

Whatcom Creek Drainage Analysis

Landscape Setting	Landscape Setting	<ul style="list-style-type: none"> Whatcom Creek is the only natural surface water outlet of Lake Whatcom. Whatcom Creek is 4.3 miles long with a drainage basin of approximately 5,790 acres. A control dam is located at the upper extent of Whatcom Creek, which is used for down-stream flood control, utility storage for water quantity and water quality considerations in the lake, and to maintain lake levels. The hydroperiod of Lake Whatcom is controlled for recreation and erosion control purposes. Lake levels are maintained at higher levels during the summer and lowered during the winter. This manipulation of water level and discharge affects the hydroperiod of Whatcom Creek. <p style="text-align: right;">(Ref# 8,13,37,47,71 for above)</p>
	Geology	<ul style="list-style-type: none"> Upper reaches: Continental sedimentary rock, resulting in a narrow incised channel with steep slopes and bedrock substrate and outcrops. Lower reaches: Glaciomarine drift in narrow, incised channels that are surrounded by relatively flat terrain. <p style="text-align: right;">(Ref# 21,103 for above)</p>
	Soils	<ul style="list-style-type: none"> Upper reaches: Moderate infiltration rates with moderate runoff potential. Lower reaches: Very slow infiltration, with high runoff potential. The mouth of Whatcom Creek is dominated by artificial fill. <p style="text-align: right;">(Ref# 47,51,63 for above)</p>
Land Use	Current Conditions	<ul style="list-style-type: none"> Whatcom Creek flows through the heart of the City of Bellingham, and into Bellingham Bay in the middle of dense industrial development. Commercial, industrial, and residential uses dominate the land use in close proximity of the creek in the lower portion of Whatcom Creek. The I-5 Street corridor between Interstate-5 and Whatcom Falls Park is the only remaining length of the creek where there is development potential. Whatcom Falls Park located in the upper reaches of the SMA. <p style="text-align: right;">(Ref# 8,16,33,34,71 for above)</p>
	Zoning	<ul style="list-style-type: none"> Most undeveloped properties are industrial or multi-family residential. Upper portion of the creek is mostly public. <p style="text-align: right;">(Ref# 54,104 for above)</p>
	Transportation and Utilities	<p>Numerous major arterials and Interstate-5 cross Whatcom Creek. Utilities are present throughout the SMA.</p> <p style="text-align: right;">(Ref# 14,35,36,39,40,41,42,43,44,45,46 for above)</p>
	Public Access	<ul style="list-style-type: none"> Numerous parks and trails over a significant portion of the Creek. Whatcom Falls Park, at the upper extent of the creek, offers many recreational opportunities, including creek access and many miles of trails. Maritime Heritage Park and surrounding public lands (~3 acres) are located at the mouth of the creek. <p style="text-align: right;">(Ref# 33,34,36,48,54 for above)</p>
	Shoreline Modifications	<ul style="list-style-type: none"> Many structures and impervious surfaces are present below Whatcom Falls Park. Modifications are within several feet of the creek, averaging 25-50 feet in most areas, except in the I-5 Street corridor where some buffers are greater than 100 feet. Very few modifications in the upper extent of the creek. Two control dams in Reaches 8 and 9. <p style="text-align: right;">(Ref# 8,12,15,28,43,71,94 for above)</p>

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Critical Areas	Wetlands	<ul style="list-style-type: none"> • Significant numbers of wetlands remain in the upper drainage basin, many associated with the headwaters of Whatcom Creek. • Significant wetland systems exist in the Cemetery Creek Watershed. • Forested and shrub wetlands exist in Whatcom Falls Park. • A large wetland complex remains at the confluence of Whatcom and Cemetery Creeks. The wetland complex and associated undeveloped uplands provide a good habitat corridor to the Cemetery Creek drainage despite development barriers such as roads. <p style="text-align: right;">(Ref# 11,52 for above)</p>
	Streams	<p>Four City regulated stream systems flow into Whatcom Creek: Hanna (15-18), Cemetery (19-21), Fever (8-9), and Lincoln (22-24) Creeks. The streams are regulated by the COB Wetland and Stream Ordinance.</p> <p style="text-align: right;">(Ref# 8,38,57,59,71 for above)</p>
	Frequently Flooded Areas	<p>Portions of Reaches 3, 4 and 5, between Interstate-5 and Whatcom Falls Park are located within the FEMA 100 year floodplain.</p> <p style="text-align: right;">(Ref# 19 for above)</p>
	Steep Slopes	<p>Steep slopes are present in Whatcom Falls Park. Reaches 2 through 5 are mapped as seismic hazard area based upon geologic units.</p> <p style="text-align: right;">(Ref# 21,103 for above)</p>
	Wildlife	<ul style="list-style-type: none"> • Fish species documented or potentially present in this drainage include Bull trout (FT & SC), and sea-run cutthroat (FCo), Chinook (FT & SC), Coho (FCo), chum, pink, sockeye and steelhead salmon. • Fish species documented or potentially present above the natural fish barrier in Reach 6, also include resident cutthroat, kokanee, and Pacific lamprey (FCo). • Wildlife species documented or potential present included bald eagle (FT), Merlin (SC), common loon (SS), pileated woodpecker (SC), and Pacific Townsend's big-eared bat (FCo & SC). <p style="text-align: right;">(Ref# 24,61,69,70,92,993,94,105 for above)</p>
Ecological Functions	Overall Function	<ul style="list-style-type: none"> • Overall, the drainage is providing most ecological functions at moderate to low levels. • Ecological functions of the creek and adjacent buffers have been greatly reduced in the lower reaches of the creek, down stream from Interstate-5 due to dense development. • Moderate functions remain in the Iowa Street corridor. Buffer widths are greater and native vegetation still remains in some areas. • Lower Whatcom Falls Park and Iowa Street corridor were severely burned during a petroleum fire in the creek during an oil spill in 1999. Extensive restoration has taken place in the effected area. The ecology of the area is still recovering. • Ecological function in the area of the upper reaches within the park is high. <p style="text-align: right;">(Ref# 71 for above)</p>
	Water Quality	<p>Whatcom Creek is listed by the DOE as Category 5 "Polluted Water" for dissolved oxygen, fecal coliform and temperature. A TMDL is in place for fecal coliform.</p> <p style="text-align: right;">(Ref# 56,85,89 for above)</p>
	Vegetation	<ul style="list-style-type: none"> • A large wetland complex with high quality native vegetation remains at the confluence with Cemetery Creek in Reach 5. • Whatcom Falls Park provides high quality creek and buffer functions. Buffer widths are greater than 200 feet in most areas and the vegetation is native and high in quality.

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		(Ref# 8,20,71 for above)
Wildlife	<ul style="list-style-type: none"> • Wildlife habitat is severely limited in the heavily urbanized areas surrounding the creek. • The best wildlife habitat is in Whatcom Falls Park where large areas of native mature habitat have been preserved. 	(Ref# 24,61,71 for above)
Habitat	<ul style="list-style-type: none"> • Generally, the SMA is providing most ecological functions at low to moderate levels, except for Whatcom Falls Park where habitat functions are high. • In-stream habitat is generally impaired below Interstate-5, but this segment of creek still functions as a fish passage corridor. • Tidal influence at the mouth of Whatcom Creek provides estuary type habitat. 	(Ref# 24,27,61,71 for above)
Limiting Factors	<ul style="list-style-type: none"> • Water quality • Dense development • Stormwater treatment and detention • Hydrology 	(Ref# 71 for above)
Priority Actions	<ul style="list-style-type: none"> • Improve stormwater treatment • Canopy cover enhancement (shrub and tree planting) • Preserve wetland/upland habitat corridor associated with Whatcom Creek and Cemetery Creek. Preserve remaining wetlands in Cemetery Creek watershed. 	(Ref# 71 for above)
Current Enhancement Actions	Numerous projects in Reaches 1 through 6 (see Ref# 49,50)	
Preservation/Enhancement Opportunities	<ul style="list-style-type: none"> • Add in-water structures to creek below Interstate-5 • Preserve existing shoreline vegetated buffers and habitat • Enhance/restore native vegetation with native shrubs and trees to improve habitat and canopy cover • Control invasive and non-native plant species 	(Ref# 71 for above)