



# ECTYPOS ARCHITECTURE

June 4, 2024

Community Planning and Development Department  
City of Mercer Island

**Memo: Critical Area Review 2** for a New Residence at 4332 W. Mercer Way

**To:** Reviewers for the above referenced project:

The following addresses critical areas impacting the above referenced single-family residential site and development proposal and is intended to introduce the project and professional studies for a Critical Area Review 2 (CAR2).

The proposed project is for the demolition of an existing residence within the Np Watercourse Buffer and construction of a new residence beyond it as well as related site work and restoration.

The Critical Areas impacting this site are:

- Steep Slope / Geologically Hazardous Area with Potential for Landslide
- Np Watercourse on the southerly neighbor's property whose buffer extends onto the subject property.

Due to the limited area for the necessary functionality of site use we are utilizing **MICC 19.07.180.C.5** Buffer Reduction to 45'.

The request for a Building Permit will run concurrently with the CAR2. In addition to the required professional reports for each Critical Area, are a CAR2 set that includes the Survey and CAR Site Plan as well as a full set of documents describing the project in detail for the building permit.

Thank you for your attention to this project,



Lucia Pirzio-Biroli, AIA, Ectypos Architecture



**Site Ownership:** Ken Chu and Wei Xu purchased the property on June 25<sup>th</sup>, 2021.

**Parcel Numbers:** 936570-0382-03, 321090-0051-09 and 321090-0061-07

**Attached Documents specific to Critical Areas:** In addition to all documentation required for a standard building permit attached are the following studies by appropriate professionals:

- **Geotechnical Report:** By Geotech Consultants, Inc. Dated: 7/24/23. Structural and Site Design conform to report recommendations.
- **Ecologist Report:** By Altmann Oliver and Associates. Dated: 5/31/24. AOA 6625 Report addresses watercourse designation, OWHM delineation, buffer and setbacks, lack of project impact and restoration area and design.
- **Topographic Site Survey** that identifies the Ordinary High Water Mark of the watercourse on the neighbor's property.
- **Sheet A1.3** is the CAR 2 site plan. Sheets describing site restoration A1.4 and A1.5 are extracted from the Ecologist's report.
- **Arborists Report:** By Tree Solutions Inc dated May 9, 2024

**Site Critical Area overlays and potential impacts:**

- Construction within a geologically hazardous Area. See Geotechnical Report and Structural Design in Drawing Set
- Delineation of watercourse buffer whose buffer extends onto the subject property: See Ecology Report; Survey and Sht. A1.3 in Drawing Set
- **Reduction** of a watercourse buffer: See Ecology Report and Shts.A1.1 and A1.3 in Drawing Set

**Site Description:**

The irregularly shaped site is composed of 3 parcels, 2 of which are sub-sized, making up a gross lot area of 18,817sf. At the southwest corner of the lot is an access easement that benefits the southerly neighbor. Running along the southerly boundary is a shared sanitary sewer easement.

The existing driveway cuts across a steep slope running easterly up from West Mercer Way to a shelf. There is an existing single-story house constructed in 1952. The site has clearly been shaped over the years, cutting and filling. There is a low bench about 3' above the primary shelf. A steep hill runs from the east edge of the shelf to the easterly property line.

About 15' off the north boundary of the site is the Ordinary High Water bank of an Np watercourse. It is a plastic lined rock channel in the middle of a storm water easement. It runs across the three properties to the north, into a catch basin and under West Mercer Way to the ravine across the street. The 60' watercourse buffer extends about halfway into the buildable area of the shelf. The existing driveway runs through the buffer.



There are 2 groves of trees encircling the site and extending onto the northerly properties. There are two significant douglas firs on the slope between the bench and driveway/West Mercer Way. One of these is exceptional.

The site is overlain by a "Potential Landslide Hazard Area" on City maps. The steep easterly slope is at risk of failure. Groundwater flows off the easterly slope creating a soggy yard to the south of the existing house.

**Project Description:** The following outlines the project and indicates mitigation sequencing (MS) steps throughout. Refer to project drawings set for depiction of intended work.

Originally the Owners intended to add a second story to the existing house, but due to settling in the foundation and limitations from its location within the watercourse buffer, they decided to tear the existing house down and build a new one beyond the watercourse buffer. (MS-A. Avoiding impact altogether)

The resulting project is a modest compact two-story house with a gross floor area of 4,700 SF. This is 60% of what would normally be allowed on a site this size. To site the house so that Critical Areas and trees are respected it is necessary to reduce the watercourse buffer to 45' (MICC 19.07.180.C.5). (MS -B Minimizing Impact; MS-C Rectifying Impact)

To access the site, the existing driveway is being used. This is the least impactful means of access given the steep slopes and large trees. The driveway will be extended to the new house, a portion of which will cross over part of the former house to provide direct access to the garage. This will be mitigated with additional site restoration. (MS-B Minimizing Impacts; MS-C Rectifying the Impact; MS-E Compensating for the Impact)

The house is sited in the "sweet spot" between the easterly and westerly hillsides to minimize geologic impacts. A 6' high soldier pile catchment wall is to be constructed at the toe of the easterly slope to protect the house against potential landslides. (1) tree will be removed with (6) replacements as part of the Buffer Enhancement Plan see sheet A1.2. (MS-A Avoiding Impact; MS-B Minimizing Impact; MS-C Rectifying Impact; MS-E Compensating for Impact)

To minimize excavation, export and import, the entire foundation will sit on pin piles. The garage slab will sit on geo-foam to reduce loading of the westerly slope. (MS-A Avoiding impact; MS-B Minimize Impact)

The detention tank is located east-west in front of the garage and spanning under the entry patio. It will collect water from the top of the existing driveway and all new construction. It will connect to the existing storm drain along the west side of the house and south property line. All utilities will run along the south property line to minimize disruption in the buffer. See drawing C-2 in the general permit set. (MS-A Avoid impact; MS-C Rectify impact)

The existing house will be removed. A portion of its footprint will be used during construction for staging and material storage. Tree protection and construction limit fencing will be installed as required. Necessary environmental protections will be implemented as noted on C-1 T.E.S.C. Plan in the general permit set. (MS-B Minimize Impact; MS-C Rectifying Impact)



After construction is complete, the existing house and exterior paving that has been removed will be restored with amended soil and native vegetation. This will be maintained until established and monitored for a period of five years. (MS-D Eliminating Impact over time; MS-E Compensate for Impact; MS-F Monitoring Impact and Taking Corrective Measures)

Ultimately this project will be restorative in its careful siting, reduced scale of impervious surfaces, restoration of former development area, and responsible storm water management. (MS-D Eliminating the Impact over Time)

**Site Photos:**



**A.**

**A)** From W. Mercer Way up driveway



**B.**

**B)** T.O. Driveway as it turns toward future house.



**C.**

**C)** Plastic lined rocky watercourse



D) Driveway as it cuts across steep westerly hillside. One large doug fir on left.



E. Existing house and driveway. Watercourse is to the left; future house is to the right.



**F.** “Bench” building pad in foreground. Shelf and then steep easterly slope. Catchment wall will be at toe of slope.