

LEVEL 1 DOWNSTREAM ANALYSIS

Project Name: Lumpkin Residence

Project Address: 5401 W Mercer Way

Mercer Island, WA 98040

Parcel Number(s): 294890-0022

Name of Developer/Owner: Contact: Tomoko S Lumpkin
5401 W Mercer Way
Seattle, WA 98040
(206) 499-0160
tomokolumpkin@gmail.com

Name of Professional Preparing Analysis: Rebekah J. Weston, PE



Company:

9/8/2021



RED BARN ENGINEERING INC.
6610 NE 181st St
Kenmore, WA 98028
PH. (425) 419-4979
www.redbarn-engineering.com

Report Date: September 8, 2021

LEVEL 1 DOWNSTREAM ANALYSIS

For 5401 W Mercer Way

DATE: 09/08/2021

TO: Current Owner

FROM: Rebekah Weston, PE Principal Civil Engineer

SUBJECT: 5401 W Mercer Way

The following Level 1 Downstream Analysis was completed on 3/17/2021. The scope indicated that there was a blockage within the pipe about 40 feet from the lake. This may clear itself in the rainy seas with increased water flow. The stormwater system outfall at the lake was observed to be intact. Photos and videos are included with the storm scope report. The project contractor will jet the line and make sure that no blockages are present prior to construction. No downstream drainage complaints were reviewed in the county file. During site visits, no precipitation was observed. The general slope to the lakefront varies from around 20% to approximately 15%.

If there are any questions regarding this Level 1 Downstream Analysis please do not hesitate to discuss further by calling the Red Barn Main Line (425) 419-4979 or email me at rebekah@redbarn-engineering.com.

Sincerely,

Rebekah J. Weston, PE

OFF-SITE ANALYSIS

The project is in the Mercer Island Basin, as identified by the King County Parcel Report. The existing runoff from the site is direct to the Type 2 stream that discharges to Lake Washington.

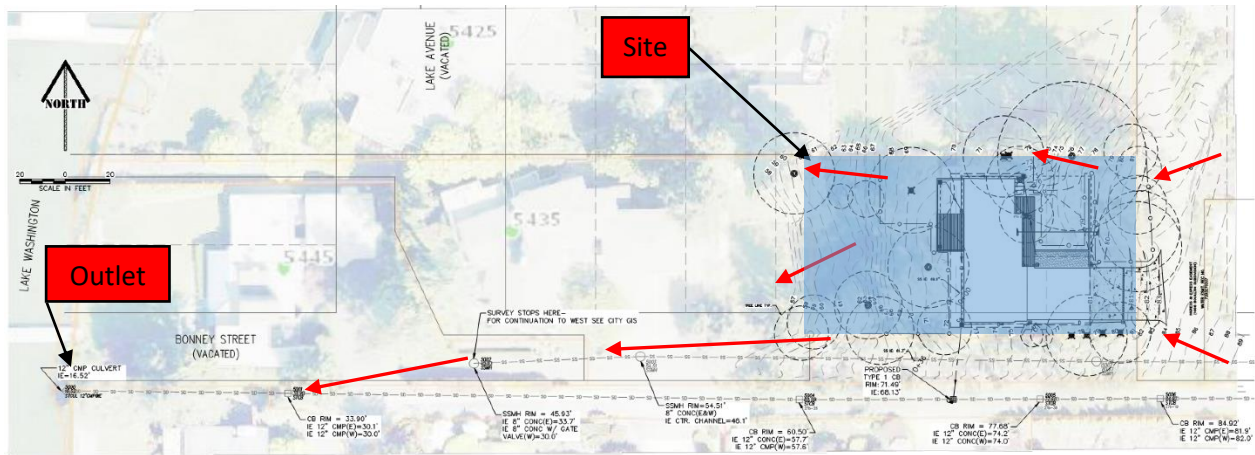


Figure 1-3. Downstream Analysis Map.

TASK 1: STUDY AREA DEFINITION AND MAPS

The majority of runoff from the proposed project will be directly discharged to the public drainage system that runs underneath Bonney Lane, West towards to Lake Washington. The high point of the project site is at approximately elevation 83 feet NAVD 88 at the southeasterly property corner. The low point is along the western boundary of the property. The low point elevation is approximately 60 feet NAVD 88.

All disturbed area run off will be collected and direct to the public system that drains directly into Lake Washington.



Photo 1: Looking West from the end of Bonney Street. Note the final stormwater catch basin before system outfalls into Lake Washington.



Photo 2: Looking uphill (East) from the end of Bonney Street.



Photo 3: Looking West, downhill towards existing residence and drive entrance on project site

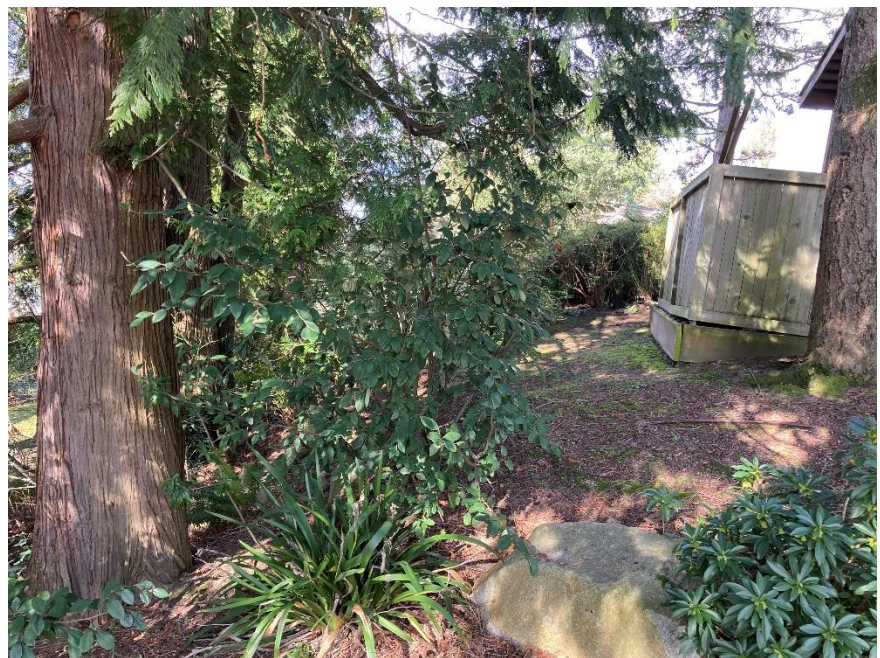


Photo 4: Showing the West (lower) half of the project site's existing back yard.

OFFSITE FLOWS

Upstream Analysis:

To the east, located uphill from the site is an Access Drive. To the south of the site is Bonney Street. Minor sheet flow generated from these surfaces run across the project site.

Downstream Analysis:

The project site is located less than 500 feet from Lake Washington. To the north and west, there are parcels that are developed with residential houses and lawns. Bonney Street runs east to west, and slopes with the project site downwards towards Lake Washington. Bonney Street contains existing catch basins that are located near the centerline of the asphalt surface. The existing project site runoff flows over the steep slopes and runs towards Lake Washington and the storm water system in Bonney Street. Proposed disturbed area and impervious surface is proposed to be directed into the public system on Boulevard Pl and drain directly into Lake Washington. The project is not proposing to send any runoff into critical areas. No work is being proposed with-in critical areas, or areas that have the potential for erosion.

TASK 2: RESOURCE REVIEW

The following was reviewed for existing and proposed problems in the study area.

CITY OF MERCER ISLAND STORMWATER SYSTEM MAPS

Per the City of Mercer Island. The link to the stormwater system maps is found here:

<https://chgis1.mercergov.org/Html5Viewer/Index.html?viewer=PubMaps&viewer=PubMaps>

King County IMAP

Per the City of Mercer Island, the critical areas associated with steep slopes is found on the King County GIS map found here: <https://gismaps.kingcounty.gov/iMap/>

GEOTECHNICAL EVALUATION

Group Northwest, Inc. reviewed the site and performed a slope stability analysis as well as provided geotechnical recommendations for the construction of the residence.

FLOOD INSURANCE RATE MAP (FIRM) PER KING COUNTY IMAP

Using the King County IMAP for the project, no related FIRM maps with a 100-year or 500-year flood level are applicable to the site. There is no base flood elevation for the site as it is not located in a floodway or plain. Refer to the King County Imap for further information:

<http://gismaps.kingcounty.gov/iMap/> .

CRITICAL AREAS REPORT

Northwest Environmental Consulting, LLC. completed a critical areas report for the project.

STREAMS

N/A

TASK 3: FIELD INSPECTION

Multiple field visits to the project site were conducted. March 13, 2021 a Level 2 Downstream Analysis was conducted by Sound Sewer Inspection (included with submittals). Field visit and survey confirms that site drains generally towards Lake Washington, with some runoff flowing towards Bonney Lane.

TASK 4: MITIGATION OF EXISTING OR POTENTIAL PROBLEMS

N/A