Appendix A

ORDINANCE NO._____

AN ORDINANCE of the City Council of the City of Bremerton, Washington, establishing a Planned Action for the South Kitsap Industrial Area (SKIA), pursuant to the State Environmental Policy Act

WHEREAS, the State Environmental policy Act ("SEPA") and implementing rules provide for the integration of environmental review with land use planning and project review through designation of "Planned Actions" by jurisdictions planning under the Growth Management Act ("GMA"); and

WHEREAS, the City has adopted a Comprehensive Plan complying with the GMA; and

WHEREAS, the City has adopted development regulations permitting designation of Planned Actions;

WHEREAS, the Puget Sound Regional Council's *Vision 2040* designates SKIA as a regional Manufacturing/Industrial Center (MIC), which is expected to accommodate significant employment growth at higher densities; and

WHEREAS, the City has received a Climate Showcase Communities grant from the U.S. Environmental Protection Agency to develop a sub-area plan that supports sustainability, greenhouse gas reduction, low impact development stormwater and wastewater recycling; and

WHEREAS, the City has prepared a sub-area plan and development regulations for the SKIA Sub-area; and

WHEREAS, designation of a Planned Action expedites the permitting process for subsequent, implementing projects whose impacts have been previously addressed in a Planned Action environmental impact statement ("EIS"), and thereby encourages desired growth and economic development; and

WHEREAS, the SKIA Sub-area Planned Action EIS identifies impacts and mitigation measures associated with planned development in the sub-area; and

WHEREAS, the City has adopted development regulations which will help protect the environment, and is adopting zoning regulations specific to the sub-area which will guide the amount, location, form, and quality of desired development; and

WHEREAS, the SKIA Sub-area is deemed to be appropriate for designation of a Planned Action.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF BREMERTON, WASHINGTON, DOES HEREBY ORDAIN AS FOLLOWS:

SECTION 1. *- Purpose*. The City Council declares that the purpose of this ordinance is to:

A. Combine analysis of environmental impacts with the City's development of plans and regulations;

B. Designate the SKIA Sub-area as a Planned Action for purposes of environmental review and permitting of subsequent, implementing projects pursuant to the State Environmental Policy Act (SEPA), RCW 43.21C.031;

C. Determine that the EIS prepared for the sub-area plan meets the requirements of a Planned Action EIS pursuant to SEPA;

D. Establish criteria and procedures, consistent with state law, that will determine whether subsequent, implementing projects qualify as Planned Actions;

E. Provide the public with information about Planned Actions and how the City will process applications for implementing projects;

F. Streamline and expedite the land use review and approval process for qualifying projects by relying on the EIS completed for the Planned Action; and

G. Apply the City's development regulations together with the mitigation measures described in the Planned Action EIS and this Ordinance to address the impacts of future development contemplated by the Planned Action.

SECTION 2. **–** *Findings***.** The City Council finds as follows:

A. The City is subject to the requirements of the Growth Management Act, RCW 36.70A, and is located within an Urban Growth Area;

B. The City has adopted a Comprehensive Plan complying with the GMA, and is amending the Comprehensive Plan to incorporate a sub-area element specific to the SKIA Sub-area;

C. The City is adopting development regulations concurrent with the SKIA Sub-area Plan to implement said Plan;

D. The City has prepared an EIS for the SKIA Sub-area ("Planned Action EIS") and finds that this EIS adequately addresses the probable significant environmental impacts associated with the type and amount of development planned to occur in the designated Planned Action area;

E. The mitigation measures identified in the Planned Action EIS and attached to this ordinance as Exhibit B, together with adopted City development regulations, will adequately mitigate significant impacts from development within the Planned Action area;

F. The subarea plan and Planned Action EIS identify the location, type and amount of development that is contemplated by the Planned Action;

G. Future projects that are implemented consistent with the Planned Action will protect the environment, benefit the public and enhance economic development;

H. The City has provided numerous opportunities for meaningful public involvement in the proposed Planned Action; has considered all comments received; and, as appropriate, has modified the proposal or mitigation measures in response to comments;

I. The SKIA Sub-area Plan is not an essential public facility as defined by RCW 36.70A.200(1), and any future projects which meet the definition of an essential public facility will not qualify as Planned Actions;

J. The Planned Action applies to a defined area that is smaller than the overall City boundaries; and

K. Public services and facilities are adequate to serve the proposed Planned Action, with implementation of mitigation measures identified in the EIS.

SECTION 3. *- Procedures and Criteria for Evaluating and Determining Projects as Planned Actions.*

A. *Planned Action Area*. The Planned Action designation shall apply to the area shown in Exhibit A.

B. *Environmental Document*. A Planned Action determination for a site-specific implementing project application shall be based on the environmental analysis contained in the Draft EIS issued by the City on _____and the Final EIS published on _____. The Draft and Final EISs shall comprise the Planned Action EIS. The mitigation measures contained in Exhibit B are based upon the findings of the Planned Action EIS and shall, along with adopted City regulations, provide the framework that the City will use to impose appropriate conditions on qualifying Planned Action projects.

C. *Planned Action Designated*. Land uses and activities described in the Planned Action EIS, subject to the thresholds described in subsection 3.D and the mitigation measures contained in Exhibit B, are designated Planned Actions or Planned Action Projects pursuant to RCW 43.21C.031. A development application for a site-specific Planned Action project located within the SKIA Planned Action Area shall be designated as a Planned Action if it meets the criteria set forth in subsection 3.D of this ordinance and applicable laws, codes, development regulations and standards of the City.

D. *Planned Action Qualifications*. The following thresholds shall be used to determine if a site-specific development proposed within the SKIA Planned Action Area is contemplated by the Planned Action and has had its environmental impacts evaluated in the Planned Action EIS: [*Note: this list is a placeholder and will be revised, as appropriate, based on sub-area plan land uses]*

(1) Land Use. The following general categories/types of land uses, which are permitted or conditionally permitted in zoning districts applicable to the SKIA Planned

Action Area, and subject to any limitations in size contained in the applicable zoning districts, are considered Planned Actions: Anticipated land uses are further identified below:

(a) Industrial and manufacturing uses;
(b) Office uses, including but not limited to research and development;
(c) Retail and service uses;
(d) Utilities and capital facilities.

Individual land uses considered to be Planned Actions shall include those uses specifically listed in development regulations applicable to the zoning classifications applied to properties within the Planned Action Area.

(2) Development Thresholds.

(a) The following amount of various new land uses are contemplated by the Planned Action:

Land Use	Development Amount
Industrial/Manufacturing	Tbd
Office/research & technology	Tbd
Retail/service uses	Tbd
Utilities & capital facilities	Tbd

(b) If future development proposals in the SKIA Planned Action Area exceed the development thresholds specified in this ordinance, further environmental review may be required pursuant to WAC 197-11-172. Furthermore, if proposed development would alter the assumptions and analysis in the Planned Action EIS, further environmental review may be required. Shifting the development amount between categories of uses may be permitted so long as the total build-out does not exceed the aggregate amount of development and trip generation reviewed in the EIS, and so long as the impacts of that development have been identified in the Planned Action EIS and are mitigated consistent with Exhibit B.

(3) Building Height. Building height shall not exceed those listed below, measured consistent with the applicable definitions and standards of the Bremerton Municipal Code:

[*To be determined.]*

(4) Transportation.

(a) *Trip Ranges & Thresholds*. The number of new pm peak hour trips anticipated in the Planned Action area and reviewed in the EIS are as follows:

Total PM Peak Hour trips	Tbd

Uses or activities that would exceed these maximum trip levels will require additional SEPA review.

(b) *Concurrency*. The determination of transportation impacts shall be based on the City's concurrency management program contained in BMC 11.12.070.

(c) *Off-Site Mitigation*. As provided in the EIS, in order to mitigate transportation related impacts, all Planned Action Projects shall pay an environmental mitigation fee to participate in and pay a proportionate share of off-site improvements. Off-site improvements are identified in Attachment B. [*Placeholder language, to be discussed.]*

(d) *Director Discretion*. The Director of Community Development shall have discretion to determine incremental and total trip generation, consistent with the Institute of Traffic Engineers (ITE) Trip Generation Manual (latest edition) or an alternative manual accepted by the City Engineer at his or her sole discretion, for each project permit application proposed under this Planned Action.

(5) Other Criteria. *[Note: May wish to add other criteria for qualification, e.g., related to sustainability goals.]*

(6) Elements of the Environment and Degree of Impacts. A proposed project that would result in a significant change in the type or degree of impacts to any of the elements of the environment analyzed in the Planned Action EIS, would not qualify as a Planned Action.

(7) Changed Conditions. Should environmental conditions change significantly from those analyzed in the Planned Action EIS, the City's SEPA Responsible Official may determine that the Planned Action designation is no longer applicable until supplemental environmental review is conducted.

E. **Planned Action Review Criteria**.

(1) The City's SEPA Responsible Official may designate as "Planned Actions", pursuant to RCW 43.21C.030, applications that meet all of the following conditions:

(a) the proposal is located within the Planned Action area identified in Exhibit A of this ordinance;

(b) the proposed uses and activities are consistent with those described in the Planned Action EIS and Section 3.D of this ordinance;

(c) the proposal is within the Planned Action thresholds and other criteria of Section 3.D of this ordinance;

(d) the proposal is consistent with the City of Bremerton Comprehensive Plan and the SKIA Sub-area Plan;

(e) the proposal's significant adverse environmental impacts have been identified in the Planned Action EIS;

(f) the proposal's significant impacts have been mitigated by application of the measures identified in Exhibit B, and other applicable city regulations, together with any modifications or variances or special permits that may be required;

(g) the proposal complies with all applicable local, state and/or federal laws and regulations, and the Responsible Official determines that these constitute adequate mitigation; and

(h) the proposal is not an essential public facility as defined by RCW 36.70A.200(1).

(2) The City shall base its decision on review of a SEPA checklist, or an alternative form approved by the Department of Ecology, and review of the application and supporting documentation.

(3) A proposal that meets the criteria of this section shall be considered to qualify and be designated as a Planned Action, consistent with the requirements or RCW 43.21C.030, WAC 197-11-164 et seq, and this ordinance.

F. **Effect of Planned Action**

(1) Designation as a Planned Action project means that a qualifying proposal has been reviewed in accordance with this ordinance and found to be consistent with its development parameters and thresholds, and with the environmental analysis contained in the Planned Action EIS.

(2) Upon determination by the City's SEPA Responsible Official that the proposal meets the criteria of Section 3.D and qualifies as a Planned Action, the proposal shall not require a SEPA threshold determination, preparation of an EIS, or be subject to further review pursuant to SEPA.

G. **Planned Action Permit Process**. Applications for Planned Actions shall be reviewed pursuant to the following process.

(1) Development applications shall meet all applicable requirements of the Bremerton Municipal Code (BMC). Applications for Planned Actions shall be made on forms provided by the City and shall include a SEPA checklist, or an approved Planned Action checklist.

(2) The City's Director of Community Development or designee shall determine whether the application is complete as provided in BMC 20.02.090.

(3) If the application is for a project within the Planned Action Area defined in Exhibit A, the application will be reviewed to determine if it is consistent with the criteria of this ordinance and thereby qualifies as a Planned Action project. The SEPA Responsible Official shall notify the applicant of his/her decision. If the project is determined to qualify as a Planned Action, it shall proceed in accordance with the applicable permit review procedures specified in BMC 20.02.040, except that no SEPA threshold determination, EIS or additional SEPA review shall be required. The decision of the SEPA Responsible Official regarding qualification as a Planned Action shall be final.

(4) Public notice and review for projects that qualify as Planned Actions shall be tied to the underlying permit and shall follow the procedures set forth in BMC20.02.100 and 20.02.110. If notice is otherwise required for the underlying permit, the notice shall state that the project has qualified as a Planned Action. If notice is not otherwise required for the underlying permit, no special notice is required by this ordinance.

(5) Development Agreement. To provide additional certainty about applicable requirements, the City or an applicant may request consideration and execution of a development agreement for a Planned Action project. The development agreement may address review procedures applicable to a Planned Action project, permitted uses, mitigation measures, payment of impact fees or provision of improvements through other methods, design standards, phasing, vesting of development rights, or any other topic that may properly be considered in a development agreement consistent with RCW 36.70B.170 et seq.

(6) If a project is determined to not qualify as a Planned Action, the SEPA Responsible Official shall so notify the applicant and prescribe a SEPA review procedure consistent with the City's SEPA regulations and the requirements of state law. The notice shall describe the elements of the application that result in failure to qualify as a Planned Action.

(7) Projects that fail to qualify as Planned Actions may incorporate or otherwise use relevant elements of the Planned Action EIS, as well as other relevant SEPA documents, to meet their SEPA requirements. The SEPA Responsible Official may limit the scope of SEPA review for the non-qualifying project to those issues and environmental impacts not previously addressed in the Planned Action EIS.

SECTION 4. - *Monitoring and Review.*

A. The City shall monitor the progress of development in the designated Planned Action Sub-area to ensure that it is consistent with the assumptions of this ordinance and the Planned Action EIS regarding the type and amount of development and associated impacts, and with the mitigation measures and improvements planned for the SKIA Planned Action Area.

B. This Planned Action Ordinance shall be reviewed no later than five years from its effective date by the SEPA Responsible Official to determine the continuing relevance of its assumptions and findings with respect to environmental conditions in the Planned Action area, the impacts of development, and required mitigation measures. Based upon this review, the City may propose amendments to this ordinance or may supplement or revise the Planned Action EIS.

SECTION 5. - *Conflict***.** In the event of a conflict between this Ordinance or any mitigation measure imposed thereto, and any ordinance or regulation of the City, the provisions of this ordinance shall control EXCEPT that the provision of any International Code shall supersede.

SECTION 6. - *Severability*. Should any section, subsection, paragraph, sentence, clause or phrase of this Ordinance or its application be declared to be unconstitutional or invalid by a court of competent jurisdiction, such decision shall not affect the constitutionality or validity of the remaining portions of this ordinance or its application to any other person or situation.

SECTION 7. - *Effective Date*. This ordinance, being an exercise of a power specifically delegated to the City legislative body, is not subject to referendum, and shall take effect five (5) days after its passage, approval and publication as provided by law.

APPROVED

_____

, MAYOR

ATTEST:

_____
, CITY CLERK

APPROVED AS TO FORM:

_____
, CITY ATTORNEY

PASSED __ day of _____, 2011

APPROVED __ day of _____. 2011

PUBLISHED __ day of _____ 2011

I hereby certify that this is a true copy of Ordinance No. _____ passed by the City Council of the City of Bremerton, Washington, and approved by the Mayor of the City of Bremerton as hereon indicated.

_____
CITY CLERK

EXHIBIT A
PLANNED ACTION AREA

EXHIBIT B
PLANNED ACTION EIS MITIGATION MEASURES

Appendix B

Determination of Significance & Scoping Notice

South Kitsap Industrial Area Comprehensive Master Plan

Proponent: City of Bremerton

Description of Proposal: The proposal is to adopt a Subarea Plan for the South Kitsap Industrial Area.

Location: The study area for the proposed Master Plan encompasses approximately 3,400 acres south of the Bremerton watershed property of which approximately 3,250 acres have been recently annexed to the City. The area is located along State Route 3 within and near the City limits of Bremerton and also near the City limits of Port Orchard.

Lead Agency: City of Bremerton, Department of Community Development

Threshold Determination (EIS Required): The lead agency has determined that this proposal is likely to have a significant adverse impact on the environment. An environmental impact statement (EIS) will be prepared.

Planned Action: The EIS will be prepared to analyze several alternatives for the plan, and will include a Planned Action ordinance as established in WAC 197-11-168.

Elements of the Environment to be Analyzed: The lead agency has identified the following areas for discussion and analysis in the EIS:

Natural Environment: Earth (wetlands, hydric soils, critical areas, geologically hazardous areas); Water (water supply and recharge, waterways); Plants and Animals (wildlife, fish); Air Quality (emissions).

Built Environment: Land Use/Plans and Policies; Cultural Resources; Aesthetics; Transportation (automobile, truck and rail); Public Services (police, fire); Utilities (sewer, domestic water, stormwater).

Scoping: Agencies, affected tribes, and members of the public are invited to comment on the scope of the EIS. Comments on the alternatives, probably significant adverse environmental impacts, mitigation measures, and approvals that may be required are welcome.

The deadline for submitting written comments on the scope of the EIS is 5:00 p.m., Pacific Daylight Time, **October 20th, 2010.** Please send written comments to the address of the SEPA Responsible Official, listed below.

On **October 13, 2010** from 5:00 to 7:00 p.m., an **Open House** will be held in the Norm Dicks Government Center, 345 6th Street, Bremerton, WA 98337. The Open House will provide an opportunity for interested citizens to obtain information on the SEPA process, to ask questions of staff and the consultant team working on the project, and to provide input on the scope of the EIS.

SEPA Responsible Official:

Responsible Official: JoAnn Vidinhar

Position/Title: Acting Director - DCD Phone: 360.473.5297

Contact Person Lindsey Sehmel

Position/Title City Planner Phone: 360.473.5845

Address: 345 6th Street, Suite 600 – Bremerton, WA – 98337

Email: Lindsey.sehmel@ci.bremerton.wa.us

DATE: Sept. 29, 2010 Signature:

Appendix C

SKIA

Gross Acres 3661.11

Buildable Acres*	AC	sf
A	763	33,236,280.00
B	417.12	18,169,572.96
C	195.72	8,525,563.20
D	162.92	7,096,708.08
E	284.98	12,413,598.12
F	414.32	18,047,909.88
G	324.71	14,144,367.60
Total	**2562.78**	111,634,566.12

* gross acres less 10% for critical area and 20% for roads/infrastructure

No Action (ALT 1)

	New Employees	**Existing Employees**	**Total Employees**	**Density**
Area A	400	200	600	0.79
Area B	800	850	1650	3.96
Area C	50	50	100	0.51
Area D	50	50	100	0.61
Area E/F	0	0	0	
Area G	100	50	150	
	1400	**1200**	**2600**	

Average Density **1.015**

Development Envelope*

	No Action		Alt 2	Alt 3
Area A	300,000		350,000	800,000
Area B	400,000		1,175,000	1,525,000
		ind/office	1,100,000	1,450,000
		bus svc	75,000	75,000
Area C	25,000		775,000	525,000
		ind/office	n/a	475,000
		bus svc	n/a	50,000
Area D	25,000		225,000	425,000
		ind/office	175,000	375,000
		bus svc	50,000	50,000
Area E	-		425,000	900,000
		ind/office	375,000	840,000
		bus svc	50,000	60,000
Area F	-		575,000	1,000,000
Area G	-		325,000	425,000
		ind/office	275,000	375,000
		bus svc	50,000	50,000
TOTALS	**750,000**		**3,850,000**	**5,600,000**

*Assumes 500 sf/employee for all development

Totals				
Ind/Office	750,000	2,850,000		5,315,000
Bus Svc	0	225,000	6%	285,000
Mixed Use		775,000		
		3,850,000		**5,600,000**

ALT 2

	New Employees	Existing Employees	Total Employees	Density
Area A	500	200	700	0.92
Area B	1500	850	2350	5.63
Area C	1500	50	1550	7.92
Area D	400	50	450	2.76
Area E	850	0	850	2.98
Area F	1150	0	1150	2.78
Area G	600	50	650	2.00
	6500	**1200**	**7700**	

5000 MIC
1500 Mixed Use

Average Density **0.00**

ALT 3

	New Employees	Existing Employees	Total Employees	Density
Area A	1400	200	1600	2.10
Area B	2200	850	3050	7.31
Area C	1000	50	1050	5.36
Area D	800	50	850	5.22
Area E	1800	0	1800	6.32
Area F	2000	0	2000	4.83
Area G	800	50	850	2.62
	10000	**1200**	**11200**	

Average Density **0.00**

FAR

No Action	Alt 2	Alt 3
0.01	0.01	0.02
0.02	0.06	0.08
0.003	0.091	0.06
0.004	0.032	0.06
	0.034	0.07
	0.032	0.06
	0.023	0.03
0.007	**0.03**	**0.05**

5%

Appendix D

APPENDIX A

Natural Environment Supplemental Information

A.1 Local, State and Federal Regulations pertaining to Plants, Animals, and their Habitat

BMC 25.14.720, in part, identifies Fish and Wildlife Habitat Conservation Area as:

- Streams and Shorelines. All streams and shorelines which meet the criteria for Type S, F, Np, or Ns waters as set forth in WAC 222-16-030 of the Department of Natural Resources Water Typing System.
- Lakes Less than Twenty (20) Acres in Surface Area. Those lakes which meet the criteria for Type F, Np, and Ns waters as set forth in WAC 222-16-030 as amended. This includes lakes and ponds less than twenty (20) acres in surface area and their submerged aquatic beds, lakes, and ponds planted with game fish by a governmental or tribal authority.
- Class I Fish and Wildlife Conservation Areas.
    - Habitats and species recognized by federal or State agencies for federal and/or State-listed endangered, threatened, and sensitive species that have primary association documented in maps or databases available to the City and that, if altered, may reduce the likelihood that the species will maintain and reproduce over the long term.
    - Areas targeted for preservation by federal, State, and/or local government which provide fish and wildlife habitat benefits, such as the shared strategy process for Puget Sound, and areas of primary association for anadromous fish and important waterfowl areas identified by the U.S. Fish and Wildlife Service.
    - Areas that contain habitats and species of local importance. These areas are identified by the City, including but not limited to those habitats and species that, due to their population status or sensitivity to habitat manipulation, warrant protection.
- Class II Fish and Wildlife Conservation Areas.
    - Habitats for State-listed candidate and monitored species documented in maps or databases available to the City which, if altered, may reduce the likelihood that the species will maintain and reproduce over the long term.

    - Habitats that have been identified through maps, databases, reports, or studies that include attributes such as comparatively high wildlife density, high wildlife species richness, significant wildlife breeding habitat, seasonal ranges, or movement corridors of limited availability and/or high vulnerability.
- Habitats and Species of Local Importance. The City should accept and consider nominations for habitat areas and species to be designated as locally important.
    - Habitats and species to be designated shall exhibit the following characteristics:
        - Local populations of native species are in danger of extirpation based on existing trends;
        - Local populations of native species that are likely to become endangered; or
        - Local populations of native species that are vulnerable or declining.

Buffer requirements for freshwater fish and wildlife habitat conservation areas are included in BMC 25.14.730, and are summarized in Table A.1-1 below:

Table A.1-1: Water Type Standard Buffers – Freshwater Only

Water Type	Attribute	Buffer Width1
S Freshwater	Freshwater Shorelines of the State	175 ft
F	Fish Habitat Waters	150 ft
Np	Year-Round, Nonfish Habitat	50 ft
Ns	Seasonal, Nonfish Habitat	35 ft

Source: BMC 20.14.730

[1] Additional 15 ft building setbacks apply to these buffers.

Development standards outlined in BMC 25.14.730 apply to designated fish and wildlife habitat conservation areas and/or buffers, and BMC 20.14.750 includes mitigation sequencing for proposed alterations.

BMC 25.09.020 identifies wetlands as:

> *…those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to*

support, and that under normal circumstances do support, a prevalence of vegetation adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from nonwetland areas to mitigate the conversion of wetlands. For identifying and delineating a wetland, local government shall use the Washington State Wetland Identification and Delineation Manual.

Wetlands are rated and categorized according to the *Washington State Wetland Rating System for Western Washington* (Hruby 2004). Wetland functions are recognized by the City's Critical Areas chapter, and include habitat functions. Development standards, including standard buffer widths for wetlands, are included in BMC 20.14.330. Standard buffer widths for wetlands are as follows:

Table A.1-2: Wetland Standard Buffer Widths

Wetland Category	Standard Buffer1
I	200 ft
II	100 ft
III	75 ft
IV	50 ft

Source: BMC 20.14.330(f)(1)

[1] Increased buffer widths can be required based on proximity to additional critical areas and slopes steeper than 15%. Modification to standard wetland buffers can be approved based on conditions outlined in BMC 20.14.330(f)(4) Wetland Buffer Width Averaging.

Washington State Wetlands Rating System for Western Washington categorizes wetlands based on their existing functions, including water quality, hydrology, and habitat, as well as the wetland's rarity, sensitivity to disturbance, or irreplaceability.

Waters of the State include lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses.

BMC 20.14.330 provides development standards in wetlands and their buffers, and BMC 20.14. 340 outlines mitigation requirements for alterations to wetlands and their buffers.

RCW 90.48 establishes policy of the state to "…to maintain the highest possible standards to insure the purity of all waters of the state consistent with public health and public enjoyment thereof, the propagation and protection of wildlife, birds, game, fish and other aquatic life..," With this

policy, the State, through the Department of Ecology, exercises its powers to retain and secure high quality for all waters of the state, which includes wetlands. The Department of Ecology uses the State Environmental Policy Act (SEPA) process to identify potential wetland-related concerns as part of project review.

Waters of the United States include but are not limited to, wetlands, rivers, streams, lakes, or ponds.

The federal Clean Water Act (CWA), administered by the U.S. Environmental Protection Agency, regulates discharge of dredged or fill material [including excavation or mechanized land clearing (per Section 404)] and discharge of pollutants (per Section 401) into "waters of the U.S.," which includes wetlands. Authorization for discharge of dredged or fill material into "waters of the U.S." is enforced by the U.S. Army Corps of Engineers. Wetlands, as defined in 33 CFR 328.3, include those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. 33 CFR 332 establishes standards and criteria for compensatory mitigation to offset unavoidable impacts to "waters of the U.S.," and requires that such mitigation replace lost functions and services, including habitat.

Critical habitat is the specific areas occupied or unoccupied by a listed species with physical or biological features essential to the conservation of the species; specific Primary Constituent Elements (PCEs) of critical habitat are physical and biological features essential to the conservation of the species.

Essential Fish Habitat is those waters and substrate necessary to marine fish for spawning, breeding, feeding, or growth to maturity.

Section 7 of the ESA, as amended, applies to federal agency actions and sets forth requirements for consultation with the U.S. Fish and Wildlife Service and National Marine Fisheries Service (NOAA Fisheries), collectively referred to as the Services, to determine if the proposed action "may affect" an endangered or threatened species and their critical habitat. Effects of an action can extend beyond a project footprint, and consider, among other things, the extent of project related noise and stormwater runoff. The National Environmental Policy Act (NEPA) dictates the evaluation of biological resources in the project area concurrent and interdependent with the Section 7 ESA consultation process. Evaluation of impacts to species federally listed as endangered is required for all levels of NEPA documentation. Because of funding provided by the U.S. Environmental Protection Agency for the proposed project, compliance with ESA and any necessary consultation with the Services is required. Under the Magnuson-Stevens Act, federal agencies must consult with NOAA Fisheries with regard to any action authorized, funded, or undertaken that may adversely affect any essential fish habitat identified under the Magnuson-Stevens Act. The consultation procedures are generally similar to ESA consultation requirements.

The MBTA prohibits private parties (and federal agencies in certain judicial circuits) from intentionally taking a migratory bird, its eggs, or nests. "Take" is defined as "pursue, hunt, shoot, wound, kill, trap, capture, or

collect" (50 CFR §10.21). The MBTA prohibits taking, selling, or other activities that would harm migratory birds, its eggs, or nests, unless the U.S. Secretary of the Interior, through the U.S. Fish and Wildlife Service, authorizes such activities under a special permit.

Pursuant to Executive Order 13112, Invasive Species, of February 3, 1999, federal agencies (including those providing project funding) are directed to prevent the introduction of invasive species, including plants and animals, and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause. Agencies are not to carry out actions that they believe are likely to cause or promote the introduction or spread of invasive species unless the benefits of such actions clearly outweigh the potential harm, and all feasible and prudent measures to minimize risk of harm should be taken in conjunction with the actions.

A.2 Waterways and Wetlands Within or Near the SKIA Project Area

Table A.2-1: Waterways Intersecting or Within 200 Ft of the SKIA Project Area

Location	LLID1	Waterway Name2	Water Type3	Standard Buffer (feet)4
Intersects the SKIA Project Area	1226963475279	Gorst Creek	F	150
	1227418475112	Unnamed tributary to Gorst Creek	F, N	150; 35 or 50
	1227471474602	Unnamed tributary to Coulter Creek	F	150
	1227482474731	Unnamed tributary to Coulter Creek	F	150
	1227525474557	Unnamed tributary to Coulter Creek	F	150
	1227596474931	Ditch along Runway	F, N	150; 35 or 50
	1227649474658	Unnamed tributary to Coulter Creek	F	150
	1227686474826	Unnamed tributary to North East Fork Union River	U	35, 50, or 150
	1227687474836	Unnamed tributary to North East Fork Union River	N	35 or 50
	1227693474830	Unnamed tributary to North East Fork Union River	F, N	150; 35 or 50
	1227697474608	Unnamed tributary to Coulter Creek	F	150
	1227817474940	Unnamed tributary to North East Fork Union River	N	35 or 50
	1227817474952	Unnamed tributary to North East Fork Union River	N	35 or 50
	1227822474388	Unnamed tributary to Coulter Creek	F, N	150; 35 or 50
	1227829475112	Unnamed (possible tributary to East Fork Union River)	U	35, 50, or 150
	1227839474982	Unnamed tributary to North East Fork Union River	F	150

Location	LLID1	Waterway Name2	Water Type3	Standard Buffer (feet)4
	1227891474365	Unnamed tributary to Coulter Creek	N	150; 35 or 50
	1227921475042	East Fork Union River	F, N	150; 35 or 50
	1228024474952	North East Fork Union River	F, N, U	35, 50, or 150
	1228344474579	Unnamed (possible tributary to Hood Canal or North Bay)	U	35, 50, or 150
Within 200 ft of the SKIA Project Area	1227806475091	Unnamed (possible tributary to East Fork Union River)	U	35, 50, or 150

Source: Kitsap County

[1] LLID = Longitude Latitude Identifier

[2] Tributaries listed may connect to other unnamed tributaries to named stream.

[3] Kitsap County GIS data does not identify N type waters as Np or Ns. "U" designation is unclassified. All water types are subject to field verification.

[4] Refer to Table A.1-1.

Table A.2-2: Wetlands Mapped Within or Within 300 Ft of the SKIA Project Area

Location	Wetland ID[1]	Source[2]	Watershed	Cowardin Classification[3]
Within the SKIA Project Area	1129	DNR '00, NWI	Elgin	PSSC
	1130	DNR '00, NWI	Elgin	PSSC/PUBH
	1131	DNR '00, NWI	Elgin	PEMC/PUBH
	1132	DNR '00, NWI	Blackjack Creek	PUB/ABH/PSSC
	1336	DNR '00, NWI	Elgin	PSSC/PUBH/PEM
	1337	DNR '00, NWI	E/SW Kitsap	PEMC
	1344	DNR '00, NWI	E/SW Kitsap; Elgin	PSSC
	1350	NWI	E/SW Kitsap; Elgin	PSSC
	1357	DNR '00, NWI	E/SW Kitsap	PSSC
	1513	NWI	Elgin	PABH
	1514	NWI	Elgin	PSSC
	2403	PARCEL MAP	E/SW Kitsap	PUB (assumed, shown as sewage disposal pond on USGS topographic map)
	2405	PARCEL MAP	Elgin	PUB (assumed, shown as open water on USGS topographic map)
Within 300 ft of the SKIA Project Area	1339	DNR '00, NWI	Elgin	PSSC
	1531	NWI	Blackjack Creek	PEMF
	2402	PARCEL MAP	Blackjack Creek	PUB (assumed, open water on Gold Mountain Golf Club)
	1141	NWI, PARCEL MAP	Blackjack Creek	PUB/ABH

Source: Kitsap County, U.S. Fish and Wildlife Service

[1] Corresponds to ObjectID provided in Kitsap County GIS data. See Figure A.1-2.

[2] The County provides a combination of various wetland data sources into one comprehensive data layer for Kitsap County. Data sets used include Department of Natural Resources 2000 Hydrology, NWI Wetlands data, Bainbridge Island wetland inventory data, and survey delineated wetlands extracted from the county's accurate parcel map sections.

[3] Based on NWI data.
KEY:
PSSC – Palustrine, scrub-shrub, seasonally flooded
PUBH – Palustrine, unconsolidated bottom, permanently flooded
PEMC – Palustrine, emergent, seasonally flooded
ABH – Aquatic bed, permanently flooded
PEM – Palustrine, emergent
PABH – Palustrine, aquatic bed, permanently flooded
PUB – Palustrine, unconsolidated bottom
PEMF – Palustrine, emergent, semipermanently flooded

A.3 Primary Constituent Elements

Bull trout Primary Constituent Elements (PCEs) include:

- Water temperatures that support bull trout use. Bull trout have been documented in streams with temperatures from 32° to 72°F (0° to 22°C), but are found more frequently in temperatures ranging from 36° to 59°F (2° to 15°C).
- Complex stream channels with features such as woody debris, side channels, pools, and undercut banks to provide a variety of depths, velocities, and instream structures.
- Substrates of sufficient amount, size, and composition to ensure success of development from egg to juvenile. This should include a minimal amount of fine substrate less than 0.25 inches (0.63 centimeters) in diameter.
- A natural hydrograph, including peak, high, low, and base flows within historical ranges or, if regulated, currently operate under a biological opinion that addresses bull trout, or a hydrograph that demonstrates the ability to support bull trout populations by minimizing daily and day-to-day fluctuations and minimizing departures from the natural cycle of flow levels corresponding with seasonal variation.
- Springs, seeps, groundwater sources, and subsurface water that contribute to water quality and quantity as a cold water source.
- Migratory corridors with minimal physical, biological, or water quality impediments between spawning, rearing, overwintering, and foraging habitats, including intermittent or seasonal barriers induced by high water temperatures or low flows.
- An abundant food base including terrestrial organisms of riparian origin, aquatic macroinvertebrates, and forage fish.
- Permanent water of sufficient quantity and quality such that normal reproduction, growth, and survival are not inhibited (USFWS 2005).

The existing PCEs of critical habitat for marbled murrelet include individual trees with potential nest platforms and forest lands of at least one half site-potential tree height regardless of contiguity within 0.8 kilometers (0.5 miles) of individual trees with potential nesting platforms and that are used or potentially used by the marbled murrelet for nesting or roosting (USFWS 1996).

Nearshore critical habitat PCEs for Puget Sound Chinook and Hood Canal Summer-Run Chum salmon include areas free of obstruction and excessive predation with (i) Water quality and quantity conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation; and (ii) Natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels (NOAA Fisheries 2005).

PCEs related to freshwater habitat for Hood Canal Summer-Run Chum salmon consist of spawning sites with water quantity and quality conditions and substrate that will support spawning, incubation, and larval development. Freshwater PCEs also include rearing areas with: 1) water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility; 2) water quality and forage supporting juvenile development; and 3) natural cover such as shade, submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks. Finally, freshwater PCEs include migration corridors free of obstruction and excessive predation with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival (NOAA Fisheries 2005).

Appendix E

APPENDIX E

Greenhouse Gases Background and Calculations

Global climate change is a change in the average weather of the earth, which can be measured by wind patterns, storms, precipitation and temperature. The extent of the change or the exact contribution from sources influenced by human activity, including the construction and operation of developments, such as the proposed alternatives, remains in debate. This analysis provides a qualitative discussion of the potential impacts of the proposed alternatives on global climate change based upon the best information available at this time.

Climate Change and Greenhouse Gas Emissions

The global climate is continuously changing, as evidenced by repeated episodes of warming and cooling documented in the geologic record. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. Scientists have observed, however, an unprecedented increase in the rate of warming in the past 150 years. This recent warming has coincided with the global Industrial Revolution, which resulted in widespread deforestation to accommodate development and agriculture and an increase in the use of fossil fuels, which has released substantial amounts of greenhouse gases into the atmosphere.

Greenhouse gases (GHG), such as carbon dioxide, methane, and nitrous oxide, are emitted by both natural processes and human activities and trap heat in the atmosphere. The accumulation of GHG in the atmosphere affects the earth's temperature. While research has shown that Earth's climate has natural warming and cooling cycles, evidence indicates that human activity has elevated the concentration of GHG in the atmosphere beyond the level of naturally- occurring concentrations resulting in more heat being held within the atmosphere. The International Government on Climate Change (IPCC), an international group of scientists from 130 governments, has concluded that it is "very likely" - a probability listed at more than 90 percent - that human activities and fossil fuels explain most of the warming over the past 50 years."[1]

[1] IPCC, Fourth Assessment Report, February 2, 2007.

The IPCC predicts that under current human GHG emission trends, the following results could be realized within the next 100 years:[2]

- global temperature increases between 1.1 – 6.4 degrees Celsius;
- potential sea level rise between 18 to 59 centimeters or 7 to 22 inches;
- reduction in snow cover and sea ice;
- potential for more intense and frequent heat waves, tropical cycles and heavy precipitation; and
- impacts to biodiversity, drinking water and food supplies.

The Climate Impacts Group (CIG), a Washington-state based interdisciplinary research group that collaborates with federal, state, local, tribal, and private agencies, organizations, and businesses, studies impacts of natural climate variability and global climate change on the Pacific Northwest. CIG research and modeling indicates the following possible impacts of human-based climate change in the Pacific Northwest:[3]

- changes in water resources, such as decreased snowpack; earlier snowmelt; decreased water for irrigation, fish and summertime hydropower production; increased conflict over water; increased urban demand for water.
- changes in salmon migration and reproduction.
- changes in forest growth and species diversity and increases in forest fires; and
- changes along coasts, such as increased coastal erosion and beach loss due to rising sea levels; increased landslides due to increased winter rainfall, permanent inundation in some areas; and increased coastal flooding due to sea level rise and increased winter streamflow.

Energy

One source of greenhouse gas emissions is the fossil fuels (especially coal) used to produce power used by consumers for electrical power and home heating needs. In the Pacific Northwest - unlike other regions in the United States - power companies are generally able to utilize hydro-electric energy sources which are considered renewable.

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[2] IPCC, Summary for Policymakers, April 30, 2007.
[3] Climate Impacts Group, Climate Impacts in Brief, accessed 2/7/2008, http://www.cses.washington.edu/cig/pnwc/ci.shtml.

Electrical service is provided to the City of Bremerton, including the SKIA subarea, by Puget Sound Energy. Puget Sound Energy has a variety of sources of power including: hydro-electric (41 percent), coal (36 percent), natural gas (20 percent), nuclear (1 percent), and other sources including wind, biomass, landfill gas, petroleum, and waste (2 percent)[4]. Approximately 56 percent of the power provided by Puget Sound Energy is generated from fossil fuels (coal, petroleum and natural gas). Puget Sound Energy offers consumers options for reducing or offsetting their energy carbon footprint, such as providing energy audits and providing the option to participate in the "green-power" program, which allows customers to purchase renewable energy sources (solar and wind) for a portion of their electricity use.

Other strategies that can further reduce greenhouse gas from energy use are: employing design features that naturally reduce energy use, such as retaining mature trees to provide carbon sequestration, air purification and cooling; and, providing onsite power generation, such as solar panels or wind turbines.

Regulatory Context

United States Environmental Protection Agency

The United States Environmental Protection Agency (EPA) is charged with enforcing the Clean Air Act and has established air quality standards for common pollutants. In addition, the EPA has been directed to develop regulations to address the GHG emissions of cars and trucks.

On September 22, 2009, the EPA released final regulations that require 29 categories of facilities to report their GHG emissions annually, starting in 2011. Covered facilities include oil refineries, pulp and paper manufacturing, landfills, and a variety of other manufacturing and industrial sources of emissions. Programmatic development projects, such as the alternatives discussed in this Draft EIS, are not subject to these regulations.

Western Regional Climate Action Initiative

On February 26, 2007, the Governors of Arizona, California, New Mexico, Oregon and Washington signed the Western Climate Initiative (WCI) to develop regional strategies to address climate change. WCI is identifying,

[4] Puget Sound Energy, http://www.pse.com/energyEnvironment/energysupply/Pages/EnergySupply-Electricity-PowerSupplyProfile.aspx, accessed October 15, 2010.

evaluating and implementing collective and cooperative ways to reduce greenhouse gases in the region. Subsequent to this original agreement, the Governors of Utah and Montana, as well as the Premiers of British Columbia and Manitoba joined the WCI. The WCI objectives include setting an overall regional reduction goal for GHG emissions to 15 percent below 2005 levels by 2020, developing a design to achieve the goal and participating in The Climate Registry, a multi-state registry to enable tracking, management, and crediting for entities that reduce their GHG emissions.

On June 8, 2007, Washington Governor Christine Gregoire and British Columbia Premier Gordon Campbell signed a Memorandum of Understanding to launch a collaborative effort to cap and significantly reduce greenhouse gas emission and to collaborate on the innovation and implementation of clean technologies.

On September 23, 2008, the WCI released its final design recommendations for a regional cap-and-trade program. On July 27, 2010, the WCI released the report, *Design for the WCI Regional Program*, which identifies specific elements of the program. This program would cover GHG emissions from electricity generation, industrial and commercial fossil fuel combustion, industrial process emissions, gas and diesel consumption for transportation, and residential fuel use. The first phase of the program, which will cover electricity emissions and some industrial emission sources, is to begin January 1, 2012. Programmatic development projects, such as the alternatives discussed in this Draft EIS, are not currently covered by the WCI cap-and-trade program.

State of Washington

In February of 2007, Executive Order No. 07-02 was signed by the Governor establishing goals for Washington regarding reductions in climate pollution, increases in "green" jobs, and reductions in expenditures on imported fuel.[5] This Executive Order established Washington's goals for reducing greenhouse gas emissions as the following: to reach 1990 levels by 2020, 25 percent below 1990 levels by 2035, and 50 percent below 1990 levels by 2050. This order was intended to address climate change, grow the clean energy economy and move Washington toward energy independence.

[5] http://www.governor.wa.gov/execorders/eo_07-02.pdf

In 2007, the Washington legislature passed SB 6001, which among other things, adopted the Executive Order No. 07-02 goals into statute.

In 2008, the Washington Legislature built on SB 6001 by passing E2SHB 2815, the Greenhouse Gas Emissions Bill (codified as RCW 70.235). While SB 6001 set targets to reduce emissions, E2SHB 2815 established reductions in emissions as requirements to be met by the state, and directed the Department of Ecology to submit a comprehensive greenhouse gas reduction plan to the Legislature by December 1, 2008. As part of the plan, Ecology was to describe the actions necessary to achieve the emission reductions, develop a system for reporting and monitoring greenhouse gas emissions within the state, and identify a design for a regional multi-sector, market-based system to reduce statewide greenhouse gas emissions. Ecology's report was submitted to the Legislature in December 2008. The Plan addresses measures to be taken at the state-level and does not apply to individual development projects, such as the alternatives discussed in this Draft EIS.

In 2009, the Governor signed Executive Order 09-05, ordering Ecology and the Washington State Department of Transportation to take certain actions to reduce climate-changing greenhouse gas emissions, to increase transportation and fuel-conservation options for Washington residents, and to protect the state's water supplies and coastal areas. The Executive Order directs these state agencies to develop a regional emissions reduction program; develop emission reduction strategies and industry emissions benchmarks to make sure 2020 reduction targets are met; work on low-carbon fuel standards or alternative requirements to reduce carbon emissions from the transportation sector; address rising sea levels and the risks to water supplies; and increase transit options, such as buses, light rail, and ride-share programs, to give Washington residents more choices for reducing the effect of transportation emissions. The measures described in the Executive Order do not apply to programmatic development projects, such as the alternatives discussed in this Draft EIS.

On June 1, 2010, the Department of Ecology issued draft guidelines entitled, *Guidance on Climate Change and SEPA*, for a 25-day public comment period. These draft guidelines include guidance regarding the types of greenhouse gas emissions that should be calculated, a discussion of how to determine if emissions surpass a threshold of "significance", and a description of different types of mitigation measures. Guidance is also provided regarding the requirement to discuss the ability of a proposal to adapt to climate changes as a result of global warming. After closure of the public comment period on June 25, 2010, the Department of Ecology issued a statement indicating that significant changes would

be required to the Draft Guidelines before they are issued. If the final *Guidance on Climate Change and SEPA* is issued subsequent to the issuance of this Draft EIS but before issuance of the Final EIS, additional analysis may be included in the Final EIS.

Other Jurisdictions

In 2007 Seattle adopted Ordinance 122574, requiring departments that perform environmental review under SEPA to evaluate GHG emissions when reviewing permit applications for development. Seattle also adopted Comprehensive Plan goals and policies (Ordinance 122610) related to reducing GHG emissions. To control the impact of climate change globally and locally, the City's goal is to reduce emissions of CO2 and other climate-changing GHGs in Seattle to 30% of 1990 levels by 2024, and by 80% of 1990 levels by 2050. To reach these goals, assessment of GHG from proposed development was required in 2008. Under this assessment, development applications that trigger environmental review are required to identify the climate change impact of their proposal by quantifying expected GHG emissions.

King County began evaluating GHG project impacts under SEPA in 2007, becoming the first local government in the nation to officially add GHG emissions to environmental review of construction projects, and adopted a spreadsheet tool for quantifying greenhouse gas emissions for new development. Seattle was one of the first cities in the country to require this review, adopting the King County spreadsheet tool. Currently, Seattle's GHG legislation does not require changes in the development proposals as a result of the review. Instead, the requirement is a first step toward limiting the potential negative effects of construction projects on the environment by disclosing the impacts of GHG emissions. The City will be analyzing data obtained from GHG disclosure to inform decisions on City SEPA Policy, which the City of Bremerton will track closely as part of the EPA Showcase Communities grant scope.

Appendix: Greenhouse Gas Assumptions

GHG Reduction Strategy	Key Source	Alt 2 Reduction	Alt 3 Reduction	Assumptions
Green Building Standards	Newsham, et. al. (http://www.nrc-cnrc.gc.ca/obj/irc/doc/pubs/nrcc51142.pdf)	912,695	1,597,986	Assumes that new construction meets LEED Silver or better goals related to energy consumption. This translates into a 25 percent reduction in building energy use.
Forest Retention (25 percent of site retained as forest)	CAPCOA - Quantifying GHG Mitigation Measures (http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf)	1,887,000	1,887,000	111 MT CO2 sequestered per year per acre for forest land. Assume 850 acres retained as forest land and carbon is absorbed for 20 year period.
25% Local Electricity Generation (renewable)	Department of Energy (http://buildingsdatabook.eren.doe.gov/TableView.aspx?table=3.1.5); Puget Sound Energy (http://www.pse.com/energyEnvironment/energysupply/Pages/EnergySupply-Electricity-PowerSupplyProfile.aspx)	305,570	535,006	Assumes 54 percent of energy use is electricity, and that 62 percent of electricity use has a carbon emissions.
Mandatory Commute Trip Reduction Program	CAPCOA - Quantifying GHG Mitigation Measures; Puget Sound Regional Travel Model Output	78,078	168,355	Assumes 25 percent of trips are commute trips for Alt 2 and 45 percent for Alt 3 (based on PSRC model output). Based on CAPCOA - a 5.3 percent reduction in commute VMT.
Expanded Vanpool and Transit Services	CAPCOA - Quantifying GHG Mitigation Measures; Puget Sound Regional Travel Model Output	60,060	129,504	Assumes 25 percent of trips are commute trips for Alt 2 and 45 percent for Alt 3 (based on PSRC model output). Based on CAPCOA - a 4 percent reduction in commute VMT.
Additional Housing Options Near SKIA (see note)	Fehr & Peers; Puget Sound Regional Travel Model Output	249,849	299,297	Assumes 25 percent of trips are commute trips for Alt 2 and 45 percent for Alt 3 (based on PSRC model output). Based on PSRC data, the average Bremerton area household commute trip length is 26 percent shorter than the average SKIA worker under existing conditions
Efficient Transportation Design (see note)	Fehr & Peers	3,000	3,000	Assumes a .1 MPG improvement in fuel economy.
Develop Support Retail and Services on Site	Fehr & Peers; Puget Sound Regional Travel Model Output	39,039	46,765	Assumes that 25 percent of non-home based trips are one mile long
Encourage Locally Serving Industries	Fehr & Peers; Puget Sound Regional Travel Model Output	19,519	23,383	Assumes that 10 percent of shipping trips are half as long
Energy Efficient Outdoor Lighting	CAPCOA	73,016	127,839	LED outdoor lighting can save 40% GHG emissions compared to other types. Assume that 5% of energy use devoted to outdoor lighting.
Combined Reduction		3,624,826	4,815,133	
Percent Reduction		35.5%	33.8%	

Appendix F

APPENDIX B

Kitsap County Comprehensive Plan – SKIA Goals and Policies

Land Use Designations

Urban Industrial *- This designation includes both industrial and business uses, such as light manufacturing, hi-tech, warehousing, bio-tech, park-like business, 4-year educational institutions, equipment and vehicle repair, as well as heavy industrial activities and those requiring access to major transportation corridors.*

Industrial Multi-Purpose Recreational Area *– This designation is intended to provide land for emerging economic opportunities, including large-scale industrial facilities, institutions of higher education, major sports and recreational facilities including stadium, arena, motorsports, athletic field and playground facilities and other similar uses requiring large land areas for development.*

Mineral Resource Overlay *– The intent of the Mineral Resource overlay is to protect sand, gravel, and rock deposits identified as significant. Commercial-quality deposits should be recognized as non-renewable resources and managed accordingly.*

Land Use Goals and Policies

Goal 1: To facilitate economic development in the SKIA UGA in a manner which does not have a significant adverse affect on the environment.

Goal 3: To accommodate and support the development of attractive and functional industrial and business uses by addressing the provision of adequate, timely and efficient infrastructure, wastewater, stormwater and potable water facilities and utilities.

Policy SKIA-3: Business/industrial developments within SKIA shall ensure consistency with the goals of the SKIA Sub- Area Plan and the SKIA Conceptual Development Plan. (see below)

Policy SKIA-4: Land uses and intensity of activity should be consistent with a) the policy and guidelines of Federal Aviation Regulation (FAR) Part 77 regarding protective imaginary surfaces around the airport, and b) the Washington State Department of Transportation Aviation Division's 2/99 publication, "Airports and Compatible Land Use" and c) the Airport's Comprehensive Plan.

Policy SKIA-5: All applications concerning master planning or development of properties located within or immediately adjacent to the SKIA UGA

boundaries (as designated on Figure 3, page 30) shall require notification of all other properties within SKIA Plan sub-area boundaries and the Cities of Bremerton and Port Orchard.

Policy SKIA-6: Retail uses, except those in service to primary uses, shall be limited.

Policy SKIA-7: Upon adoption of this plan and in coordination with the Port of Bremerton and the South Kitsap Land Owners Association, Kitsap County will establish design standards for SKIA.

Natural Systems

Policy SKIA-11: Facilitate the retention and restoration of uninterrupted natural corridors, beneficial for passive recreation, wildlife habitat, trails, and connection of critical areas throughout the sub-area.

Policy SKIA-12 Establishes performance standards for implementing policies addressing Natural Systems.

Among these performance standards are wide range of mechanisms to protect natural vegetation and animal habitat, which would inform the creation of development standards for SKIA:

- *Cluster development;*
- *Performance based developments (PBDs);*
- *Onsite density transfers;*
- *Donations of conservation easements to qualified non-profit nature conservancy corporations (i.e., land trusts);*
- *Use of BAS in developing regulations;*
- *Low impact development (LID) standards;*
- *Use of Best Management Practices (BMPs) as a standard SEPA mitigation measure for project level development applications; and*
- *Use of native vegetation for constructed landscaping and restoration to reduce potential loss of plant and animal habitat diversity.*

Economic Development

Policy SKIA-24: The review and approval of development within SKIA will include adequate buffering of adjacent rural areas, using adopted standards current at the time of review and approval; and will include mitigation of adverse impacts on designated resource lands.

Airport

Policy SKIA-43: Kitsap County, by means of the SKIA Plan, will provide appropriate land use designations for business park and light industrial uses that are compatible with and complementary to airport uses.

Policy SKIA-44: Kitsap County will, to the largest extent possible, ensure that permitted uses will not be incompatible with the airport on adjacent lands as provided by aircraft accident safety zone guidelines included in the Port of Bremerton Master Plan, including, but not limited to, such uses as schools, play fields, hospitals, nursing homes, daycare facilities, overhead utilities and churches. Kitsap County will, to the largest extent possible, preclude development that penetrates FAR Part 77 (protective imaginary surfaces).

Policy SKIA-45: Kitsap County will notify the Port of Bremerton of projects planned and proposed for construction within a 2-mile radius of Bremerton National Airport.

Policy SKIA-46: Kitsap County will, to the largest extent possible, ensure that permitted uses will not create large areas of standing water that attract birds or generate significant smoke/steam, etc., unless approved by the Port of Bremerton.

Policy SKIA-47: During the site development review process, Kitsap County will review proposed development to ensure appropriate airport compatible standards, including but not limited to:

- *Height limitations;*
- *Low-growing vegetation in landscape plans;*
- *Non-glare outdoor lighting;*
- *Limited storage of large quantities of hazardous or flammable material;*
- *Clustered development placed away from extended runway centerline; and*
- *Noise-sensitive use limitations.*

Policy SKIA-49: Kitsap County will require, that within 6 months of adoption of this sub-area plan, the Port of Bremerton identify, through its airport master planning process, lands that may need navigation and obstruction easements, and lands where development should be minimized, carefully sited, or should be precluded from development to protect airport operations[…].

Appendix G

CULTURAL RESOURCES ANALYSIS: SOUTH KITSAP MANUFACTURING AND INDUSTRIAL CENTER, KITSAP COUNTY, WASHINGTON

Prepared for: Blumen Consulting Group, Inc.

September 24, 2010

Prepared by:

ERCI

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CREDITS AND ACKNOWLEDGMENTS

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REPORT AUTHORS ..... Kelly R. Bush and Julia M. Rowland B.A.

CLIENT CONTACT ..... Deborah Munkberg, Blumen Consulting Group, Inc.

Equinox Research and Consulting International Inc. (ERCI) would like to thank:

- Blumen Consulting Group, Inc. and the City of Bremerton for retaining us and for their commitment to the heritage planning and the management of archaeological resources;

The opinions and recommendations in this report are those of ERCI alone and do not necessarily reflect those held by any of the organizations or individuals mentioned above. Any errors or omissions are the responsibility of ERCI.

MANAGEMENT SUMMARY

Project Area: The South Kitsap Manufacturing and Industrial Center, City of Bremerton, Kitsap County, Washington
Acres: ~ 3,400
Elevation: ~ 350 to 550 feet
Water body: Sinclair Inlet, Puget Sound
Landform: Kitsap Peninsula
County: Kitsap
Quad map: Burley, Bremerton West, Belfair, Wildcat Lake
Township 23 N , **Range** 1 W, **Section** 1, 2, 10, 11, 12, 13, 14, 15, 22, 23, 24, 27
Lat and Long: From the center of the APE: 47° 29' 57" N 122° 44' 34" W
UTM: From the center of the APE: Zone 10 519379E 5260663N

Deborah Munkberg of Blumen Consulting Group, Inc. (BCG) contacted Kelly R. Bush of ERCI in June of 2010 to conduct a cultural resources analysis for the South Kitsap Manufacturing and Industrial Center in Bremerton, Washington. The Blumen Group is providing consultation to the City of Bremerton for this project.

> The City of Bremerton (City) has received a Climate Showcase Communities grant from the US Environmental Protection Agency to complete a comprehensive master plan and planned action EIS [Environmental Impact Statement] for the South Kitsap Manufacturing and Industrial Center. Key Objectives include economic development and job creation; protection of natural systems, reductions in greenhouse emissions and increased sustainability; development of innovative systems and sustainable infrastructure. The City is also seeking a public outreach effort that is inclusive and provides transparency in this planning process (BCG 2010).

This project is located in the City of Bremerton on the Kitsap Peninsula in South Kitsap County, Washington.

This report documents the initial cultural resources data analysis for this project providing long term planning for the South Kitsap Industrial Area.

Summary

- Archaeological sites exist in Washington State with site densities that can exceed 1 per acre. Very little of SKIA has been subject to archaeological survey so none of the archaeological sites that lie in this area have been recorded.
- The highest densities of archaeological sites in the Puget Sound region are currently recorded on shorelines, terraces and adjacent to existing or extinct aquatic features. These landforms are common is SKIA.
- Projects with ground disturbance have the potential to impact archaeological sites.
- Agencies that manage land or issue land use permits must ensure that the projects they permit or fund do not disturb archaeological sites.
- There are federal and state laws that protect cultural resources. All resources older than 50 years must be evaluated and documented.
- Dr. Robert Whitlam of the Department of Archaeology and Historic Preservation (DAHP) is the primary contact for projects with a federal nexus. Stephenie Kramer is the primary DAHP contact for projects with state law compliance

- Having a procedure for identification, evaluation and management options for all historic properties allows investors and developers to reduce their fear and cost exposure.
- Both State and Federal responsibilities to cultural resources (historic properties) are twofold:
    - Identify and evaluate all types of historic properties
    - Carry out effective tribal consultation
- Many tools now exist to help small local government with this task.
- Project proponents (applicants) can be responsible for providing the data to the local government to ensure that their projects will not impact archaeological resources or other historic properties.
- DAHP has a guide to help Local Governments provide adequate review for these technical reports.
- Field testing of projects is most efficiently done during planning. Heritage planning early in the process can help project proponents use their resources efficiently.
- Costs associated with identifying cultural resources can be shared between stakeholders and can be cared out in phases.
- Consultation with affected federally recognized Tribes is the responsibility of the Government. Early, in-person consultation has shown to be the most successful.
- Many Tribes have environmental/cultural review policies that can mesh with state and federal law.

The following recommendations are based on our archival review of available data for both the archaeological information and our experience with the heritage planning policies and laws prevailing in Washington State. We recommend the City of Bremerton:

1. Begin active tribal consultation by determining with a letter and follow up phone call which tribes have an interest in the SKIA.
2. Assign a team to the management of the critical area designation of archaeological sites that can be responsible for the management of the data, consultation with tribes, agencies and developers or investors. This same team could have a member that was actively searching for grants and other funding streams that could begin to provide data to improve the understanding of precontact land use in the SKIA and thereby reduce the jeopardy of developers and investors.
3. Actively seek partners to build their data base of information around cultural resources to identify those geographic areas that provide the most jeopardy for encountering significant resources.
4. Identify ways to piggy back on existing agency protocols or plans and establish relationships that build trust with the agency and tribal reviewers. Trust stimulates growth.
5. Take advantage of the many trainings and workshops on cultural resources in the region that help planners learn from the mistakes of other organizations and see what has been working in other locations in the Puget Sound.
6. Consider a heritage program that helps guide development by incorporating a heritage theme in the SKIA. Heritage themes have funding initiatives both at the federal and state level. They also help build community.
7. Build on the existing communities such as the Airport which likely has a wide interest in history. Most Ports have many avocational "history buffs" and they also have some great documentation as the controlling agencies including the Department of Defense required drawings and other narratives during past developments. They may have buildings older than 50 years that are ready for documentation and would be a great partner in heritage planning.

8. Start early in creating a protocol/checklist for review of projects that includes a form letter for DAHP so that you get on the top of their list for reviewing. Clear, complete projects are easier and faster to review.

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1.0 INTRODUCTION

Deborah Munkberg of Blumen Consulting Group, Inc. (BCG) contacted Kelly R. Bush of ERCI in June of 2010 to conduct a cultural resources analysis for the South Kitsap Manufacturing and Industrial Center in Bremerton, Washington. The Blumen Group is providing consultation to the City of Bremerton for this project.

> The City of Bremerton (City) has received a Climate Showcase Communities grant from the US Environmental Protection Agency to complete a comprehensive master plan and planned action EIS [Environmental Impact Statement] for the South Kitsap Manufacturing and Industrial Center. Key Objectives include economic development and job creation; protection of natural systems, reductions in greenhouse emissions and increased sustainability; development of innovative systems and sustainable infrastructure. The City is also seeking a public outreach effort that is inclusive and provides transparency in this planning process (BCG 2010).

This project is located in the City of Bremerton on the Kitsap Peninsula in South Kitsap County, Washington (Figure 1,Figure 2).

This report documents the initial cultural resources analysis for this project providing long term planning for the South Kitsap Industrial Area.

Figure 1: Regional image showing the approximate location of the project area.

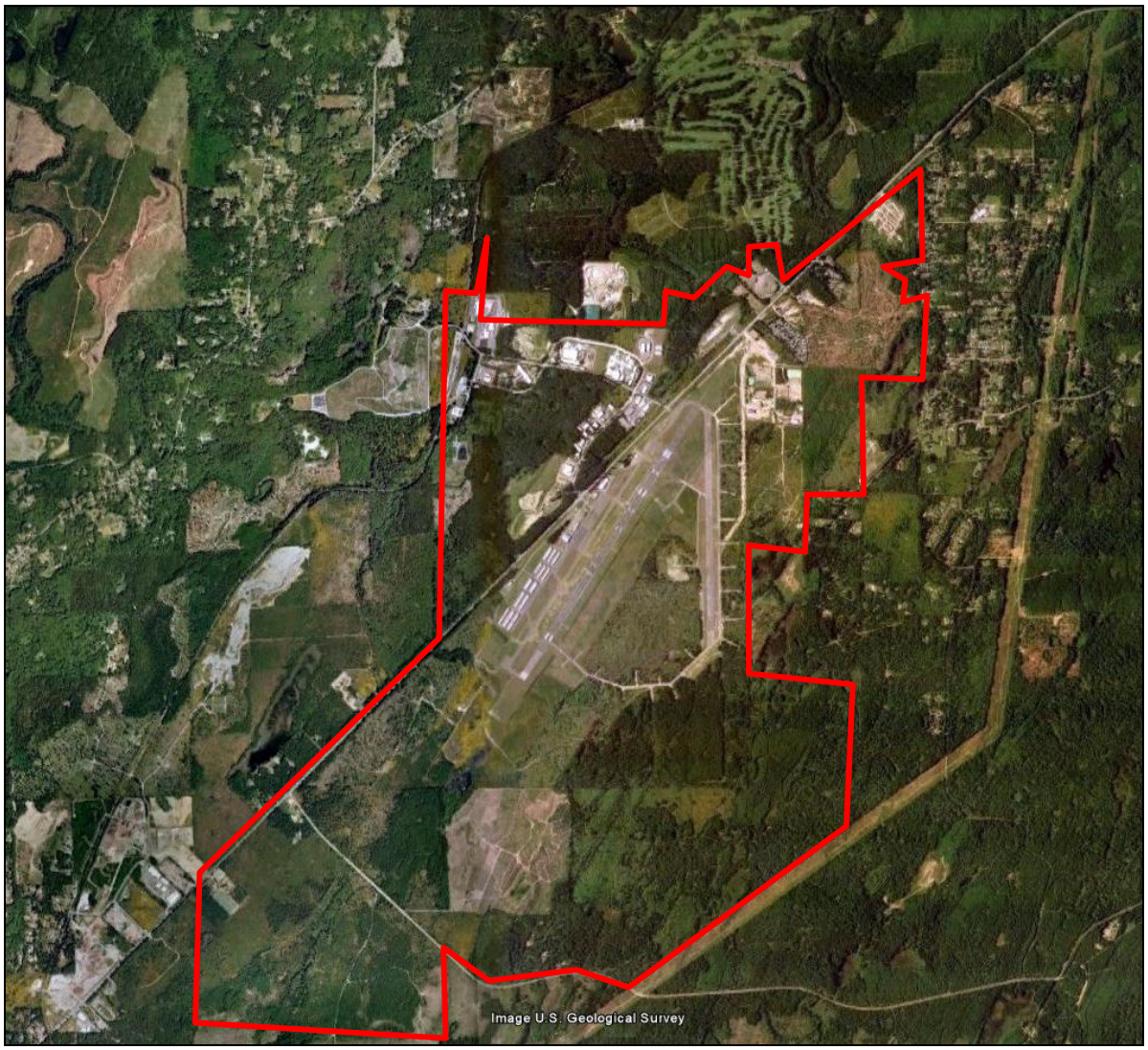

Figure 2: Aerial photo showing the project area outlined in red.

2.0 CONSULTATION

The DAHP is the state agency that provides specialized information and review for projects with an archaeological component or concern in the State of Washington. For projects that have a federal nexus such as funding, permitting, review or licensing, projects are required to fulfill obligations outlined in Section 106 of the National Historic Preservation Act and are reviewed by Dr. Robert Whitlam, Washington State Archaeologist.

Agencies for the federal government recognize the long and unique relationship that the federal government has had with federally recognized Indian tribes. These responsibilities have grown from the historic relationship between the Federal government and the Indian tribes including treaties, public laws, policies, statutes, and executive orders. Paramount of these relationships are the treaties in which tribes have ceded portions of aboriginal lands to the U.S. Government in return for promises to protect tribal rights as self-governing communities within reservation lands, as well as certain rights to use resources from non-reservation lands.

The consultation practice recognizes:

- Tribal sovereignty of federally recognized Indian tribes that possess nationhood status and retain inherent powers of self-governance and the authority to make and enforce laws, establish courts and establish dispute resolution mechanisms
- Government-to-government relationships according to the President's Memorandum 1994, and Executive Order 13175, whereby consultation is a bilateral process of discussion and cooperation between sovereigns
- The need for consultation in good faith with tribal leaders and their representatives in order to develop strong partnerships with federally recognized Indian Tribes
- The need for respect of traditional tribal values and customs recognizing that certain historic properties may be essential elements of living cultures and communities
- That information about religious or sacred places can be sensitive and that tribal law or policy may prohibit disclosure of certain information, therefore maintaining a commitment to withholding sensitive information from public disclosure to the extent allowable under law

In the case where projects are running through a SEPA checklist, the City of Bremerton will be responsible for ensuring that the Department of Archaeology and Historic Preservation and any affected federally recognized tribes are consulted and provided an opportunity to comment and provide their unique expertise. This consultation may include phone calls, emails, and in-person meetings.

In the case where there is a federal nexus, the lead agency will be responsible for consultation with the affected tribes and DAHP. If the project is regulated by a state agency then that agency is responsible for ensuring that the requirements of Executive Order 05-05 are carried out during the planning process.

The tribes of Puget Sound have varying levels of organization and management around cultural resources. Practically speaking this means that the City of Bremerton may need to consult with different tribes in different ways. Some tribes have a Tribal Historic Preservation Office (THPO) in place which means that on tribal lands they are recognized with the same power as the Department of Archaeology and Historic Preservation. Off tribal lands, they provide review and comment and are often very efficient in their response to questions regarding specific project as they have the dedicated resources of the THPO to do that work. Some tribes are still working to establish their resource management departments and more time or explanation of projects to help them provide good reviews.

The Suquamish Tribe, Port Madison Reservation, will likely be one of the tribes that have an interest in your project area and they have an establish THPO with experienced program staff and excellent data sets.

Tribal Consultation is a cornerstone of both the state and federal laws on cultural resources. The City of Bremerton will need to ascertain which tribes would like to be consulted on the development of SKIA. This should happen with a letter followed up with an in-person meeting at the tribal center and possible a tour of the project area. Once initial consultation practices have been established between the tribes and the City then a protocol for review and comment can be established between the City and the tribes. It is important to know that each tribe has a preferred set of communications protocol and each tribe should be treated as a sovereign.

3.0 BACKGROUND

3.1 Project Area

The project area is composed of approximately 3,400 consecutive acres in the City of Bremerton in Southern Kitsap County. Included in the project area is the Bremerton National Airport.

The project area is bordered to the west by the Kitsap/ Mason County line and lies approximately three miles southwest of Sinclair Inlet, two miles northeast of Hood Canal, four miles north of North Bay, and eleven miles west of Vashon Island on the Kitsap Peninsula.

3.2 Environmental Setting

It is outside the scope of this project to describe in detail the landform processes which sculpted the current Puget Sound environment; however, detailed descriptions of landform origins for this region and sea-level stabilization can be found in Burns 1985; Downing 1983; Easterbrook 1962, 1963, 1966; Fladmark 1975; Goudie 1983; Hilbert and Miller 2001; Pielou 1991; Thorson 1980, 1989; Whitlock 1992.

The project area is in the southern half of the Puget Trough Province, characterized by glacial geology and topography (Franklin and Dyrness 1983: 16). As the most recent glacial epoch retreated, glacial till and outwash were deposited with soils formed in glacial materials under the influence of coniferous forest vegetation. Glacial retreat also caused isostatic rebound as the weight of glacial ice on the surface subsided; isostatic rebound reached heights of 140 meters. Modern sea level and shoreline configurations did not stabilize until about 5,000 years ago (Thorson 1981).

Environmental factors play an important role in the location and preservation of archaeological sites. Soils are of particular interest to cultural resource managers because archaeological sites generally occur in soil matrices and soils can be used for reconstructing past landscapes and landscape evolution, for use in estimating the age of surfaces and depositional episodes, and for providing physical and chemical indicators of human occupation.

2.4.1 Geomorphology and Soils

Soil data for this project was obtained from the Web Soil Survey (WSS), which provides soil data and information produced by the National Cooperative Soil Survey. It is operated by the USDA Natural Resources Conservation Service (NRCS) and provides access to the largest natural resource information system in the world. The site is updated and maintained online as the single authoritative source of soil survey information. According to the WSS, the Project Area has thirteen major soil types: Alderwood very gravelly sandy loam, 0 to 6 percent slopes; Alderwood very gravelly sandy loam, 6 to 15 percent slopes; Alderwood very gravelly sandy loam, 15 to 30 percent slopes; Dystric Xerorthents, 45 to 70 percent slopes; Harstine gravelly sandy loam, 0 to 6 percent slopes; Harstine gravelly sandy loam, 6 to 15 percent slopes; McKenna gravelly loam; Neilton gravelly loamy sand, 0 to 3 percent slopes; Neilton gravelly loamy sand, 3 to 15 percent slopes; Neilton gravelly loamy sand, 15 to 30 percent slopes; Ragnar fine sandy loam, 0 to 6 percent slopes; Ragnar fine sandy loam, 6 to 15 percent slopes and Urban land-Alderwood complex, 0 to 8 percent slopes.

Alderwood very gravelly sandy loam, 0 to 6 percent slopes, is found at elevations of 50 to 800 feet. It is composed of 85 percent Alderwood and similar soils and 6 percent minor components of Mckenna, Norma and Shalcar. Alderwood, the major component of this soil, is found on till plains and moraines, has a parent material of basal till and is moderately well drained. A typical soil profile for Alderwood is 0 to 1 inches very gravelly sandy loam, 1 to 22 inches very gravelly loam and 22 to 60 inches very gravelly sandy loam. The water table is typically found at 16 to 36 inches and dense

material is typically found between 20 to 40 inches. This soil accounts is found in approximately 35% of the project area.

Alderwood very gravelly sandy loam, 6 to 15 percent slopes, is found at elevations of 50 to 800 feet. It is composed of 100 percent Alderwood and similar soils. Alderwood, the major component of this soil, is found on till plains and moraines, has a parent material of basal till and is moderately well drained. A typical soil profile is 0 to 1 inches very gravelly sandy loam, 1 to 22 inches very gravelly loam and 22 to 60 inches very gravelly sandy loam. The water table is typically found at 16 to 36 inches and dense material is typically found at 20 to 40 inches. This soil is found in approximately 15% of the project area.

Alderwood very gravelly sandy loam, 15 to 30 percent slopes, is found at elevations of 50 to 800 feet. It is composed of 100 percent Alderwood and similar soils. Alderwood, the major component of this soil, is found on till plains and moraines, has a parent material of basal till and is moderately well drained. A typical soil profile is 0 to 1 inches very gravelly sandy loam, 1 to 22 inches very gravelly loam and 22 to 60 inches very gravelly sandy loam. The water table is typically found at 16 to 36 inches and dense material is typically found at 20 to 40 inches. This soil is found in approximately 5% of the project area.

Dystric Xerorthents, 45 to 70 percent slopes, is found at elevations of 0 to 500 feet. It is composed of 100 percent Dystric xerorthents and similar soils. Dystric xerorthents, the major component of this soil, is found in streams and valleys, has a parent material of sandy and gravelly outwash and/or ablation till and is moderately well drained. A typical soil profile is 0 to 10 inches very gravelly sandy loam and 10 to 60 inches very gravelly sandy loam. The water table and the restrictive feature are typically found at more than 80 inches. This soil is found in approximately 3% of the project area.

Harstine gravelly sandy loam, 0 to 6 percent slopes, is found at elevations of 0 to 500 feet. It is composed of 85 percent Harstine and similar soils and 5 percent minor components of Mckenna and Norma. Harstine, the main component of this soil, is found on moraines and till plains and is moderately well drained. A typical soil profile is 0 to 1 inches gravelly sandy loam, 1 to 33 inches gravelly sandy loam and 33 to 60 inches very gravelly sandy loam. The water table is typically found at 24 to 30 inches and dense material is typically found at 25 to 40 inches. This soil is found in approximately 20% of the project area.

Harstine gravelly sandy loam, 6 to 15 percent slopes, is found at elevations of 0 to 500 feet. It is composed of 85 percent Harstine and similar soils and 2 percent minor components of Norma and Mckenna. Harstine, the main component of this soil, is found on moraines and till plains and is moderately well drained. A typical soil profile is 0 to 1 inches gravelly sandy loam, 1 to 33 inches gravelly sandy loam and 33 to 60 inches very gravelly sandy loam. The water table is typically found at 24 to 39 inches and dense material is typically found at 25 to 40 inches. This soil is found in approximately 1% of the project area.

McKenna gravelly loam is found at elevations of 50 to 500 feet. It is composed of 85 percent Mckenna and similar soils and 15 percent minor components of Norma. McKenna, the main component of this soil, is found in depressions and is poorly drained. A typical soil profile is 0 to 6 inches gravelly loam, 6 to 28 inches very gravelly loam and 28 to 41 inches very gravelly sandy loam. The water table is typically found at 0 inches and dense material is typically found at 28 to 40 inches. This soil is found in approximately 3% of the project area.

Neilton gravelly loamy sand, 0 to 3 percent slopes, is composed of 100 percent Neilton and similar soils. Neilton, the main component of this soil, is found on terraces, has a parent material of gravelly

and sandy outwash and is excessively drained. A typical soil profile is 0 to 4 inches gravelly loamy sand, 4 to 19 inches very gravelly loamy sand and 19 to 60 inches very gravelly sand. The water table and restrictive feature are typically found at more than 80 inches. This soil is found in approximately 6% of the project area.

Neilton gravelly loamy sand, 3 to 15 percent slopes, is composed of 100 % Neilton and similar soils. Neilton, the main component of this soil, is found on terraces, has a parent material of gravelly and sandy outwash, and is excessively drained. A typical soil profile is 0 to 4 inches gravelly loamy sand, 4 to 19 inches very gravelly loamy sand and 19 to 60 inches very gravelly sand. The water table and restrictive feature are typically found at more than 80 inches. This soil is found in approximately 1% of the project area.

Neilton gravelly loamy sand, 15 to 30 percent slopes, is composed of 100 percent Neilton and similar soils. Neilton, the main component of this soil, is found on terraces, has a parent material of gravelly and sandy outwash, and is excessively drained. A typical soil profile is 0 to 4 inches gravelly loamy sand, 4 to 19 inches very gravelly loamy sand and 19 to 60 inches very gravelly sand. The water table and restrictive feature are typically found at more than 80 inches. This soil is found in approximately 3% of the project area.

Ragnar fine sandy loam, 0 to 6 percent slopes, is found at elevations of 300 to 1,000 feet. It is composed of 100 percent Ragnar and similar soils. Ragnar, the major component of this soil, is found on terraces and is well drained. A typical soil profile is 0 to 4 inches fine sandy loam, 4 to 21 inches fine sandy loam and 21 to 60 inches loamy sand. The water table is typically found at more than 80 inches and strongly contrasting textural stratification is typically found at 20 to 40 inches. This soil is found in approximately 3% of the project area.

Ragnar fine sandy loam, 6 to 15 percent slopes, is found at elevations of 300 to 1,000 feet. It is composed of 100 percent Ragnar and similar soils. Ragnar, the major component of this soil is found on terraces and is well drained. A typical soil profile is 0 to 4 inches is fine sandy loam, 4 to 21 inches fine sandy loam and 21 to 60 inches loamy sand. The water table is typically found at more than 80 inches and strongly contrasting textural stratification is typically found at 20 to 40 inches. This soil is found in approximately 1% of the project area.

Urban land-Alderwood complex, 0 to 8 percent slopes, is found at elevations of 50 to 800 feet. It is composed of 70 percent Urban land and 20 percent Alderwood and similar soils. Urban, the major component of this soil, is found on till plains and moraines, has a parent material of basal till and is moderately well drained. A typically soil profile is 0 to 1 inches very gravelly sandy loam, 1 to 22 inches very gravelly loam and 22 to 60 inches very gravelly sandy loam. The water table is typically found at 16 to 36 inches and dense material is typically found at 20 to 40 inches. This soil is found in approximately 4% of the project area.

2.4.2 Climate

The Project Area is located within the Puget Sound area subset of the *Tsuga heterophylla* (western hemlock) environmental zone (Franklin and Dyrness 1988). The climate is significantly tempered by the proximal Pacific Ocean and Puget Sound. Summers are fairly warm and hot days are rare; winters are cool but snow and freezing temperatures are uncommon except at higher elevations. This wet, mild, maritime climate is responsible for the unique nature and wide distribution of the *Tsuga heterophylla* zone, the most extensive vegetation zone in western Washington, Oregon and southwestern British Columbia.

2.4.3 Western Hemlock Zone- *Tsuga heterophylla*

The Western Hemlock Zone (WHZ) extends from sea level to approximately 762 meters asl. While there are considerable variations within the zone, generally the WHZ has a wet and mild maritime climate (Franklin & Dyrness 1988: 71). Most of the precipitation falls in the form of rain and occurs mainly in the winter months. Soils are typically of medium texture, ranging from sandy loam to clay loam in some areas, with well developed soils limited to moderate slopes; on steeper slopes poorly developed, shallow soils are often encountered.

Major tree species within the Western Hemlock Zone include:

- *Pseudotsuga menziesii* (Douglas fir)
- *Tsuga heterophylla* (western hemlock)
- *Thuja plicata* (western red cedar)
- *Abies grandis* (grand fir)
- *Picea sitchensis* [near the coast] (sitka spruce)
- *Pinus monticola* [occasionally] (western white pine)

The Puget Sound area varies slightly from the rest of the (WHZ), which is largely a result of differing climate and soil types. The area is greatly impacted by the rain shadow of the Olympic Mountains. The average precipitation within the Puget Lowlands ranges from 800 to 900 millimeters. Also significant are the soil types present in the region, which largely developed from glacial drift and outwash. These soils are typically coarse textured, nutrient poor and excessively drained (Franklin & Dyrness 1988: 88).

Franklin & Dyrness (1988) list a number of notable differences in the plant communities as a result of these factors. They include:

1) Stands with *Pinus contorta* (shore pine), *Pinus monticola,* and *Pinus ponderosa* (ponderosa pine*)* as their major components
2) *Quercus garryana* (Garry oak) groves, which are commonly invaded by *Pseudotsuga menziesii*
3) Poorly drained areas with swamp or bog plant communities
4) Extensive prairies
5) The presence of species not commonly found in the WHZ such as *Juniperus scopulorum* (Rocky Mountain juniper), *Populus tremuloide* (trembling aspen), *Pinus ponderosa* and *Betula papyrifera* (paper birch)

3.3 Cultural Setting

3.3.1 Origins of the Traditional People

It is beyond the scope of this study to provide a detailed description of traditional Coast Salish land use and lifeways. For in-depth descriptions of traditional Coast Salish culture readers should consider the following references: Adamson 1969; Allen 1976; Ames and Maschner 1999; Amoss 1977a, 1977b, 1978, 1981; Barnett 1938, 1955; Belcher 1986; Bennett 1972; Bierwert 1993, 1999; Borden 1950, 1951, 1975; Boxberger 1986, 1996; Boyd 1999; Bryan 1955; Carlson 1990, 1996; Collins 1952, 1974a, 1974b, 1974c; Curtis 1913; Dewhirst 1976; Duncan 1977; Elmendorf 1971, 1974, 1993; Guilmet *et al.* 1991; Gunther 1928, 1945; Haeberlin and Gunther 1930; Harmon 1998; Harris 1994; Howay 1918; Island County Historical Society 1993; Jorgensen 1969; Kew 1972, 1990; Kozloff 1973; Lane and Lane 1977; Mansfield 1993; Mattson 1971, 1985; B. Miller 1993, 1997, 1998, 2001;

Miller and Boxberger 1994; J. Miller 1988; Mitchell 1971; Mooney 1976; Neil 1989; Onat 1987; Roberts 1975; Robinson 1980, 1981, 1999; Ruby and Brown 1976, 1981,1986; Sampson 1972; H. Smith 1900, 1907; Smith and Fowkes 1901; M. Smith 1941, 1950, 1956; Snyder 1964, 1981; Spier 1935, 1936; Stein 1984, 2000; Stewart 1977; Strickland 1984, 1990; Suttles 1958, 1960, 1987, 1990; Taylor n.d.; Thompson 1978; Twedell 1950; Wessen 1988a; White 1980; Whitlam 1980; and Willis 1973.

The southern Northwest Coast Salish peoples that traditionally inhabited the project area prior to European settlement lived a comfortable, successful, and highly adapted lifestyle in this west coast environment. They excelled at resource extraction, processing, and tool and structure manufacture. Their lives followed a seasonal round that included both permanent and temporary summer camps along the coast for fishing and shellfish and plant gathering. In pre-contact times the myriad of bays and inlets that make up the Puget Sound, including Sinclair Inlet, Hood Canal and Case Inlet, were likely popular year round gathering spots for at least as long as sea levels have been stable, which is approximately 5000 years (Wessen 1988a: 14). The shellfish and other ocean resources available traditionally in these bays and inlets could have easily supported the larger populations of people estimated for this area near the time of contact with Europeans. There were also the terrestrial and wetland resources including mammals and the harvest of plant resources that were carefully maintained and utilized at the time of early contact with Europeans. There may have been groups that used Sinclair Inlet, Hood Canal and Case Inlet year round, including the possibility of larger aggregate village use. Much of the evidence for this extensive pre-contact and proto-historic land use has been obliterated by the development of the last two hundred years.

> A host of small bands of Salish Indians inhabited the country surrounding Puget Sound, its islands, and the valleys of its tributary streams, as well as the shores immediately north of the sound. All spoke variations of what is known as the Nisqualli dialect (so called by one of the principal tribes using it), yet in spite of the close linguistic, geographical, and cultural relationship there were no political ties among them. Some of these tribes still exist; others, extinct, have left a memento of themselves in geographical names; some are known only as names recorded by an early traveler or remembered by an aged survivor of the native population. Prominent tribes of this group were the Squaxon, Sahewamish, Suquamish, Nisqualli, Puyallup, Dwamish, Samamish, Snoqualmu, Snohomish, Stillaquamish, and Skagit (Curtis 1913: 14).

Descriptions, culture history, linguistic analysis, archaeological investigation and interpretation have been presented in books, journals, reports, museum displays, art galleries, cultural festivals and slide talks. References for Coast Salish information is available from the most general to the most specific and can be found in virtually every information storage facility in the region, including a vast amount of information on the internet. From reading general descriptions it would be easy to consider the entire Northwest Coast as one culture area, but, in describing culturally distinguishable regions within the larger Coast Salish Culture area, Suttles states:

> …the absence of any formal political organization, and occasional conflicts, the people of this region were linked together by continual intervillage marriage and participation in economic and social activities and the exchange of foods, goods, information and personnel (1987:103).

The people of the Puget Sound are included in the Northwest Coast Salish culture area by their participation in the salmon ceremony, their extensive use of cedar and their tradition of the Potlatch (Collins 1974b:100; Roberts 1975).

> Southern Coast Salish refers to the speakers of two coast Salish languages, Lushootseed (lə'shōōtsēd) and Twana ('twänə). Lushootseed is the language of a number of tribes whose territory extended from Samish Bay southward to the head of Puget Sound and included the drainages of the rivers flowing into this sheltered salt water. Lushootseed consists of two dialects, Northern and Southern. Twana is the language of the people of Hood Canal and its drainage. Dialect differences within Twana were slight (Suttles 1990).

It is important to note that there is evidence for human occupation and use in this region for at least 10,000 years. Although some archaeologists believe that North America was populated by migrations of people from present-day Asia crossing a bridge of land in the Bering Strait of Alaska, some native peoples of the area do not believe this, as their origin narratives take place here in the Puget Sound (Stein 2000).

Northwest tribes and tribal entities have displayed great flexibility in order to maintain and recreate themselves through fluctuating trends in the American political and economic theatre. The Stevens' Treaties (1850s), Indian Reorganization Act (1930s), Termination policies (1950s), and the complicating measures in between, have kept Indians and non-Indians working hard to define who these native peoples are and what the relationship between 'their' governments are. It is not surprising that "many enduring Indian organizations originated during these years and these policies account for the tribal affiliations and legal identities of most Indians today" (Harmon 1998:190). Collins (1946, 1950, 1974a), Harmon (1998), and Robbins (1986) offer excellent analyses of the range of challenges faced by 20th century tribes and tribal entities.

During the 19th Century, American policy concentrated on assimilation of the native population. At the time of the Treaty of Point Elliot in 1855, the U.S. Government required each tribe to have a chief. In pre-contact society there were no permanent authorities beyond the kinship unit; now for the first time appeared headmen (Collins 1974b:72). Native peoples now had to define themselves by reference to federal laws and institutions. Consequently, the foundation for a separate, subordinate class of people was created. The proper functioning of the traditional kinship unit system was incompatible with the developing class system and with the new political requirements of the United States federal government (Collins 1974b:61). Social differentiation increased during the contact period although the new influences were not solely responsible for social change, as the rudimentary framework for a class system was likely in place in the societies of northern Puget Sound (Collins 1974b:61).

In the one hundred years following Vancouver's trip through the region of the South Coast Salish peoples in 1792, social, political, economic, and religious change was immense. Along with the changes in class structure came the need for political leaders. As the 20th century approached and the lands around the Puget Sound were filling with settlers, the requirements for leadership within the Indian community changed.

> If the modern descendants of indigenous people were to take pride in the Indian identity ascribed to them, they would have to base it on something other than an ability to amass wealth or even to maintain independence through the adroit use of resources and opportunities. One longstanding basis for Indian self–assertion and pride was the claimed right to redeem treaty pledges (Harmon 1998:224).

Despite the changing needs of Native populations, one element of leadership persisted: the ability to negotiate with the immigrants and their non-Indian leadership.

> The needs for leaders in warfare, missionization and trading disappeared, as the country became settled. The one remaining function of the leader was that of representative of his people in dealing with the whites. The chief was expected to initiate action, to obtain benefits from the Government. It was his duty to attend Government hearings, to speak for his tribe, and to organize relevant data in support of his case. It was also his duty to represent his people by making speeches on ceremonial occasions in which both Whites and Indians took part (Collins 1974b:73).

After 1900, the assimilation regime was losing steam and by 1917, "optimism and a desire for rapid incorporation were pushed aside by racism, nostalgia and disinterest"; "total assimilation was no longer the central concern of policy makers and the public" (Harmon 1998:161). Through these times of ever-evolving U.S. policies and imposed federal guardianship, native populations were transitioning from a resource-based economy to a wage-based system. Aboriginal men and women were continuing to redefine who they were and how they could fit into their own culture and the dominant immigrant society.

In 1890, a field inspector noted:

> Numbers of [Indians] are working in the woods, and at the various sawmills on the Sound, and as they are good workers they receive the same compensation as white laborers. Those who do not work regularly in the mills, farm to a limited extent and cut cordwood for sale to steamers on the Sound. Their greatest source of revenue is from fish that they obtain in large quantities, and utilize for home consumptions and sale to canneries and individuals. These Indians are apparently well to do. They dress well; have an abundance to eat, and the majority of them have more or less money (Harmon 1998:170).

Jobs became scarce as American labor markets moved increasingly towards mechanization and the effects of the Depression era were realized. Racial discrimination often came into play and white employment was favored (e.g., the Carlisle Cannery in Bellingham adopted a whites-only hiring policy during the 1920s [Harmon 1998:172]). Now part of the commercial, manufacturing and transportation industries of Western Washington, Indians began moving from rural areas to industrial centers in order to position their selves in the general economy. They worked as loggers, stevedores, sawyers, farmers, fishers, clam diggers and laborers- always within the lower echelons of industrial society (Harmon 1998:170).

While jobs were plentiful during the First World War, by the time of the Great Depression Indian poverty was rampant. Harmon states, "Indians had lost income as shrinking demand forced Washington fish canneries, logging camps, and sawmills to curtail operations" (Harmon 1998:191). Adaptation was key to survival.

> …with marked resourcefulness, [Indians] turned to individual fishing, wood cutting, both for fuel and pulp wood, and with a minimum of gratuitous assistance subsisted themselves and their families (Harmon 1998:192).

During the economic crisis of the 1930s, federal policy attempted to deal with increasing Indian poverty resulting in the "Indian New Deal". This policy combined reservation-centered relief programs and federal support for tribal self-governance (Harmon 1998:193). In 1934, the Wheeler-Howard Act more commonly known as the Indian Reorganization Act (IRA), was formulated allowing tribes to establish formal governments with limited powers, and to adopt constitutions. It

was hoped that this would preserve tribal assets and foster tribal organizations. Indians were permitted to vote on the IRA (Harmon 1998:198).

World War II rekindled the economy and Indians took advantage of the demand for labor and raw materials and the resurgent lumber and fishing industries. Naval shipyards and the Boeing Airplane Company were also sources of employment (Harmon 1998:205). In the post-war climate the federal government operated under a policy that sought to "terminate" federal responsibility for Indians initiating in the formulation of the Indian Claims Commission (ICC). Numerous public laws were passed nationally in the fifties and sixties but no bill to terminate tribes around Puget Sound was passed (AFSC 1970:77).

During the 'termination' era, fishing as a treaty right became the focus of many fishers in the Northwest. Certainly the expansion of non-Indian fishers and the decline in fish stocks stimulated the focus of Indians on their treaty-reserved right to fish, but other economic and social realities of the post-war era were the catalyst for Indians to challenge state enforced fish conservation laws. Conservation enforcement was challenged successfully and unsuccessfully for two decades, creating confusion for everyone involved in the management of resources and enforcement of law.

Legal decisions put forth in regional courts throughout the 1960s challenged Indians' right to fish and continued to define exactly what treaty rights entailed. This culminated in the now famous Boldt Decision of 1974 (United States v Washington 1974). Judge George Boldt not only found that the treaty Indians were:

> …heirs to a unique and precious legacy, (and) the judge broke new legal ground by quantifying that legacy. When the tribes agreed to fish "in common with" citizens, he declared, they did not acquire a right from non-Indians but instead agreed to share their own most important resource…the modern state therefore had an obligation to regulate its citizens so that half the harvestable migrating salmon could reach the places where Indians fished (Harmon 1998:231).

Another important facet of Boldt's decision in *United States v. Washington* is that he declared that the corporate entities prosecuting were the direct legal heirs and sovereign polities of tribes or bands named in the treaties.

It was also in the post Boldt period that a larger group of Puget Sound tribes created the Northwest Indian Fisheries Commission (NWIFC) whose members have a commitment to wise natural resource management (details of their membership, operations and office locations can be found on their web page www.nwifc.wa.gov).

Due to the multifaceted nature of Native culture, cultural identity continues to survive despite the great transitions and challenges faced during the 19th and 20th centuries. The primary tools allowing for this survival include the ability to adapt as well as the strengths afforded to them by the values and beliefs of an earth-based culture.

> In the 1820s, no native societies of the Puget Sound were corporate groups with government powers and formal memberships based on descent. Members of every tribe today- federally recognized as well as unrecognized- think, speak, support themselves and organize themselves in ways that the villages of 1820 would never have dreamed of (Harmon 1998:248).

As severe an impact as the government policies, displacement by immigrants, and the removal of traditional fishing locations were, the devastation of smallpox in the 18th and 19th centuries, was the primary cause for the decline of the native peoples all over Puget Sound.

To fully document the origins of the Traditional Peoples of this land, information from oral histories of the people who consider this the place of their ancestors/immortals should also be incorporated. From the preface to her third volume of text from oral traditions, *Haboo* (1985: iv), Vi Hilbert, who spent part of her life in Tulalip, describes the value and place of narratives:

> We do not know how long it has taken for these stories to come down to us, for we did not use the kind of calendar everyone uses today. My people marked time by referring to especially remarkable occasions, such as the year of the solar eclipse, or the period when the big log jam still blocked the Skagit River, all of our culture had to be committed to memory. To this end, our historians developed excellent memories in order to pass on important information to later generations.
>
> Our legends are like gems with many facets. They need to be read, savored, and reread from many angles. My elders never said to me, "this story carries such and such a meaning." I was expected to listen carefully and learn why the story was being told. Though guided, I was allowed the dignity of finding my own interpretation.

Information passed down in the narratives of the people who consider this delta part of their ancestry provides the context and richness that fill in ethnographic gaps.

3.3.2 Villages

Traditionally the river drainage was the primary unifying concept among the loosely organized groups of the Puget Sound Salish. Cultural distinctions were recognized along the following biogeoclimatic culture zones (AFSC 1970:6).

1. Saltwater people
2. River people
3. Inland people
4. Prairie people

The land was not owned in the European understanding of ownership. To travel across the landscape, people considered convenience and their feelings about the people they might encounter (AFSC 1970:7)

Each house along the creek would likely be considered autonomous but connected within the village system by kin relations, language, and other social and economic constructs. Each village house-site had its own name and story, although loyalties surely existed beyond the village community.

Summer encampments in the higher elevations and out in the islands for resource gathering would have been common and the trails and travel corridors to these resource-gathering areas would have been well known to the users and their neighbors.

T.T. Waterman worked as an ethnographer in the early 1900s. He worked with native elders to record with careful detail the place names, history, genealogy and culture of the Puget Sound and the Straits of Juan de Fuca (Hilbert et al 2001: iv). The place names that Waterman recorded give clues to how the native peoples of Puget Sound felt about their land (Hilbert et al 2001:i). The tables and maps below provide some place names along Sinclair Inlet, ~3 miles northeast of the project area and Case's Inlet, ~ 5 miles southeast of the project area (Figure 3,Figure 4,Table 1 and Table 2).

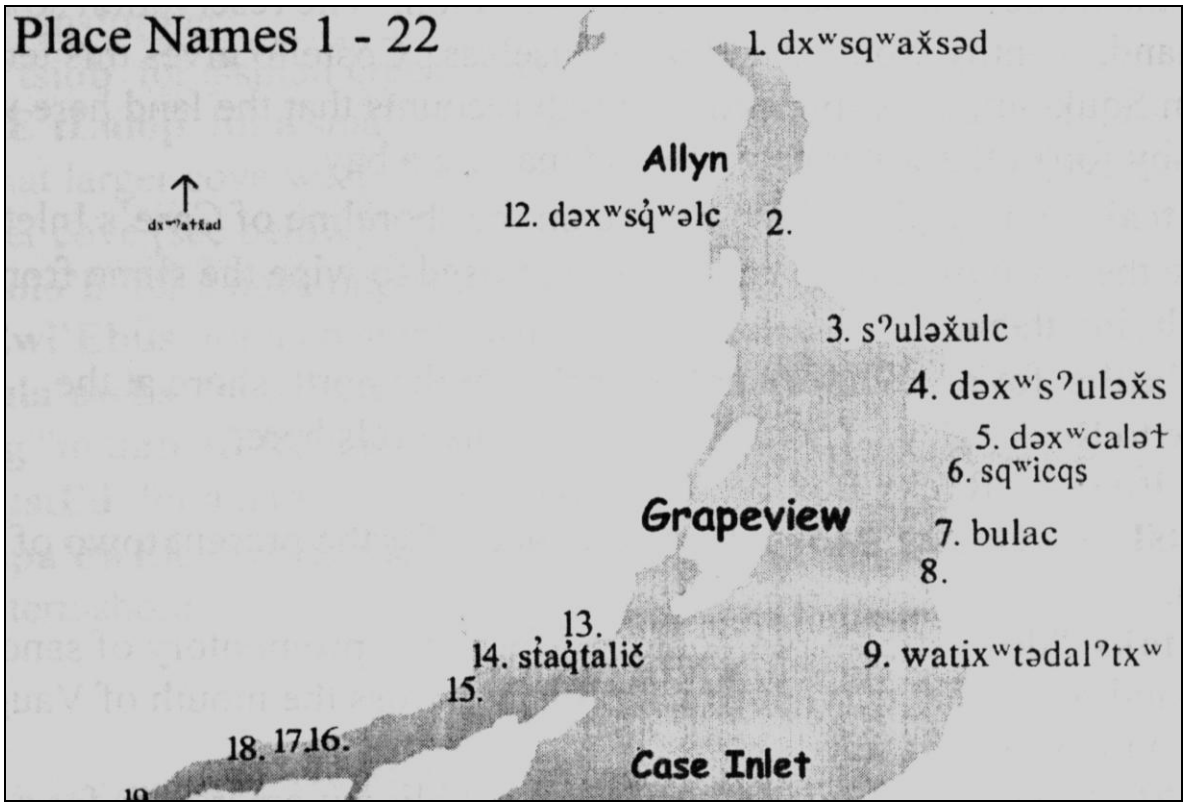

Figure 3: Case Inlet map sites recorded in Waterman's original manuscripts edited by Hilbert et al 2001.

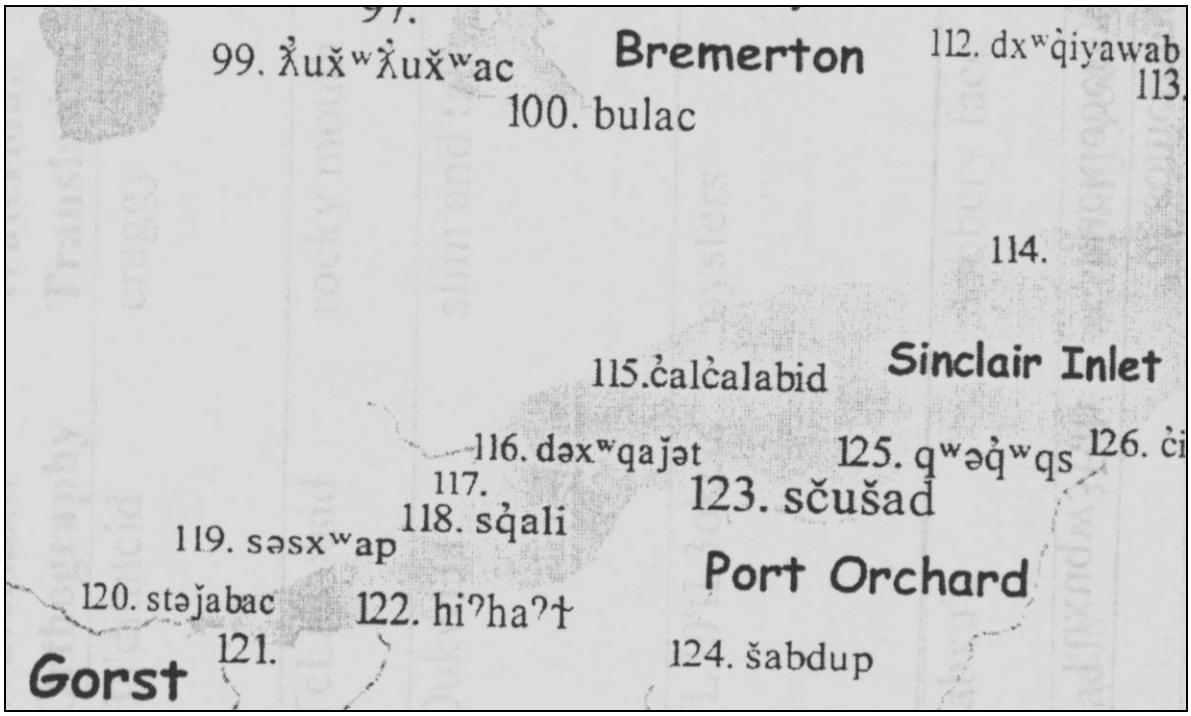

Figure 4: Sinclair Inlet map sites recorded in Waterman's original manuscripts edited by Hilbert et al 2001.

Table 1: Place names of Case Inlet sites recorded in T.T. Waterman's original manuscripts edited by Hilbert et al 2001.

Map Number	Waterman Name	Translation	Location
1	tuxsqwa'ksud	Split apart	A village at the mouth of a creek
2	tuxɛ'tcai	Mossy place	Area on the shoreline of Case's Inlet
12	tuxsqwElts	Hot	Sherwood Creek

Table 2: Place names of Sinclair Inlet sites recorded in T.T. Waterman's original manuscripts edited by Hilbert et al 2001.

Map Number	Waterman Name	Translation	Location
121	Du³xö'i	Old or Decayed	A small creek on Sinclair Inlet
120	StEtca'bEts	Rolling logs to the water	The upper end of Sinclair Inlet
119	Seshwa'p	To jump	A creek with some large maples at the mouth
122	Xe'¹xEL	Diminutive of good	A small creek

3.3.3 Migrations

There are no great migrations described in ethnographic literature or in the published narratives regarding cultural origins. Research revealed a general lack of discussion with respect to origin narratives with the exception of Hilbert (1985) and Ballard (1929) who present stories dealing with the origin of certain languages, creatures and places of significance.

Significant geopolitical migrations by Native Americans as a result of Euroamerican settlement did take place. The severe depopulation that occurred during the 18th century, due to disease, relocation, and dispersal likely stimulated shifts in territorial boundaries. The fur trade at this time would have been a catalyst for the movement of some groups as they struggled to adjust to population decline and relocating their families closer to trading posts or marketable resources. The strength of long-established kin ties was clearly flexible in response to these external forces and allowed for groups to keep boundaries and alliances during changing times.

The most significant documented movement of people was the attempt to displace people from the area to reservations as a condition of the signing of the Múckl-te-óh (Point Elliot) Treaty in 1855.

Under the Point Elliot Treaty the Suquamish Tribe was assigned to the Port Madison Reservation along with the Duwamish and Skokomish Tribes (History Link 2006).

At the treat of Point No Point in 1855 the Twana groups were collectively assigned to the Skokomish Reservation, located at the head of Hood Canal. By this time records indicate they numbered less than three hundred (Curtis 1913:12). The Klallam were also assigned to the Skokomish Reservation though few moved there (History Link 2006).

The Squaxin, along with the Nisqually and the Puyallup, ceded their lands in the Treaty of Medicine Creek and were assigned to a Reservation that included Squaxin Island, land at the head of McAllister Creek and land where the city of Tacoma now stands. The entire Reservation was less than 4,000 acres and was to accommodate more than 12,000 native peoples (Curtis 1913:16). Some members of

the Squaxin Tribe choose to move to the Skokomish Reservation because of its nearness to their traditional territory (Ruby and Brown 1974).

3.3.4 Subsistence & Settlement Patterns

During the early contact period, the people who used inlets and bays of the Puget Sound employed a settlement pattern that included permanent but dispersed winter village sites. Despite the existence of permanent winter villages people demonstrated some level of mobility as much of their resource gathering activities involved an annual seasonal round. Summer camps were visited year after year to collect and process important plant and animal resources. Summerhouses consisted of mat lodges that could be easily moved. Houses in villages along the shores of the Puget Sound and at the main river mouths occasionally required relocation to avoid rising flood water levels. Planks from the houses and family graveyards, which were usually located near the houses, were also moved to drier sites (Collins 1974b: 16).

The settlement patterns of people in post-treaty times reflect culture groups trying to recover from seemingly insurmountable assaults on a variety of fundamental elements of their culture, not the least of which was a devastating decline in population from European diseases. In his analysis of the decreasing numbers of Indians in the Fort Nisqually census, Herbert Taylor notes that "…these figures are for the year 1838-1839 after civilization's multiple blessings of rum, syphilis, gun powder, and smallpox had done their work" (1960: 404).

Smallpox was likely the most significant contributor to the loss of cultural foundations in Coast Salish communities. Ethnohistorians suggest 75 percent as a conservative mortality rate among the Indian populations around Puget Sound by the time of direct Euro-American contact (Campbell 1989; Harris 1994). Other researchers are now considering much higher rates of mortality. The devastating population reduction in a culture that relies on its people as holders of all-important information is difficult to imagine. To lose most of the cultural information base (all libraries, schools, books, research centers, archives, scholars, teachers, scientists, religious leaders, television, radio and the internet…to name a few) in a matter of decades would destabilize any society; many would collapse. For detailed discussions on the effect of smallpox, see Carlson 1997 and Harris 1997.

Another kind of migration occurred during the 19th and 20th Centuries as the cash-based economy flourished in the Puget Sound region. Native populations continued to be marginalized and their traditional life ways severed by the literal and figurative fences of European settlement and government policies. Young people, the catalysts of all cultures, began to move to towns and urban centers, further eroding familial groups. Traditional communities who had once thrived on the strength of their familial ties and social constructs were greatly reduced by formal and informal assimilation policies.

Despite dramatic societal changes since the signing of treaties, there are many examples of how Indians currently perceive themselves which illustrate that they maintain a clear picture of who they are and how they are different from their non-Indian neighbors.

> Those who do not have a federal seal of approval, like those who do, account for the identity they claim by a chain of events linking them to Indians of the past. Until recently, most of them have also respected each other's accounts of their links to aboriginal people. Apparently recognizing that there were many routes from the past to the present, they maintained fraternal relations across the political, legal and geographic lines that officials tried to run around them (Harmon 1998: 249).

In addition, government dockets contain letters, stories, ethnographic accounts, and other evidence whose collection was inspired by the various policies of the Federal and State governments over the

past 200 years in an attempt to live with Indian Tribes of the Pacific Northwest. Tribal archives also contain documentation of "who they are"; documentation that has been required to maintain and/or acquire federal or state recognition since the time of the Stevens' Treaties in the mid 19th century.

Today, with the increased success and self-determination of governmental and business organizations representing traditional tribes, a small number of tribal members have migrated back to their traditional communities. Members are returned to live and reconnect their affinial ties or to exercise treaty rights and/or to help maintain their identities.

3.3.5 Spirituality

Extensive ethnographic discussions and detailed descriptions of rituals and activities surrounding the spiritual expression of people traditionally living in and around Kitsap Peninsula are presented in numerous documents including the works of Bierwert 1999; Collins 1946, 1952, 1974 a & b; Jilek 1982; Katz 1995; Miller J. 1988; Moss 1986; Onat and Hollenbeck 1981; Sampson 1972; A. Smith 1988; Snyder 1964; Spier 1935; Suttles 1987 and White 1941. Descriptions of spiritual activities provided to past ethnographers need not all be repeated here. Descriptions and analysis of the blending of traditional beliefs, Christianity and Shakerism are found in many of these accounts. It is worthwhile noting that Shakerism (established in the late 19th century by John Slocumb) became popular very quickly and helped to maintain some traditional beliefs. The BIA and other governmental agencies did not attack it because it was not perceived as a threat to the success of assimilation.

> In the years when I was growing up, when our religion was forbidden, my parents practiced as Shakers so the spirit power would continue (Katz 1995:252).

Some published information might be considered by current practitioners as too sensitive to be restated, yet again. It is important to note here that people are not supposed to discuss their own guardian spirit. "Mentioning a spirit by name is supposed to be tantamount as summoning him. If he is not one's own spirit, this could mean his appearance only to harm the speaker" (Collins 1974b: 145).

> …it was dangerous to reveal too much about it. If you talked about it, you could spoil it: it might leave you or even make you sick or it could be taken away from you by an enemy shaman (Suttles 1987:131).

It is clear from the ethnographic literature and many of the recent interpretations and analyses of the early ethnographies that ceremonialism is central to the continued identity of the Indian Communities and the Indian membership they represent.

> …the state of possession in most dancers seems nevertheless genuine. But what can this deep feeling, which once meant, 'I am a great hunter, or a great canoe maker, or warrior,' mean today? I believe it can only mean, 'I am an Indian' (Suttles 1987:208).

3.3.6 Sense of Place

To the people who recognize this portion of Puget Sound as integral to their community roots and sense of identity, the entire delta and the hills that create this watershed are central to their physical world and that of their ancestors. This connection to and respect for the past, present, and future is integral to the sense of "Place" discussed throughout the ethnographic literature about the people of this area. This was indeed one of the fundamental misunderstandings during treaty discussions of the 1850s.

> White culture regarded it as a commodity to be owned, fenced, bought, and sold. To the Indians land was part of a religious heritage, not a chattel and not an article of trade (AFSC 1970:21).

Components vital to the continuation of a strong and healthy community life are many and varied. Numerous resources are paramount to the physical survival of people – clean air, water and food. But the survival of the communities that used the inlets of the Puget Sound traditionally was based on a much more complex interpretation of the resources. Cultural constructs were in place that helped to maintain a comfortable and safe resource acquisition and allocation system that could change/adapt through time. This system relied on an intimate understanding of natural ecosystems, long standing alliances with neighbors and a commitment to a way of life that nurtured body, spirit and soul. The people living in the Puget Sound prior to European exploration and immigration to the Northwest were well taken care of by the place in which they lived and were clear on their position and role within the ecosystem.

3.3.7 Resource Gathering and Processing

The daily lives of the traditional people of this delta area revolved around food gathering, preparation, preserving and presentation. The abundant resources of the riverine and marine environment rewarded hard work. Foods were collected based on seasonal availability and complex social constructs developed to allow for maximum collection efficiency, redistribution, and healthy alliances within and between groups (Figure 5).

Procurement was only part of the program as it is the ability to process and store food items that determines population density in the environment of the Northwest where abundance is cyclic and resources are available in huge amounts for brief, somewhat predictable periods of time.

> …while the habitat was undeniably rich, abundance did not exist the year round but only here and there and now and then, and that such temporary abundances-though they may well be a necessary condition for population density and cultural development of the sort seen on the Northwest Coast- are not sufficient to create them. Equally necessary conditions were the presence of good though limited food-getting techniques, food storing techniques, a social system providing the organization for subsistence activities and permitting exchanges, and a value system that provided the motivation for getting food, storing food, and participating fully in the social system (Suttles 1987:46).

As the processing of food was generally cited as female labor, the ability of a group to store enough food for the winter might have depended upon the number of females capable and available for this work.

> "There do appear…to be differences in the productivity of households due in part to differences in the number of women available to process food in season...women, the processors of food" (Suttles 1987:49).

Like all subsistence activities, gathering was a long-practiced and highly successful adaptation for acquiring food, and many of the goods required for a variety of aspects of the traditional lifestyle.

> Indian women, through the centuries, devised ingenious methods of gathering, preparing, and preserving the foods which nature provided. They learned when the edibles were mature and ripe for harvesting, and they developed tools and techniques for the work. They learned which woods to use and which kinds of fire best suited

their needs, they designed and made their own cooking utensils and equipment from material available to them (Batdorf 1980:4).

Figure 5: Fish drying at temporary summerhouse, 1905 (photo courtesy of University of Washington Libraries Digital Collections; Norman Edson Collection no. 475).

The management of root gathering patches is well documented with burning, weeding, replanting of root tops, and prairie ownership considered indigenous practices (Collins 1974b:77). For an excellent discussion of potato use in the early contact period, see Suttles (1987:137-151). Berry patches were also owned and managed. Ownership of resource gathering areas is an excellent boundary for teaching rules around behavior. Children learn early that certain behaviors are acceptable in certain settings and they carry this information with them to adulthood to help guide them to act accordingly. How individuals respond to these rules is part of how other members of the culture act towards and react to the individuals. Ownership of resources, such as berry picking patches or fishing locations is one of the many strategies used to reassert the beliefs of a culture group; it is a cultural practice important to maintaining historic identity.

> Berries are still found, but in much smaller quantities. Formerly, large patches of berries were burned over every year or two by specialists with spirit power to increase their yield (Snyder 1981:224).

The cedar tree was so much a part of traditional life that it provided material for clothing, houses, transportation and tools as well as the spirit power and central stability that the cedar provided for the traditional peoples of the Sound.

> "They held the supernatural cedar in high esteem, for, like the bountiful salmon of the seas, the ubiquitous tree of the forest gave of itself to sustain and enrich their lives." (Stewart 1984:19)

In the contemporary response of Salishan people to the new needs of their peoples, we find the cedar once again central to maintaining identity.

> The Northwest Coast people are again a positive force in the land, facing up to governments, industry and the business world – and themselves. Many are grasping the tools of education to enable them to compete…and many are focusing on the old art forms. The cedar tree is often central to that art, providing, as in the past, the raw material they need: wood, bark, roots and withes (Stewart 1984:19).

The cedar tree was part of every moment of life in traditional culture (Figure 6 and Figure 7). The respect and importance of this tree continues today in ceremonial life where clothing, regalia, ritual items, firewood, functional items and indeed the buildings used for ceremonies are still made of cedar. Administrative buildings incorporate cedar, as cedar is still considered a cornerstone for cultural identity. Discussions of gathering and associated activities are found in most of Collins' works; Bruseth 1926; Fish and Bedal 2000; Harold Engles tapes; Jenkins 1956; Onat and Hollenbeck 1981; Roberts 1975; Smith, M.1941, 1950,1956; Smith, A. 1988; Snyder 1964; Turner 1995.

The diverse resources of the waterways of the Puget Sound suggest an extensive gathering round likely occurred throughout. Plants, lithics, spirit power and other resources would have been acquired in a variety of ways. Much of this mobile resource procurement would have occurred in the warmer months from spring through autumn.

Plants and plant products would have been harvested at the most useful point in their cycle. For example, berries at their ripest, cambium at it sappiest, roots and tubers at their sweetest. Edible plants would have been harvested at their highest sugar content, when they were easiest to dry and store. Roots, stems and leaves were collected at the point in their cycle when the active ingredient(s) were most potent. Long-term collection strategies would likely have incorporated an understanding of how to maintain strong and abundant plants (e.g., prescribed burning, pruning, etc.).

Figure 6: An example of a planked tree from a mature forest the east coast of Vancouver Island.

Figure 7: Tule and cedar mats built everything (photo courtesy of the University Washington archive collection).

3.3.8 Fish

Fish are central to the culture of the Indians today and their ancestors.

> Salmon was not merely an important part of life – not a recreation and not solely a means of providing food-it was the heart of a whole way of life. It was the staple article of year-round diet; fresh, smoked, or dried…It was a major commodity in trade between tribes. Above all, it was a blessing for which the Indians always gave thanks….Many religious beliefs and tales concerned salmon, and these were often presented in the rituals….The ceremonies, stories and taboos exhibited a fundamental concept of the immortality of the salmon and the related desire not to offend it and endanger its return. The methods and skill of the aboriginal fishermen achieved extraordinary harvests but at the same time ensured continuation of the great runs (AFSC 1970:3).

The peoples of the Kitsap Peninsula would have fished for a variety of fish including saltwater species. Like other types of resource gathering, fishing was sometimes a communal enterprise and at other times carried out by only one or two people in established fishing locations. Some traps and weirs may have been maintained by related groups (Snyder 1964:69).

Numerous ethnographic accounts provide descriptions of fishing strategies, techniques, equipment and tools (Batdorf 1980; Snyder 1964; Stewart 1977).

> Salmon are taken by a variety of techniques. Some of these involved fish traps reaching across the entire river. Others include basket traps located in strategic positions below falls or narrow channels, large nets dragged in the water between two canoes, nets set in deep portions of the river, dip nets manipulated by hand, fish spears hurled from the bank, and line and bait (Collins 1974b: 79).

Fishing was regulated traditionally, as is it today, within and between groups through a complex set of alliances. Fishing technology and styles have changed over millennia; however the fundamental relationships to fish and fishing have remained.

> Testimony that the descendants of aborigines had forsaken ancestral rites and adopted the same habits and aspirations as their non-Indian neighbors did not sway Judge Boldt. All the plaintiffs in the case, he declared, had established their status as Indian tribes. And even though "employment acculturation" and state law enforcement had drastically reduced the number of Indians who fished, most Indians were distinguished by the fact that the right to fish remained their "single most highly cherished interest and concern (Harmon 1998:240).

Fishing and processing of the catch, as well as associated feasting, played such a large and complex role in the culture of the traditional people of this area that it could be discussed under any number of subheadings in this overview. Each part of the process was subject to cultural and religious sanctioning. Success in fishing is related to guardian spirit power, not just for the act of fishing, but also for the acquisition of materials and the building of fishing equipment including transportation, gear, traps and weirs. Acquiring and maintaining gear to catch and process fish is regarded equally as important as the ritual paraphernalia to bless the boats and catch. As long ago, complex ceremonies continue today to ensure safety and to provide healthy fish to eat.

3.3.9 Hunting and Trapping

According to most literature, hunting was second to fishing in providing food for people living in the Puget Sound. The farther away from the ocean, the more important hunting became in the quest for animal protein. Mammals and birds were the primary prey and, following the traditional philosophy,

much of the creature was used. Skin or fur for clothing, flesh for food, sinew and other soft tissue for various uses, bone for tools, weapons and other functional devices such as straws. Many parts of animals and birds are also used in ceremony. Ethnographic discussions of hunting are found in Gunther 1950; Jeffcott 1949; Onat and Hollenbeck 1981; Onat 1980; Onat, Bennett, and Hollenbeck 1980; Smith 1941, 1950; Suttles 1987.

Hunting and trapping were undertaken by groups and individuals. Various styles of hunting were used depending on the prey, the season, and the need. "Animals such as the bear, deer, and beaver are usually secured by traps…. Birds also provide a source of food. Among the birds used as food are the pheasant, the blue grouse, the duck, the goose, and the loon" (Collins 1974b:80).

Historically, deer (*Odocoileus* spp.), elk (*Cervus canadensis*), black bear (*Ursus americanus*), cougar (*Felis concolor*), and coyote (*Canis latrans*) lived in the vicinity of Bremerton. These mammals have extensive ranges and were at one time common in both bottomland and uplands. Marshy habitats near the project area typically supported a specialized, diverse array of fauna that still includes raccoon (*Procyon lotor*), ermine (*Mustela erminia*), beaver (*Castor canadensis*), river otter (*Lutra canadensis*), marten (*Martes americana*), and muskrat (*Ondatra zibethicus*) (Dalquest 1948).

Processing the meat was also part of a complex and well-adapted system of procurement. Feasting, drying, smoking, and various forms of caching were used to maintain a food supply during lean times. Traditional tools and weapons kits were highly adaptable. It took little time for technological advancements to become incorporated into successful hunting kits. This is apparent from the speed with which tools and materials from traders and explorers were incorporated into the archaeological and ethnographic record. Excellent discussions on lithic tools and weapons are found in numerous archaeological reports and documents (Bamforth 1986a, 1986b; Binford 1979; Cotterell and Kamminga 1979; Crabtree 1972; Hayden 1979, 1986; Magne 1985; Odell 1980, 1981a, 1981b, 1982; Rousseau 1992).

3.4 Post-Contact

3.4.1 Fur Trade and Early Exploration

A number of local histories share tales of survival of the early explorers and immigrants that came to the Northern Puget Sound. The main characters in these books were primarily the travelers and homesteaders themselves, with only occasional anecdotal mention of Native individuals or groups (Ames 1884; Barkan 1987; Batdorf 1980; Boxberger 2001; Boyd 1999; Bruseth 1910; Clark 1970; Conroy 2005; Costello 1895; DAHP-Department of Archeology and Historic Preservation 1989; Edson 1968; Essex 1971, n.d.; Fish 1927; Humphrey 1984; Island County Historical Society 1993; Jones n.d.; Jordan 1974; Malstrom 1986; Martin 1952; Meeker 1905; Neil 1989; O'Donnell 1992, 1993; Riddle 1975; Strickland 1984, 1990; Sucher 1973; The Washington Historical Records Survey Division of Community Service Programs Work Projects Administration 1942; Thompson 1989; White 1980; Whitfield 1926a, 1926b and Willis 1976).

The first documented exploration of the Pacific Northwest was a Spanish expedition in 1543, led by Greek-born Apostolus Valerianos, more commonly known as Juan de Fuca. De Fuca explored the strait that now bears his name and northern Puget Sound for twenty days (Camfield 2000:255; Coffman 1926; Karamanski 1983).

George Vancouver (Figure 8) was another early explorer in the Pacific Northwest; some of the earliest records documenting the Pacific Northwest come from his explorations.

In 1792, Captain George Vancouver explored southern Puget Sound, mapping and naming many prominent landmarks. It was Vancouver who renamed Puget Sound—the southern portion called Whulge by the Nisqually—and Mt. Rainier—called Ta-co-bet or Tacobud—as well as Vashon Island, Bainbridge Island, Port Gamble, Hood Canal and Port Orchard, among others. He did not, however, dub any of the rivers, many of which retain their native names (Carpenter 1986:21; Clark 1953; History Link 2006). Vancouver also "named the waters between the south end of Whidbey Island and the mainland Possession Sound, and it is still called that today" (Hayes 1999:86).

The first Europeans to stay for any length of time in the Puget Sound area were traders, trappers, and explorers associated with the Hudson's Bay Company (HBC) (Figure 9). In the 1820s through the 1860s, HBC employees regularly traveled and traded around the Puget Sound (Harmon 1998). The Columbia River was instantly intriguing to many of early European explorers to the Pacific Northwest (Ross 1966); traders and HBC employees soon regularly used the Cowlitz River as a quick and direct route from Fort Vancouver on the Columbia River and Fort Nisqually in southern Puget Sound (Cox 1957; McClelland 1952:6; Ross 1966). Tribes around Puget Sound took benefit in trading and bartering with HBC, and many were hired as guides as well (Carpenter 1986:30).

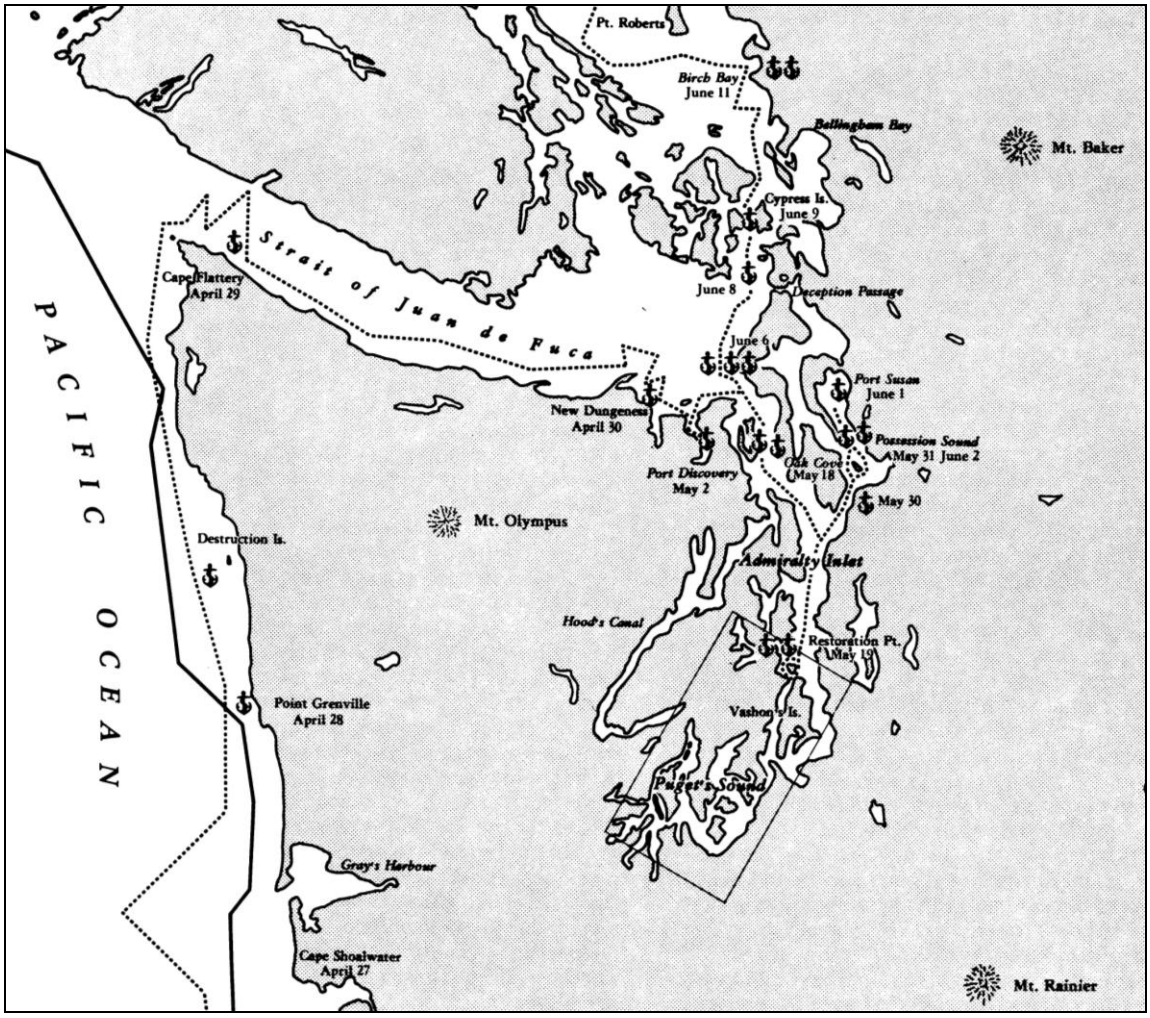

Figure 8: Preliminary chart of N.W. Coast of America from George Vancouver (Hayes 1999:86)

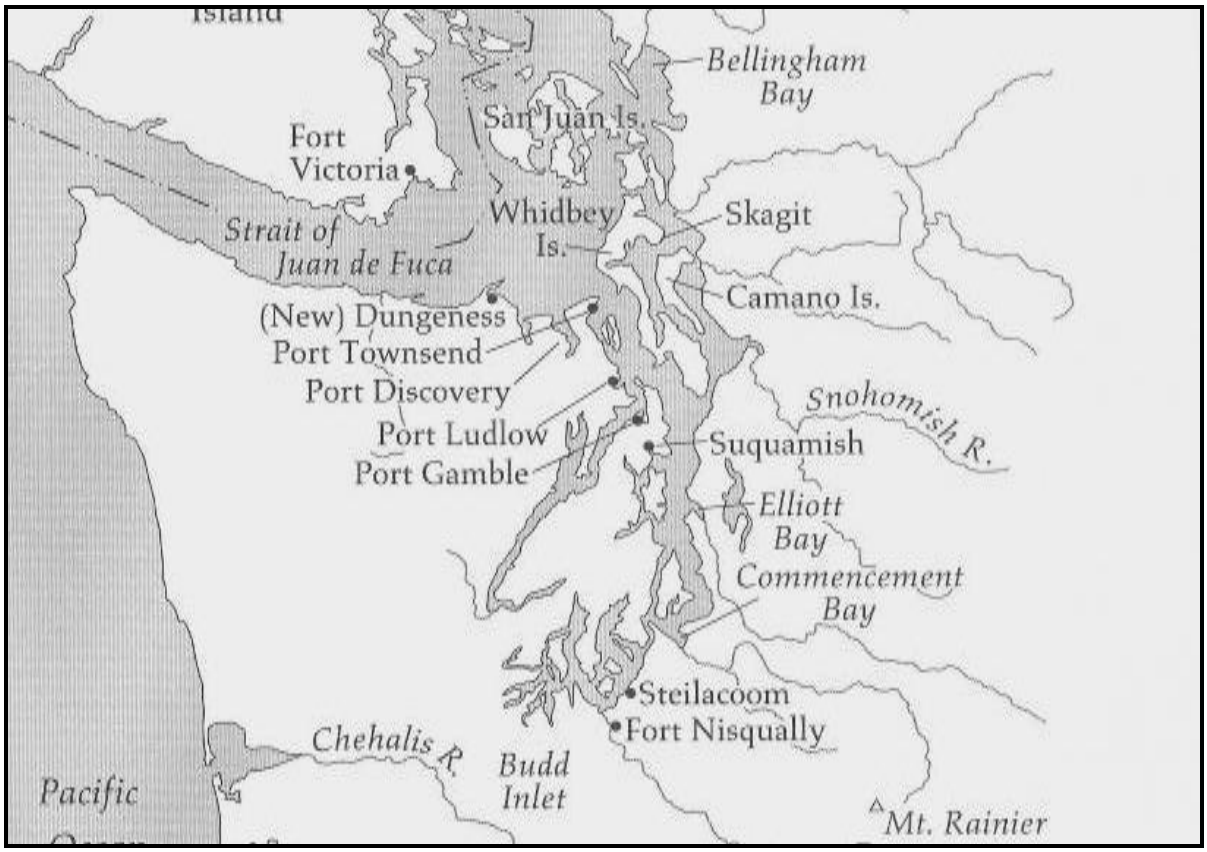

Figure 9: Map of early settlements and activity of the Hudson's Bay Company (Harmon 1998: 25).

3.4.2 Logging and Mining

Even before Washington State was a territory, logging was an economically important industry and was supported by a demand for piles and timbers for the mines and buildings used in the California Gold Rush. By 1855, sixteen Puget Sound sawmills were exporting 85,000 board feet of lumber per day. The logging industry, once dominated by small businesses, was taken over by large timber companies that gained access to "immense tracts of timber" by purchasing land or timber rights to privately-owned land. Some lumber companies illegally logged public lands, which further depleted the forests of the Puget Sound region (Gates 1941:211). According to Charles M. Scammon's account of logging during the territorial days the major mills for manufacturing lumber were "scattered from the head of Possession Sound, on the north, to the extremity of Puget Sound, southward"; the saw logs to supply the mills were cut from the adjacent shores (Gates 1941:212). The following excerpt from Scammon's account demonstrates the grand scale of the timber industry on the Northwest coast:

> Probably no country in the world has the natural facilities for producing immense supplies of masts, spars, and timber of great size as has that portion of Washington Territory bordering the shores of Juan de Fuca Strait, Admiralty Inlet, Possession Sound, Puget Sound, and their many branches (Gates 1941: 212).

Although not the in the same league, mining left its own mark on the developing hills of Puget Sound in the early days. Much of the exploration done for early trading led to exploration for various ore

deposits and the concurrent opening up of transportation corridors for timber encouraged mining and the associated development to accommodate the population of miners and their families. A typical mining camp in the early 1900s was equipped with railroad service, hydro-powered electricity, a gravity-fed water system, a school, a hotel, and other modern conveniences (Sucher 1973: 24).

The timber demands of California during the gold rush of 1850 inspired the establishment of mills all over Puget Sound. With the establishment of mills the Kitsap Peninsula white settlement began in earnest. During this time the Kitsap Peninsula would the wealthiest area per capita on Puget Sound (History Link 2006).

The area of the Kitsap Peninsula now known as the City of Bremerton was explored by the Captain Wilkes' expedition in May of 1841. Wilkes named the current location of downtown, Bremerton, Point Turner

The establishment of the Puget Sound Naval Station in 1891 Point Turner that really encouraged the growth of the city. William Bremer, in an effort to capitalize off of the new naval station platted and named the city in 1891 (Kitsap County Historical Society n.d.). The city got its own post office this same year. The need of the naval station for goods and services created economic opportunity and by 1901 Bremerton was incorporated and had a two room schoolhouse, a volunteer fire department and a newspaper – The Bremerton News (Kitsap County Historical Society n.d.).Wooden water mains were piping water through the city by 1902). By 1908 Bremerton had grown enough to have a library, a high school of 106 students and 5 teachers, a chamber of commerce and free mail delivery. Bremerton and the nearby town of Charleston were consolidated in 1927. It is interesting to note that William Gates Sr., the grandfather of Bill Gates founder of Microsoft, was the treasurer of the Bremerton Chamber of Commerce in 1938 (www.bremertonchamber.org).

Though the city of Bremerton continues to see growth today and the Puget Sound Naval Station is still in operation today (Kitsap County Historical Society n.d.). The Seattle Naval Air Station, also known as Sand Point, located along the western shore of the peninsula was established in 1920. IN 1942 the base covered 471 acres. During WW2 the Sand Point became an air transport and ship staging area primarily for Western Pacific operations, though the base was occasionally used by Boeing and Pan American Airlines. During this time Sand Point has an outlying field called the Kitsap County Airport. Today it is known as the Bremerton National Airport (Freeman 2010).

3.4 Previous Archaeology

Archaeology in the Pacific Northwest is full of interesting stories and complex facets and components. Preservation of sites, history of research, modern demographics, and the taphonomic processes of landform creation and movement in the study area provide the plot lines to this fascinating story. The relationships between landscape and land use are well established. Some of these patterns can be seen in land use patterns in today's populations. The clustering associated with modern groups was common on a different scale in the past.

Archaeological sites are those properties that provide the physical evidence or material remains of previous human activities. Areas or landscape occurrences associated with oral history, origin narratives or accounts of traditional cultural use with or without corroborating (physical) evidence may also be determined eligible to the National Register of Historic Places.

For discussions of archaeological investigations in the region see: Bennett 1979; Bryan 1955,n 1963; Borden 1975; Butler & Osborne 1959; Butler 1961; Dalan & Wilke 1983; Campbell 1981; Carlson 1983; Duncan 1977; Elmendorf 1960; Eells 1985; Franck 1999, 2003; Gibbs 1877; Griffin 1983;

Haeberlin and Gunther 1930; Hollenbeck, J. L.; Kidd 1964,1966; Lewarch and Larson 1977; Mattson 1971; Nelson 1969; Smith 1907; Smith 1940, 1950; Smith & Fowkes 1901; Stump 1999; Suttles 1983; Thompson 1978; Thomas 1979; Tweddell 1950; Waterman 1920; and Welch 1983

Within seven miles of the project area, 11 archaeological sites are recorded and on file at the DAHP (

Table 3).

There are currently no recorded archaeological sites on file with DAHP inside of the project area.

Table 3: Recorded Archaeological sites located within seven miles of the project area.

Smithsonian Number	Distance from Project Area	Date Recorded	Site Type Name
45KP00109	~ 2 miles	12/24/1992	Pre Contact Camp, Pre Contact Shell Midden
45MS00106	~ 5.5 miles	2/26/1992	Pre Contact Camp, Pre Contact Feature, Pre Contact Lithic Material
45MS00158	~ 6.5 miles	7/1/2007	Historic Agriculture
45MS00161	~ 5.5 miles	6/20/2008	Historic Logging Properties
45MS00112	~ 5.5 miles	7/10/1995	Pre Contact Camp, Pre Contact Feature, Pre Contact Lithic Material, Pre Contact Shell
45MS00052	~ 6.5 miles	8/9/1963	Pre Contact Shell Midden
45MS00146	~ 6.5 miles	8/22/2006	Historic Logging Properties, Historic Railroad Properties, Historic Refuse Scatter/Dump
45MS00159	~ 6 miles	7/1/2007	Historic Agriculture
45MS00160	~ 6 miles	6/20/2008	Historic Homestead, Historic Refuse Scatter/Dump
45MS00047	~ 7 miles	5/12/1952	Pre Contact Shell Midden
45MS00007	~ 7 miles	9/3/1948	Pre Contact Lithic Material, Pre Contact Shell Midden

In order to determine the amount and the nature of the archaeological survey work that has been done within two miles of the project area the survey reports on file with DAHP were looked at. There are 21 survey reports on file with DAHP within two miles of the project area (Table 4). Of these, four were inside of the project area. These reports were value examined using the following criteria:

- Density of subsurface (shovel) testing
- intensity of survey transect intervals
- did the report included maps of the project area and/ or surveyed areas that included scales and reference points.

It was noted during this review that the majority of the archaeological survey projects employed no or extremely low intensity sub surface testing compared to today's professional industry standards.
Some maps did not show the locations of the surface survey or the few shovel tests that were employed.

Table 4: Archaeological survey reports on file with DAHP located within two miles of the project area.

Date	NADB Number	Title of Report	Author	County	Quadrangle	Document Type
2/1/2005	1344565	Cultural Resources Assessment of SR 3: Division Avenue/Pleasant Street project, Gorst	Early, Amber L.	Kitsap	Bremerton West	Survey Report
8/22/2005	1345515	Cultural Resources Assessment for the Gorst Creek Estuary Restoration Project - Phase I, Gorst	Chambers, Jennifer	Kitsap	Bremerton West	Survey Report
5/30/2006	1347532	Cultural Resources Assessment for the Sinclair Inlet Restoration and Trail Project - Part 2, Gorst	Berger, Margaret	Kitsap	Bremerton West	Survey Report
8/14/2002	1341263	Bremerton Westside Wastewater Treatment Plant Wet-Weather Facilities Cultural Resources Assessment	Tingwall, Douglas F.	Kitsap	Bremerton West	Survey Report
4/10/2007	1349443	Archaeological and Historical Resources Assessment of the Westpark Redevelopment Project, City of Bremerton	Hudson, Lorelea	Kitsap	Bremerton West	Survey Report
3/22/2007	1349250	An Archaeological Survey of the Bayside Residential Development, Bremerton	Boersema, Jana	Kitsap	Bremerton West	Survey Report
8/17/2007	1350173	Cultural Resource Assessment for the Tremont Street Road Improvement Project, Port Orchard	Chambers, Jennifer	Kitsap	Bremerton West	Survey Report
10/9/2007	1350348	Cultural Resources Assessment for the Cedar Heights School Sidewalks Project, Port Orchard	Berger, Margaret	Kitsap	Bremerton West	Survey Report
7/1/2008	1351976	Cultural Resources Investigations for SR 160, SR 16 to Long Lake Road Project	Crisson, Fred	Kitsap	Bremerton East, Bremerton West	Survey Report

Date	NADB Number	Title of Report	Author	County	Quadrangle	Document Type
2/8/2006	1349679	Cultural Resources Report for Wildlands of Washington, Lumsden Property, Port Orchard	Goetz, Linda Naomi	Kitsap	Burley	Survey Report
4/19/2005	1345111	Burley Creek Hatchery Facility Upkeep Project	Clark, Sunshine	Kitsap	Burley	Survey Report
1/15/2007	1348865	Cultural Resources Assessment for the SR 16 Burley Olalla Interchange Project	Earley, Amber	Kitsap	Olalla	Survey Report
10/1/2003	1342891	Cultural Resources Investigations for Washington State Department of Transportation's SR 16: Burley-Olalla Project	Luttrell, Charles T.	Kitsap	Olalla	Survey Report
10/19/2009	1353596	BRE Lake Flora Road Alt. 5 Cellular Tower Cultural Resources Review	Stipe, Frank	Kitsap	Burley	Survey Report
12/10/2009	1354299	Cultural Resources Assessment for the SW Lake Flora Road/ JM Dickenson Road SW Intersection Improvement Project, Kitsap County, WA	Berger, Margarett	Kitsap	Burley	Survey Report
5/17/1996	1339607	Cultural Resources Study for Cascade Natural Gas Corporation's Proposed Phase 2 Kitsap Lateral Upgrade Project, Mason And Kitsap Counties, Washington	Naomi Goetz, Linda C.	Kitsap, Mason	Belfair, Burley, Lake Wooten	Survey Report
11/3/2006	1348505	Cultural Resources Survey, SR 3 Imperial Way to Sunnyslope Safety Project	de Boer, Trent	Kitsap	Bremerton West, Wildcat Lake	Survey Report
4/17/2009	1352767	Letter to Chrissy Bailey RE: Cultural Resources Assessment for Segment 1 of the Cross South Kitsap Industrial Area (SKIA) Connector Project, near Bremerton	Chambers Jennifer	Kitsap	Belfair, Bremerton West, Wildcat Lake	Survey Report

Date	NADB Number	Title of Report	Author	County	Quadrangle	Document Type
9/1/2008	1352037	Cultural Resources Investigation for the Bremerton Airport Runway Rehabilitation Phase 2, Runway Rehablitation-2009 AIP Project 3-53-0007-21, Bremerton	Sharpe, James J.	Kitsap	Belfair	Survey Report
12/27/2007	1350738	Memo to Jeff Sawyer RE: A Cultural Resources Survey for a State Highways Safety Project, XL 2645	Bundy, Barbara E.	Clallam, Jefferson, Kitsap, Mason	Belfair, Brinnon, Burley, Forks, Gunderson Mountain, Lofall, Port Gamble, Poulsbo, Quillayute Prairie, Sequim, Shelton, Snider Peak, Union, Vaughn	Survey Report
1/8/2009	1352363	Archaeological Investigations of the Bear Creek Dewatto Road Realignment Project near Belfair	Neil, Stephanie	Mason	Belfair, Wildcat Lake	Survey Report

3.4.1 Potential Site Types

We might expect to find a wide range of site types within the SKIA. In contrast to archaeological sites, areas or landscape occurrences associated with oral history, origin narratives or accounts of traditional cultural use with or without corroborating (physical) evidence may be determined eligible to the National Register as Traditional Cultural Properties (TCP).

Expected Archaeological site types for the Kitsap Peninsula include:

Table 5: Potential Site Types.

SITE TYPES	ACTIVITY
Precontact or Historic Shell Middens	Living; gathering and processing shellfish for storage for winter
Lithic Scatters or isolates	Stone tools or weapons or the waste material from their production or maintenance Remnants of discarded or misplaced stone tools
Fish Weirs, Traps, Nets or other stone or post	Fishing and the activities associated with gathering the material required to build catch and process fish and other salt water creatures.

SITE TYPES	ACTIVITY
alignments for fishing	
Cultural Depressions	Depressions from the prior construction and use of subterranean houses, cache pits or other roasting or processing pits-these include hot rock cookery pits Any other depression constructed by humans during traditional activities
Culturally Modified Trees (CMTs)	Bark-stripped trees Planked trees or other Aboriginally-logged trees
Rock Art	Pictographs (painted rock art) Petroglyphs (pecked or carved rock art)
Cultural Earthworks	Burial mounds Fortifications Burial cairns Foundations
Petroforms	Rock blinds or some types of rock art Navigational cairns or Canoe runs Any other alignment or arrangement of rocks during the pursuance of traditional cultural activities
Shell midden	Culture rich shell deposits that may be from processing or eating or the waste products from either of these
Human Remains	Articulated or scattered human remains, secondary burial that can be associated with box burial or tree burial
Burial	Cemetery individual (opportunistic and ritual)
Historic features or buildings	Logging or homesteading features such as camps, transportation, docks, cache pits, hunting blinds or cubbies
Historic site related to Industry, settlement or missionary work	Homesteader's features, refuse dumps or other activity areas Sites or features related to the development of industry in and around the cities of Anacortes or La Conner Artifacts or features related to the establishment of missions in and around the Swinomish Reservation

Some of the aforementioned archaeological site types could also be considered a TCP, if they exhibited any of the three criteria listed below (from Parker and King 1983):

1. A location associated with the traditional beliefs of a group about its origins, its culture history, or the nature of the world;
2. A location where religious practitioners have historically gone and are known or thought to go today to perform ceremonial activities in accordance with traditional cultural rules of practice; and
3. A location where a community has traditionally carried out economic, artistic or other cultural practices important to maintaining its historic identity.

Given information available in ethnographic literature and considering the biogeoclimatic zones present in the Puget Sound, a list of potential TCP site types is presented below. This list is not part of a predictive model, but is a starting point from which to consider the effects of project developments and what kinds of resources might be affected.

Table 6: Potential TCP site types and the corresponding activities or resources.

SITE TYPES	ACTIVITY or RESOURCES
Plant Gathering (resources)	Functional plants (CMTs) Medicinal plants Magical plants Food plants
Private Knowledge	Questing, Ceremonial, Spirit, Sweat, Bathing, Legendary, Privacy
Fishing	Salmon, Steelhead, other fish Catching and Processing
Hunting	Bear, Deer, Elk, Mountain Goat Beaver, marmot and other small woodland mammals Grouse (woodland birds) and water foul Processing: primary, secondary
Villages	Dispersed Seasonal Year-round
Gathering Sites (social)	Annual or seasonal gatherings for resource procurement, trade, mate selection and gaming
Encampment for travel	Campsite Temporary stopovers Small resource procurement
Trails	Main N/S trails Tributaries (Loops) Connectors
Burial	Cemetery Individual (opportunistic and ritual)

Gathering (Resource) Sites

Resource gathering sites are usually associated with plant gathering, processing and storage. A gathering area that was used year after year may be considered part of the social fiber of a community. Gathering sites may also mark the place where ceremonies took place that served to solidify traditions such as teaching important skills or stories to young people about who they are and from where they come. Gathering locations or the rights to gather may be owned; this ownership may provide the foundation for certain cultural rules within the community.

Plant resources were used in all aspects of life during the pre contact era. The gathering of plant resources creates numerous archaeological sites. Not only the collection sites, but the sites where tools were made or the plants were processed may appear in the archaeological record. The following table provides the ethnographic references to plants that would have been available to people who used the project area in the past.

Private Knowledge Sites

This category is wide and contains a variety of site types representing areas associated with:

- Questing
- Ceremonies

- Spiritualism
- Bathing (Sweating)
- Legends
- Privacy

Each of these types has a range of attributes or characteristics associated with it. These characteristics are vital to the perceived integrity of the site are also part of determining the eligibility of each site or property for the National Register.

Fishing and Hunting Sites

In the Puget Sound, we would expect sites associated with the following activities:

- Collecting material for fishing equipment
- Catching fish
- Processing fish
- Storing fish
- Fishing boundary markers
- Private knowledge sites to acquire the skills or spirit power to catch fish

Each of these activities has a variety of site types associated with it normally represented as discrete activity loci inside larger general use areas. As an example, storage areas might be located in a specific area of a village or encampment. Material collected for fish weirs, traps or nets might be found in areas near to where material was obtained and/or in material storage areas for a variety of products requiring manufacture. Territorial boundary markers may be as subtle as a rocky outcropping near a weir or trap and be difficult to discern for someone unfamiliar with local knowledge or cultural affiliation. Processing areas might be found in association with catching sites or as an activity area within a gathering site.

As fish and fishing are of vital significance to the people of the Puget Sound we might find associated elements within many of the site types discussed. On the landscape, we would expect to find fish procurement areas near to places where fish naturally gather due to water movement around landforms (back eddies), water temperature and velocity, cover and structure. Descriptions of relevant fishing tools and technology are found in Smith 1988, Snyder 1981, and Stewart 1977.

In the inlets and bays of the Puget Sound we might expect to find hunting sites, including sites associated with collecting material for hunting gear (lithic procurement), killing and processing of animals, storage (e.g., caches), territorial boundary markers, and private knowledge sites to acquire the skills or power to hunt successfully. Game animals sought currently and/or traditionally, include deer, elk, bear, beaver, rabbit, fisher, raccoon, otter, other small mammals, game birds, migratory birds and waterfowl.

Village Sites

Pre-contact village sites would be expected to be located in areas providing the most pleasant winter living conditions as most village sites were occupied during this part of the year. Summer months were spent in comfortable and mobile encampments necessary for resource gathering and processing. For the winter months in the Pacific Northwest, we expect to find village sites on south-facing landforms with level surfaces and, access to resources such as water and fuel. Areas sheltered from prevailing winds with access to good water transport corridors were also sought. Good locations would be used year after year.

Gatherings (Social) Sites

These are multi-use and purpose sites that reflect all the activities associated with collecting seasonally available resources. Resources targeted are annually consistent and are abundant enough that the group or groups who claim control over the resource are able to share them with neighbors and kin. This kind of sharing provided the opportunity for numerous other social mechanisms to become established.

Annual gatherings provided the opportunity for parents to introduce their children to:

- Other children that may become potential mates
- Other children that may become their friends, colleagues, competitors and counterparts in other groups
- Kin members that live in other villages
- Other members of their extended family or people they are related to through marriage

These gatherings are also a time for adults to:

- Share stories of the year
- Re-establish alliances for resource sharing and defense
- Exchange resources and information
- Meet new family members and establish their relationship with them

How these sites might appear on the landscape is influenced by numerous factors including their geographic location, the resources being gathered, the number of people gathering, where visitors were coming from, and the time of year. Large gathering areas would usually be flat enough for extensive camping and processing areas and near to plenty of fresh water, often from numerous sources. Major trails or intersections of several trails would usually be located nearby. Locations would normally be near a variety of other resources that could be gathered simultaneously. Numerous places on the Kitsap Peninsula would have been excellent for this kind of gathering.

Encampment Sites for Travel and Trails

These stopovers are common in upland areas of the coast and interior plateau or along waterways used for travel and might have been used seasonally, annually or as a single use site. They are often difficult to locate archaeologically in forested upland areas because thick vegetation normally obscures their visibility on the surface. These encampments are associated with several activities including resource gathering, processing and travel (to and from common, well-known locations). Encampments might be needed to access locations for gathering materials vital to cultural ceremonies such as winter dancing, healing, bathing or questing.

Waterways provide an efficient means of travel. This ease of travel can result in a paucity of temporary/ short use camps along easily navigable stretches of rivers as travelers may reach a village before nightfall and not require a stopover. Today many gathering trips are planned as day trips, reducing the number of overnight locations needed to secure the cultural resources.

Despite excellent travel corridors provided by larger rivers in the project area, overland travel was also common along the tributaries and sloughs of Puget Sound. Historically, trails were recorded or referred to throughout the local drainages and into neighboring areas and regions. The use of snowshoes and crossing the Cascade divide on the snow suggests long familiarity with mountain travel (Collins 1974b:66).

It is reasonable to believe that the extensive land travel corridors recorded throughout the Northwest are also present in the Puget Sound however locating evidence of trails in the field can sometimes be

problematic. Historic roads are often built on top of existing trails obliterating any sign of them. Vegetation can also grow over a trail in a relatively short time if the trail falls out of use due to displacement or rapid population decline.

There are numerous examples in the literature of north/south and east/west travel throughout the Puget Sound and adjacent Cascade Mountains (e.g., Bruseth n.d.; Carlson 1997; Chittenden 1986; Coleman 1869; Collins 1974b; Curtis 1913; Custer in Majors 1984; Fish and Bedal 2000; Galloway and Richardson 1983; Gibbs 1967; Haeberlin and Gunther 1930; Jeffcott 1949; Jenkins 1984; Linsley 1981; Majors 1984; Roberts 1975; Suttles 1987, 1990; Hilbert et al. 2001).
Trails would be expected within corridors connecting hunting and gathering areas to village sites, corridors to sensitive and powerful locations in the uplands, and corridors that connect villages. As the project area is surrounded by inlets, lakes and bays of varying size and function we would expect that many trails both terrestrial and aquatic existed here.

Burial Sites

Acidic soil conditions found within the coastal temperate rain forest do not facilitate preservation of bone material resulting in a generally low probability for identifying human remains. The practice of internment in the trees often led to rapid removal of the physical evidence of burial. It is more common to identify burial markers such as Cairns or carved wooden figures set up as monuments (Suttles 1987: 127) and burial structures (such as mounds) than actual human remains.

Shell midden sites are often the locations where preservation allows for encountering human remains and intact or disturbed burials. These locations must be carefully monitored and managed for human remains culturally sensitive locations may be identified by spiritual practitioners within the communities identified as traditional users of the Puget Sound. Such sites exist adjacent to the project area simply because that people have lived (and died) along the waterways of the Puget Sound for millennia.

4.0 METHODS

4.1 Archival Research

1) Review of site forms and previous reports on file at the Department of Archaeology and Historic Preservation in Olympia, Washington.

2) Review of published and unpublished information on the prehistory or traditional native use of the area.

3) Review of archaeological site location maps for Kitsap County.

5.0 RESULTS AND RECOMMENDATIONS

5.1 Results

The City of Bremerton has contracted with the Blumen group to assist in an effort to complete a comprehensive master plan and planned action EIS [Environmental Impact Statement] for the South Kitsap Manufacturing and Industrial Area (SKIA). Equinox Research and Consulting International Inc. (ERCI) has carried out background research to identify the existing conditions of our understanding of the cultural resources in the SKIA and provide a framework to develop the protocol for project proponents and the reviewing agencies with regard to cultural resource management in the SKIA.

With the data available on cultural resources and the laws and policies that already exist for this study area we are providing a framework for the city of Bremerton to help them carry out their compliance responsibilities while they pursue their objectives of economic development and job creation; protection of natural systems, reductions in greenhouse emissions and increased sustainability; development of innovative systems and sustainable infrastructure.

Existing Data for Cultural Resources in SKIA

Of the approximately 3400 acres of the SKIA project area, between 100 and 150 acres, or less than 4%, have been surveyed. Of the 7 archaeological surveys conducted in SKIA, all have usable maps to relocate the testing area. 3 investigations have no sub-surface testing associated with the investigation; 6 investigations had shovel probes or sub surface tests in the testing program but they were all less than 4 test holes per investigation (. Table **7** and 8). These strategies fall short of the current industry standard that might for example call for test holes every 30 feet or for 20 test holes per acre depending on the probability and the predicted target size of the archaeological site type. All of these projects were compelled by compliance to various laws associated with a permitting process.

As a result of the paucity of data from within the project area where **no archaeological sites have been recorded**, we have examined the data available from within 7 miles of the project. Unlike some areas in Washington State where recorded archaeological site density is more than 1 site per acre, SKIA and the surrounding area has not had enough adequate archaeological survey to provide meaningful data for any stratified sampling program method.

As a comparison, Island County to the north of Kitsap County has approximately 208 square miles of land with 171 recorded archaeological sites; San Juan County has approximately 175 square miles of land with 403 recorded archaeological sites; while Kitsap County with approximately 396 square miles has only 77 recorded archaeological sites. This discrepancy is likely related to the relatively low percentage of surveyed acres in Kitsap County.

This means that any projects within the SKIA that involve ground disturbance would decrease their jeopardy of encountering a buried archaeological site by having an archaeological survey that involves sub surface testing implemented during the planning process. Ground disturbance includes but is not limited to: trenching or building for infrastructure (water, sewer, power and telecom), transportation corridor construction and maintenance, building foundations, storm water management, grading, filling, grubbing with machines, planting, channelizing, levee removal or construction, residential construction, docks, wharves, shoreline stabilization or timber harvesting.

. Table 7: Archaeological Sites recorded within 7 miles of the project area

Smithsonian Number	Distance from Project Area	Site Type	Closest Water Body	Elevation	Landform	Quad Map	Soil Type
45KP00109	~ 2 miles northeast	Pre Contact Camp, Pre Contact Shell Midden	Sinclair Inlet	~ 50 feet	Shoreline Bluffs	Bremerton West	38. Pits
45MS00106	~ 5.5 miles southwest	Pre Contact Camp, Pre Contact Feature, Pre Contact Lithic Material	Hood Canal	< 10 feet	Shoreline sand spit	Belfair	Tn. Tidal Marsh,
45MS00158	~ 6.5 miles southwest	Historic Agriculture	Hood Canal	~ 20 feet	Shoreline tidal flat	Belfair	Ib. Indianola Loamy Sand
45MS00161	~ 5.5 miles southwest	Historic Logging Properties	Union River, Hood Canal	~ 20 feet	Terrace	Belfair	Ba. Belfast Sandy Loam
45MS00112	~ 5.5 miles southwest	Pre Contact Camp, Pre Contact Feature, Pre Contact Lithic Material, Pre Contact Shell Midden	Hood Canal	~ 20 feet	Terrace	Belfair	Ea. Edmonds Fine Sandy Loam, 0-2% slopes and Mh. Mukilteo Peat, Shallow over Gravel
45MS00052	~ 6.5 miles southwest	Pre Contact Shell Midden	Hood Canal	< 10 feet	Shoreline	Belfair	Ed. Everett Gravelly Loamy Sand
45MS00146	~ 6.5 miles southwest	Historic Logging Properties, Historic Railroad Properties, Historic Refuse Scatter/Dump	Hood Canal	~ 10 feet	Shoreline tidal flats	Belfair	Cg. Coastal Beach
45MS00159	~ 6 miles southwest	Historic Agriculture	Hood Canal	~ 20 feet	Dike with mudflats	Belfair	Ea. Edmonds Fine Sandy Loam,

45MS00160	~ 6 miles southwest	Historic Homestead, Historic Refuse Scatter/Dump	Hood Canal	~ 20 feet	River floodplain	Belfair	Ea. Edmonds Fine Sandy Loam
45MS00047	~ 7 miles southwest	Pre Contact Shell Midden	Hood Canal	~ 12-15 feet	Shoreline	Belfair	Tn. Tidal Marsh, and Ia. Indianola Loamy Sand
45MS00007	~ 7 miles south	Pre Contact Lithic Material, Pre Contact Shell Midden	North Bay	~ 10 feet	Shoreline	Belfair	Mf. Mcmurray Peat, Shallow over Gravel
45KP00115	~ 5 miles northeast	Pre Contact Camp, Pre Contact Shell Midden	Sinclair Inlet	~ 10 feet	Shoreline bluffs	Bremerton West	63. Urban Land - Alderwood Complex and 15. Harstine Gravelly Sandy Loam and 16. Harstine Gravelly Sandy Loam
45KP00150	~ 4 miles northeast	Historic Residential Structures	Sinclair Inlet	~ 50 feet	Hill slope	Bremerton West	36. Neilton Gravelly Loamy Sand
45KP00148	~ 4 miles northeast	Historic Refuse Scatter/Dump	Oyster Bay	~ 100 feet	Depression	Bremerton West	63. Urban Land - Alderwood Complex
45KP00140	~ 6.5 miles northeast	Pre Contact Burial	Sinclair Inlet	~ 20 feet	Shoreline	Bremerton East	18. Indianola Loamy Sand
45KP00159	~ 4 miles northeast	Historic Refuse Scatter/Dump	Sinclair Inlet	~ 10 feet	Former shoreline	Bremerton West and East	3. Alderwood Very Gravelly Sandy Loam.
45KP00160	~ 7 miles northeast	Historic Refuse Scatter/Dump	Sinclair Inlet	< 10 feet	Former shoreline	Bremerton West	3. Alderwood Very Gravelly Sandy Loam.

45KP00009	~ 7 miles northeast	Pre Contact and Historic Components, Pre Contact Burial, Pre Contact Lithic Material, Pre Contact Shell Midden	Sinclair Inlet	< 10 feet	Shoreline	Belfair	2. Alderwood Very Gravelly Sandy Loam
45KP00121	~ 7 miles northeast	Pre Contact Shell Midden	Totten Inlet	~10-20 feet	Low bank along a Former shoreline	Bremerton West	Urban land-Alderwood Complex
45KP00123	~ 5 miles northeast	Pre Contact Shell Midden	Ostrich Bay	< 10 feet	Uplifted shoreline	Bremerton West	23. Kapowsing Gravelly Loam
45KP00147	~ 5 miles northeast	Historic Military Properties, Historic Refuse Scatter/Dump, Historic Residential Structures, Historic Road	Oyster Bay, Mud Bay	~ 50 feet	Terrace above lake	Bremerton West	1. Alderwood Very Gravelly Sandy Loam and 3. Alderwood Very Gravelly Sandy Loam
45KP00116	~ 6 miles northeast	Pre Contact Camp, Pre Contact Isolate, Pre Contact Shell Midden	Ostrich Bay	< 10 feet	Shoreline cut bank	Bremerton West	Alderwood Very Gravelly Sandy Loam
45KP00025	~ 6 miles northeast	Historic Military Properties	Ostrich Bay	~ 10 feet	Shoreline	Bremerton West and East	Alderwood Very Gravelly Sandy Loam
45KP00006	~ 7 miles northeast	Pre Contact Burial, Pre Contact Camp, Pre Contact Isolate, Pre Contact Shell Midden	Ostrich Bay, Mud Bay	< 10 feet	Shoreline	Bremerton West	2. Alderwood Very Gravelly Sandy Loam and 22. Kapowsing Gravelly Loam,
45KP00153	~ 4.5 miles northwest	Historic Railroad Properties	Gold Creek	~ 1,500 feet	floodway	Wildcat Lake	27. Kilchis-Shelton Complex,
45KP00152	~ 5 miles south	Historic Mining Properties	Gold Creek	~ 1,500 feet	floodway	Wildcat Lake	27. Kilchis-Shelton Complex,
45MS00142	~ 5 miles south	Pre Contact Lithic Material	North Bay, Case Inlet	< 10 feet	Shoreline	Belfair	Mc. Mckenna Gravelly Loam,

45MS00107	~ 4.5 miles south	Pre Contact Camp, Pre Contact Lithic Material	North Bay, Case Inlet	~ 0-40 feet	Protected shoreline	Belfair	Eh. Everett Gravelly Sandy Loam
45MS00104	~ 4 miles south	Pre Contact Isolate, Pre Contact Petroglyph	North Bay, Case Inlet	< 10 feet	Shoreline	Belfair	Mc. Mckenna Gravelly Loam,
45MS00005		Pre Contact Shell Midden	North Bay, Case Inlet	~0-15 feet	Shoreline	Belfair	Mf. Mcmurray Peat, Shallow over Gravel
45MS00103		Historic Petroglyph	North Bay, Case Inlet	< 10 feet	Shoreline	Belfair	Eg. Everett Gravelly Sandy Loam

Table 8: Archaeological Survey Reports Elements Detailed

Archaeological Site Smithsonian Number	Acres surveyed	Number of shovel tests	Pedestrian survey intervals of 25 feet or less	vegetation scrapes	Report contains maps that indicate the area surveyed	Maps have the 6 critical elements	Brief description of project location
1339607	< 20	1	Yes	Yes	No	No	Road corridor
1348505	~ .5	2	Yes	No	No	Yes	Road corridor
1352037	~ 62	None	Yes	No	No	Yes	Airport
1340400	< 20	None	Yes	Yes	No	Yes	Terrace overlooking Union River Reservoir
1341003	< 20	None	Yes	Yes	No	Yes	Terrace overlooking Union River Reservoir
1344565	~ 1.5	4	Yes	No	Yes	Yes	Road corridor, area overlooks tidal area
1352767	~ 25	2	Unknown - Transect width not reported	No	Yes	Yes	Road corridor

The jeopardy to the implementers of any of these projects is that it is against state law (see Appendix 2) to disturb archaeological sites in Washington State and the Department of Archaeology and Historic Preservation (DAHP) has begun fining offenders. Agencies that permit land use that result in the disturbance of an archaeological site are responsible for that disturbance. A number of county and municipal governments in this state have found themselves on the receiving end of litigation over disturbances to archaeological sites.

The commonly used practice of requiring archaeological survey early in planning for projects that have proposed ground disturbance provides opportunities to either redesign to avoid or to reduce impacts and follow the process for unavoidable disturbance to an archaeological site.

5.2 Regulatory Environment

There are three overarching regulatory environments within which cultural resources are managed. Many agencies, federal, state or local, have internal policies, but all these policies echo either the Federal Historic Preservation Laws of Section 106 of the National Historic Preservation Act. http://www.achp.gov/docs/nhpa%202008-final.pdf or the Washington State Laws that are attached in Appendix 2 or Executive Order 05-05.

5.2.1 Federal

> **Section 106**
> *[16 U.S.C. 470f — Advisory Council on Historic Preservation, comment on Federal undertakings]*
>
> The head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking in any State and the head of any Federal department or independent agency having authority to license any undertaking shall, prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register. The head of any such Federal agency shall afford the Advisory Council on Historic Preservation established under Title II of this Act a reasonable opportunity to comment with regard to such undertaking.

And it's implementing regulation 36 CFR part 800 Protection of Historic Properties (as amended 2004). The entire 16 page document is available at:
http://www.achp.gov/regs-rev04.pdf

The table of contents from 36 SFR 800 below outlines the process for taking care of the Section 106 responsibilities of any federal agency that would have regulation, review, funding or licensing for projects in the SKIA.

> **Subpart A -- Purposes and Participants**
> 800.1 Purposes.
> 800.2 Participants in the Section 106 process.
> **Subpart B -- The Section 106 Process**
> 800.3 Initiation of the section 106 process.
> 800.4 Identification of historic properties.
> 800.5 Assessment of adverse effects.
> 800.6 Resolution of adverse effects.
> 800.7 Failure to resolve adverse effects.
> 800.8 Coordination with the National Environmental Policy act.
> 800.9 Council review of Section 106 compliance.
> 800.10 Special requirements for protecting National Historic Landmarks.
> 800.11 Documentation standards.
> 800.12 Emergency situations.
> 800.13 Post-review discoveries.
> **Subpart C -- Program Alternatives**

800.14 Federal agency program alternatives.
800.15 Tribal, State and Local Program Alternatives. (Reserved)
800.16 Definitions. Appendix A – Criteria for Council involvement in reviewing individual Section 106 cases

Some of the federal agencies that regularly carry out Section 106 responsibilities in industrial growth areas in Western Washington include:

- The United States Army Corps of Engineers
- Federal Highways Administration (Washington Department of Transportation)
- Department of Agriculture
- Department of the Interior
- Environmental Protection Agency
- National Oceanic and Atmospheric Administration

These agencies have internal protocol to assist their agents in fulfilling their Section 106 responsibilities and have a range of available technical assistance to applicants. Some have full time heritage planners with a background in archaeology, history, architecture or other helpful expertise. The Washington State Department of Archaeology and Historic Preservation has designated reviewers to help with interpreting the requests and requirements of the federal agencies and can provide technical support to both the City of Bremerton and the various investors and developers that SKIA hopes to attract. The main contact at DAHP is Dr. Robert Whitlam 360-586-3080.

The critical steps of fulfilling Section 106 responsibilities are:

1. Identifying if the project is undertaking that could affect historic properties
2. Requesting Area of Potential Effect (APE) concurrence from SHPO – this requires a map and project description
3. Identifying which tribes have an interest in your project – this is usually done with a letter and follow-up phone call.
4. Implement in field identification and evaluation of all historic property types.
5. Carry out and document in person tribal consultation with tribes that have indicated an interest in your project area.
6. Document the determination of no effect to historic properties and request letter from DAHP to finalize the process.

Although each project is reviewed for its own unique suite of characteristics, all project types and historic property types have been managed, many thousands of times. Although the data around cultural resources is protected by strict confidentiality rules (for example archaeological site information is exempt from the Freedom on Information Act). The options for management are common and transparent. It is this history of process that allows land managers to provide some certainty of process for potential investors and developers. One of the key thresholds for all management of cultural resources is that any resource older than 50 years requires some kind of management. Practically speaking, this means pop bottles older than 50 years are going to require, at a minimum, documentation.

5.2.2 State

The Revised Code of Washington has a series of regulations regarding cultural resources and the most common are provided in Appendix 2. These laws are usually referred to if there is no public funding or other state nexus. Executive Order 05-05 is the usual regulatory environment for any project that

does not have federal funding (federal always supersedes state) and has some kind of state funding or regulation. Executive Order 05-05 parallels the federal process and procedures and review are similar in implementation. As with the Section 106 responsibilities, Executive Order 05-05 responsibilities are the same as the list above. With both of these processes the main areas of documentation are around:

1. Identify and evaluate all types of historic properties
2. Carry out and document effective consultation both with tribes and DAHP

Compliance with State Laws require that you first identify all types of historic properties (cultural resources) in your project area and then determine if your project is going to have an effect on this resource. You must take reasonable steps to avoid, minimize disturbance or mitigate. And you must show tribal consultation. Both the state and federal processes mandate documentation for initiation and completion. This documentation is, again, the responsibility of the lead agency. If the project has a funding stream that kicks in the State or Federal responsibilities then the City of Bremerton would then be an interested party. If neither a state nor federal agency has any funding, review, or license issuance, then the City of Bremerton will be responsible to make sure that State Laws are followed with regard to the management of cultural resources.

5.2.3 Local Government

State laws as found in Appendix 2 are only slightly different that the federal law. The state laws do not require cultural resources to reach a threshold of eligible for the National Register of Historic Places to demand management. They are less concerned with the "significance" of a resource and merely require a presence/absence threshold. State Law has a similar rhythm in that the agency responsible for issuing the development permit (regardless of what kind of development) is required to consult with DAHP. To do this, the agency will submit a narrative with a map showing the development area to DAHP and request feedback regarding cultural resources. DAHP will then respond with a letter outlining the additional information they will need and will request copies of correspondence with the affected tribes.

The process ends when a concurrence letter from the DAHP that shows that either there were no historic properties or that there is no effect or there will be Archaeological site disturbance permit application that outlines how the disturbance to properties will be mitigated. There are many ways to speed up the review process for projects. The most important piece is always early consultation so you can help your investor or developer hone their project and keep their paperwork in order.

Short of carrying out a complete identification and evaluation for the SKIA, this would be cost prohibitive, the City of Bremerton can provide guidance documents and protocols that will streamline the process and reduce uncertainties.

Attached in Appendix 1 is a generalized "Unanticipated Discoveries Protocol" (UDP) that can be used by some clients who are in a position where DAHP has not requested a full survey but would like the builder to have a brief training by an archaeologist to recognize when to stop digging. In these cases, the UDP is kept on site during construction and each member of the construction crew is required to attend training on how to implement the plan.

The City of Bremerton can also provide in a monitoring plan template that again can be modified to be used on a project where DAHP has not requested a full survey but is requiring a professional archaeological monitor be on site during construction.

These two options are unlikely to be seen during the first years of SKIA development as DAHP will not have enough local data to make these determinations, but as archaeological surveys are completed and their understanding of precontact land use in SKIA is better understood, the likely hood of UDP options will increase. As more management of cultural resources is carried out in SKIA, the City of Bremerton will want to have a planner who is familiar with the process, language and players in your region. If the City of Bremerton is issuing land use permits they are responsible if an archaeological site is disturbed. This makes any tools that help reduce that likelihood valuable.

Certified Local Government Program:

An additional tool available from the DAHP is the Certified Local Government Program, a relatively new but successful program to help local governments improve their ability to successfully review project proposals. From the DAHP web site:

> Washington State's Certified Local Government (CLG) Program helps local governments to actively participate in preserving Washington's irreplaceable historic and cultural resources as assets for the future. This unique nationwide program of financial and technical assistance was established by the National Historic Preservation Act. In Washington, it is implemented and administered by the Department of Archaeology and Historic Preservation (DAHP). (http://www.dahp.wa.gov/pages/LocalGovernment/LocalGovernmentOverview.htm)

Local governments can engage in a data sharing agreement with DAHP that will provide GIS training and layers to help with the management of archaeological sites and other historic properties. Currently enrolled neighbors include: Mason County, King County, Jefferson County and the City of Bainbridge Island.

Incumbent on the local government is to ensure that the archaeological investigations are in fact providing adequate data to the various reviewers prior to issuing the permit. The Washington DAHP maintains guidelines for archaeological survey and reporting on line.
http://www.dahp.wa.gov/pages/Documents/Archaeology.htm

Both the "Standards for Cultural Resource Reporting" and the "Field Guide to Archaeology" provide local government reviewers with a quick and easy resource to determine whether a submitted technical report has adequately tested and reported on the proposed project.

DAHP also provides Environmental Review guides and the EZ form from their web site.

> The purpose of the EZ forms is to satisfy State and Federal requirements for project compliance reviews in an expeditious manner. Often this compliance is completed by project proponents that are not trained in cultural resources regulations and review requirements such as banking institutions and community service organizations. The EZ forms are for this group only. The EZ forms provide DAHP with the opportunity to catch eligible properties before effects occur. Though the instances are rare, we have identified dozens of historic properties from literally hundreds of EZ forms each year. Those that are determined eligible require additional review, and in many cases, a complete cultural resources survey by a trained professional is required.

- EZ1 (Project Review Sheet)
- DAHP Mitigation Options & Documentation Standards (download pdf file)
- Executive Order 05-05
  - Guidance to EO 05-05
  - Frequently Asked Questions

There are opportunities for the City of Bremerton to reduce the development costs for the investors and developers associated with management of cultural resources by applying for planning grants to design modeling tools to help with the process. These might involve identifying areas that are most likely to be developed first and carrying out limited in field survey to provide a baseline for future studies. There is also the possibility of data sharing with the Suquamish Tribe who has an extensive resource management program and is ready to provide review and feedback to all projects in the ancestral territory of the Suquamish people and that includes the SKIA. Their Tribal Historic Preservation Office (THPO) has extensive information on their Traditional Cultural Properties, Usual and accustomed fishing areas and of course archaeological sites. Some of this information is protected but there is excellent opportunity for data sharing in this case.

5.3 Summary

- Archaeological sites exist in Washington State with site densities that can exceed 1 per acre. Very little of SKIA has been subject to archaeological survey so none of the archaeological sites that lie in this area have been recorded.
- The highest densities of archaeological sites are currently recorded on shorelines, terraces and adjacent to existing or extinct aquatic features. These landforms are common is SKIA.
- Projects with ground disturbance have the potential to impact archaeological sites.
- Agencies that manage land or issue land use permits must ensure that the projects they permit or fund do not disturb archaeological sites.
- There are Federal and State Laws that protect cultural resources. All resources older than 50 years must be evaluated and documented.
- Dr. Robert Whitlam of the Department of Archaeology and Historic Preservation is the primary contact for projects with a federal nexus.
- Having a procedure for identification, evaluation and management options for all historic properties allows investors and developers to reduce their fear and cost exposure.
- Both State and Federal responsibilities to cultural resources (historic properties) are two fold:
  - Identify and evaluate all types of historic properties
  - Carry out effective tribal consultation
- Stephenie Kramer and Gretchen Kaehler are the primary DAHP contacts for State or Local government projects.
- Many tools now exist to help small local government with this task.
- Project proponents (applicants) can be responsible for providing the data to the local government to ensure that their projects will not impact archaeological resources or other historic properties.
- DAHP has a guide to help Local Governments provide adequate review for these technical reports.
- Field testing of projects is most efficiently done during planning. Heritage planning early in the process can help project proponents use their resources efficiently.
- Costs associated with identifying cultural resources can be shared between stakeholders and can be cared out in phases.

- Consultation with affected federally recognized Tribes is the responsibility of the Government. Early, in-person consultation has shown to be the most successful.
- Many Tribes have environmental/cultural review policies that can mesh with state and federal law.

5.4 Recommendations

The following recommendations are based on our archival review of available data for both the archaeological information and our experience with the heritage planning policies and laws prevailing in Washington State. We recommend the City of Bremerton

1. Begin active tribal consultation by determining with a letter and follow up phone call which tribes have an interest in the SKIA.
2. Assign a team to the management of the critical area designation of archaeological sites that can be responsible for the management of the data, consultation with tribes, agencies and developers or investors. This same team could have a member that was actively searching for grants and other funding streams that could begin to provide data to improve the understanding of precontact land use in the SKIA and thereby reduce the jeopardy of developers and investors.
3. Actively seek partners to build their data base of information around cultural resources to identify those geographic areas that provide the most jeopardy for encountering significant resources.
4. Identify ways to piggy back on existing agency protocols or plans and establish relationships that build trust with the agency and tribal reviewers. Trust stimulates growth.
5. Take advantage of the many trainings and workshops on cultural resources in the region that help planners learn from the mistakes of other organizations and see what has been working in other locations in the Puget Sound.
6. Consider a heritage program that helps guide development by incorporating a heritage theme in the SKIA. Heritage themes have funding initiatives both at the federal and state level. They also help build community.
7. Build on the existing communities such as the Airport which likely has a wide interest in history. Most Ports have many avocational "history buffs" and they also have some great documentation as the FAA and its equivalents required drawings and other narratives during past developments. They may have buildings older than 50 years that are ready for documentation and would be a great partner in heritage planning.
8. Start early in creating a protocol/checklist for review of projects that includes a form letter for DAHP so that you get on the top of their list for reviewing. Clear, complete projects are easier and faster to review.

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7.0 APPENDICES

Appendix 1: General Unanticipated Discoveries Protocol

Unanticipated Discoveries Protocol

In the event that any ground-disturbing activities or other project activities related to this development or in any future development uncover protected cultural material (e.g., bones, shell, antler, horn or stone tools), the following actions will be taken:

1. When an unanticipated discovery of protected cultural material (see definitions below) occurs, the contractor will completely secure the location and contact:
    a. The project manager who will contact the:
    b. Project Archaeologist if one has been established ;
    c. The Agency who has issued the land use permit
    d. The Department of Archaeology and Historic Preservation (DAHP) (Robert Whitlam 360-586-3080
    e. The Affected Tribes

All cultural material older than 50 years is required to be evaluated; cultural material that may be protected by law could include but not be limited to:

- Logging, mining, industrial or agriculture equipment (objects or features) older than 50 years; this includes old railroad logging rail beds, dumps or other objects;
- Historic bottles and soldered dot cans; these can be buried or on the surface.
- Buried layers of black soil with layers of shell, charcoal, and fish and mammal bones (**Error! Reference source not found.**, Figure 11). Buried cobbles that may indicate a hearth feature;
- Non natural sediment or stone deposits that may be related to activity areas of people;
- Stone, bone, shell, horn, or antler tools that may include projectile points (arrowheads), scrapers, cutting tools, wood working wedges or axes, and grinding stones (Figure 12);
- Stone tools, weapons or stone flakes from the manufacture of tools or weapons (Figure 13);
- Perennially damp areas may have preservation conditions that allow for remnants of wood and other plant fibers; in these locations there may be remains including fragments of basketry, weaving, wood tools, or carved pieces; and
- Human remains.

Figure 10: Example of two fragments of an antler wedge for the UDP.

Figure 11: Example of protected shell midden in uncovered by machine scrape for UDP.

Figure 12: Example of protected worked bone and spines for UDP.

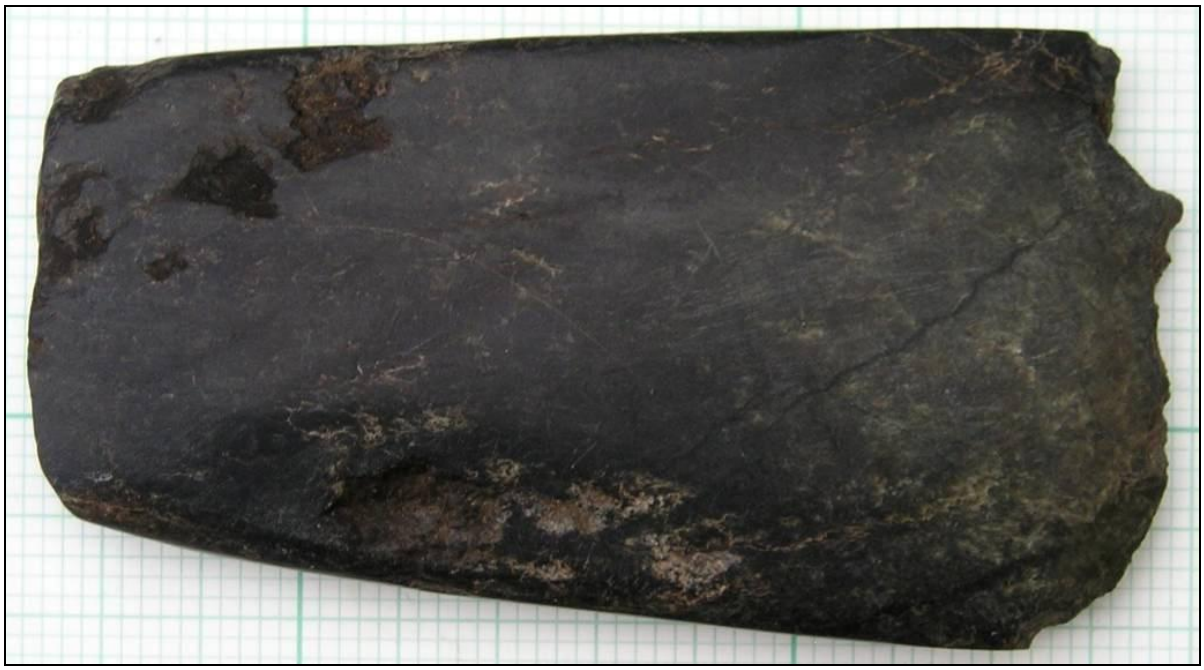


Figure 13: Example of protected adze blade for UDP.

Figure 14: Example of chalcedony pentagonal knife for UDP.

2. Human Remains Protocol

The following Protocol is intended to cover situations in which "inadvertent discovery bones that may be human remains are made and will be followed during all project actions that may result in ground disturbing activity and the inadvertent discoveries.

Any human remains discovered during this project will be treated at all times with dignity and respect.

Upon discovery of bones that may be human remains, whether complete burial or isolated remains and whether intact or fragmentary, the operator shall stop of all construction activities within an area of not less than thirty (30) feet of the remains and:

- the on site superintendent will call the project archaeologist if there is one, to determine whether the bones are human or not and if they are shall Implement reasonable measures to protect the discovery site for evaluation, including stabilization and covering the location appropriate to the site, for example, insure that steel plates or plywood secure the discovery site; If the bone/s are human:

- Take reasonable measures to insure the confidentiality (as per RCW 42.17.310) of the discovery site providing clear statements to the workers to ensure the discovery is not discussed off site; and

- Take reasonable steps to restrict access to the site of discovery;

- The on site project superintendent will call the Kitsap County Sheriff, who will if necessary; contact the Kitsap County Coroner to determine if the human remains are forensic in nature. If law enforcement determines that the discovery is forensic the contractor will work with law enforcement to address the situation.

- If the remains are not forensic in nature, the coroner will then transfer control of the process to the Dr. Guy Tasa, Physical Anthropologist for DAHP who will take responsibility for management of the remains including consultation with the affected Tribes.

If a situation develops, or if a dispute arises about the implementation of any of these procedures, the stakeholders shall work together to address the situation and project activities shall proceed when consensus is reached among the parties. A written document of that consensus will be distributed by the Lead Agency responsible for the land use permit.

If a project is proceeding in the South Kitsap Industrial Area without a land use permit all laws around human remains still apply.

Table 1: Project Contact List

Name	**Affiliation**	**Number**	**Email**
	The Project Proponent		
	Engineering or Design Contact		
	Contractor		

	Lead Agency		
	Kitsap County Sherriff		
	Kitsap County Coroner		
	Affected Tribe		
	Affected Tribe		
Robert Whitlam	State Archaeologist (DAHP)	360-586-3080	Rob.whitlam@dahp.wa.gov
Stephenie Kramer	Assistant State Archaeologist	360-586-3083	Stephenie.kramer@dahp.wa.gov
Guy Tasa	Physical Anthropologist, DAHP	360-586-3534	Guy.tasa@dahp.wa.gov
	Project Archaeologist		

Appendix 2: Selected State Laws Regarding Archaeological Material.

- Executive Order 05-05
  Guidance to EO 05-05
  Frequently Asked Questions

- Indian Graves and Records (RCW 27.44)
- Archaeological Sites and Resources (RCW 27.53)
- Archaeological Excavation and Removal Permit (WAC 25-48)
- Abandoned and Historic Cemeteries and Historic Graves (RCW 68.60)
- Registration of Historic Archaeological Resources on State-Owned Aquatic Lands (WAC 25-46)
- Aquatic Lands - In General (RCW 79.90.565)
- Archaeological Site Public Disclosure Exemption (RCW 42.56.300)
- Discovery of Human Remains (RCW 27.44)
  Guidance to RCW 27.44

27.44.030
The legislature hereby declares that:

(1) Native Indian burial grounds and historic graves are acknowledged to be a finite, irreplaceable, and nonrenewable cultural resource, and are an intrinsic part of the cultural heritage of the people of Washington. The legislature recognizes the value and importance of respecting all graves, and the spiritual significance of such sites to the people of this state;

(2) There have been reports and incidents of deliberate interference with native Indian and historic graves for profit-making motives;

(3) There has been careless indifference in cases of accidental disturbance of sites, graves, and burial grounds;

(4) Indian burial sites, cairns, glyptic markings, and historic graves located on public and private land are to be protected and it is therefore the legislature's intent to encourage voluntary reporting and respectful handling in cases of accidental disturbance and provide enhanced penalties for deliberate desecration.

27.44.040
Protection of Indian graves — Penalty.

(1) Any person who knowingly removes, mutilates, defaces, injures, or destroys any cairn or grave of any native Indian, or any glyptic or painted record of any tribe or peoples is guilty of a class C felony punishable under chapter 9A.20 RCW. Persons disturbing native Indian graves through inadvertence, including disturbance through construction, mining, logging, agricultural activity, or any other activity, shall reinter the human remains under the supervision of the appropriate Indian tribe. The expenses of reinterment are to be paid by the *office of archaeology and historic preservation pursuant to RCW 27.34.220.

(2) Any person who sells any native Indian artifacts or any human remains that are known to have been taken from an Indian cairn or grave, is guilty of a class C felony punishable under chapter 9A.20 RCW.

(3) This section does not apply to:

(a) The possession or sale of native Indian artifacts discovered in or taken from locations other than native Indian cairns or graves, or artifacts that were removed from cairns or graves as may be authorized by RCW 27.53.060 or by other than human action; or

(b) Actions taken in the performance of official law enforcement duties.

(4) It shall be a complete defense in the prosecution under this section if the defendant can prove

by a preponderance of evidence that the alleged acts were accidental or inadvertent and that reasonable efforts were made to preserve the remains, glyptic, or painted records, or artifacts accidentally disturbed or discovered, and that the accidental discovery or disturbance was properly reported.

27.44.055

Skeletal human remains — Duty to notify — Ground disturbing activities — Coroner determination — Definitions.

(1) Any person who discovers skeletal human remains must notify the coroner and local law enforcement in the most expeditious manner possible. Any person knowing of the existence of human remains and not having good reason to believe that the coroner and local law enforcement has notice thereof and who fails to give notice thereof is guilty of a misdemeanor.

(2) Any person engaged in ground disturbing activity and who encounters or discovers skeletal human remains in or on the ground shall:

(a) Immediately cease any activity which may cause further disturbance;

(b) Make a reasonable effort to protect the area from further disturbance;

(c) Report the presence and location of the remains to the coroner and local law enforcement in the most expeditious manner possible; and

(d) Be held harmless from criminal and civil liability arising under the provisions of this section provided the following criteria are met:

(i) The finding of the remains was based on inadvertent discovery;

(ii) The requirements of the subsection are otherwise met; and

(iii) The person is otherwise in compliance with applicable law.

(3) The coroner must make a determination whether the skeletal human remains are forensic or nonforensic within five business days of receiving notification of a finding of such remains provided that there is sufficient evidence to make such a determination within that time period. The coroner will retain jurisdiction over forensic remains.

(a) Upon determination that the remains are nonforensic, the coroner must notify the department of archaeology and historic preservation within two business days. The department will have jurisdiction over such remains until provenance of the remains is established. A determination that remains are nonforensic does not create a presumption of removal or nonremoval.

(b) Upon receiving notice from a coroner of a finding of nonforensic skeletal human remains, the department must notify the appropriate local cemeteries, and all affected Indian tribes via certified mail to the head of the appropriate tribal government, and contact the appropriate tribal cultural resources staff within two business days of the finding. The determination of what are appropriate local cemeteries to be notified is at the discretion of the department. A notification to tribes of a finding of nonforensic skeletal human remains does not create a presumption that the remains are Indian.

(c) The state physical anthropologist must make an initial determination of whether nonforensic skeletal human remains are Indian or non-Indian to the extent possible based on the remains within two business days of notification of a finding of such nonforensic remains. If the remains are determined to be Indian, the department must notify all affected Indian tribes via certified mail to the head of the appropriate tribal government within two business days and contact the appropriate tribal cultural resources staff.

(d) The affected tribes have five business days to respond via telephone or writing to the department as to their interest in the remains.

(4) For the purposes of this section:

(a) "Affected tribes" are:

(i) Those federally recognized tribes with usual and accustomed areas in the jurisdiction where the remains were found;

(ii) Those federally recognized tribes that submit to the department maps that reflect the tribe's geographical area of cultural affiliation; and

(iii) Other tribes with historical and cultural affiliation in the jurisdiction where the remains were found.

(b) "Forensic remains" are those that come under the jurisdiction of the coroner pursuant to RCW 68.50.010.

(c) "Inadvertent discovery" has the same meaning as used in RCW 27.44.040.

(5) Nothing in this section constitutes, advocates, or otherwise grants, confers, or implies federal or state recognition of those tribes that are not federally recognized pursuant to 25 C.F.R. part 83, procedures for establishing that an American Indian group exists as an Indian tribe.

27.53.010

The legislature hereby declares that the public has an interest in the conservation, preservation, and protection of the state's archaeological resources, and the knowledge to be derived and gained from the scientific study of these resources.

27.53.040

Archaeological resources — Declaration.

All sites, objects, structures, artifacts, implements, and locations of prehistorical or archaeological interest, whether previously recorded or still unrecognized, including, but not limited to, those pertaining to prehistoric and historic American Indian or aboriginal burials, campsites, dwellings, and habitation sites, including rock shelters and caves, their artifacts and implements of culture such as projectile points, arrowheads, skeletal remains, grave goods, basketry, pestles, mauls and grinding stones, knives, scrapers, rock carvings and paintings, and other implements and artifacts of any material that are located in, on, or under the surface of any lands or waters owned by or under the possession, custody, or control of the state of Washington or any county, city, or political subdivision of the state are hereby declared to be archaeological resources.

27.53.060

Disturbing archaeological resource or site — Permit required — Conditions — Exceptions — Penalty.

(1) On the private and public lands of this state it shall be unlawful for any person, firm, corporation, or any agency or institution of the state or a political subdivision thereof to knowingly remove, alter, dig into, or excavate by use of any mechanical, hydraulic, or other means, or to damage, deface, or destroy any historic or prehistoric archaeological resource or site, or remove any archaeological object from such site, except for Indian graves or cairns, or any glyptic or painted record of any tribe or peoples, or historic graves as defined in chapter 68.05 RCW, disturbances of which shall be a class C felony punishable under chapter 9A.20 RCW, without having obtained a written permit from the director for such activities.

(2) The director must obtain the consent of the private or public property owner or agency responsible for the management thereof, prior to issuance of the permit. The property owner or agency responsible for the management of such land may condition its consent on the execution of a separate agreement, lease, or other real property conveyance with the applicant as may be necessary to carry out the legal rights or duties of the public property landowner or agency.

(3) The director, in consultation with the affected tribes, shall develop guidelines for the issuance and processing of permits.

(4) Such written permit and any agreement or lease or other conveyance required by any public property owner or agency responsible for management of such land shall be physically present while any such activity is being conducted.

(5) The provisions of this section shall not apply to the removal of artifacts found exposed on the surface of the ground which are not historic archaeological resources or sites.

(6) When determining whether to grant or condition a permit, the director may give great weight to the final record of previous civil or criminal penalties against either the applicant, the parties responsible for conducting the work, or the parties responsible for carrying out the terms and conditions of the permit, either under this chapter or under comparable federal laws. If the director denies a permit, the applicant may request a hearing as provided for in chapter 34.05 RCW.

27.53.090
Violations — Penalty.
Any person, firm, or corporation violating any of the provisions of this chapter shall be guilty of a misdemeanor. Each day of continued violation of any provision of this chapter shall constitute a distinct and separate offense. Offenses shall be reported to the appropriate law enforcement agency or to the director.
27.53.095
Knowing and willful failure to obtain or comply with permit — Penalties.
(1) Persons found to have violated this chapter, either by a knowing and willful failure to obtain a permit where required under RCW 27.53.060 or by a knowing and willful failure to comply with the provisions of a permit issued by the director where required under RCW 27.53.060, in addition to other remedies as provided for by law, may be subject to one or more of the following:

(a) Reasonable investigative costs incurred by a mutually agreed upon independent professional archaeologist investigating the alleged violation;

(b) Reasonable site restoration costs; and

(c) Civil penalties, as determined by the director, in an amount of not more than five thousand dollars per violation.

(2) Any person incurring the penalty may file an application for an adjudicative proceeding and may pursue subsequent review as provided in chapter 34.05 RCW and applicable rules of the department.

(3) Any penalty imposed by final order following an adjudicative proceeding becomes due and payable upon service of the final order.

(4) The attorney general may bring an action in the name of the department in the superior court of Thurston county or of any county in which the violator may do business to collect any penalty imposed under this chapter and to enforce subsection (5) of this section.

(5) Any and all artifacts in possession of a violator shall become the property of the state until proper identification of artifact ownership may be determined by the director.

(6) Penalties overturned on appeal entitle the appealing party to fees and other expenses, including reasonable attorneys' fees, as provided in RCW 4.84.350.
68.60.010
Definitions.
Unless the context clearly requires otherwise, the definitions in this section apply throughout this chapter.

(1) "Abandoned cemetery" means a burial ground of the human dead in [for] which the county assessor can find no record of an owner; or where the last known owner is deceased and lawful conveyance of the title has not been made; or in which a cemetery company, cemetery association, corporation, or other organization formed for the purposes of burying the human dead has either disbanded, been administratively dissolved by the secretary of state, or otherwise ceased to exist, and for which title has not been conveyed.

(2) "Historical cemetery" means any burial site or grounds which contain within them human remains buried prior to November 11, 1889; except that (a) cemeteries holding a valid certificate of authority to operate granted under RCW 68.05.115 and 68.05.215, (b) cemeteries owned or operated by any recognized religious denomination that qualifies for an exemption from real estate taxation under RCW 84.36.020 on any of its churches or the ground upon which any of its churches are or will be built, and (c) cemeteries controlled or operated by a coroner, county, city, town, or cemetery district shall not be considered historical cemeteries.

(3) "Historic grave" means a grave or graves that were placed outside a cemetery dedicated pursuant to this chapter and to chapter 68.24 RCW, prior to June 7, 1990, except Indian graves and burial cairns protected under chapter 27.44 RCW.

(4) "Cemetery" has the meaning provided in RCW 68.04.040(2).

68.60.040

Protection of cemeteries — Penalties.

(1) Every person who in a cemetery unlawfully or without right willfully destroys, cuts, mutilates, effaces, or otherwise injures, tears down or removes, any tomb, plot, monument, memorial, or marker in a cemetery, or any gate, door, fence, wall, post, or railing, or any enclosure for the protection of a cemetery or any property in a cemetery is guilty of a class C felony punishable under chapter 9A.20 RCW.

(2) Every person who in a cemetery unlawfully or without right willfully destroys, cuts, breaks, removes, or injures any building, statuary, ornamentation, tree, shrub, flower, or plant within the limits of a cemetery is guilty of a gross misdemeanor punishable under chapter 9A.20 RCW.

(3) Every person who in a cemetery unlawfully or without right willfully opens a grave; removes personal effects of the decedent; removes all or portions of human remains; removes or damages caskets, surrounds, outer burial containers, or any other device used in making the original burial; transports unlawfully removed human remains from the cemetery; or knowingly receives unlawfully removed human remains from the cemetery is guilty of a class C felony punishable under chapter 9A.20 RCW.

68.60.050

Protection of historic graves — Penalty.

(1) Any person who knowingly removes, mutilates, defaces, injures, or destroys any historic grave shall be guilty of a class C felony punishable under chapter 9A.20 RCW. Persons disturbing historic graves through inadvertence, including disturbance through construction, shall reinter the human remains under the supervision of the department of archaeology and historic preservation. Expenses to reinter such human remains are to be provided by the department of archaeology and historic preservation to the extent that funds for this purpose are appropriated by the legislature.

(2) This section does not apply to actions taken in the performance of official law enforcement duties.

(3) It shall be a complete defense in a prosecution under subsection (1) of this section if the defendant can prove by a preponderance of evidence that the alleged acts were accidental or inadvertent and that reasonable efforts were made to preserve the remains accidentally disturbed or discovered, and that the accidental discovery or disturbance was properly reported.

68.60.055

Skeletal human remains — Duty to notify — Ground disturbing activities — Coroner determination — Definitions.

(1) Any person who discovers skeletal human remains shall notify the coroner and local law enforcement in the most expeditious manner possible. Any person knowing of the existence of skeletal human remains and not having good reason to believe that the coroner and local law enforcement has notice thereof and who fails to give notice thereof is guilty of a misdemeanor.

(2) Any person engaged in ground disturbing activity and who encounters or discovers skeletal human remains in or on the ground shall:

(a) Immediately cease any activity which may cause further disturbance;

(b) Make a reasonable effort to protect the area from further disturbance;

(c) Report the presence and location of the remains to the coroner and local law enforcement in the most expeditious manner possible; and

(d) Be held harmless from criminal and civil liability arising under the provisions of this section provided the following criteria are met:

(i) The finding of the remains was based on inadvertent discovery;

(ii) The requirements of the subsection are otherwise met; and

(iii) The person is otherwise in compliance with applicable law.

(3) The coroner must make a determination whether the skeletal human remains are forensic or nonforensic within five business days of receiving notification of a finding of such remains provided that there is sufficient evidence to make such a determination within that time period. The coroner

will retain jurisdiction over forensic remains.

(a) Upon determination that the remains are nonforensic, the coroner must notify the department of archaeology and historic preservation within two business days. The department will have jurisdiction over such remains until provenance of the remains is established. A determination that remains are nonforensic does not create a presumption of removal or non-removal.

(b) Upon receiving notice from a coroner of a finding of nonforensic skeletal human remains, the department must notify the appropriate local cemeteries, and all affected Indian tribes via certified mail to the head of the appropriate tribal government, and contact the appropriate tribal cultural resources staff within two business days of the finding. The determination of what are appropriate local cemeteries to be notified is at the discretion of the department. A notification to tribes of a finding of such nonforensic skeletal human remains does not create a presumption that the remains are Indian.

(c) The state physical anthropologist must make an initial determination of whether nonforensic skeletal human remains are Indian or non-Indian to the extent possible based on the remains within two business days of notification of a finding of such nonforensic remains. If the remains are determined to be Indian, the department must notify all affected Indian tribes via certified mail to the head of the appropriate tribal government within two business days and contact the appropriate tribal cultural resources staff.

(d) The affected tribes have five business days to respond via telephone or writing to the department as to their interest in the remains.

(4) For the purposes of this section:

(a) "Affected tribes" are:

(i) Those federally recognized tribes with usual and accustomed areas in the jurisdiction where the remains were found;

(ii) Those federally recognized tribes that submit to the department maps that reflect the tribe's geographical area of cultural affiliation; and

(iii) Other tribes with historical and cultural affiliation in the jurisdiction where the remains were found.

(b) "Forensic remains" are those that come under the jurisdiction of the coroner pursuant to RCW 68.50.010.

(c) "Inadvertent discovery" has the same meaning as used in RCW 27.44.040.

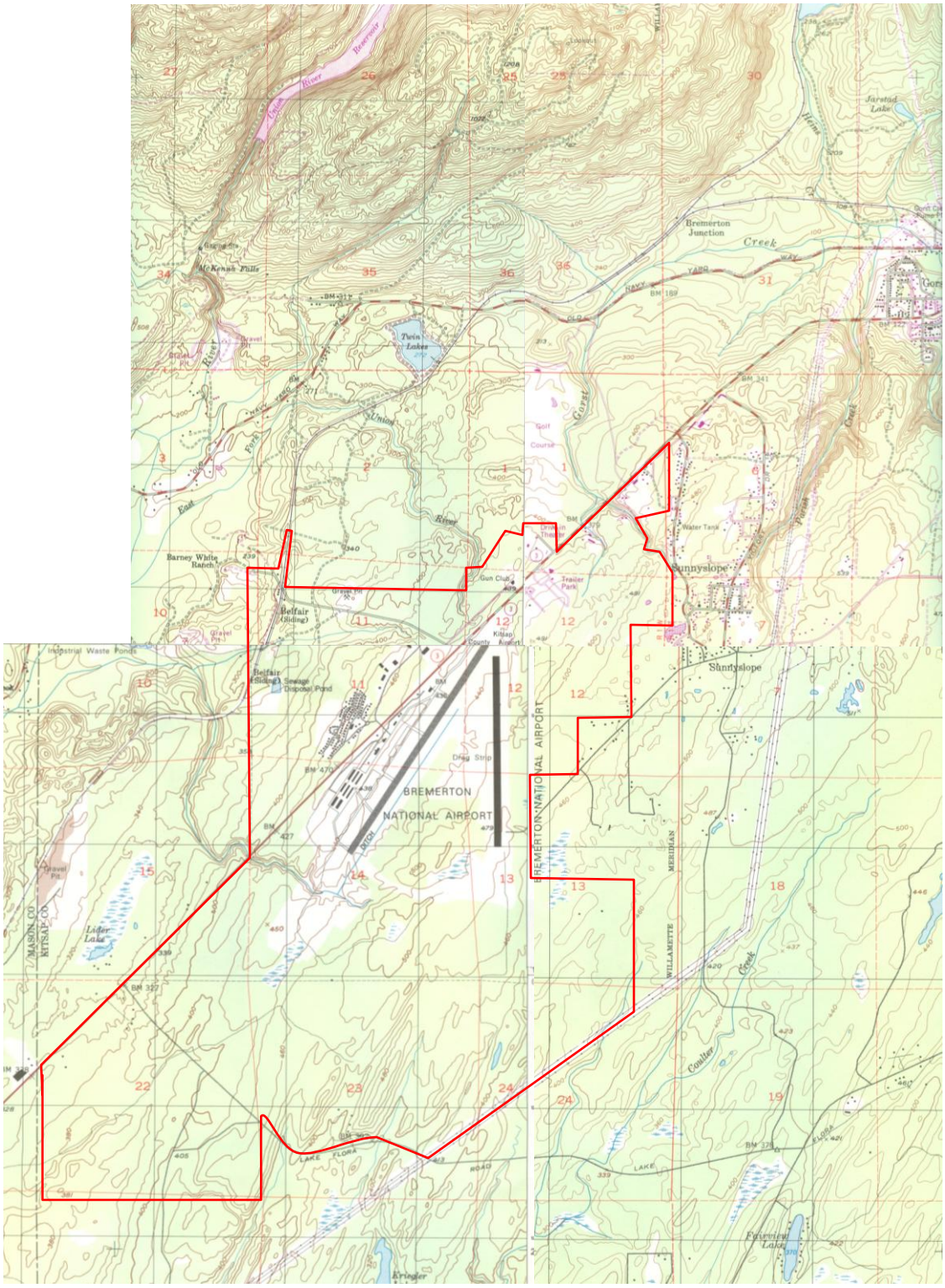
(5) Nothing in this section constitutes, advocates, or otherwise grants, confers, or implies federal or state recognition of those tribes that are not federally recognized pursuant to 25 C.F.R. part 83, procedures for establishing that an American Indian group exists as an Indian tribe.

68.60.060

Violations — Civil liability.

Any person who violates any provision of this chapter is liable in a civil action by and in the name of the department of archaeology and historic preservation to pay all damages occasioned by their unlawful acts. The sum recovered shall be applied in payment for the repair and restoration of the property injured or destroyed and to the care fund if one is established.

Appendix 3: Quad Maps: Belfair, Wildcat Lake, Bremerton West and Burley



Appendix H

Lake Flora Road Intersection LOS: Roundabouts and Traffic Signals

This section details the 2030 LOS Calculation Results for the following intersections analyzed as roundabout and signalized intersections:

- Alternative 2, Lake Flora Road and Area E/F Access Road
- Alternative 2, Lake Flora Road and Cross Skia Connector Road
- Alternative 3, Lake Flora Road and Cross Skia Connector Road

Table H-1 Alternative 2 Trip Generation Rate

SKIA Area	ITE Land Use Code	Employees	PM Peak In Volume	PM Peak Out Volume	Total	Daily
Area A - Industrial Park	130	500	46	184	230	1,670
Area B - Business Park	770	1,500	195	690	885	6,060
Area C - Shopping Center[1]	820	1,200	844	879	1,723	19,838
Area C - Office Park	750	300	18	99	117	1,050
Area D - Business Park	770	400	52	184	236	1,616
Area E - Business Park	770	850	110	392	502	3,434
Area F - Industrial Park	130	1,150	106	423	529	3,841
Area G - Business Park	770	600	78	276	354	2,424
Total Proposed		6,500	1,449	3,127	4,576	39,933

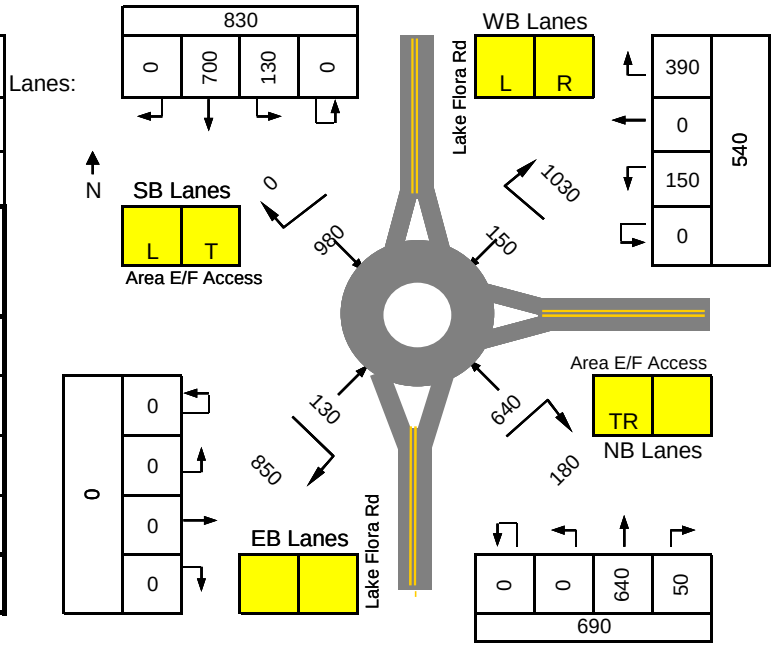
[1] *Assumes 23% Pass-by reduction as discussed in Section 3.6.3*

Table H-2 Alternative 3 Trip Generation Rate

SKIA Area	ITE Land Use Code	Employees	PM Peak In Volume	PM Peak Out Volume	Total	Daily
Area A - Industrial Park	130	1,400	129	515	644	4,676
Area B - Business Park	770	2,200	286	1,012	1,298	8,888
Area C - Business Park	770	1,000	130	460	590	4,040
Area D - Business Park	770	800	104	368	472	3,232
Area E - Business Park	770	1,800	234	828	1,062	7,272
Area F - Industrial Park	130	2,000	184	736	920	6,680
Area G - Business Park	770	800	104	368	472	3,232
Total Proposed		10,000	1,171	4,287	5,458	38,020

ROUNDABOUT OPERATIONS ANALYSIS (NCHRP 572)

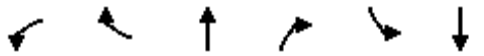
Type of Design		Roundabout with Double-Lane Circulating Roadway						
Period (hr)	0.25		Scenario	2030 Alt 2	E-W	Area E/F Access		
PHF	0.92		Peak Hour	PM	N-S	Lake Flora Rd		
Approach	**Total Volume (pcph)**	**Critical Lane (pcph)**	**Circ. Flow (pcph)**	**Capacity (pcph)**	**v/c**	**Control Delay (sec)**	**LOS**	**Queue** (ft)**
North	690	690	130	1032	0.73	18	B	200
South	830	700	150	1017	0.75	19	B	200
East								
West	540	390	640	722	0.59	17	B	100
All	2060					18	B	



Source: NCHRP 572: Roundabouts in the United States (TRB, 2007)

Does not account for flared entry lanes or pedestrian effects.

*** Assumes a queued vehicle length of 25 feet*



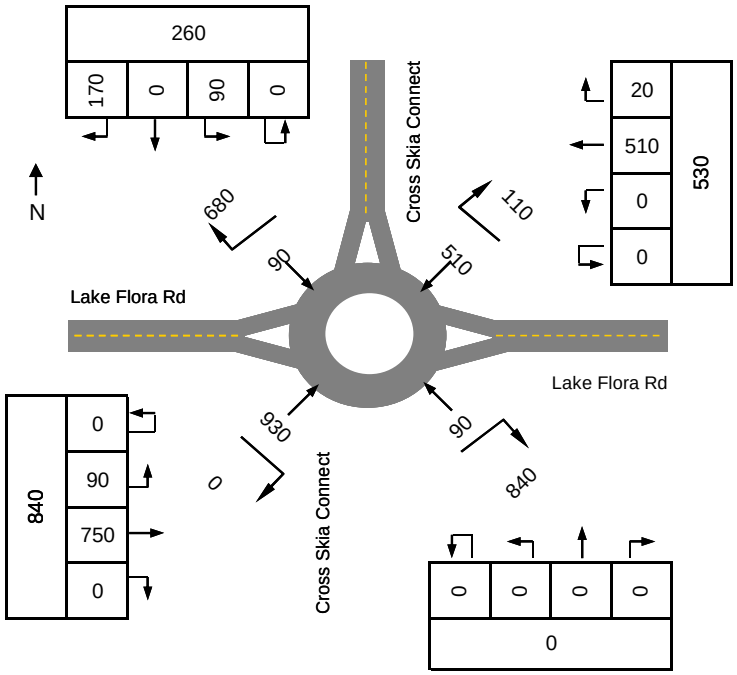
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1541	1378	1706		1541	1731
Flt Permitted	0.95	1.00	1.00		0.30	1.00
Satd. Flow (perm)	1541	1378	1706		480	1731
Volume (vph)	150	390	640	50	130	700
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	424	696	54	141	761
RTOR Reduction (vph)	0	198	2	0	0	0
Lane Group Flow (vph)	163	226	748	0	141	761
Heavy Vehicles (%)	11%	11%	4%	11%	11%	4%
Turn Type		Perm			Perm	
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	20.0	20.0	72.0		72.0	72.0
Effective Green, g (s)	20.0	20.0	72.0		72.0	72.0
Actuated g/C Ratio	0.20	0.20	0.72		0.72	0.72
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	308	276	1228		346	1246
v/s Ratio Prot	0.11		0.44			c0.44
v/s Ratio Perm		c0.16			0.29	
v/c Ratio	0.53	0.82	0.61		0.41	0.61
Uniform Delay, d1	35.8	38.3	7.0		5.5	7.0
Progression Factor	1.00	1.00	1.00		0.95	0.94
Incremental Delay, d2	1.6	17.4	2.3		3.1	2.0
Delay (s)	37.4	55.7	9.2		8.4	8.5
Level of Service	D	E	A		A	A
Approach Delay (s)	50.6		9.2			8.5
Approach LOS	D		A			A

Intersection Summary			
HCM Average Control Delay	19.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

ROUNDABOUT OPERATIONS ANALYSIS (HCM 2000 - AVERAGE VALUES)

Type of Design		Single-Lane Roundabout					
Period (hr)	0.25	Scenario	2030 Alt 2	E-W	Lake Flora Rd		
PHF	0.92	Peak Hour	PM	N-S	Cross Skia Connector		
Approach	**Total Volume (pcph)**	**Circ. Flow (pcph)**	**Capacity (pcph)**	**v/c**	**Control Delay (sec)**	**LOS***	**Queue** (ft)**
North							
South	260	510	832	0.34	12	B	50
East	840	90	1180	0.77	18	C	200
West	530	90	1180	0.49	11	B	75
All	1630				14	B	

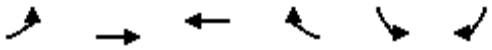


Capacity based on average of upper and lower values provided in Highway Capacity Manual 2000

Does not account for flared entry lanes or pedestrian effects.

** LOS criteria for unsignalized intersections from the Highway Capacity Manual 2000*

*** Assumes a queued vehicle length of 25 feet*



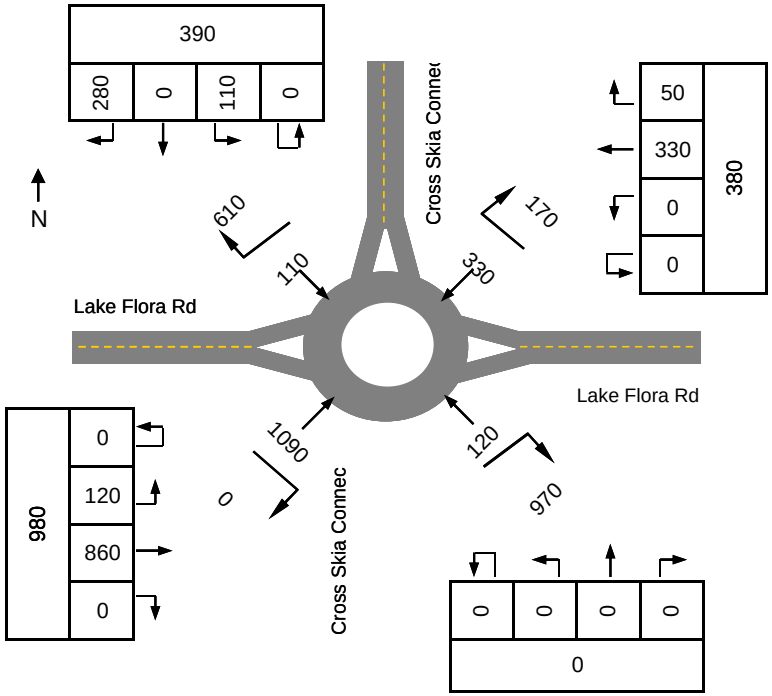
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		1.00	0.99		1.00	0.85
Flt Protected		0.99	1.00		0.95	1.00
Satd. Flow (prot)		1724	1733		1541	1378
Flt Permitted		0.89	1.00		0.95	1.00
Satd. Flow (perm)		1541	1733		1541	1378
Volume (vph)	90	750	510	20	90	170
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	815	554	22	98	185
RTOR Reduction (vph)	0	0	2	0	0	144
Lane Group Flow (vph)	0	913	574	0	98	41
Heavy Vehicles (%)	11%	3%	3%	11%	11%	11%
Turn Type	Perm					Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Actuated Green, G (s)		46.3	46.3		15.7	15.7
Effective Green, g (s)		46.3	46.3		15.7	15.7
Actuated g/C Ratio		0.66	0.66		0.22	0.22
Clearance Time (s)		4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1019	1146		346	309
v/s Ratio Prot			0.33		c0.06	
v/s Ratio Perm		c0.59				0.03
v/c Ratio		0.90	0.50		0.28	0.13
Uniform Delay, d1		9.8	6.0		22.5	21.7
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		10.3	0.3		2.0	0.9
Delay (s)		20.1	6.3		24.5	22.6
Level of Service		C	A		C	C
Approach Delay (s)		20.1	6.3		23.3	
Approach LOS		C	A		C	

Intersection Summary			
HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	91.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

ROUNDABOUT OPERATIONS ANALYSIS (HCM 2000 - AVERAGE VALUES)

Type of Design		Single-Lane Roundabout					
Period (hr)	0.25	Scenario	2030 Alt 3	E-W	Lake Flora Rd		
PHF	0.92	Peak Hour	PM	N-S	Cross Skia Connector		
Approach	**Total Volume (pcph)**	**Circ. Flow (pcph)**	**Capacity (pcph)**	**v/c**	**Control Delay (sec)**	**LOS***	**Queue** (ft)**
North							
South	390	330	967	0.44	12	B	50
East	980	110	1161	0.92	30	D	375
West	380	120	1151	0.36	10	A	50
All	1750				21	C	

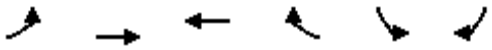


Capacity based on average of upper and lower values provided in Highway Capacity Manual 2000

Does not account for flared entry lanes or pedestrian effects.

** LOS criteria for unsignalized intersections from the Highway Capacity Manual 2000*

*** Assumes a queued vehicle length of 25 feet*



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		1.00	0.98		1.00	0.85
Flt Protected		0.99	1.00		0.95	1.00
Satd. Flow (prot)		1721	1699		1541	1378
Flt Permitted		0.89	1.00		0.95	1.00
Satd. Flow (perm)		1546	1699		1541	1378
Volume (vph)	120	860	330	50	110	280
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	935	359	54	120	304
RTOR Reduction (vph)	0	0	6	0	0	247
Lane Group Flow (vph)	0	1065	407	0	120	57
Heavy Vehicles (%)	11%	3%	3%	11%	11%	11%
Turn Type	Perm					Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Actuated Green, G (s)		65.2	65.2		16.8	16.8
Effective Green, g (s)		65.2	65.2		16.8	16.8
Actuated g/C Ratio		0.72	0.72		0.19	0.19
Clearance Time (s)		4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1120	1231		288	257
v/s Ratio Prot			0.24		c0.08	
v/s Ratio Perm		c0.69				0.04
v/c Ratio		0.95	0.33		0.42	0.22
Uniform Delay, d1		11.0	4.5		32.3	31.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		16.4	0.2		4.4	2.0
Delay (s)		27.4	4.7		36.7	33.0
Level of Service		C	A		D	C
Approach Delay (s)		27.4	4.7		34.1	
Approach LOS		C	A		C	

Intersection Summary			
HCM Average Control Delay	23.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

BREMERTON COMPREHENSIVE PLAN LOS STANDARD

Over the longer term, the GMA requires that the level of transportation investment must keep pace with growth in traffic volumes so that the level of service thresholds established in the transportation element are maintained. The LOS standards recommended for adoption as part of the transportation element are:

Maintain LOS E or better (V/C less than or equal to 1.0) in the SR-303 (Warren/Wheaton) corridor, Kitsap Way (SR 310), Sylvan Way, and on the Manette Bridge.

Maintain LOS D or better (V/C less than or equal to 0.9) on all other arterial streets in the City.

These arterial level of service thresholds will be monitored over time. For locations that may exceed the level of service threshold in the future, a different threshold would need to be established or a specific facility improvement would need to be identified and programmed for funding within six years.

The LOS standards establish the maximum threshold of congestion on each facility. This relates to the concurrency definition in the GMA that requires adequate public facilities (operating better than the LOS standard) to be available when the impacts of development occur. “Concurrent with development” as applied to transportation means that “improvements or strategies are in place at the time of development, or that financial commitment is in place to complete the improvements or strategies within six years.” Therefore, any development within the City or County that would cause a LOS standard to be exceeded could not be approved unless the financial commitment to improve the deficiency was in place within the required six-year timeframe. Level of service would need to be monitored annually to ensure that the LOS standards established would not be exceeded.

Since publication of the 1995 Transportation Element, the Bremerton City Council has adopted a new ordinance that includes a Transportation Development Code (Chapter 11.12). The purpose of the Transportation Development Code is to implement the transportation element of the City Comprehensive Plan, and to provide an orderly process for the adoption, implementation, interpretation and modification of City transportation system development standards. (11.12.020)

The Transportation Development Code gives the City Engineer the authority to request traffic impact analysis reports for proposed development projects if there is reason to believe the impact on the City’s existing or planned future transportation facilities will be significant. The City Engineer shall impose conditions necessary to mitigate all impacts of traffic, circulation and parking resulting from a project. For segments, intersections, or other portions of the street system for which a Level of Service Standard has been adopted, mitigation measures shall be sufficient to assure that such segments, intersections or other portions of the street system continue to meet or exceed the adopted LOS standards after full project occupancy and operation. For segments, intersections or other portions of the street system for where the present LOS is below the adopted standard, the mitigation measure shall be sufficient to maintain or exceed the present LOS. (11.12.060 and 11.12.070)

Trip Generation Rates by Development Alternative

This section provides the trip rates by SKIA Area used for analysis in each of the development alternative scenarios.

Table H-3 Alternative 1 Trip Generation Rate

SKIA Area	ITE Land Use Code	Employees	PM Peak In Volume	PM Peak Out Volume	Total	Daily
Area A - Industrial Park	130	400	37	147	184	1,336
Area B - Industrial Park	130	800	74	294	368	2,672
Area C - Industrial Park	130	50	5	18	23	167
Area D - Industrial Park	130	50	5	18	23	167
Area E - Industrial Park	130	0	0	0	0	0
Area F - Industrial Park	130	0	0	0	0	0
Area G - Industrial Park	130	100	9	37	46	334
Total		1,400	130	514	644	4,676

Table H-4 Alternative 2 Trip Generation Rate

SKIA Area	ITE Land Use Code	Employees	PM Peak In Volume	PM Peak Out Volume	Total	Daily
Area A - Industrial Park	130	500	46	184	230	1,670
Area B - Business Park	770	1,500	195	690	885	6,060
Area C - Shopping Center[1]	820	1,200	844	879	1,723	19,838
Area C - Office Park	750	300	18	99	117	1,050
Area D - Business Park	770	400	52	184	236	1,616
Area E - Business Park	770	850	110	392	502	3,434
Area F - Industrial Park	130	1,150	106	423	529	3,841
Area G - Business Park	770	600	78	276	354	2,424
Total Proposed		6,500	1,449	3,127	4,576	39,933

[1] *Assumes 23% Pass-by reduction as discussed in Section 3.6.3*

Table H-5 Alternative 3 Trip Generation Rate

SKIA Area	ITE Land Use Code	Employees	PM Peak In Volume	PM Peak Out Volume	Total	Daily
Area A - Industrial Park	130	1,400	129	515	644	4,676
Area B - Business Park	770	2,200	286	1,012	1,298	8,888
Area C - Business Park	770	1,000	130	460	590	4,040
Area D - Business Park	770	800	104	368	472	3,232
Area E - Business Park	770	1,800	234	828	1,062	7,272
Area F - Industrial Park	130	2,000	184	736	920	6,680
Area G - Business Park	770	800	104	368	472	3,232
Total Proposed		10,000	1,171	4,287	5,458	38,020