



December 2, 2021

Site Address: 8005 SE 34th Pl Mercer Island 98040
King County Parcel No: 445830-0240

DOWNSTREAM ANALYSIS REPORT

Task 1: Study Area Definition and Maps

A Downstream Analysis has been performed for the project site per Section I-3.5.3 of the 2019 DOE SWMMWW. This project is located at 8005 SE 34th Pl in the City of Mercer Island on a 9,953 SF parcel. The site is currently developed with a Single-Family Residence, and driveway access from SE 34th Place. The site is bordered by 80th Ave SE to the west, SE 34th Pl to the north, and single-family residences to the south and east. The topography of the site slopes to the northwest at an average of 5-10% with localized areas of steeper slopes at the southern and northern limits of the site. According to Mercer Island GIS Portal, the southern and eastern portion of the site falls within a "Landslide Area." Properties upslope to the southeast may contribute some stormwater runoff onto the site in the form of sheet and interflow from lawn and pervious runoff. As no on-site drainage systems were identified, runoff follows the natural slopes of the site towards SE 34th Pl and 80th Ave SE in two natural discharge areas. These natural discharge areas converge under ¼ mile downstream, creating a single threshold discharge area for the site. A downstream map showing the study area is included in Figure 1.

Task 2: Resource Review

Encompass has reviewed the site and the applicable resources for both listed and potential problems. According to Mercer Island GIS Portal, the southern and eastern portion of the site falls within a "Landslide Area." The site is located within the Mercer Island drainage basin, within the Cedar River/Lake Washington watershed according to King County iMap.

Task 3: Field Inspection

The field portion of the Level 1 Downstream Analysis was performed by Encompass Engineering & Surveying on Tuesday, November 16th, 2021. The analysis was performed at approximately 2:30 PM with a temperature of about 50°. Weather conditions were overcast, and soil conditions were observed to be relatively wet. Information collected during this study is included in the Task 4 system description.

Task 4: Drainage System Description and Problem Descriptions

The site is contained within the Mercer Island Drainage Basin. Stormwater runoff leaves the site in two separate natural discharge areas (NDAs) which converge within ¼ mile downstream, creating a single threshold discharge area (TDA) for the site. Stormwater on the western portion of the site (NDA A) sheet flows towards 80th Ave SE, where stormwater enters the City of Mercer Island storm system in one of two Type 1 CBs located on the eastern side of the road (Elements 1 & 2). Stormwater is conveyed to the north via 12" concrete storm pipe on the east side of 80th Ave SE. Stormwater on the eastern portion of the site sheet (NDA B) flows towards SE 34th Pl, where it enters the ROW and runs along a raised asphalt edge on the southern side of the road and enters the City of

Western Washington Division

165 NE Juniper St., Ste 201, Issaquah, WA 98027
Phone: (425) 392-0250

Eastern Washington Division

407 Swiftwater Blvd, Cle Elum, WA 98922
Phone: (509) 674-7433

Mercer Island storm system in a Type 1 CB (Element 3). From here, the stormwater flows west via a 12" concrete pipe and combines with the stormwater from NDA A. The combined stormwater flows to the north on 80th Ave SE through a series of Type 1 CBs (Elements 4-10) located on the eastern side of the road. After Element 5, the storm pipes increase to 15" concrete. At the intersection of SE 32nd St and 80th Ave SE, stormwater crosses to the north side of SE 32nd St and passes through a Type 1 CB (Element 11), a Type 2 CB (Element 12), and into a Type 1 CB (Element 13) on the north side of SE 32nd St. Stormwater continues west on the north side of SE 32nd St and passes through two Type 2 CBs (Elements 14 & 15) via 20" concrete pipes and passes through the intersection of SE 32nd St and 8th Ave SE, and enters a Type 1 CB (Element 16) at the northwest corner of the intersection. Stormwater continues west along the north side of SE 32nd St and passes through two Type 2 CBs (Elements 17 & 18) before entering a Type 1 CB (Element 19) at the corner of SE 32nd St and 77th Ave SE. This is approximately ¼ mile downstream of the site, and is where the downstream analysis was concluded. No problems or capacity constraints in the downstream storm system were identified. See Figure 1 below for a detailed Downstream Map.

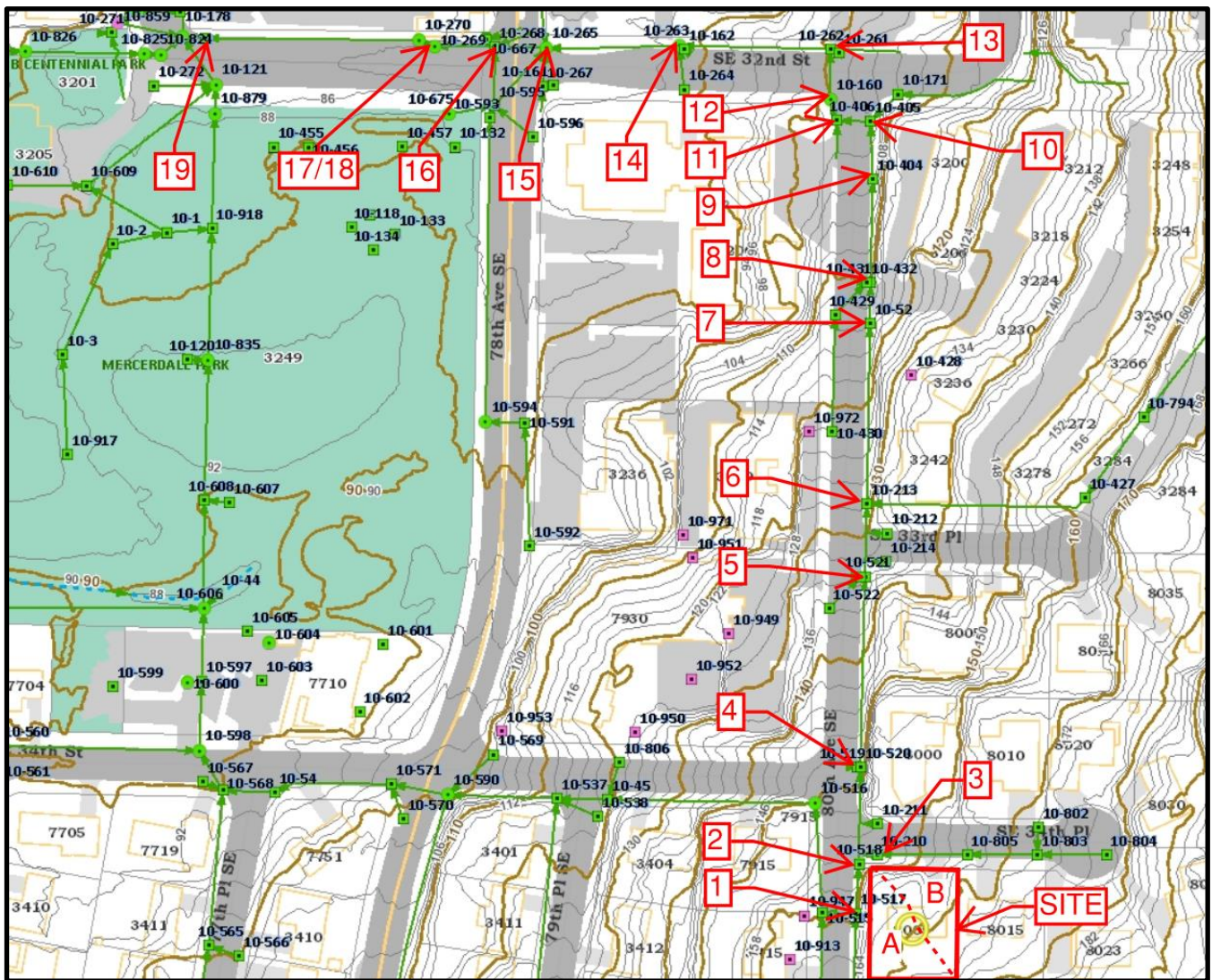


Figure 1: Downstream Map



Element 1: Type 1 CB along western project frontage on 80th Ave SE



Element 2: Type 1 CB at project frontage at 80th Ave SE & SE 34 PI intersection



Element 3: Type 1 CB at project frontage on SE 34th PI



Element 4: Type 1 CB on 80th Ave SE



Element 6: Type 1 CB on 80th Ave SE



Element 10: Type 1 CB at intersection of 80th Ave SE and SE 32nd St



Element 13: Type 1 CB on SE 32nd St



Element 15: Type 2 CB (per Mercer Island Records) at intersection of SE 32nd St and 8th Ave SE



Element 17 & 18: Two Type 2 CBs on SE 32nd St



Element 19: Type 1 CB at intersection of 77th Ave SE and SE 32nd St at ¼ mile downstream of the site