

February 4, 2026  
Project No. 25007

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5336 Butterworth Road  
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**Regarding: Critical Area Report: Watercourses and Shorelines**  
Proposed Anderson Residence Remodel  
5336 Butterworth Road – Mercer Island, Washington

Nikkole,

## INTRODUCTION

This critical area report has been prepared for your proposed residential remodel project located at 5336 Butterworth Road in Mercer Island, Washington. The project site contains a Type F watercourse (stream) and includes frontage along Lake Washington, which is a designated shoreline. The proposed project consolidates the footprint of the existing residence, increases the distance of the modified structure from both the Type F watercourse and Lake Washington, and results in a no net loss of ecological functions. The project is exempt from the development regulations established in Mercer Island City Code (MICC) 19.07 (*Environment*) and conforms to the development regulations established in MICC 19.13 (*Shoreline Master Program*). Attached to this report is an exhibit showing the location of the Type F watercourse, designated shorelands, and the proposed project.

## PROJECT SITE

The project site is a developed 24,446 square foot (0.56 acre) residential property located along the east shoreline of Mercer Island in the northeast quarter of Section 19, Township 24 North, Range 5 East, Willamette Meridian. The King County tax parcel number for the site is 866140-0050. Access to the site is from Butterworth Road via an access easement. A multi-story single family residence with attached garage, driveway, and an auto court exists in the western and central portion of the site. On the east side of the residence, a large partially covered deck extends towards Lake Washington over a concrete paver patio. The balance of the site includes residential landscaping comprising artificial turfgrass, gravel/paver pathways, and a narrow perimeter of trees, shrubs, and groundcovers.

## SITE DEVELOPMENT HISTORY

The project site has an extensive permit history. The existing single-family residence was constructed in the early 2000's. The residence is the result of a substantial remodel and addition to a pre-existing residence. As part of this work, restoration of a watercourse located in the northern portion of the site

was required by the City of Mercer Island. The restoration included the removal of artificially created ponds, the re-establishment of the natural stream centerline, the cutting back of stream banks, the construction of rock weirs and splash pools, re-bedding the stream, and installing native plant species. At the time of project approval, benefits of the restoration that were identified by the City of Mercer Island included the stabilization of the stream banks for erosion prevention, the creation of salmonid habitat, and increased aesthetic value. Since construction of the residence and completion of the watercourse restoration, the project site has been subject to numerous permit approvals covering various interior upgrades, landscaping improvements, and pier repair/replacement work.

## CRITICAL AREA AND SHORELINE DETERMINATION

On February 14, 2025, the project site was screened for watercourses and regulated shorelines. This work applied the definitions, buffers, and setbacks established for watercourses in MICC 19.07 and shorelines in MICC 19.13. Weather at the time of study included overcast sky conditions with ambient air temperatures ranging to approximately 38 °F. The work was completed during a moderate drought in the very early part of the statistical growing season when antecedent precipitation was rated as “drier than normal”. As a result of this work, a Type F watercourse was identified along the northern property line and the shoreline of Lake Washington was identified in the eastern part of the site.

### Type F Watercourse

A Type F watercourse (stream) exists in the northern portion of the project site. The ordinary high water mark (OHWM) of the stream was flagged using sequentially numbered blue stake wire flags labeled “1-1N” through “1-26N” and “1-1S” through “1-26S”. Flagging was subsequently surveyed and mapped by Terrane. A Type F classification is applied to the watercourse because the flagged channel segment measures greater than 2 feet in width, has a gradient of less than 16 percent, and is connected to a downstream fish bearing water (Lake Washington). The classification is supported by current GIS mapping maintained by the City of Mercer Island. A 120 foot standard width buffer is required from the delineated watercourse limits. A 10 foot setback is required from the outer limits of the watercourse buffer for buildings and other structures. The standard width buffer extends across the entirety of the project site. A narrow band of trees, shrubs, and groundcover exists in the on-site buffer along the stream channel. The balance of the buffer is developed and includes a residential dwelling unit, residential landscaping, and related improvements such as patios, gravel and paver paths, and a large area of artificial turfgrass.

### Shorelines

The project site maintains approximately 68 feet of shoreline frontage along Lake Washington. The shoreline includes a rockery bulkhead, a pocket beach, and an ell shaped dock (pier) with a boat and multiple jet ski lifts. The OHWM of Lake Washington was established at 18.6 feet, which represents the full pool elevation of the lake. Designated shorelands extend landward for a distance of 200 feet from the OHWM of Lake Washington. The City of Mercer Island designates the on-site shorelands an “urban residential environment”. The purpose of this designation is to provide for residential and recreational utilization of associated shorelands compatible with residential character in terms of bulk, scale, type of development and no net loss of ecological functions of the shorelands. In

addition, a 25 foot setback is required from the shoreline for structures. Hardscape and lot coverage requirements apply for a distance up to 50 feet from the shoreline.

## PROPOSED PROJECT

The proposed project includes the following site improvements:

1. Interior Remodel: This work is of various scopes and locations interior to the existing residence.
2. Building Expansion: This work is a modest 255 square foot expansion of existing interior living space. The expansion is located on the east side of the residence off the lower daylight basement level. The purpose of the expansion is to provide an in-home office for the landowner. The entirety of the expansion is located within the standard width Type F watercourse buffer in an area that is currently an at grade patio. The expansion does not add to the existing structure footprint because it is infill under an existing main floor exterior deck. The building expansion represents alteration to 16 percent of the existing exterior walls of the residence.
3. Deck Reconfiguration: This work includes demolition and re-construction of the existing main floor deck in a more compact format. The existing deck is located primarily off the east side of the residence but also includes a small return along the northern portion of the residence. The existing deck is partially covered by a roof. The proposed deck is compact in shape, eliminates decking along the northern portion of the residence, and is uncovered. The proposed deck measures 129 square feet smaller than the existing deck and is located 5.4 feet further from the Type F watercourse and 8.1 feet further from the shoreline of Lake Washington than the existing deck.

## PROJECT IMPACTS AND MITIGATION SEQUENCING

The proposed project is limited in scope and scale. The general purpose of the project is to modestly expand interior living space of a single-family residence and reconfigure existing exterior living space to align with modern residential living. The project will permanently impact approximately 752 square feet of watercourse buffer and shorelands. This is a 129 square foot reduction when compared to existing conditions. The project also increases the horizontal distance of residential structure from the on-site Type F watercourse by 5.4 feet and increases the distance from Lake Washington by 8.1 feet. Proposed work is located entirely within the footprints of legally established residential surface improvements.

The proposed project is a stand-alone project and is consistent with existing residential use on the site. The project does not establish a standard, allowance, or precedence that is not otherwise allowed by MICC. The project also does not provide land use approval, utility connections, and/or other improvements beyond those required to support the project. There are no known projects that are dependent upon and/or are related to the project.

The proposed project completely avoids both the Type F watercourse channel and the shoreline of Lake

Washington. Buffer and shoreland impacts have been minimized by decreasing the overall deck area, positioning the deck closer to the residence, and locating the proposed building expansion under the footprint of the existing deck. The project also eliminates existing overly complex deck geometry, excessive structural projections, and roof structure. The project does not result in temporary construction impacts that require restoration and there is also no known unpermitted work on the site that requires restoration. Long term buffer and shoreland impacts are reduced because the proposed improvements will be constructed using durable modern materials that have a considerable expected lifespan. Buffer or shoreland impact mitigation is not warranted because the project demonstrates a no net loss of ecological functions. The project will be subject to standard inspections during the construction phase to ensure compliance with the approved plans.

## ECOLOGICAL FUNCTIONAL ASSESSMENT

Table 1 (below) provides a watercourse buffer and shoreland functional assessment that demonstrates the proposed project results in a no net loss of ecological functions. The applied no net loss standard requires post development functioning to equal or exceed existing functioning. This standard has been met for the project.

**TABLE 1 – WATERCOURSE AND SHORELINE ECOLOGICAL FUNCTION ASSESSMENT**

FUNCTION	DESCRIPTION	EXISTING CONDITIONS	POST DEVELOPMENT CONDITIONS
<b>Shade and Microclimate Maintenance</b>	The ability to moderate water temperature by influencing localized environmental conditions such as shade, relative humidity, ambient air temperature, wind, channel dimensions, groundwater contributions, and overhead cover.	The building site comprises legally established residential structures.	<b>No change to function.</b>  The project does not result in the removal of vegetation, modification to aspect and/or topography, and/or alteration to water, sunlight, airflow, and/or humidity delivery pathways to and/or within the watercourse buffer and/or shorelands.
<b>Stream Bank Stabilization and Wave Energy Attenuation</b>	The ability to maintain stream or shoreline bank form and structure through a combination of vegetative structure, soil, and rock.	The building site comprises legally established residential structures. The watercourse channel and lake shoreline are constructed features. The connection between the building site and the watercourse and the shoreline is interrupted by residential use.	<b>No change to function.</b>  The project does not require changes to the constructed nature of the watercourse channel and/or the shoreline bulkhead. Existing residential use between the building site, watercourse, and shorelands will be unchanged
<b>Large Woody Debris Recruitment, Nutrient Delivery, and</b>	The ability to collect and transport large woody debris (LWD), other vegetative matter, and related material to a stream channel or lake shoreline.	The building site comprises legally established residential structures. Existing residential use precludes LWD generation and interrupts natural recruitment pathways between	<b>No change to function.</b>  The project does not require vegetation removal and does not increase the developed nature of the project site. Existing residential use between the building site,

<b>Organic Matter Generation.</b>		the building site and the watercourse and shoreline.	watercourse, and shorelands will be unchanged
<b>Floodwater and Sediment Storage</b>	The ability to temporarily retain flood water and sediment during high runoff events.	No mapped floodplain exists along the watercourse. Lake water levels are managed by the Ballard Locks. The building site is separated from the watercourse and shoreline by residential use.	<b>No change to function.</b> The project does not require topography modification within the watercourse buffer or shorelands. Existing residential use between the building site, watercourse, and shorelands will be unchanged
<b>General Wildlife Habitat Suitability</b>	The ability to provide the space or conditions for reproduction, resting, hiding, migration, and food production for aquatic and shoreline-dependent birds, invertebrates, mammals, amphibians, and anadromous and resident native fish.	Disturbed wildlife migratory corridors exist along the watercourse and shoreline within a narrow vegetated corridor. The building site does not contain vegetation, habitat structures, and/or natural arrangements of food, water, cover, and/or space that wildlife can use to move, forage, and maintain territory.	<b>No change to function.</b> The project does not require vegetation removal and/or modification of existing migratory corridors that exist along the watercourse and shoreline. Existing residential use between the building site, watercourse, and shorelands will be unchanged
<b>Allowing for channel migration</b>	The ability to accommodate natural movement of a stream or river channel over time in response to gravity and topography.	The on-site watercourse exists within a man-made channel formed by landscape rocks. There is no mapped channel migration zone on the site. The developed nature of the site limits channel migration potential.	<b>No change to function.</b> The project avoids work in the watercourse channel and/or the undeveloped areas located adjacent to the channel. Existing residential use between the building site, watercourse, and shorelands will be unchanged

<sup>1</sup>. Ecological functions and descriptions are adapted from the *City of Mercer Island Critical Areas Ordinance (CAO) Update – 2018 Best Available Science Report for Watercourses, Wetlands, and Fish and Wildlife Habitat Conservation Areas* (ESA 2018) and Washington Administrative Code (WAC) 173-26-201(3)(d)(i)(C).

## REGULATORY COMPLIANCE – CRITICAL AREAS

MICC 19.07.130 exempts addition to or reconstruction of an existing legally established structure or building within a critical area buffer constructed on or before January 1, 2005 provided the following are met:

- 1. The seasonal limitations on land clearing, grading, filling, and foundation work described in section 19.07.160(F)(2) shall apply.**

The proposed project conforms to this requirement. All applicable seasonal limitations will be applied to the proposed work.

- 2. Additions shall be allowed if all of the following criteria are met:**
  - a. The structure is enlarged not more than a cumulative total of 200 square feet larger than its footprint as of January 1, 2005;**

- b. If the existing, legally established structure is located over or within a wetland or watercourse, no further expansion within the wetland or watercourse is allowed;
- c. If the existing legally established structure is located within a wetland or watercourse buffer, the addition may be no closer to the wetland or watercourse than a distance equal to 75 percent of the applicable standard buffer and must also be no closer to the watercourse or wetland than the existing structure;
- d. A critical area study approved by the city demonstrates that impacts have been avoided or minimized and mitigated consistent with section 19.07.100, mitigation sequencing;
- e. If the modification or addition is proposed within a geologically hazardous area or associated buffer, a qualified professional provides a statement of risk consistent with section 19.07.160(B)(3).

The proposed project conforms to this requirement. The proposed work does not qualify as an addition because it simply reconfigures, reduces, and/or infills existing residential structure footprints. No work will occur within a wetland or watercourse. When compared to the existing deck, the proposed deck is 126 square feet smaller and is located 5.4 feet further away from the Type F watercourse and 8.1 feet further away from Lake Washington. The 255 square foot lower-level building expansion is infill under the existing deck. This critical area report documents how the project conforms to both mitigation sequencing and no net loss requirements. A geotechnical report will be prepared if necessary to assess the risks associated with building in the geologic hazards.

3. **Reconstruction of legally established nonconforming structures shall meet the standards in section 19.01.050. The code official may require a critical area study and mitigation plan addressing temporary impacts to critical areas and buffers.**

The proposed project conforms to this requirement. The existing main level deck will be reduced by 129 square feet. The 255 square foot lower-level building expansion results in structural alteration of 16 percent of the dwelling unit's existing exterior walls. No temporary watercourse and/or shoreland impacts are proposed.

4. **Demolition: Removal of structures in watercourse and wetland buffers and geologically hazardous areas, provided:**
- a. **Site disturbance is limited to the existing access and building footprint;**
  - b. **There is no site disturbance within or to wetlands or watercourses;**
  - c. **All soils are stabilized and the area is revegetated with appropriate native vegetation;**  
**and**
  - d. **Necessary building permits are obtained.**

The proposed project conforms to this requirement. Existing residential yards will be used to access the building site. The building site includes legally established residential structures and related surface improvements. No work will occur within the Type F watercourse. As needed, temporary erosion and sediment control measures will be implemented to stabilize exposed soils. Permanent surface restoration will be limited to replacement of incidental residential

landscaping disturbed during construction. All necessary building permits and approvals will be obtained.

## REGULATORY COMPLIANCE – SHORELINES

No work is proposed within the 25 foot shoreline setback and no modifications to hardscape and lot coverage is proposed within the first 50 feet from Lake Washington. The proposed project is consistent with the preferred and priority use of the designated shorelands. The project reduces the footprint of a legal non-conforming structure as well as increases the distance of the structure from Lake Washington. This report includes a no net loss assessment of shoreland functions.

## QUALIFICATIONS OF REPORT AUTHOR

I am a certified Professional Wetland Scientist (PWS). My educational and training background includes a Bachelor of Science in Environmental Science from Washington State University with an emphasis on natural resource management, a Certificate in Wetland Science and Management from the University of Washington, and continuing education specific to critical area delineation, classification, functional assessment, and impact mitigation. I have 26 years of critical area consulting experience in the King County area of western Washington, including the City of Mercer Island. My project experience includes critical area and functional assessments on sites ranging from less than one acre to more than 150 acres in size including both rural and urban environments.

## CLOSURE

The proposed residential remodel project located at 5336 Butterworth Road exists within a Type F watercourse buffer as well as shorelands associated with Lake Washington. The project consolidates the footprint of the existing residence, increases the distance of the residence from both the Type F watercourse and Lake Washington, and results in a no net loss of ecological functions. The project is exempt from the development regulations established in MICC 19.07 and conforms to the development regulations established in MICC 19.13. I trust that this report meets your current needs. If you have any questions or require further assistance with this or any other project, please do not hesitate to call me at (425) 864-3244 or email me at [psuper@evergreenarc.com](mailto:psuper@evergreenarc.com).

Sincerely,

**EVERGREEN AQUATIC RESOURCE CONSULTANTS, LLC**

Issaquah, Washington



Peter P. Super

Professional Wetland Scientist


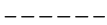







PHOTO 1 - VIEW OF EXISTING RESIDENCE

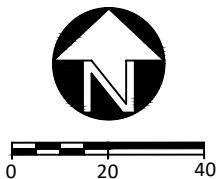


**Drawing Legend:**

-  Existing deck to be removed (881 sf)
-  Existing roof line to be removed
-  Proposed deck (752 sf)
-  Proposed building expansion under existing deck (255 sf)
-  Interior remodel

**Buffer Impact Summary:**

881 sf - existing deck to be removed  
 (752 sf) - proposed deck  
 129 sf - net decrease on structure



Site Plan Exhibit

5336 Butterworth Road  
 Mercer Island, Washington

