

June 28, 2017

Collin and Jillian Hagstrom
c/o Brad Sturman
Sturman Architects
9 – 103rd Avenue NE, Suite 203
Bellevue, WA 98004

Re: Hagstrom Residence Critical Areas Report, Response to Peer Review Comments

The Watershed Company Reference Number: 160735

Dear Collin:

This letter represents our responses to the concerns and recommendations provided by the City's Peer Reviewer related to the recently prepared mitigation plan and Critical Areas Report for your property located at 7428 SE 71st Street in Mercer Island, Washington. The comments were provided in a June 8, 2017, letter from Environmental Science Associates (ESA) (*Hagstrom Review CAO17-004*). ESA's comments and recommendations are listed in italics below. Our response to the comments follow in standard font.

Watercourse A

Concern – The project proposes impacts within the buffer of Watercourse A. According to MICC 19.07.070.B, the decision for determining the minimum buffer reduction allowed on piped watercourses is made by the code official. This decision is made based on a determination that the proposal will result in no net loss of watercourse and buffer functions. The CAS and Mitigation plan document existing non-conforming conditions (including portions of the existing residence) located within the standard 25-foot buffer from the piped corridor of Watercourse A. The study states, "The existing watercourse buffers, particularly the Watercourse A buffer, provide very little protective functions." We agree that the existing piped condition of the on-site watercourse precludes the associated buffer area from providing ecological functions for the feature. The mitigation plan details the approach to remove impervious surface and provide buffer enhancement that may warrant buffer reduction and allow impacts within the existing buffer.

While the proposed removal of impervious surfaces and buffer enhancement may provide limited habitat, hydrologic, and water quality benefits to Lake Washington, we do not believe that these

proposed actions will significantly improve functions for the piped watercourse itself. As such, ESA does not believe that the proposed buffer enhancement would provide adequate mitigation for the proposed site development within the standard 25-foot buffer of the piped watercourse, as these features would not specifically enhance the ecological functions of the piped watercourse.

Recommendation 1 – It is recommended that the applicant explore the possibility of daylighting the lower portion of Watercourse A. Daylighting and restoring this lowest watercourse segment could be integrated with the proposed Mitigation Plan and the enhancement of the Lake Washington shoreline area, and could be coordinated with the adjoining property owners consistent with MICC 19.07.070.B.4 (ensuring that the new daylighted watercourse segment would not create new critical areas compliance issues). If this approach is determined feasible and reasonable, we believe that watercourse daylighting and restoration would result in a significant increase in ecological functions and could warrant buffer reduction adjacent to Watercourse B, and/or in portions of the project site where the Watercourse A channel must remain piped. At a minimum, the applicant should demonstrate why daylighting and restoring the stream is not feasible.

The above concern states that the Reviewer does not believe the proposed mitigation for Watercourse A buffer impacts “*will significantly improve functions for the piped watercourse itself.*” Improving the functions of the watercourse itself, significantly or otherwise, is not a requirement of MICC for allowed alterations within watercourse buffers. Under MICC 19.07.030.A.10.e, mitigation measures for proposed impacts must ensure “*no net loss of critical area function.*” The proposed plan will have no direct effect on the functions of the watercourse, itself, and the functions of the buffer will be significantly improved by decreasing the amount of impervious surface within the buffer; moving all proposed impervious areas farther from watercourse than the closest point of the existing structure, including the open channel segment and the piped segment; and replacing impervious and/or otherwise non-vegetated areas with a dense, native plant community. Decreasing the amount of impervious within the buffer (net reduction of 173 sf) combined with moving all impervious areas farther from the watercourse (including portions of the existing structure which are on top of the piped watercourse) would be sufficient to ensure no net loss of critical area or buffer function without additional buffer enhancement. Combining these measures with 1,634 sf of buffer enhancement far exceeds the requirement of “no net loss” of function, instead providing a substantial improvement in buffer function. Indirect effects on Watercourse A through reduction in runoff velocities and increasing shade and input of organic materials associated with the buffer planting plan will represent a slight improvement in watercourse functions.

Additionally, Watercourse A is located within a sewer easement for a large city-owned sewer line that services the entire surrounding neighborhood. Daylighting any portion

of Watercourse A would require substantial modifications within the easement and likely the sewer line itself. The City has indicated that it does not support creating an open channel watercourse in this location, given the limitations associated with the underground utilities.

Concern - The study states that 1,535 square feet of buffer enhancement will occur for buffer impacts in Watercourse A in the form of expansion of the residence into the watercourse buffer. It does not state, however, what the total square footage of buffer impact is anticipated to be. The study also does not state that the applicant is seeking a reduced buffer for Watercourse A, despite the site plan showing the effects of this reduced buffer area.

Recommendation 2 – It is recommended that an updated study include a table or figure that quantifies the area of each type of impact as well as the area of each type of corresponding mitigation proposed. Comparing the ratio of anticipated impacts to proposed mitigation could provide a quantitative analysis of no net loss. The updated study should clearly quantify the buffer reduction being pursued for Watercourse A.

The applicant is not proposing a reduction of the Watercourse A buffer, as buffer reduction is not feasible to allow the proposed development. Rather, the applicant is utilizing the allowed alterations provision under MICC 19.07.030.A.10. The open channel (Type 3) segment of Watercourse A requires a 35-foot standard buffer that can only be reduced to a minimum of 25 feet through buffer reduction and/or buffer averaging. The existing structure is 10 feet from the open channel segment; therefore, maintaining a 25-foot buffer would substantially reduce the buildable area from the current developed area. Since this provision is being applied for the open channel Watercourse A buffer, the applicant is utilizing this provision for the entire Watercourse A buffer for simplicity. The mitigation area has been maximized and demonstrates a significant improvement in watercourse buffer function under either scenario.

Upon final revisions, the mitigation plan proposes enhancing 1,634 square feet of buffer, not as direct compensatory mitigation for buffer impacts, but to ensure no net loss of buffer function as required by MICC. The enhancement of the degraded portions of the Watercourse A buffer is intended to go beyond the minimum necessary to achieve no net loss of function by providing a significant lift in overall buffer function from the current condition. As stated above, the proposed residence will incorporate less impervious area within the Watercourse A buffer than the existing condition, representing a net decrease of 173 sf. All impervious areas will be farther from Watercourse A than the closest points currently (piped and open channel segments). The existing and proposed impervious area and enhancement areas are provided in Table 1 of the Critical Areas Report. The areas are also depicted in the legend and as specific hatching on Pages W2 and W3 of 7 in the mitigation plan.

Concern – The study does not specifically delineate minimum buffers which will be maintained for the piped portion of Watercourse A. Specifically, a staircase is shown which appears to encroach within 3 feet of Watercourse A.

Recommendation 3 – It is recommended that the study specifically list and indicate the minimum buffers for the piped portion of Watercourse A. MICC 19.07.070 allows for reduction of buffers around piped watercourses, but stipulates that the reduced area must be adequate to protect the watercourse. ESA's primary recommendation is to consider daylighting Watercourse A (see Recommendation 1). If the applicant provides adequate documentation that portions of Watercourse A cannot be daylighted as part of the proposal, we recommend that the applicant consider opportunities to provide a 5-foot minimum buffer (free from new fill and structures) to the west of Watercourse A in order to preserve ecological buffer functions.. At a minimum, this should include realignment of the stairway on the east side of the proposed structure.

Minimum distances between the proposed improvements and Watercourses A and B have been added to the mitigation plan figures. The minimum buffer widths are shown for the Watercourse B buffer, which is being reduced. The Watercourse A buffer is not technically being reduced; rather, the residence is being reconstructed within the standard buffer under the allowance provided by MICC 19.07.030.A.10 as described above. The standard buffer is still depicted adjacent Watercourse A. The stairs in question have been reconfigured so that they are now located twelve feet from the piped segment of Watercourse A. The closest point any portion of the new development is to Watercourse A (piped or open channel) is 10 feet.

Buffer Enhancement

Concern – On sheet W3 of the drawing set the legend lists the buffer enhancement area for shoreline setback mitigation at 1,819 SF, but page 10 (section 5.0) of the critical area study lists that enhancement area at 1,908 SF.

The correct area of shoreline setback mitigation area is 1,908 SF. The CAR has been revised to correct the inconsistency.

On the "second" sheet W4 of the drawing set (assuming it is meant to be sheet W5) there are ten (10) shrubs listed in the planting schedule, but on page 14 of the critical area study (section 6.1) it states that "nine native small tree/shrub species and five native groundcover species are proposed in the mitigation area."

There correct number of proposed shrub plantings is ten. The CAR has been revised to correct the inconsistency. The duplicate plan sheet numbers have been corrected.

Also on "second" sheet W4 hatched areas for groundcovers are shown beneath proposed shrub plantings. If the quantities listed for groundcovers in the planting schedule are calculated to be

planted at 24" O.C. across the entirety of these hatched areas, this would result in too many plants being planted on the site. This could be mitigated if the quantities been adjusted to leave room for the other plants on the plan.

The planting quantities and/or densities have been recalculated as requested. Groundcovers in the watercourse buffer enhancement areas, which include sword fern and low Oregon grape, will be spaced at 48" on center. Groundcovers in the shoreline buffer enhancement area, including kinnikinnick, western larkspur, and Roemer's fescue, are smaller species, which will be installed at 36" on center.

Recommendation 4 – It is recommended that the study correct these inaccuracies for consistency, and clarify that the number and spacing of mitigation plantings is correct for the size of the mitigation area.

The CAR has been revised to be consistent with the areas, spacing, and quantities on the mitigation plan.

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

Sincerely,



Ryan Kahlo, PWS
Ecologist