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**CITY OF MERCER ISLAND**

9611 SE 36<sup>th</sup> Street • Mercer Island, WA 98040-3732

(206) 275-7605 • FAX (206) 275-7726

www.mercergov.org

**CRITICAL AREAS DETERMINATION**

**NOTICE OF DECISION**

**December 4, 2017**

<b>Project Number:</b>	CAO17-012
<b>Description:</b>	The applicant has proposed to average the buffer of a watercourse for the construction of an expanded driveway. The watercourse is piped in the area of work and an open Type 2 stream on another portion of the property. 271 square feet of impervious surface is proposed to be added in the piped watercourse buffer and 542 square feet of buffer is proposed to be added to the buffer at the open portion of the stream.
<b>Applicant/Owner:</b>	Randy Koehler RKK Construction, Inc. 3056 70 <sup>th</sup> Ave SE Mercer Island, WA 98040
<b>Site Address:</b>	4525 West Mercer Way, Mercer Island, WA, 98040; Identified by King County Assessor tax parcel number 770100-0110.
<b>Zoning District:</b>	R-15
<b>SEPA Compliance:</b>	The proposal is categorically exempt from SEPA review per WAC 197-11-800(6)(E).
<b>Exhibits:</b>	<ol style="list-style-type: none"><li>1. Site Plan received by the City on August 24, 2017.</li><li>2. Development Application received by the City on August 24, 2017.</li><li>3. Buffer Averaging Plan received by the City on August 24, 2017.</li></ol>

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**I. FINDINGS OF FACT**

**1. Application Description:**

The applicant has proposed to average the buffer of a watercourse for the construction of a new driveway. The watercourse is a Type 2 stream in an open channel in the northwestern portion of the property. It then enters a pipe and continues on both the subject property and the adjacent property to the north. The applicant is proposing to reduce the buffer by 271 square feet in the area of the piped water course and add 542 square feet to the buffer of the open channel portion of the watercourse. The applicants are also proposing to replant 271 square feet of the buffer between the proposed driveway and the piped watercourse.

**2. Zoning:**

The existing zoning of the subject site is Single Family Residential R-15 (15,000 square foot minimum lot area).

**3. Adjacent Land Use:**

Surrounding properties contain single-family residential uses.

**4. Consistency with Land Use Code/Zoning Requirements:**

MICC 19.16 Definitions “Critical Area Determination” states that the land use application is “An administrative action by the code official pursuant to MICC 19.15.010(E) to allow reduction or averaging of a wetland or watercourse buffer, or alteration of a steep slope.” The applicant has applied for a Critical Areas Determination to average the width of a watercourse buffer by removing 271 square feet of buffer in the northern portion of the property and adding 542 square feet of buffer to the southeast portion of the property.

Mercer Island City Code (MICC) MICC 19.07.070(B)(3) allows for watercourse buffer width to be averaged provided the following are met:

- a. The proposal will result in a net improvement of critical area function;
- b. The proposal will include replanting of the averaged buffer using native vegetation;
- c. The total area contained in the averaged buffers on the development proposal site is not decreased below the total area that would be provided if the maximum width were not averaged;
- d. The standard buffer width is not reduced to a width that is less than the minimum buffer width at any location; and
- e. That portion of the buffer that has been reduced in width shall not contain a steep slope.

**5. SEPA Compliance:**

The proposal is categorically exempt from SEPA review under WAC 197-11-800(6)(E).

**6. Public Noticing and Comments:**

There is no public hearing requirement for a critical areas determination (an administrative action) per MICC 19.15.010(E) and 19.15.020(F)(1). On October 2, 2017, City staff sent a Public Notice of Application to all property owners within 300 feet of the subject property and placed the Public Notice of Application in the City Weekly Permit Bulletin. The site was posted with a public notice sign, in a location that is visible to the public right-of-way on October 2, 2017 as required by MICC 19.15.020(E)(4)(a). A public comment period ran from October 2, 2017 through 5:00 P.M. on November 1, 2017. No comments were received during the public comment period.

**8. MICC 19.07.070(A):**

Watercourses – Designation and Typing. Watercourses shall be designated as Type 1, Type 2, Type 3 and Restored according to the following criteria:

1. Type 1 Watercourse. Watercourses or reaches of watercourses used by fish, or are downstream of areas used by fish.
2. Type 2 Watercourse. Watercourses or reaches of watercourses with year-round flow, not used by fish.
3. Type 3 Watercourse. Watercourses or reaches of watercourses with intermittent or seasonal flow and not used by fish.
4. Restored Watercourse. Any Type 1, 2 or 3 watercourses created from the opening of previously piped, channelized or culverted watercourses.

**Staff Analysis:**

The Buffer Averaging Plan provided by the applicant (Exhibit 3) states that the watercourse has two different designations. Throughout most of the property the watercourse is piped. However, in the northeastern portion of the property the watercourse is not piped, has a year-round flow, and is not used by fish, making it a Type 2 stream per MICC 19.07.070(A).

**9. MICC 19.07.070(B)(1):**

Watercourse Buffer Widths. Standard buffer widths shall be as follows, measured from the ordinary high water mark (OHW), or top of bank if the OHW cannot be determined through simple nontechnical observations.

<b>Watercourse Type</b>	<b>Standard (Base) Buffer Width (feet)</b>	<b>Minimum Buffer Width with Enhancement (feet)</b>
Type 1	75	37
Type 2	50	25
Type 3	35	25
Restored or Piped	25	Determined by the code official

**Staff Analysis:**

As stated above, the applicant's Buffer Averaging Plan (Exhibit 3) identifies the open channel portion of the existing watercourse as a Type 2 watercourse that is subject to a 50 foot regulated buffer that may be reduced to a minimum buffer width of 25 feet with an approved critical area determination. The piped portion of the watercourse is subject to a 25 foot regulated buffer that may be reduced to a width determined by the code official. Staff finds that the mitigation proposed by the applicant will result in no adverse impact on the watercourse, provided that the conditions below are met.

**10. MICC 19.07.070(B)(2):**

Reduction of Buffer Widths. The code official may allow the standard buffer width to be averaged if:

- a. The proposal will result in a net improvement of critical area function;

**Staff Analysis:**

The applicant is proposing to offset the encroachment of the driveway onto 271 square feet of the piped watercourse by adding 542 square feet to the buffer of the open channel portion of the watercourse. The Buffer Averaging Plan provided by the applicant (Exhibit 3) states that the buffer averaging will result in a net improvement in the function of the watercourse. This criterion is met.

- b. The proposal will include replanting of the averaged buffer using native vegetation;

**Staff Analysis:**

As shown on Exhibit 1, the applicant is proposing to plant a 271 square foot area of the buffer in native vegetation, located between the proposed driveway and the piped watercourse. This decision conditions that the applicant submit a planting plan, which will then be sent for peer review. As conditioned, this criterion is met.

- c. The total area contained in the averaged buffers on the development proposal site is not decreased below the total area that would be provided if the maximum width were not averaged.

**Staff Analysis:**

*The applicant is proposing to remove 271 square feet from the required piped watercourse buffer and adding 541 square feet to the buffer to the open channel portion of the watercourse. The project will result in a net addition to the size of the buffer, so this criterion is met.*

- d. The standard buffer width is not reduced to a width that is less than the minimum buffer width at any location; and

**Staff Analysis:**

*The applicant is proposing to reduce the buffer to a minimum width of approximately 11 feet. MICC 19.07.070(B)(1) states that the minimum buffer width allowed for piped watercourses is determined by the code official. With the proposed planted buffer enhancement area and the added buffer area on the open channel portion of the buffer, 11 feet is an appropriate buffer width for the piped watercourse. This criterion is met.*

- e. That portion of the buffer that has been reduced in width shall not contain a steep slope.

**Staff Analysis:**

*The portion of the buffer to be reduced in width does not contain a steep slope. This criterion is met.*

**4. MICC 19.07.040(J)(1):**

Maintenance and Monitoring. Landscape maintenance and monitoring may be required for up to five years from the date of project completion if the code official determines such condition is necessary to ensure mitigation success and critical area protection.

**Staff Analysis:**

*Staff finds that project approval may be conditioned with a five year maintenance bond or assignment of funds. Additionally, a financial guarantee (e.g. bond, cash deposit, or assignment of funds) is typically required for critical area mitigation projects prior to the issuance of any permit for clearing, grading, or building. In some circumstances, the code official shall have the discretion to waive the requirement for bonding or an assignment of funds. Staff finds this is an appropriate condition of approval.*

**5. MICC 19.07.040(J)(2):**

Maintenance and Monitoring. Where monitoring reveals a significant variance from predicted impacts or a failure of protection measures, the applicant shall be responsible for appropriate corrective action, which may be subject to further monitoring.

**Staff Analysis:**

*Staff finds that this requirement is appropriate as a condition of approval.*

**6. Permit Expiration:**

MICC 19.15.020(K) states "Except for building permits or unless otherwise conditioned in the approval process, permits shall expire one year from the date of notice of decision if the activity approved by the permit is not exercised. Responsibility for knowledge of the expiration date shall be with the applicant."

**Staff Analysis:**

*Staff finds that this requirement shall carry with the proposal, and is appropriate as a condition of approval.*

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**II. CONCLUSIONS OF LAW**

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Based on the above Findings of Facts, the following Conclusions of Law have been made:

1. The subject property contains a Type 2 watercourse associated buffer, as well as .
2. The piped watercourse buffer will not be less than 11 feet. The minimum buffer specified for piped watercourses in MICC 19.07.070(B)(1) may be determined by the Code Official.
3. An approved critical areas study was submitted (Exhibit 3).
4. The buffer averaging will not result in a net reduction of critical area function.
5. A financial guarantee (e.g. bond, cash deposit, or assignment of funds) may be required for critical area mitigation prior to the issuance of any permit for clearing, grading, or building.
6. As shown in Exhibit 1, no portion of the reduced piped watercourse buffer is on a steep slope.
7. Approximately 271 square feet of impervious surface will be removed from the piped watercourse buffer. 271 square feet of the buffer will be replanted with native vegetation. 542 square feet will be added to the buffer of the Type 2 watercourse.
8. The applicant will replant the reduced buffer using native vegetation.

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**III. DECISION**

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Based upon the above noted Findings of Fact and Conclusions of Law, critical areas determination application CAO17-012 for watercourse buffer averaging, as depicted by Exhibits 1 and 3, is hereby **APPROVED** subject to the Conditions of Approval. This decision is final, unless appealed in writing consistent with adopted appeal procedures.

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**IV. CONDITIONS OF APPROVAL**

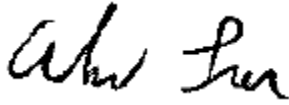
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The following conditions shall be binding on the "Applicant," which shall include owner or owners of the property, heirs, assigns and successors.

1. The approval of the permit is based on the proposal substantially complying with the submittal, as demonstrated in Exhibits 1 and 3.
2. The applicant shall complete a King County Critical Area Bond Quantity Worksheet and submit to the Code Official for review and approval. To view this worksheet please visit: <http://www.kingcounty.gov/~media/depts/permitting-environmental-review/dper/documents/forms/ls-wks-sensareaBQ-pdf.ashx?la=en>
3. The applicant shall submit a revised mitigation plan including a planting plan, monitoring protocols and performance measurements prior to building permit issuance.
4. Upon completion of the mitigation work, a letter written by a qualified professional detailing compliance with the approved mitigation plan shall be submitted to the City of Mercer Island Development Services Group. The compliance letter shall be accompanied by a set of as-built drawings depicting type and location of mitigation plantings. A maintenance and monitoring memo shall be submitted to the City of Mercer Island Development Services Group annually for a period of five years. Plant survival rates are to meet or exceed those set out in the required mitigation plan.
5. This permit approval shall expire one year from the date of notice of decision if a complete building permit is not received by the City for the activity approved by this critical area determination.
6. The applicant shall obtain all required permits for construction.

7. The applicant shall install and have inspected full temporary erosion and sediment control measures prior to construction.

**Approved this 4<sup>th</sup> day of December, 2017.**



**Andrew Leon  
Planner  
Development Services Group  
City of Mercer Island**

Parties of record have the right to appeal the decision on this action when it is issued. If at that time you desire to file an appeal, you must submit the appropriate form, available from the Development Services Group, and file it with the City Clerk within fourteen (14) days from the date this decision is signed. Upon receipt of a timely complete appeal application and appeal fee, an appeal hearing will be scheduled. To reverse, modify or remand this decision, the appeal hearing body must find that there has been substantial error, the proceedings were materially affected by irregularities in procedure, the decision was unsupported by material and substantial evidence in view of the entire record, or the decision is in conflict with the city's applicable decision criteria.

Please note that the City will provide notice of this decision to the King County Department of Assessment, as required by State Law (RCW 36.70B.130). Pursuant to RCW 84.41.030(1), affected property owners may request a change in valuation for property tax purposes notwithstanding any program of revaluation by contacting the King County Department of Assessment at (206) 296-7300.



**CITY OF MERCER ISLAND**  
**DEVELOPMENT SERVICES GROUP**  
 9611 SE 36TH STREET | MERCER ISLAND, WA 98040  
 PHONE: 206.275.7605 | [www.mercergov.org](http://www.mercergov.org)



CITY USE ONLY		
PERMIT #	RECEIPT #	FEE
Date Received:		

**DEVELOPMENT APPLICATION** Received By:

STREET ADDRESS/LOCATION <b>4525 W. MERCER WAY</b>	ZONE <b>R-15</b>
COUNTY ASSESSOR PARCEL #'S <b>7700100110</b>	PARCEL SIZE (SQ. FT.) <b>21,524</b>

PROPERTY OWNER (required) <b>RKX CONST. INC</b>	ADDRESS (required) <b>3096 70<sup>TH</sup> AVE SE - MI</b>	CELL/OFFICE (required) <b>206-236-2920</b> E-MAIL (required) <b>RANDY@RKXCONSTRUCTION.COM</b>
PROJECT CONTACT NAME <b>RANDY KOEHLER</b>	ADDRESS <b>3096 70<sup>TH</sup> AVE SE, MI</b>	CELL/OFFICE <b>SAME</b> E-MAIL <b>SAME</b>
TENANT NAME	ADDRESS	CELL PHONE  E-MAIL

**DECLARATION:** I HEREBY STATE THAT I AM THE OWNER OF THE SUBJECT PROPERTY OR I HAVE BEEN AUTHORIZED BY THE OWNER(S) OF THE SUBJECT PROPERTY TO REPRESENT THIS APPLICATION, AND THAT THE INFORMATION FURNISHED BY ME IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

SIGNATURE **Randy Koehler - Pres.**

DATE **7-25-17**

**PROPOSED APPLICATION(S) AND CLEAR DESCRIPTION OF PROPOSAL** (PLEASE USE ADDITIONAL PAPER IF NEEDED):  
**CRITICAL AREAS DETERMINATION - CRITICAL AREA STUDY - WATERCOURSE BUFFER AVERAGING**

ATTACH RESPONSE TO DECISION CRITERIA IF APPLICABLE

**CHECK TYPE OF LAND USE APPROVAL REQUESTED:**

APPEALS	DEVIATIONS Continued	SUBDIVISION SHORT PLAT Continued
<input type="checkbox"/> Building (+cost of file preparation)	<input type="checkbox"/> Impervious Surface (5% Lot overage)	<input type="checkbox"/> Short Plat Amendment
<input type="checkbox"/> Land use (+cost of verbatim transcript)	<input type="checkbox"/> Shoreline	<input type="checkbox"/> Final Short Plat Approval
<input type="checkbox"/> Code Interpretation	<input type="checkbox"/> Wet Season Construction Moratorium	<b>VARIANCES (Plus Hearing Examiner Fee)</b>
<b>CRITICAL AREAS</b>	<b>ENVIRONMENTAL REVIEW (SEPA)</b>	<input type="checkbox"/> Type 1**
<input checked="" type="checkbox"/> Determination	<input type="checkbox"/> Checklist: Single Family Residential Use	<input type="checkbox"/> Type 2***
<input type="checkbox"/> Reasonable Use Exception	<input type="checkbox"/> Checklist: Non-Single Family Residential Use	<b>OTHER LAND USE</b>
<b>DESIGN REVIEW</b>	<input type="checkbox"/> Environmental Impact Statement	<input type="checkbox"/> Accessory Dwelling Unit
<input type="checkbox"/> Administrative Review	<b>SHORELINE MANAGEMENT</b>	<input type="checkbox"/> Code Interpretation Request
<input type="checkbox"/> Design Review - Major	<input type="checkbox"/> Exemption	<input type="checkbox"/> Comprehensive Plan Amendment (CPA)
<input type="checkbox"/> Design Review - Minor	<input type="checkbox"/> Semi-Private Recreation Tract (modification)	<input type="checkbox"/> Conditional Use (CUP)
<b>WIRELESS COMMUNICATIONS FACILITIES</b>	<input type="checkbox"/> Semi-Private Recreation Tract (new)	<input type="checkbox"/> Lot Line Revision
<input type="checkbox"/> Wireless Communications Facilities- 6409 Exemption	<input type="checkbox"/> Substantial Dev. Permit	<input type="checkbox"/> Lot Consolidation
<input type="checkbox"/> New Wireless Communications Facility	<b>SUBDIVISION LONG PLAT</b>	<input type="checkbox"/> Noise Exception
<b>DEVIATIONS</b>	<input type="checkbox"/> Long Plat	<input type="checkbox"/> Reclassification of Property (Rezoning)
<input type="checkbox"/> Changes to Antenna requirements	<input type="checkbox"/> Subdivision Alteration to Existing Plat	<input type="checkbox"/> ROW Encroachment Agreement (requires separate ROW Use Permit)
<input type="checkbox"/> Changes to Open Space	<input type="checkbox"/> Final Subdivision Review	<input type="checkbox"/> Zoning Code Text Amendment
<input type="checkbox"/> Fence Height	<b>SUBDIVISION SHORT PLAT</b>	
<input type="checkbox"/> Critical Areas Setback	<input type="checkbox"/> Short Plat	
	<input type="checkbox"/> Deviation of Acreage Limitation	

\*\*Includes all variances of any type or purpose in all zones other than single family residential zone: B,C-O,PBZ,MF-2,MF2L,MF-3

\*\*\*Includes all variances of any type or purpose in single family residential zone: R-8.4, R-9.6, R-12, R-15



**CRITICAL AREA STUDY**

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**4525 W. Mercer Way: Watercourse  
Buffer Averaging Plan**

Prepared for:

Randy Koehler  
RKK Construction  
3056 70th Ave SE  
Mercer Island, WA 98040

Prepared by:



750 Sixth Street South  
Kirkland . WA 98033

p 425.822.5242  
f 425.827.8136  
watershedco.com

August 2017

The Watershed Company Reference Number:  
161208

**Cite this document as:**  
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4525 W. Mercer Way: Watercourse Buffer Averaging Plan.

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The approximately 0.65-acre residential property contains one single-family residence, associated out-building, a gravel access drive, and associated lawn and ornamental shrub areas. Much of the property is forested with a mix of Douglas-fir, western red cedar, and bigleaf maple in the canopy layer with a mix of native, ornamental, and non-native invasive species in the shrub layer. Sword fern, lawn grasses, and ornamental planting comprise the groundcover layer. There is one watercourse, Watercourse A (see below), on the property.

## 2.2 Watercourse A

Watercourse A enters the northeast portion of the property via a culvert located beneath W. Mercer Way. The watercourse flows northwesterly in an open channel for a short distance (approximately 50 feet) before entering a pipe beneath the gravel access drive that runs along the northern property boundary. Beyond the culvert, Watercourse A remains piped just off-site on the adjacent property to the north (Parcel #7700100100) and continues as a piped watercourse for the remainder of its length before discharging into Lake Washington approximately 800 feet southwest of the driveway culvert (Mercer Island GIS). According to the Mercer Island Watercourse Inventory, Watercourse A is a permanently flowing feature.

Watercourse A averages approximately one to two feet in width on the subject property and was approximately two inches deep at the time of the inspection. Watercourse A neither currently, nor historically, provides fish habitat. While Watercourse A is currently piped downstream of the driveway culvert, the historic channel would have flowed down a gradient averaging 40-50 percent just west of the subject property. The steep gradient combined with the small channel size (less than two feet) precludes fish use currently and historically. In Western Washington, streams are not considered fish-bearing if the channel width is less than two feet and/or the gradient is more than 16 percent (20 percent for larger contributing basins) (WAC 222-16-031).

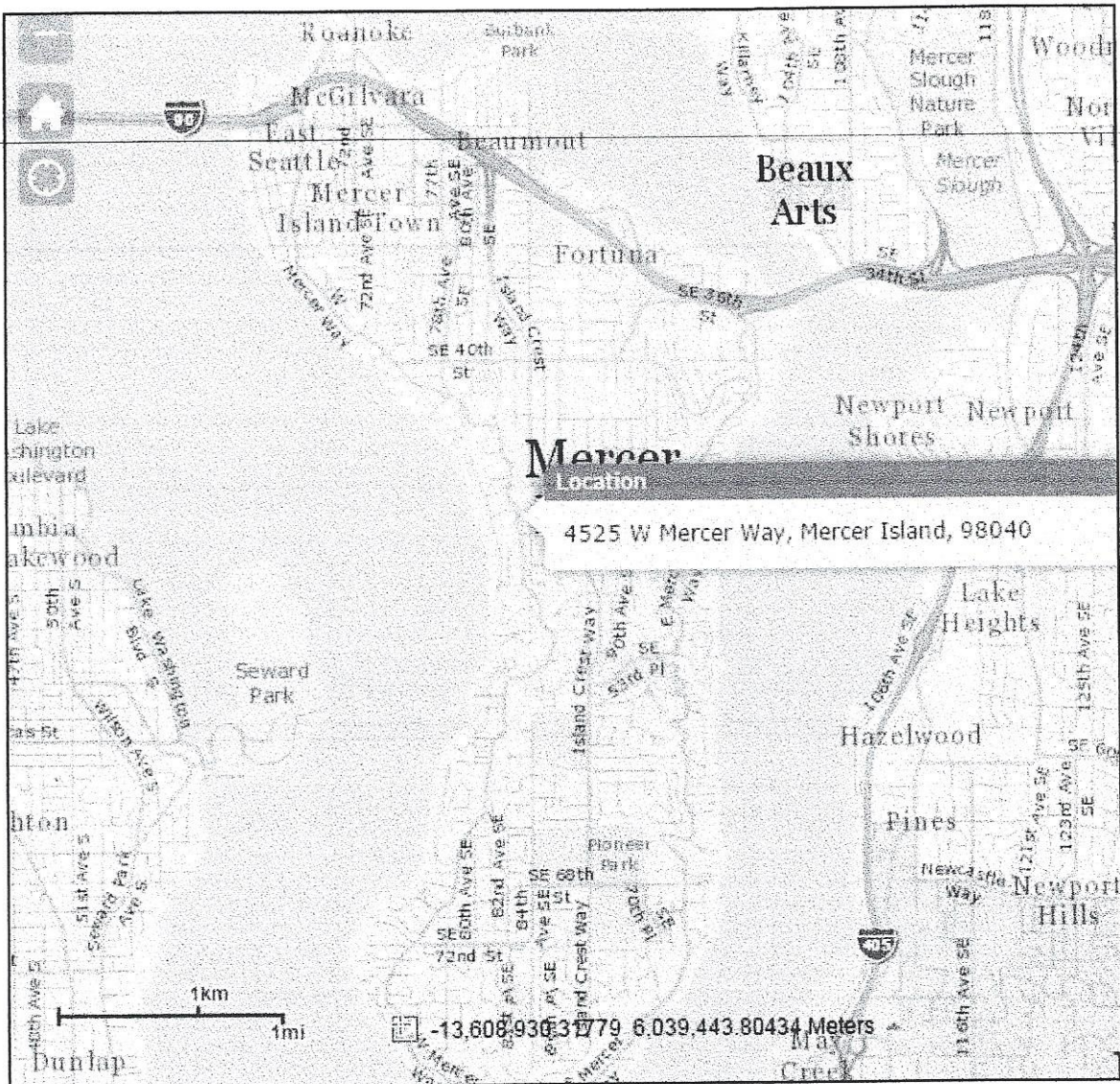


Figure 1. A vicinity map showing the location of the site (imagery source: King County Imap).



Figure 2. An aerial view of the subject property (imagery source: King County Imap).

## 2.3 Critical Area Buffers

Outside of the existing structures and driveway, the existing watercourse buffer areas are predominantly forested with a mix of bigleaf maple, Douglas-fir, and western red cedar in the canopy layer. Understory within the Type 2 watercourse buffer is mostly a dense layer of sword fern and interspersed mountain ash, rhododendron, and ornamental plantings, along with an isolated patch of Himalayan blackberry. The piped watercourse buffer is also forested, but the understory east of the existing house (where buffer reduction is proposed) is very sparse, with only a few sword fern in the understory along with scattered laurel sprouts. The piped watercourse buffer west of the existing house, which will remain in its current condition is dominated by mature bigleaf maple and western red cedar trees with a dense vine maple and sword fern understory. The area of proposed buffer addition includes a 22-inch Douglas-fir tree and an extremely dense (100% cover) understory composed of snowberry and mock orange.

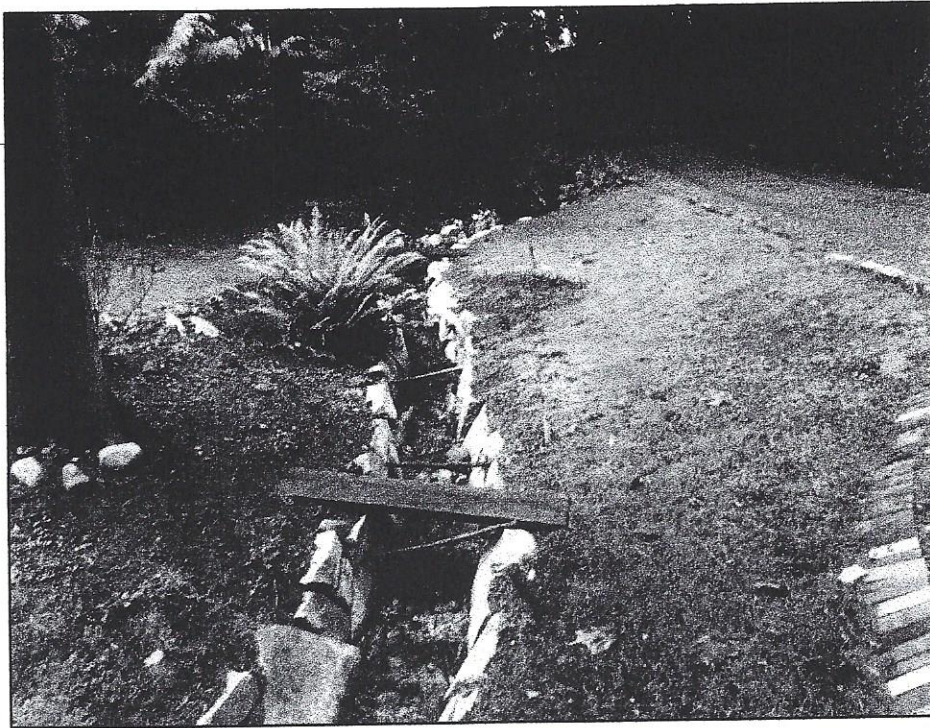


Photo 1: Watercourse A, facing downstream (west).



Photo 2: Standard 50-foot buffer to be preserved.



Photo 3: Standard 50-foot buffer to be preserved.



Photo 4: Standard 25-foot buffer to be preserved.



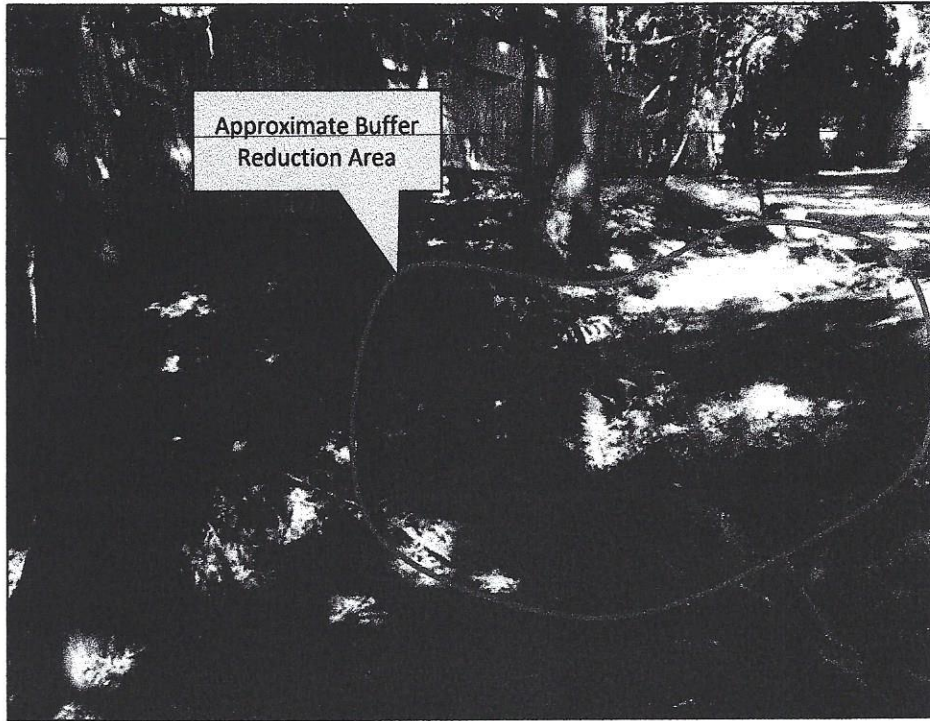


Photo 5: Area of proposed buffer reduction. Trees to be retained.



Photo 6: Proposed buffer addition area.

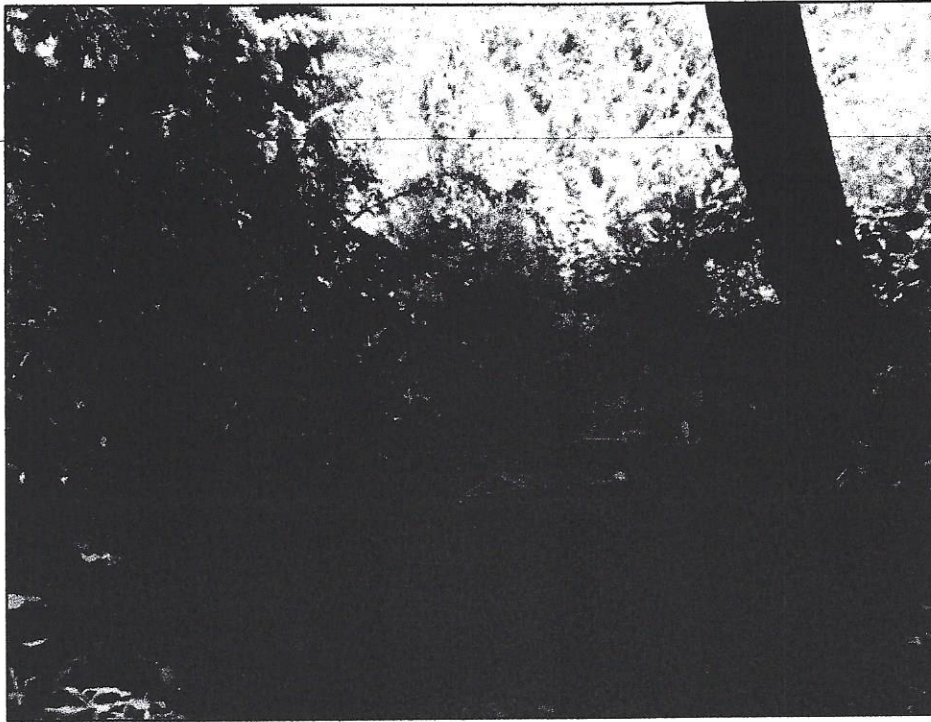


Photo 7: Proposed buffer addition area.

### 3 LOCAL REGULATIONS

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In the City of Mercer Island, watercourses are regulated under the Mercer Island City Code (MICC), Chapter 19.07 – Environment. Watercourse buffers are designated based on the watercourse classification (MICC 19.07.070). Watercourses in Mercer Island are classified as one of four types based on fish use, permanence of flow, and whether the watercourse is piped. Non-fish-bearing, permanent streams, such as the open channel segment of Watercourse A, are classified as Type 2 and require a standard buffer width of 50 feet. The lower section of Watercourse A is piped. Piped watercourses require a standard buffer width of 25 feet.

Watercourse buffers may be reduced through a variety of enhancement measures in accordance with MICC 19.07.070.B.2, provided a smaller buffer will result in no net loss of watercourse and buffer function. Type 2 watercourse buffers may be reduced to a minimum of 35 feet, while for piped watercourses the minimum buffer width is determined on a case-by-case basis by the City.

Watercourse buffers may be modified through buffer averaging provided the following criteria are satisfied:

- a. *The proposal will result in a net improvement of critical area function;*
- b. *The proposal will include replanting of the averaged buffer using native vegetation;*
- c. *The total area contained in the averaged buffers on the development proposal site is not decreased below the total area that would be provided if the maximum width were not averaged;*
- d. *The standard buffer width is not reduced to a width that is less than the minimum buffer width at any location; and*
- e. *That portion of the buffer that has been reduced in width shall not contain a steep slope.*

## 4 PROJECT PURPOSE AND APPROACH

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The purpose of the project is to construct a new single-family residence with garage. All of the new structures will be located outside of critical areas and buffer. However, these improvements also require an expansion of the existing driveway on-site per fire code requirements. The city fire marshal has agreed to allow the driveway to remain at its current width for the section within the Type 2 watercourse 50-foot buffer but has mandated an expansion to the required width in all areas outside the 50-foot buffer, including within the 25-foot buffer associated with the piped watercourse segment.

In order to achieve the purpose of the project and satisfy the requirements of the fire code, the applicant proposes buffer averaging for a portion of the piped watercourse buffer. The proposed reduction will result in no net loss of critical area or buffer functions and satisfies the relevant provisions of MICC 19.07.070.B.3:

- a. *The proposal will result in a net improvement of critical area function;*

The area of proposed buffer reduction is generally the lowest functioning, non-developed buffer area on the property. The reduction area includes mostly bare ground with a few sword ferns and scattered laurel sprouts. Existing trees in the vicinity will remain as part of the reduced buffer (Photo 5). The buffer addition area includes a mature, 22-inch Douglas-fir and an extremely dense, native understory dominated by snowberry and mock orange. Further, the buffer addition area is associated with the 50-foot buffer for the Type 2 watercourse.

The ability of the Type 2 watercourse buffer to provide protection for the open channel segment far exceeds the functions provided by the buffer for a piped watercourse. The buffer addition area is twice the size of the buffer reduction area and provides much greater water quality, hydrology, and habitat functions than the reduced buffer. The net result will be a significant improvement of critical area function. Further, the areas where the standard buffers will be preserved are highly functioning buffers composed of mostly native forest areas, including several mature/old growth trees.

- b. *The proposal will include replanting of the averaged buffer using native vegetation;*

The proposal includes additional native plantings in the reduced buffer to compensate for the loss of vegetation in the reduction area. A total of six sword ferns, four snowberry and four evergreen huckleberry will be installed. Trees are not proposed, as no trees or shrubs will be removed, and the area currently contains a forested canopy.

- c. *The total area contained in the averaged buffers on the development proposal site is not decreased below the total area that would be provided if the maximum width were not averaged;*

This requirement is exceeded by the proposal. The total averaged buffer area will be greater than the standard buffer area. A net increase in buffer area of 271 square feet is proposed.

- d. *The standard buffer width is not reduced to a width that is less than the minimum buffer width at any location;*

The buffer will only be reduced within the piped watercourse buffer. There is no minimum width for piped watercourse buffers. The proposed buffer will not be reduced to less than 10 feet.

- e. *That portion of the buffer that has been reduced in width shall not contain a steep slope.*

The reduced buffer does not contain a steep slope.

Additionally, an existing non-conforming structure in the piped watercourse buffer will be removed and the area restored with native grass seed. This is noted for general descriptive purposes. The removal of the structure is not included as proposed mitigation.

## 4.1 Mitigation Sequencing

The project has been designed to avoid, minimize and compensate for impacts to the greatest extent possible given the constraints of the site. The following describes how the mitigation sequencing requirements of the MICC have been met.

### *Avoid*

The project area contains one watercourse and its associate buffer areas. Direct impacts to critical areas will be avoided. Buffer impacts will be avoided through buffer averaging.

### *Minimize*

The amount of buffer averaging proposed is the minimum necessary to accommodate the proposed development. Buffer averaging is not proposed to allow for structural replacement. The Mercer Island Fire Department is mandating the driveway improvements as a condition of the development. There is no feasible alternative that would not require buffer averaging.

### *Mitigate*

Compensatory mitigation is not applicable, as buffer averaging will allow the development to avoid buffer impacts. The averaged buffer will provide greater function than the standard buffer. The addition area is associated with the open channel segment, while the reduction area is associated with the piped watercourse segment. The addition area is composed of dense, native vegetation, while the reduction area is mostly bare ground with only a few isolated groundcover species and non-native laurel.

Table 1: Buffer Averaging Summary.

<b>Buffer Reduction</b>	<b>Buffer Mitigation</b>
Reduce a portion of the standard 25-foot piped watercourse buffer to not less than 10 feet (271 SF total)	Expand a portion of the standard 50-foot Type 2 watercourse buffer (542 SF total); install native vegetation in the reduced buffer at a 1:1 ratio for the reduction area (271 SF total) to replace lost function.

## 5 IMPACT ASSESSMENT

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The proposal is to construct a new single-family residence, associated garage, and expand a portion the driveway, as required by the fire code. Driveway expansion cannot be completed within the constraints of the standard watercourse buffers. Buffer averaging is proposed to allow expansion of the driveway. A portion of the piped watercourse buffer will be reduced, and buffer addition for the Type 2 buffer is proposed at a 2:1 ratio to ensure buffer function improvement. Additionally, a portion of the piped watercourse buffer will be enhanced with native plantings at a 1:1 ratio to the proposed reduction area.

### 5.1 No net loss

Without buffer averaging and enhancement, a slight decrease in hydrologic, water quality, and habitat function could be anticipated to occur under the proposed project due to the partial reduction of the Watercourse A buffer. The proposed buffer expansion and enhancement will result in an overall improvement in buffer function compared to the existing conditions.

Table 1, below, summarizes how the proposed mitigation will achieve an improvement of ecological functions on-site.

Table 2. Summary showing no net loss of critical area buffer functions with proposed conditions.

Critical Area Buffer Function	Existing Conditions	Proposed Conditions	Determination
<p><b>Water Quality</b></p>	<p>The current water quality function of the critical area buffers is limited by sparsely vegetated buffer areas and existing buffer intrusions.</p>	<p>Buffer area will increase at a 2:1 ratio, and enhancement in the reduced buffer will occur at a 1:1 ratio. Piped watercourse buffer will decrease in total size, while the Type 2 buffer will increase at 2:1.</p>	<p>Increasing the buffer for the Type 2 (open channel) segment will provide greater protection of the watercourse, as the open channel buffer has the ability to filter and trap sediments and nutrients that could otherwise enter the watercourse. The ability of the piped watercourse buffer to provide these functions is limited as long as the segment remains piped. Increasing amount of dense, rigid vegetation in the reduced areas of the piped watercourse buffer will provide additional filtering capacity in the unlikely event that the watercourse is ever daylighted. The current piped watercourse buffer is very sparsely vegetated at ground level.</p>
<p><b>Hydrology</b></p>	<p>The current hydrologic function of the critical area buffers is limited by sparsely vegetated areas and buffer intrusions.</p>	<p>Vegetative density to be substantially increased in reduced buffer by planting native shrubs and groundcovers. Total buffer area to be increased at a 2:1 ratio, in an area of extremely dense native vegetation. Highest functioning buffer areas will be preserved throughout the site.</p>	<p>Increasing the buffer in a densely vegetated area contiguous with the Type 2 watercourse buffer will increase the ability of the buffer to attenuate peak stormwater flows during rain events. This effect will be realized much more directly, given the proximity to the open channel as opposed to the piped segment. The addition of shrubs and groundcover plants in the reduced buffer would help attenuate flood flow during heavy rain events in the unlikely event that the watercourse is ever daylighted.</p>

Critical Area Buffer Function	Existing Conditions	Proposed Conditions	Determination
<b>Habitat</b>	The habitat function of the buffer reduction area limited by low understory vegetative density, low structural diversity, and prevalence on non-native plant species.	The reduced buffer will be enhanced through the addition of a native shrub and groundcover community. Increase the buffer area at a 2:1 ratio within a native forested area. Highest functioning buffer areas will be preserved throughout the site.	The additional buffer area proposed for the Type 2 buffer increase is the most densely vegetated, native forest area on the property. Protecting this area as buffer improves the habitat function by increasing forage and cover opportunities for wildlife both in terms of overall area and quality of habitat. Additionally, the buffer reduction area provides little cover or forage opportunities currently. Adding fruit-producing shrubs and groundcover will increase the habitat potential in the reduced buffer area.
<b>Overall</b>	Low-functioning piped watercourse buffer with little understory vegetation and existing impervious surface. Greater overall function is present in the existing Type 2 buffer which is mostly forested.	Reduce and enhance low-functioning piped watercourse buffer. Expand the higher-functioning Type 2 watercourse at a 2:1 ratio. Highest functioning buffer areas will be preserved throughout the site.	The proposed project is expected to improve ecological functions over existing conditions. This includes habitat, hydrology, and water quality functions of the watercourse buffers. Overall a net increase in size and a net improvement in watercourse buffer function is anticipated.

## 6 MONITORING PLAN

The buffer enhancement area located within the reduced watercourse buffer will be monitored and protected to ensure success of the installed vegetation. An as-built inspection will be conducted post-installation to ensure the plantings have been installed per the approved plan. An as-built report with representative photographs will be provided to the City within 30 days of installation.

A protective covenant will be recorded on the property title identifying this area as protected watercourse buffer restoration area, noting that native vegetation in this area



will not be disturbed without direction from a qualified restoration specialist and/or the City of Mercer Island.

## 7 SUMMARY

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In order to accommodate the proposed improvements at 4525 W. Mercer Way, specifically the requirement to expand the existing driveway as required by code, a buffer averaging plan has been prepared. Buffer reduction is only proposed to allow the necessary driveway expansion. All structures will be located outside of the standard watercourse buffers, including the piped and Type 2 watercourse buffers.

A total of 271 SF of the piped watercourse buffer will be reduced, and a total of 542 square feet will be added to the Type 2 watercourse buffer (2:1 ratio). Additionally, 271 square feet of the reduced piped watercourse buffer will be enhanced with native shrubs and groundcovers. The buffer reduction area is a low-functioning buffer, given the lack of native groundcover in the area. Conversely, both the buffer addition area and the much of the buffer preservation areas are composed of native forest with a dense understory of shrubs and groundcovers.

Given the limited buffer modifications proposed and the satisfaction and/or exceedance of the required criteria under MICC 19.07.070.B.3, the buffer function will be increased upon implementation of the accompanying buffer averaging plan.

**APPENDIX A**

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**Buffer Averaging Plan**