

**SHORELINE AREA:** Bone Creek from SR 9 to ball field access drive just east of trailer park area.

**REACH NUMBER: # 11**

Land Use	Current Shoreline Designation	N/A (Ref # 2)
	Current Land Use	Trailer park, residential, AG (crop). (Ref # 3, 7)
	Zoning	Public, RV park, residential high density; UGA – business traffic-oriented (X ac). (Ref # 2, 16)
Potential Species Present	Wildlife species	None. (Ref # 12)
	Fish species	Coho and cutthroat presence documented. (Ref # 13, 18)
	PHS species/habitat	Wetlands associated with Sumas River (upper basin). Emergent and scrub-shrub wetland provide wildlife habitat and water quality/quantity protection. (Ref # 12)
	TSE species	ESU for coho, fall/winter chum; RU for bull trout (Ref # 13)
	Invasive wildlife/fish species	No data.
Physical Environment	Acres of land in reach	
	Aquatic vegetation	No data.
	Slope	No slope data listed by DOE (Ref # 6). Site class and moderate to high liquefaction hazard listed by Whatcom County (DNR 2004). (Ref # 17)
	Buildings	
	Culverts/stormwater utilities	Two possible (Ref # 3, 7)
	Geology	Glacial outwash. (Ref # 9)
	Tributary Creeks	None. (Ref # 1, 3, 13)
	Impervious surface	
	Roads/transportation	One farm driveway; trailer park access and internal roadways. (Ref # 3, 7)
	Soils	Briscot silt loam, Mt. Vernon fine sandy loam (Ref # 4)
	Topography	35 to 40 feet elevation. (Ref # 6)
	FEMA	100 year floodplain generally confined to ordinary high water mark. (Ref # 1)
	Terrestrial Vegetation	Conditions are mixed. The majority of the reach is lawn or pasture vegetated with native and non-native herbaceous species. Native vegetation (deciduous trees and shrubs) is present in patches. Himalayan blackberry dominates the understory/ stream banks for much of this reach. Other invasive species were observed (Ref # 3)
Riparian Function	Aquatic substrate type	No data
	Channel confinement	Confined within bank-full width, unconfined in basin due to topography. (Ref # 3, 6)
	Channel gradient	No data. (Ref # 13)
	Channel migration zone	Unknown.
	Creosote structures	No data/ none observed (Ref # 3, 7)
	In-water structures	No data/ none observed (Ref # 3, 7)
	Fish passage blockages	None. (Ref # 13)
	LWD presence	None observed. Tree cover along the shoreline is low to moderate. Recruitment potential is low. (Ref #3, 7)
	Riffle/pool analysis	No data
	DOE 303(d)	None listed. (Ref # 10)
	Toxic sites/land fills	None listed. (Ref # 6, 8)

**SHORELINE AREA:** Bone Creek from SR 9 to ball field access drive just east of trailer park area.

**REACH NUMBER: # 11**

	Point source pollution	Agriculture, urban density trailer park. (Ref # 7)
Historic & Cultural	Historic aerials	None available on-line. Presume geomorphology has been stable for several decades.
	Archeological sites	None indicated. (Ref # 5)
	Historic sites	None indicated. (Ref # 5)
	Parks & public access	None. (Ref # 1)
Function Analysis	<b>Reach Function</b> <ul style="list-style-type: none"> <li>Hydrologic</li> <li>Shoreline Vegetation</li> <li>Habitat</li> </ul>	<p>Functioning with impairments. Rainfall dominated; flashy winter and early spring peaks, low summer, variable spring and fall flows. Impairment in basin due to loss of wetland area, draining, filling, ditching and removal of vegetation for agriculture.</p> <p>Generally impaired; restoration along portion of reach, patches of native trees and shrubs are spotty. Agriculture and trailer park land uses have lead to degradation of vegetation.</p> <p>Terrestrial: Impaired; some restoration along creek will provide improved habitat in the future.</p> <p>Aquatic: Functioning, with impairments.</p>
	<b>Limiting Factors</b>	<ul style="list-style-type: none"> <li>Existing land uses</li> <li>Water quality</li> <li>Zoning</li> </ul>
	<b>Functions</b> <ul style="list-style-type: none"> <li>Sustainable</li> <li>Not Sustainable</li> </ul>	<p>Sustainable at current levels: hydrologic, shoreline vegetation, and terrestrial &amp; aquatic habitat. However, sustainability affected by private property ownership.</p> <p>Terrestrial habitat likely not sustainable in majority of reach due to land uses.</p>
	<b>Priority Actions</b>	<ul style="list-style-type: none"> <li>Water quality improvement.</li> </ul>
	<b>Current Enhancement Projects</b>	Wetland/riparian enhancement project at southwestern end of reach.
	<b>Preservation/Enhancement Opportunities</b>	<ul style="list-style-type: none"> <li>Preservation of terrestrial vegetation, habitat and associated corridors. Particularly riparian corridors.</li> <li>Enhance riparian buffer: increase width and species diversity of native shoreline vegetation.</li> <li>Remove invasive plant material (Himalayan blackberry, yellow flag iris).</li> <li>Fish usage is documented; habitat enhancement could be a opportunity target.</li> </ul>





# CITY OF SUMAS, WA

## Shoreline Jurisdiction

### Reach 11

Sehome Planning & Development



Data Sources: Whatcom County Planning, Pictometry 2008, & the City of Sumas GIS.

Projection: UTM Zone 10 NAD83

1 inch = 200 feet

0 100 200 Feet



**SHORELINE AREA:** Bone Creek from ball field access drive just east of trailer park area to Sumas River.

**REACH NUMBER: # 12**

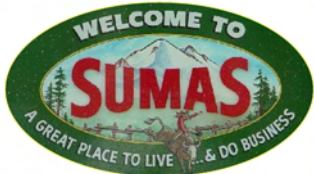
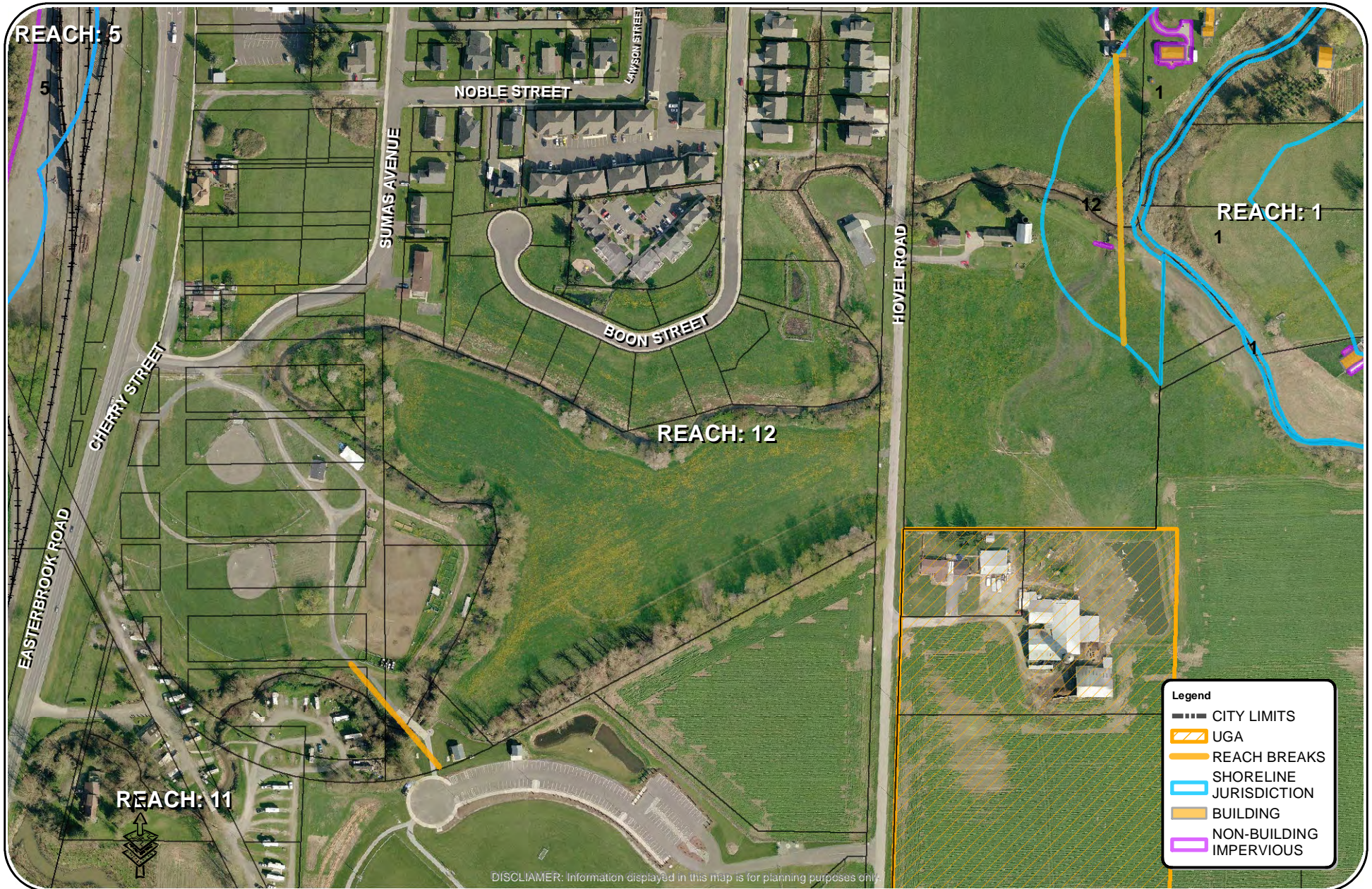
Land Use	Current Shoreline Designation	N/A (Ref # 2)
	Current Land Use	Residential, AG (crop), public recreation. (Ref # 3, 7)
	Zoning	Residential medium density (0.9 ac), Residential high density (0.8 ac). (Ref # 2, 16)
Potential Species Present	Wildlife species	None. (Ref # 12)
	Fish species	Coho and cutthroat presence documented. (Ref # 13, 18)
	PHS species/habitat	Wetlands associated with Sumas River (upper basin). Emergent and scrub-shrub wetland provide wildlife habitat and water quality/quantity protection. (Ref # 12)
	TSE species	ESU for coho, fall/winter chum; RU for bull trout (Ref # 13)
	Invasive wildlife/fish species	No data.
Physical Environment	Acres of land in reach	1.7 acres of buffer (Sumas River) (Ref #1)
	Aquatic vegetation	No data.
	Slope	No slope data listed by DOE (Ref # 6). Site class and moderate to high liquefaction hazard listed by Whatcom County (DNR 2004). (Ref # 17)
	Buildings	None.
	Culverts/stormwater utilities	No data. Culvert under Hovel Road (Ref # 3, 7)
	Geology	Glacial outwash. (Ref # 9)
	Tributary Creeks	None. (Ref # 1, 3, 13)
	Impervious surface	Negligible.
	Roads/transportation	One foot bridge. (Ref # 3, 7)
	Soils	Mt. Vernon find sandy loam (Ref # 4)
	Topography	35 to 40 feet elevation. (Ref # 6)
	FEMA	100 year floodplain generally confined to ordinary high water mark. (Ref # 1)
	Terrestrial Vegetation	Approximately half of the reach is characterized by native deciduous trees and shrubs. The remainder of the reach is pasture/agricultural land – these areas are vegetated with native and non-native herbaceous species. Multiple invasive species observed, and Himalayan blackberry dominates understory throughout the reach. Vegetation provides 80-100% cover to stream along southern end, northern end has no cover. (Ref # 3)
Riparian Function	Aquatic substrate type	No data.
	Channel confinement	Confined within bank-full width, unconfined in basin due to topography. (Ref # topo, observation)
	Channel gradient	No data. (Ref # 13)
	Channel migration zone	Unknown.
	Creosote structures	No data/ none observed (Ref # 3, 7)
	In-water structures	No data/ none observed (Ref # 3, 7)
	Fish passage blockages	Non-barrier at Hovel Road. (Ref # 13)
	LWD presence	Some woody debris observed from pedestrian bridge at southern end of reach. Tree cover along the shoreline is low to moderate. Recruitment potential is low to moderate. (Ref # 3)
	Riffle/pool analysis	No data
	DOE 303(d)	None listed. (Ref # 10)

**SHORELINE AREA:** Bone Creek from ball field access drive just east of trailer park area to Sumas River.

**REACH NUMBER: # 12**

	Toxic sites/land fills	None listed. (Ref # 8)
	Point source pollution	Urban density residential uses, light agriculture, recreation. (Ref # 7)
Historic & Cultural	Historic aerials	None available on-line. Presume geomorphology has been stable for several decades.
	Archeological sites	None indicated. (Ref # 5)
	Historic sites	None indicated. (Ref # 5)
	Parks & public access	Southern portion of reach is public park, planned trail system. (Ref # 2)
Function Analysis	<b>Reach Function</b> <ul style="list-style-type: none"> <li>Hydrologic</li> <li>Shoreline Vegetation</li> <li>Habitat</li> </ul>	<p>Functioning with impairments. Rainfall dominated; flashy winter and early spring peaks, low summer, variable spring and fall flows. Impairment in basin due to loss of wetland area, draining, filling, ditching and removal of vegetation for agriculture.</p> <p>Generally impaired; areas of native trees and shrubs in southwest portion of reach providing habitat and creek cover. Degraded in northeastern half of reach adjacent to agriculture and new residential development where there is no cover for creek.</p> <p>Terrestrial: Impaired; some opportunity for improvement (agriculture areas).</p> <p>Aquatic: Functioning, with impairments.</p>
	<b>Limiting Factors</b>	<ul style="list-style-type: none"> <li>Existing land uses</li> <li>Water quality</li> <li>Zoning</li> </ul>
	<b>Functions</b> <ul style="list-style-type: none"> <li>Sustainable</li> <li>Not Sustainable</li> </ul>	<p>Sustainable at current levels: hydrologic, shoreline vegetation, and terrestrial &amp; aquatic habitat. However, sustainability affected by private property ownership.</p> <p>Terrestrial habitat likely not sustainable in portions of reach due to land uses (residential).</p>
	<b>Priority Actions</b>	<ul style="list-style-type: none"> <li>Preservation of riparian corridor.</li> <li>Water quality improvement.</li> </ul>
	<b>Current Enhancement Projects</b>	None known.
	<b>Preservation/Enhancement Opportunities</b>	<ul style="list-style-type: none"> <li>Preservation of terrestrial vegetation, habitat and associated corridors. Particularly riparian corridors.</li> <li>Enhance riparian buffer: increase width of native shoreline vegetation in pasture areas, increase species diversity, plantings on banks to provide shading.</li> <li>Removal of invasive species (Himalayan blackberry).</li> <li>Fish usage is documented; habitat enhancement could be a opportunity target.</li> </ul>





# CITY OF SUMAS, WA

## Shoreline Jurisdiction

### Reach 12

Sehome Planning & Development

**Wilson**  
SURVEY/ENGINEERING

Data Sources: Whatcom County Planning, Pictometry 2008, & the City of Sumas GIS.

Projection: UTM Zone 10 NAD83

1 inch = 300 feet

0 150 300 Feet



**SHORELINE AREA:** Ditch, seasonal drainage and wetland system that drains into Sumas Creek.

**REACH NUMBER: # 13**

Land Use	Current Shoreline Designation	N/A. Upper portion of reach designated as natural system protection area in Comp Plan. (Ref # 2)
	Current Land Use	Ag, industrial. (Ref # 3, 7)
	Zoning	Industrial. (Ref # 2, 16)
Potential Species Present	Wildlife species	None. (Ref # 12)
	Fish species	None listed. (Ref # 13)
	PHS species/habitat	In western most portion of reach: wetlands associated with Sumas River (upper basin). Emergent and scrub-shrub wetland provide wildlife habitat and water quality/quantity protection. (Ref # 12)
	TSE species	ESU for coho, fall/winter chum; RU for bull trout (Ref # 13)
	Invasive wildlife/fish species	No data.
Physical Environment	Acres of land in reach	
	Aquatic vegetation	N/A
	Slope	No slope data listed by DOE (Ref # 6). Site class and moderate to high liquefaction hazard listed by Whatcom County (DNR 2004). (Ref # 17)
	Buildings	
	Culverts/stormwater utilities	No data. Culvert under industrial parcel between Bob Mitchell Way and railroad (Ref # 3).
	Geology	Glacial outwash. (Ref # 9)
	Tributary Creeks	N/A
	Impervious surface	
	Roads/transportation	Industrial park and development. (Ref # 3, 7)
	Soils	Puget silt loam; Sumas silt loam (Ref # 4)
	Topography	Approximately elevation is 40 feet. (Ref # 6)
	FEMA	Entire area within the 100 year floodplain. (Ref # 1)
	Terrestrial Vegetation	The majority of the reach (13A and B) is dominated by pasture (reed canarygrass). A limited number of native deciduous trees and shrubs are present just east of Bob Mitchell Way. Much of the area south of 13A is agriculture (crop). Majority of channels appear ditched, and have no cover (Ref # 3)
Riparian Function	Aquatic substrate type	N/A
	Channel confinement	N/A
	Channel gradient	N/A
	Channel migration zone	N/A
	Creosote structures	N/A
	In-water structures	N/A
	Fish passage blockages	N/A
	LWD presence	N/A
	Riffle/pool analysis	N/A
	DOE 303(d)	None listed (Ref # 10)
	Toxic sites/land fills	
	Point source pollution	

**SHORELINE AREA:** Ditch, seasonal drainage and wetland system that drains into Sumas Creek.

**REACH NUMBER: # 13**

Historic & Cultural	Historic aerials	None available on-line. Presume geomorphology has been stable for several decades.
	Archeological sites	None indicated. (Ref # 5)
	Historic sites	None indicated. (Ref # 5)
	Parks & public access	Trail planned along Halverstick Road. (Ref # 2)
Function Analysis	<b>Reach Function</b> <ul style="list-style-type: none"> <li>•</li> </ul>	<p>A wetland system is located in this area of the city, which is zoned for, and is being used for, industrial purposes. The system is draining to the east, into Johnson Creek, via a man-made ditch. Much of the wetland system remains in tack but is degraded, as it has been converted to active, or currently fallow, pasture land. Forested wetland still remains in the western area of the reach. This system still provides good water quality functions and hydrologic functions (flood attenuation, water storage and base flow) to downstream areas, which include fish habitat. Habitat functions vary throughout the system, but is generally low in the reach as defined for this review.</p> <p>Functions in this system could be enhanced in areas that have not been developed. This system should be considered very important for its current functional level and for the potential this area holds, particularly with the loss of wetlands in the watershed.</p>
	<b>Limiting Factors</b>	<ul style="list-style-type: none"> <li>▪ Zoning</li> </ul>
	<b>Functions</b> <ul style="list-style-type: none"> <li>• Sustainable</li> <li>• Not Sustainable</li> </ul>	
	<b>Priority Actions</b>	<ul style="list-style-type: none"> <li>▪ Wetland preservation</li> </ul>
	<b>Current Enhancement Projects</b>	None known. Upper portion of reach designated as natural system protection area in Comp Plan.
	<b>Preservation/Enhancement Opportunities</b>	<ul style="list-style-type: none"> <li>▪ Wetland restoration/ enhancement opportunities.</li> </ul>





# CITY OF SUMAS, WA

## Shoreline Jurisdiction

### Reach 13A

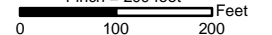
Sehome Planning & Development



Data Sources: Whatcom County Planning, Pictometry 2008, & the City of Sumas GIS.

Projection: UTM Zone 10 NAD83

1 inch = 200 feet







# CITY OF SUMAS, WA

## Shoreline Jurisdiction

### Reach 13B

Sehome Planning & Development



Data Sources: Whatcom County Planning, Pictometry 2008, & the City of Sumas GIS.

Projection: UTM Zone 10 NAD83

1 inch = 200 feet

0 100 200 Feet

Land Use	Current Shoreline Designation	N/A
	Current Land Use	AG (crop). (Ref # 3, 7)
	Zoning	AG, industrial. Also designated as natural system protection area in Comp Plan, (Ref # 2, 16)
Potential Species Present	Wildlife species	None. (Ref # 12)
	Fish species	Coho, chum and cutthroat presence documented. (Ref # 13, 18)
	PHS species/habitat	Priority fish presence. (Ref # 12)
	TSE species	ESU for coho, fall/winter chum; RU for bull trout (Ref # 13)
	Invasive wildlife/fish species	No data.
Physical Environment	Acres of land in reach	
	Aquatic vegetation	No data.
	Slope	No slope data listed by DOE (Ref # 6). Site class and moderate to high liquefaction hazard listed by Whatcom County (DNR 2004). (Ref # 17)
	Buildings	
	Culverts/stormwater utilities	Three known. (Ref # 13).
	Geology	Glacial outwash. (Ref # 9)
	Tributary Creeks	Multiple ditches drains the adjacent wetland into the stream (Ref # 1, 3, 13)
	Impervious surface	
	Roads/transportation	Arterial access along creek (Kneuman Road). (Ref # 3, 7)
	Soils	Pangborn muck (Ref # 4)
	Topography	Approximate elevation is 40 feet. (Ref # 6)
	FEMA	Entire reach is in the 100 year floodplain. (Ref # 1)
	Terrestrial Vegetation	The stream is located in a ditch along the south side of Kneuman Road. Vegetation south of the stream is characterized as pasture/agricultural land – these areas are vegetated with native and non-native herbaceous species. A single row of native trees is present along the stream (restoration plantings) (Ref # 3)
Riparian Function	Aquatic substrate type	No data.
	Channel confinement	Confined in ditch, adjacent to drained field/wetland area. (Ref # 3)
	Channel gradient	Low, based upon topography. (Ref # 3)
	Channel migration zone	Unknown.
	Creosote structures	No data/ none observed (Ref # 3, 7)
	In-water structures	No data/ none observed (Ref # 3, 7)
	Fish passage blockages	Three non-barriers within reach. Partial barrier west of city limits. (Ref # 13)
	LWD presence	None observed. Tree cover is low. Recruitment potential is low. (Ref # 3, 7)
	Riffle/pool analysis	No data.
	DOE 303(d)	Category 4A for fecal and DO (TMDL approved by EPA). (Ref # 10)
	Toxic sites/land fills	None listed. (Ref # 6, 8)
	Point source pollution	Agriculture, mainly crop land, located in the upper watershed. (Ref # 3, 7)



Historic & Cultural	Historic aerials	None available on-line. Presume geomorphology has been stable for several decades.
	Archeological sites	None indicated. (Ref # 5)
	Historic sites	None indicated. (Ref # 5)
	Parks & public access	Sytsma wetland parcel and easement. (Ref # 1)
Function Analysis	<b>Reach Function</b> <ul style="list-style-type: none"> <li>Hydrologic</li> <li>Shoreline Vegetation</li> <li>Habitat</li> </ul>	<p>Functioning with impairments. Groundwater dominated along with rainfall; flashy winter and early spring peaks, low summer, variable spring and fall flows. Impairment in basin due to loss of wetland area, draining, filling, ditching and removal of vegetation for agriculture. Wetland to the south has been trenched in several places, with water from the wetland draining directly into Sumas Creek.</p> <p>Impaired, however, trees have been planted directly adjacent to the south side of the ditch; Kneuman Road is on the north side. The remainder of the shoreline buffer is fallow agriculture.</p> <p>Terrestrial: Impaired; potential for enhancement.</p> <p>Aquatic: Impaired.</p> <p>As with Reach 13, the wetland systems associated with Sumas Creek are important for the functions they currently provided and for their rehabilitation potential; particularly in this reach as the wetland soils are organic in composition (see also discussion on Reach 13 data sheet).</p>
	<b>Limiting Factors</b>	<ul style="list-style-type: none"> <li>Zoning</li> <li>Water quality</li> </ul>
	<b>Functions</b> <ul style="list-style-type: none"> <li>Sustainable</li> <li>Not Sustainable</li> </ul>	Sustainable at current levels: hydrologic, shoreline vegetation, and terrestrial & aquatic habitat. However, sustainability affected by private property ownership.
	<b>Priority Actions</b>	<ul style="list-style-type: none"> <li>Wetland preservation and rehabilitation.</li> </ul>
	<b>Current Enhancement Projects</b>	Native plantings (trees and shrubs) along ditch. Designated as natural system protection area in Comp Plan.
	<b>Preservation/Enhancement Opportunities</b>	<ul style="list-style-type: none"> <li>Enhance riparian buffer: increase width of native shoreline vegetation in pasture areas.</li> <li>Wetland restoration/ enhancement.</li> </ul>





# CITY OF SUMAS, WA

## Shoreline Jurisdiction

### Reach 14

Sehome Planning & Development

**Wilson**  
SURVEY/ENGINEERING

Data Sources: Whatcom County Planning,  
Pictometry 2008, & the City of Sumas GIS.

Projection: UTM Zone 10 NAD83

1 inch = 300 feet

0 150 300 Feet



**SHORELINE AREA:** Sumas Creek from ditch at Kneuman Road to Bob Mitchell Way.

**REACH NUMBER: # 15**

Land Use	Current Shoreline Designation	N/A
	Current Land Use	Undeveloped parcels, industrial. (Ref # 3, 7)
	Zoning	Industrial and public). (Ref # 2, 16). Also designated as natural system protection area in Comp Plan.
Potential Species Present	Wildlife species	None. (Ref # 12)
	Fish species	Coho, chum and cutthroat presence documented. (Ref # 13, 18)
	PHS species/habitat	Priority fish presence. (Ref # 12)
	TSE species	ESU for coho, fall/winter chum; RU for bull trout (Ref # 13)
	Invasive wildlife/fish species	No data.
Physical Environment	Acres of land in reach	
	Aquatic vegetation	No data.
	Slope	No slope data listed by DOE (Ref # 6). Site class and moderate to high liquefaction hazard listed by Whatcom County (DNR 2004). (Ref # 17)
	Buildings	
	Culverts/stormwater utilities	No data. Culvert observed at western terminus (at farm residence). (Ref #3)
	Geology	Glacial outwash. (Ref # 9)
	Tributary Creeks	None. (Ref # 1, 3, 13)
	Impervious surface	
	Roads/transportation	Kneuman Road at western terminus, Bob Mitchell Way at eastern terminus of reach; railroad spur south of reach. (Ref # 3, 7)
	Soils	Briscot silt loam; Pangborn muck (Ref # 4)
	Topography	35 to 40 feet elevation. (Ref # 6)
	FEMA	100 year floodplain generally confined to ordinary high water mark. (Ref # 1)
	Terrestrial Vegetation	The majority of the reach is characterized by native deciduous trees and shrubs. Native vegetation present has the potential to provide good habitat. Patches of Himalayan blackberry also observed. The area of the reach south of the railroad is paved, with the exception of a small shrub wetland. (Ref # 3)
Riparian Function	Aquatic substrate type	No data.
	Channel confinement	Unknown, no data. (Ref # 13)
	Channel gradient	Low. (Ref # 3)
	Channel migration zone	Unknown.
	Creosote structures	No data/ none observed (Ref # 3, 7)
	In-water structures	No data/ none observed (Ref # 3, 7)
	Fish passage blockages	One non-barrier within reach. (Ref # 13)
	LWD presence	No data. Mostly shrubs and small trees in reach, some larger trees also present – recruitment potential low to moderate. (Ref # 3, 7)
	Riffle/pool analysis	No data.
	DOE 303(d)	Category 4A for fecal and DO (TMDL approved by EPA). (Ref # 10)
	Toxic sites/land fills	None listed. (Ref # 8)
	Point source pollution	Agriculture, mainly crop land, located in the upper watershed; railroad spur south of reach. (Ref # 3, 7)



**SHORELINE AREA:** Sumas Creek from ditch at Kneuman Road to Bob Mitchell Way.

**REACH NUMBER: # 15**

Historic & Cultural	Historic aerials	None available on-line. Presume geomorphology has been stable for several decades.
	Archeological sites	None indicated. (Ref # 5)
	Historic sites	None indicated. (Ref # 5)
	Parks & public access	Public zoning eastern most portion of reach adjacent to Bob Mitchell Way. (Ref # 2)
Function Analysis	<b>Reach Function</b> <ul style="list-style-type: none"> <li>Hydrologic</li> <li>Shoreline Vegetation</li> <li>Habitat</li> </ul>	<p>Functioning with impairments. Groundwater dominated along with rainfall; flashy winter and early spring peaks, low summer, variable spring and fall flows. Impairment in basin due to loss of wetland area, draining, filling, ditching and removal of vegetation for agriculture.</p> <p>Functioning, with some impairments. West portion of reach is degraded and dominated by non-native grasses and shrubs (agriculture use). Increasing amounts of trees and shrubs in the eastern portion provides more habitat and better cover for creek, although non-natives are likely present.</p> <p>Terrestrial: Functioning, with impairments. Some areas degraded; some native trees and shrub areas within reach. Function limited by industry to south and road to north.</p> <p>Aquatic: Functioning, with impairments.</p>
	<b>Limiting Factors</b>	<ul style="list-style-type: none"> <li>Zoning</li> <li>Water quality</li> </ul>
	<b>Functions</b> <ul style="list-style-type: none"> <li>Sustainable</li> <li>Not Sustainable</li> </ul>	Sustainable at current levels: hydrologic, shoreline vegetation, and terrestrial & aquatic habitat. However, sustainability affected by private property ownership.
	<b>Priority Actions</b>	<ul style="list-style-type: none"> <li>Preservation of riparian corridor.</li> </ul>
	<b>Current Enhancement Projects</b>	None known. Designated as natural system protection area in Comp Plan.
	<b>Preservation/Enhancement Opportunities</b>	<ul style="list-style-type: none"> <li>Preservation of terrestrial vegetation, habitat and associated corridors. Particularly riparian corridors.</li> <li>Enhance riparian buffer: increase shading at western end by installing plants on the banks.</li> <li>Removal of invasive species (Himalayan blackberry).</li> </ul>



# CITY OF SUMAS, WA

## Shoreline Jurisdiction

### Reach 15



Land Use	Current Shoreline Designation	N/A
	Current Land Use	Residential, undeveloped parcels, industrial, AG. (Ref # 3, 7)
	Zoning	Industrial, business general and public. (Ref # 2, 16) Portions of reach designated as natural system protection area in Comp Plan.
Potential Species Present	Wildlife species	None. (Ref # 12)
	Fish species	Coho, chum and cutthroat presence documented. (Ref # 13, 18)
	PHS species/habitat	Priority fish presence. (Ref # 12)
	TSE species	ESU for coho, fall/winter chum; RU for bull trout (Ref # 13)
	Invasive wildlife/fish species	No data.
Physical Environment	Acres of land in reach	
	Aquatic vegetation	No data
	Slope	No slope data listed by DOE (Ref # 6). Site class and moderate to high liquefaction hazard listed by Whatcom County (DNR 2004). (Ref # 17)
	Buildings	
	Culverts/stormwater utilities	No data. Culvert observed under West Third Street, West Second Street, Johnson Street, and Bob Mitchell Way (Ref # 3).
	Geology	Glacial outwash. (Ref # 9)
	Tributary Creeks	None. (Ref # 1, 3, 13)
	Impervious surface	
	Roads/transportation	Three access arterials (Johnson, W. Second, W. Third Streets); Bob Mitchell Way at western terminus, railroad tracks at eastern terminus of reach. (Ref # 3, 7)
	Soils	Brisco silt loam; Puget silt loam (Ref # 4)
	Topography	35 to 40 feet elevation. (Ref # 6)
	FEMA	Entire reach is in the 100 year floodplain. (Ref # 2)
	Terrestrial Vegetation	The majority of the reach is characterized by native deciduous trees and shrubs. However, large patches of Himalayan blackberry and reed canarygrass are also present along the reach. Knotweed was also observed south of West Third Street (Ref # 3)
Riparian Function	Aquatic substrate type	No data.
	Channel confinement	Unknown, no data. (Ref # 13)
	Channel gradient	Low. (Ref # 3)
	Channel migration zone	Unknown.
	Creosote structures	No data/ none observed (Ref # 3, 7)
	In-water structures	No data/ none observed (Ref # 3, 7)
	Fish passage blockages	Non-barrier at RR and none at additional road crossings. (Ref # 13)
	LWD presence	No data. Low recruitment potential, mostly shrubs and small trees. (Ref # 3, 9)
	Riffle/pool analysis	No data.
	DOE 303(d)	Category 4A for fecal and DO (TMDL approved by EPA). (Ref # 10)
	Toxic sites/land fills	None listed. (Ref # 8)
	Point source pollution	Scattered low intensity residential uses, railroad, light agriculture. (Ref # 3, 7)



Historic & Cultural	Historic aerials	None available on-line. Presume geomorphology has been stable for several decades.
	Archeological sites	None listed. (Ref # 5)
	Historic sites	Historic house (Parkinson House), Nooksack Bible Camp: both are in vicinity but probably not in shoreline jurisdiction. (Ref # 5)
	Parks & public access	Public zoning north western most portion of reach adjacent to Bob Mitchell Way. (Ref # 2)
Function Analysis	<b>Reach Function</b> <ul style="list-style-type: none"> <li>Hydrologic</li> <li>Shoreline Vegetation</li> <li>Habitat</li> </ul>	<p>Functioning with impairments. Groundwater dominated along with rainfall; flashy winter and early spring peaks, low summer, variable spring and fall flows. Impairment in basin due to loss of wetland area, draining, filling, ditching and removal of vegetation for agriculture.</p> <p>Functioning, with some areas impaired. Approximately half of the reach is located in a residential area where trees and shrubs exist along the shoreline. The remainder of the reach (south end) is degraded and is dominated by non-native grasses and shrubs.</p> <p>Terrestrial: Impaired, particularly in the southern half of the reach.</p> <p>Aquatic: Functioning, with impairments.</p>
	<b>Limiting Factors</b>	<ul style="list-style-type: none"> <li>Zoning</li> <li>Water quality</li> <li>Property ownership</li> </ul>
	<b>Functions</b> <ul style="list-style-type: none"> <li>Sustainable</li> <li>Not Sustainable</li> </ul>	Sustainable at current levels: hydrologic, shoreline vegetation, and terrestrial & aquatic habitat. However, sustainability affected by private property ownership.
	<b>Priority Actions</b>	<ul style="list-style-type: none"> <li>Preservation of riparian corridor.</li> <li>Water quality improvement.</li> </ul>
	<b>Current Enhancement Projects</b>	None known. Portions of reach, northern and southern most designated as natural system protection area in Comp Plan.
	<b>Preservation/Enhancement Opportunities</b>	<ul style="list-style-type: none"> <li>Preservation of terrestrial vegetation, habitat and associated corridors. Particularly riparian corridors.</li> <li>Enhance riparian buffer: increase width of native shoreline vegetation in reed canarygrass areas.</li> <li>Remove invasive species.</li> </ul>



# CITY OF SUMAS, WA

## Shoreline Jurisdiction

### Reach 16

Sehome Planning & Development



Data Sources: Whatcom County Planning, Pictometry 2008, & the City of Sumas GIS.

Projection: UTM Zone 10 NAD83

1 inch = 200 feet

0 100 200 Feet



## References

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2.	City of Sumas Comprehensive Plan. 2004.	Maps for NWI wetlands, flood areas, current and future zoning, parks, natural system protection areas.
3.	Field observations. July 8, 2010.	
4.	United States Department of Agriculture. National Resources Conservation Services (NRCS). Soil Survey of Whatcom County. <a href="http://ice.or.nrcs.usda.gov/website/whatcom/viewer.htm">http://ice.or.nrcs.usda.gov/website/whatcom/viewer.htm</a>	Interactive soil survey map.
5.	Washington State Department of Archaeology & Historic Preservation. 2006. The <b>Washington Information System for Architectural and Archaeological Records Data</b> (WISAARD). <a href="http://www.dahp.wa.gov/pages/wisaardIntro.htm">www.dahp.wa.gov/pages/wisaardIntro.htm</a>	Interactive mapping site of historical historic and archaeological sites.
6.	Washington State Department of Ecology. 2010. Digital Coastal Atlas. Website: <a href="http://www.ecy.wa.gov/programs/sea/SMA/atlas_home">www.ecy.wa.gov/programs/sea/SMA/atlas_home</a>	Interactive mapping site of various marine features, wetlands, and streams
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8.	Washington State Department of Ecology. 2010. Confirmed and Suspected Contaminated Sites Report. Website: <a href="http://www.ecy.wa.gov/programs/tcp/cscs/CSCS">www.ecy.wa.gov/programs/tcp/cscs/CSCS</a>	Comprehensive list of toxic sites, with contaminants identified
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11.	Washington State Department of Fish and Wildlife. 2010. Priority Habitats and Species. Website: <a href="http://www.wdfw.wa.gov/hab/phsvert">www.wdfw.wa.gov/hab/phsvert</a>	Priority habitat and species of Washington State
12.	Washington State Department of Fish and Wildlife. May 24, 2010. Priority Habitats and Species Data Maps.	Hard copy maps and supporting documentation listing State and Federal listed species and habitats.



13.	Washington State Department of Fish and Wildlife. 2010. SalmonScape. Website: <a href="http://www.wdfw.wa.gov/mapping/salmoscape">www.wdfw.wa.gov/mapping/salmoscape</a>	Interactive mapping site for salmonid species
14.	Historic aerial photographs. <a href="http://www.historicaerials.com">www.historicaerials.com</a>	
15.	US Environmental Protection Agency Region 10. 2009. Soil, Sediment, and Surface Water Sampling Sumas Mountain Naturally-Occurring Asbestos Site.	Swift Creek asbestos contamination summary
16.	Whatcom County Planning Department and Development Services. 2008. Shoreline Management Program.	Shoreline designations map.
17.	Whatcom County Planning and Development Services. 2005. Critical Areas Maps.	PDF maps of county wide critical areas.
18.	David Evans and Associates. 1998. Fish Habitat Reconnaissance Assessment for the City of Sumas.	