

September 28, 2022

Randy Gross
Vice President, Project Development
Covenant Retirement Communities & Services
Via email: regross@covliving.org
Phone: 773-878-4572

Re: Mercer Island Covenant Shores, Drainage Feature Evaluation

The Watershed Company Reference Number: 161001.1

Dear Randy:

This letter summarizes our evaluation of the jurisdictional status of a drainage feature in the north-central part of the Covenant Shores property on Mercer Island. This letter summarizes the findings of that evaluation. I conducted separate site investigations in October 2016 and September 2022 to assess the on-site feature and the surrounding landscape and inventoried watercourse features.

Public-domain information for the feature in question was reviewed for this study. These sources include:

- City of Mercer Island GIS mapping program (GIS Portal);
- Washington Department of Fish and Wildlife interactive mapping program (SalmonScape);
- Washington Department of Natural Resources, Forest Practices Application Mapping Tool (FPARS);
- WDFW & NWIFC: Statewide Washington Integrated Fish Distribution Maps (SWIFD);
- King County GIS mapping program (iMap)

A survey of the Covenant Shores property was also reviewed for this study (Bush, Roed & Hitchings, June 8, 2016) (BRH Survey). See attached Sheets 2, 3, and 5 of BRH Survey with highlights added to clarify relevant stormwater pipes.

Findings

The subject property is located at 9150 Fortuna Drive, Mercer Island, Washington (parcel #0724059016). Several large, multi-unit residential buildings, an administrative building, and mowed lawn areas comprise the approximately 12.4-acre property. An open-channel, ditch like drainage feature (Drainage A) originates from a pair of culverts near the center of the property (Figures 1 & 2). Drainage A flows northward for approximately 200 feet before discharging into Lake Washington at the north end of the property. Drainage A is approximately one-foot wide on average, and it contained very low flows (less than two inches) at the time of the inspections.



Figure 1: Drainage A facing north (downstream) (10/2016)

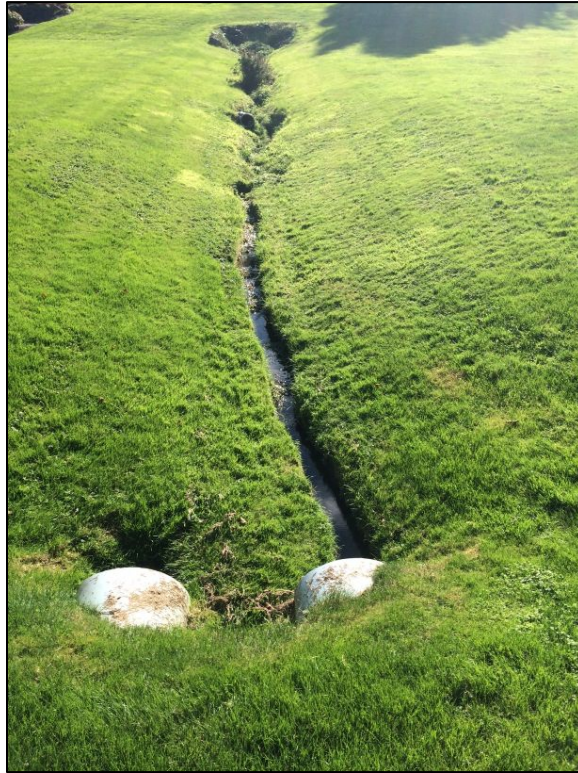


Figure 2: Drainage A facing south (upstream). Note small size (less than one foot) (10/2016)



Figure 3: Watercourse A upstream of I-90. Note large size comparable to Drainage A (9/15/2022)

According to the City's GIS Portal, Drainage A is identified as a Type F watercourse, with a 100-foot buffer. GIS Portal's storm utility map shows a Type Np watercourse (Watercourse A) entering a pipe just south of Interstate 90 (I-90) on parcel #0724059117. This area was evaluated during the October 2016 and September 2022 inspections. The location of Watercourse A is confirmed south of I-90 (Figure 3). Watercourse A averages approximately six to eight feet in width and contained approximately four inches of flow, on average, at the time of the inspections. Watercourse A enters a vertical culvert approximately four feet in diameter just south of I-90. Per GIS Portal, the pipe conveys the watercourse flow northeast beneath I-90 then north beneath N. Mercer Way. Multiple stormwater drainage lines from north and south of I-90 are mapped as discharging into the piped segments and directly into Drainage A. The entire piped system is mapped as daylighting at the origin point of Watercourse A (Figure 4). This evidence suggests that Drainage A is the downstream segment of a natural watercourse feature (Watercourse A) that is piped for approximately 1,100 feet before daylighting on the subject property and supplemented by stormwater. Under such a scenario, the drainage feature would be regulated as a watercourse under the Mercer Island Municipal Code (MIMC). However, further investigation indicates that the stormwater mapping shown on GIS Portal is incorrect.

None of the other public inventories reviewed (aside from GIS Portal) depict Watercourse A as being redirected towards the north beneath N. Mercer Way towards Drainage A. Instead, these resources depict the piped segment of Watercourse A as continuing towards the northeast beyond I-90 and connecting with an open stream channel approximately 900 feet southeast of Drainage A (Figures 5, 6, & 7). This stream segment was visually confirmed near the intersection of SE 33rd Place and 94th Avenue SE.



Figure 4: GIS Portal watercourse and stormwater mapping showing Watercourse A flowing north into Drainage A. Note extensive drainage network conveyed into the piped sections above Drainage A.

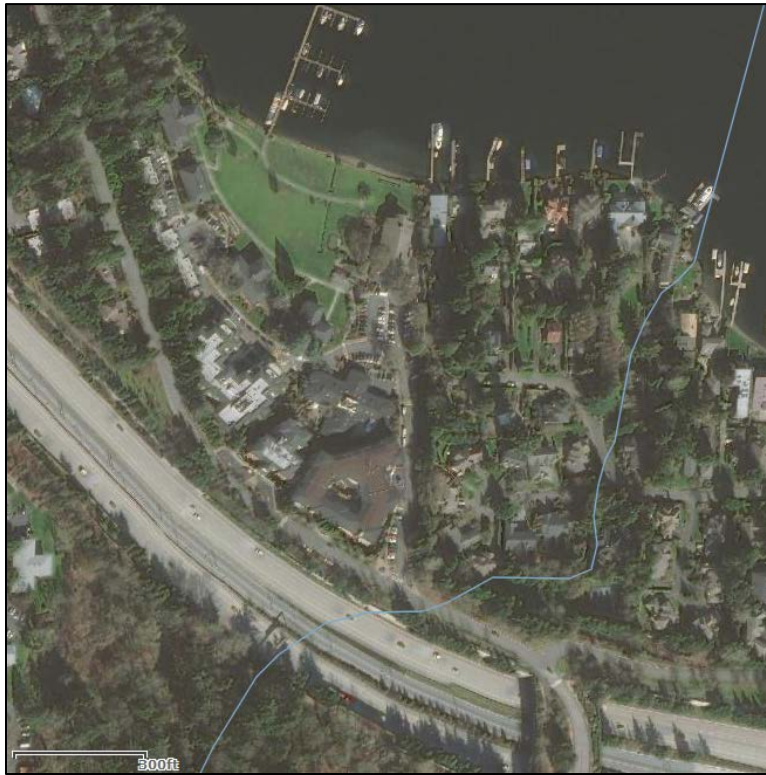


Figure 5: SWIFD mapping showing Watercourse A directed east of the subject property.



Figure 6: FPARS mapping showing Watercourse A directed east of the subject property.



Figure 7: WDFW SalmonScape mapping showing Watercourse A directed east of the subject property

The GIS Portal depiction of the piped segment of Watercourse A turning north beneath N. Mercer Way towards Drainage A is also not supported by the BRH Survey. According to the BRH Survey, there is no pipe extending north (towards Drainage A) from the connecting point beneath N. Mercer Way. Rather; the municipal stormwater pipe is, instead, directed towards the southeast beneath and in-line with N. Mercer Way. The BRH Survey does not continue off property, but the general direction of the storm pipe is similar to what is depicted by FPARS, SalmonScape, and SWIFD. The BRH Survey does depict a stormwater pipe that originates beneath the residential building in the southeast corner of the subject property; however, this pipe begins approximately 100 feet north of N. Mercer Way, and it is a six-inch diameter pipe that is far too small to convey the flow from Watercourse A. Based on the BRH Survey, the drainage feature is fed from stormwater pipes that originate on-site, with the exception of a single, eight-inch pipe that extends to a point beneath N. Mercer Way (approximately 600 feet northwest of where Watercourse A intercepts N. Mercer Way). Two trench drains are depicted on the property that capture surface runoff from adjacent impervious areas. There are no detention facilities on the property that would slowly release collected stormwater. The remaining inputs depicted on the BRH Survey come from roof drains, private and public storm drains, and catch basins.

A simple comparison of the amount of flow contained in Watercourse A versus the amount contained in Drainage A is further evidence that the two features are not connected. As described above, Watercourse A averages six to eight feet in width, with an average of four inches of flow at the time of the inspections. Drainage A averages one foot in width and contained less than one inch of flow during the September 2022 inspection. Very low flow was confirmed in the stormwater catch basins on the subject property at the time of the September 2022 inspection, which is likely the source of the extremely low flows observed in the drainage channel at that time. Based on a combination of all these factors, it does not appear that Watercourse A and Drainage A are connected.

To ascertain whether a natural stream channel existed in the location of Drainage A, historically, a review of historic aerial photographs was conducted. The subject property has been generally cleared of woody vegetation since at least 1936, which allows for clear images of the property at that time. The 1936 aerial photograph clearly shows that no stream channel was present anywhere in the vicinity at that time (Figure 8). Similarly, the feature does not appear to be present in 1990 or 1998 aerial photographs (Figures 9 & 10). The earliest aerial photograph to clearly depict the drainage channel is from 2000 and is still visible currently (Figure 11).



Figure 8: 1936 aerial photograph, no channel present (source: King County iMap)



Figure 9: 1990 aerial photograph, no channel present (source: Google Earth)



Figure 10: 1998 aerial photograph, no channel present (source: King County iMap)



Figure 11: 2021 aerial photograph, channel present (source: King County iMap)

Under MIMC 19.16.010, the definition of a jurisdictional watercourse *“does not include irrigation and drainage ditches, grass-lined swales, canals, storm water runoff devices, or other courses unless they are used by fish or to convey waters that were naturally occurring prior to construction.”* Since the contributing flow in Drainage A is derived from stormwater, and no historic watercourse channel was present in this location, it is our conclusion that Drainage A is an entirely artificial drainage channel that was constructed as a stormwater conveyance feature. Drainage A is a short, narrow channel, and while it discharges into Lake Washington, the small size, low flows, and extremely dense vegetation in the lower half combine to preclude fish use. Under the Washington Department of Natural Resources stream typing, Western Washington streams less than two feet wide are generally considered non-fish-bearing. As an entirely artificial drainage feature that is not used by fish and does not convey waters that were naturally occurring prior to construction, it is our opinion that Drainage A is not regulated as a watercourse by the City of Mercer Island.

As described above, Drainage A is densely vegetated, particularly in the lower sections. The feature, therefore, likely meets basic wetland criteria – hydrophytic vegetation community, hydric soils, and saturated soil conditions during the growing season. Similar to the regulations regarding watercourses, under MIMC 19.16.010, *“Wetlands do not include artificial wetlands, such*

as irrigation and drainage ditches, grass-lined swales, canals, landscape amenities, and detention facilities.” Therefore, as an intentionally created drainage ditch, Drainage A is not regulated as a wetland by the City.

Watercourse A, in the vicinity of the subject property, is a piped watercourse. According to MIMC 19.07.180.C.1, piped watercourses do not require a buffer. A piped watercourse, instead, requires a 45-foot building setback. Based on the available GIS inventories, it is unlikely that the 45-foot building setback would extend onto the subject property.

State and Federal Regulations

Ditches excavated from non-wetland areas, while not regulated by the City, may be regulated by the U.S. Army Corps of Engineers (Corps) under Section 404 of the Clean Water Act. The Corps may take jurisdiction over Drainage A, due to wetland characteristics within the ditch and its connectivity to Lake Washington. If direct impacts or alterations to Drainage A are proposed, Corps authorization may be required. Typical wetland mitigation criteria (e.g. Ecology mitigation ratios) do not apply to ditch wetlands, but the Corps will require verification that downstream water quality be protected during and after construction and that activity in the ditch does not result in up or downstream flooding.

Federally permitted actions that could affect endangered species may also require a biological assessment study and consultation with the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service. Application for Corps permits may also require an individual 401 Water Quality Certification and Coastal Zone Management Consistency determination from Ecology and a cultural resource study in accordance with Section 106 of the National Historic Preservation Act.

It is possible, although unlikely, that WDFW could regulate Drainage A as a water of the state; The criteria for a regulated stream under state jurisdiction are similar to those of Mercer Island. The definition of watercourse, river, or stream “*does not include irrigation ditches, canals, storm water treatment and conveyance systems, or other entirely artificial watercourses, except where they exist in a natural watercourse that has been altered by humans*” (WAC 220-660-030.145). Therefore, as an artificially constructed stormwater conveyance feature that does not contain fish, Drainage A does not satisfy any of the stream typing criteria per Washington Department of Natural Resources definitions and is not regulated by the state, in our opinion. However, we recommend providing notification to WDFW prior to commencing any activities that would divert, obstruct, or change the flow of Drainage A to confirm that a Hydraulic Project Approval is not necessary for these activities. WDFW may conduct a site visit to assess the conditions in Drainage A prior to making a determination. In general, state and federal agencies do not regulate stream buffers.

Disclaimer

The information contained in this letter or report is based on the application of technical guidelines currently accepted as the best available science and in conjunction with the manuals and criteria outlined in the methods section. All discussions, conclusions and recommendations reflect the best professional judgment of the author(s) and are based upon information available to us at the time the study was conducted. All work was completed within the constraints of budget, scope, and timing. The findings of this report are subject to verification and agreement by the appropriate local, State and Federal regulatory authorities. No other warranty, expressed or implied, is made.

Please call if you have any questions or if we can provide you with any additional information.

Sincerely,

A handwritten signature in blue ink, appearing to read "R. Kahlo". The signature is fluid and cursive, with the first letter of each name being significantly larger and more stylized.

Ryan Kahlo, PWS
Senior Ecologist

Enclosures: Survey Markup

