

Project Report: Edward K. Thomas Bldg. Stormwater Treatment

Site ID: JCR - 7

Site Name: Edward K. Thomas Bldg.

Project Location: 58°21'42.48"N, 134°34'52.73"W

Watershed Name: Jordan Creek

AWC Stream ID: 111-50-10620

USGS-HUC: 190103010606

Ownership Type: Private

Size: To be determined based on contributing area characteristics and locality design rainfall.

Overall Project Goal: Improve water quality in Jordan Creek by treating stormwater run-off generated from 36,000 ft² (0.83 acres) of commercial development at the Edward K. Thomas building.

Project Objectives: Construct an appropriate stormwater best management practice (BMP), such as an infiltration basin or bioswale, capable of treating approximately 3,368 ft³ of run-off generated from 36,000 ft² (0.83 acres) of commercial development.

Potential benefits: Improved water quality.

Background: Jordan Creek is an anadromous stream that supports coho, pink, and chum salmon along with Dolly Varden char, and cutthroat trout. In particular, Jordan Creek provides important rearing habitat for coho salmon and produces up to 10,000 smolts per year. However, Jordan Creek is also listed as an impaired waterbody due to sediment and high turbidity from urban run-off. Fine sediment and other pollutants attributed to stormwater runoff occurring in the densely developed lower portion of the watershed can adversely impact fish and fish habitat.

Approximately 1,900 linear feet of lower Jordan Creek is severely impacted by commercial development that encroaches on the stream, causing several problems due to reduced riparian functions and poor snow management practices. Encroaching parking lots are not compliant with the City and Borough of Juneau (CBJ) stream-side setback required on anadromous streams, but many are "grandfathered" because they were built prior to the ordinance. Implementing best management practices (BMPs) would go a long way to improve water quality and fish habitat in this urban stream. However, property owners do not have an incentive to implement BMPs and are generally reluctant to voluntarily work on such projects.

The United States Fish and Wildlife Service (USFWS) recently completed a stormwater inventory and assessment for the Lower Jordan Creek watershed, which identifies opportunities to manage the quantity and quality of stormwater entering the stream. USFWS identified the Edward K. Thomas building, owned by Central Council of Tlingit and Haida (CCTHITA), as one of the sites along Jordan Creek where stormwater treatment is needed. Run-off from the adjacent parking lot circumvents the storm sewer system, flows across the CCTHITA property and discharges untreated directly into the creek. USFWS recommends implementing a bioswale or rain garden at this location to treat the stormwater.

Site Characteristics: The Edward K. Thomas Building is located on commercial property owned by the Central Council of Tlingit and Haida Indian Tribes of Alaska (CCTHITA). This property adjoins other commercial developments in the Airport Shopping Center. The parking lot of the Shopping Center is paved except at the south end of the CCTHITA property, which contains an unpaved parking area utilized for the CCTHITA Driver Training School. Due to pavement wearing and setting, stormwater from the adjoining paved surfaces circumvents the storm sewer system, flows across the unpaved driver training area, and discharges untreated into Jordan Creek. The site is restricted by the 25-foot no disturbance zone and the 50-foot setback for anadromous streams established by CBJ Municipal Code §40.70.310.

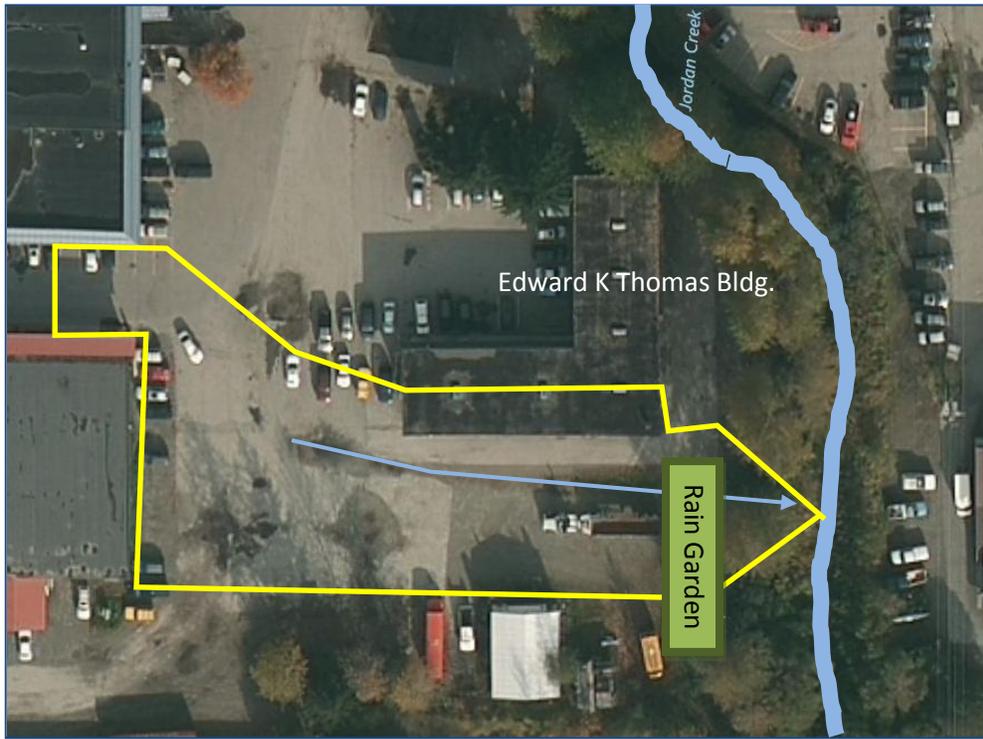


Figure 1. The Edward K Thomas Building project site showing the area contributing to the stormwater discharging to Jordan Creek in yellow, the current flowpath of stormwater, and the approximate location of infiltration basin (note: not drawn to scale).



Figure 2. The Edward K Thomas Building project site during a rain event with stormwater run-off draining towards Jordan Creek, which is in the background.

Proposed Project: The proposed project is an infiltration basin that is capable of treating approximately 3,368 ft³ of run-off generated from 36,000 ft² (0.83 acres) of commercial development to be located along the stream-side of the property (Figure 1). Based on size and amount of impermeable surfaces of the contributing area, preliminary calculations suggest the need for a bioswale or rain garden that is 20 ft. in width by 80 ft. in length, and 2 ft. deep. This can be accomplished outside of the 25-foot no disturbance zone, but will require construction within the 50-foot setback for Jordan Creek.

Final design should take into account site restrictions and adhere to the standards set forth in the CBJ Manual of Stormwater Best Management Practices (August 2010).

http://www.juneau.org/engineering/SW_BMP/documents/Aug_2010_Manual_Stormwater_BMPs_000.pdf