ACERA LLC
Advanced Concepts in Environmental Regulatory Assistance

TECHNICAL MEMORANDUM

Client:
Prakish Modi
14317 NE 186th Place
Woodinville, WA 98072

DATE: January 24, 2015
PROJECT: Wetland and Stream Assessment Report and Buffer Reduction Plan
PROJECT #: 130.001

SUBJECT: Response to City of Woodinville Additional Information Request for Modi Reasonable Use Permit (CAE14001 and SEP14023)

This Technical Memorandum is a response to the City of Woodinville Additional Information Request for Modi Reasonable Use Permit (CAE14001 and SEP14023) dated January 6th, 2015. Specifically it addresses comments 3-8 comments from the Muckleshoot Indian Tribe as they relate to the Wetland and Stream Assessment Report and Buffer Reduction Plan (Report) prepared by ACERA, May 2014. City comments and codes are copied verbatim. ACERA responses are in bold type.

Comment #3

"In accordance with WMC 21.24.340, the director may allow alteration to a wetland provided the a report by a qualified professional determines the following items listed in 21.24.340(1)(a-d). Please address these under the Section 4.1 Wetland A of this report."

WMC 21.24.340 Wetlands – Permitted alterations.
The Development Services Director may allow alterations to a wetland and wetland buffers under the following conditions:

(1) Special studies completed by qualified professionals determine:

(a) The wetland does not serve any of the valuable functions of wetlands identified in WMC 21.06.710 including, but not limited to, biologic and hydrologic functions; or

(b) The proposed development will protect or enhance the wildlife habitat, natural drainage or other valuable functions of the wetland and will be consistent with the purposes of this chapter;

(c) The existing on-site habitat value, hydrology, erosion and deposition and/or water quality; and

(d) Specific recommendations for mitigation which may be required as a condition of development proposal approval. The mitigation may include, but is not limited to, construction techniques or design, drainage or density specifications;

Due to its small size (1,800 square feet) and its low category rating (IV), which reflects minimal functions for hydrology, water quality, and habitat, Wetland A meets the criteria of *WMC 21.24.340(1)(a).* Therefore, the requirements of 21.24.340*(1)(b-d)* do not need to be addressed.

Both Wetland A and its buffer are situated within the proposed stream buffer. Enhancement of Wetland A and its buffer will occur as part of the mitigation actions proposed for the stream buffer reduction.

Wetland A is designated as Class III (WMC 21.24.320). The Class III designation is the closest equivalent to the rating of Category IV. Wetland A is rated Category IV, the lowest possible category using the Best Available Science, i.e. Ecology's Washington State Wetlands Rating System for Western Washington – Revised (Hruby 2004). Wetland A was rated low for water quality function (8), low for hydrologic function (2), and low for habitat function (13).

Although this wetland is adjacent to Little Bear Creek, it is neither proximal (in the center of the creek); nor is it hydrologically influenced by Little Bear Creek. Wetland A therefore does not meet the requirements of a Class 1 Wetland. Wetland A does not provide any hydrologic functions such as flood attenuation or habitat functions such as fish rearing habitat for Little Bear Creek. Little Bear Creek was at flood stage during the site visit and was well below the elevation of Wetland A.

In addition, Wetland A appears to be artificially created and may be an excavated borrow pit or a rudimentary stormwater pond related to the development of the adjacent property, north of the Site. No historical data on this feature is available at this time.

Comment #4

"Page 7 of the report states that "degraded buffers may have their buffers reduced to 115 feet with buffer enhancement and me be further reduced to 100 feet if the same buffer function can be achieved". Please provide an existing baseline of stream and buffer function and value and the net improvement with the enhancement measures, refer to WMC 21.24.380(1)(a). Specifically, explain how the existing in its current state buffer impacts the stream and buffer function and value."

WMC 21.24.380 Streams – Development standards.

A development proposal on a site containing a stream shall meet the following requirements:
(1) The following standard buffers shall be established from the ordinary high water mark or from the top of the bank if the ordinary high water mark cannot be identified:

Stream Type	Standard Buffer Width	Reduced Buffer Width with Enhancement	
1	150 feet	115 feet	*
2	115 feet	100 feet	
3	75 feet	50 feet	
4	50 feet	35 feet	

*A 100-foot buffer may be allowed by the Development Services Director when a special study (based on BAS) determines that functions achieved in 100 feet are equal to the functions achieved in 115 feet for the site in question.

(a) The standard buffer width will be established unless the existing stream buffer is significantly degraded. If the existing stream buffer is significantly degraded, the applicant may use the reduced buffer as referenced in subsection (1) of this section as long as enhancement measures are implemented to provide a net improvement in overall stream and buffer function and value as determined by a qualified biologist. Enhancement measures shall be conducted in accordance with a plan approved by the Development Services Director.

City of Woodinville Ordinance 375 § 3, 2004 states: "*according to the science, effective buffer widths for riparian functions vary considerably; the literature is not definitive in identifying one buffer width for each function studied. The ranges for buffer widths vary in size for a particular function, according to scientific studies. Water temperature, sediment and pollution retention, healthy benthic*

***communities and habitat for some species may be achieved in 100 feet of restored and enhanced riparian stream corridors*" This references the best available science as adopted by the City of Woodinville. Existing baseline of stream buffer function and value and the net improvement with the proposed enhancement measures are provided in Table A (attached).**

Comment #5

"Wetland- Mitigation Requirements. Page 9 (section 6.1) of the report states that the "buffers are degraded because of infestation of highly invasive Knotweed", refer to WMC 21.24.350(2). With an established baseline of existing wetland and buffer function and value, demonstrate that the enhancement measures will provide a net improvement in the existing functions/values."

***WMC 21.24.350(2)* refers to mitigation requirements for direct impacts to critical areas (i.e. wetlands). Regulated buffer is not a Critical Area as defined under *WMC 21.06.136.* There are no proposed impacts to Wetland A. Therefore, this comment is unwarranted. The project proposes a buffer reduction and this is addressed in the response to Comment #3.**

Comment #6

"Streams- Mitigation Requirements. Page 9-10 (section 6.3) of the report needs to address WMC 21.24.400(1)(a-d). Please provide more detail on the current functions that are provided and how the mitigation will improve the function. "

WMC 21.24.400 Streams – Mitigation requirements.

> (1) Restoration or mitigation shall be required as part of a development proposal whereby impacts, either direct or indirect, to the stream occur. Restoration shall also be required when a stream or its buffer is altered in violation of law or without any specific permission or approval by the Development Services Director. A mitigation plan for the restoration or mitigation shall demonstrate that the:
>
> (a) Stream has been degraded and will not be further degraded by the restoration or mitigation activity;
>
> (b) Restoration or mitigation will reliably and demonstrably improve the water quality and fish and wildlife habitat of the stream;
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> (c) Restoration or mitigation will have no lasting significant adverse impact on any stream functions; and
>
> (d) Restoration or mitigation will assist in stabilizing the stream channel.

WMC 21.24.400(1)(a & c). **Little Bear Creek is primarily degraded due the construction of SR 522 within much of its historical floodplain. Upstream of the site, this creek flows between SR 522 and commercially developed industrial properties. These are significant sources of disturbance and pollution. Infestations of invasive knotweed and blackberry species are degrading the stream buffer. Enhancement measures detailed in Table A will significantly improve current onsite buffer functions and will not further degrade the stream.**

WMC 21.24.400(1)(b-d). **Existing baseline of stream buffer function and value and the net improvement with the proposed enhancement measures are provided in Table A (attached).**

Comment #7

"*The report should provide additional information regarding mitigation, maintenance, monitoring and contingency (WMC 21.24.140 and 150). Mitigation projects shall be monitored and maintained for a period of 5 years. Please provide information relating to costs of the planting and labor for bonding purposes."*

A 5 year monitoring plan has been added as section 7.0 of the report. Planting and labor costs will be forthcoming as bids are received.

Comment #8

" Please addressing fencing and signage of the critical areas."
The stream buffer will be identified and marked per the requirements of *WMC 21.24.160 Critical area markers and signs.* See report section 6.0.

Muckleshoot Indian Tribe Fisheries Division Comments

Attached comments to the City's letter from the Muckleshoot Indian Tribe Fisheries Division are duly noted. These are recommendations and are not legally binding. The Tribe has no legal jurisdiction over this proposed project or authority to impose conditions and requirements on City of Woodinville permits.

Comment #1

This project is difficult to assess without more information about the proposed short plat and subsequent housing units. For example, is there a design that could offer some use of the property without impacting the entire stream/wetland buffers across the property as proposed? There is no information provided to determine other potential alternatives; therefore, reviewers cannot determine how this project (as proposed) truly meets mitigation sequencing required for both critical areas and Shoreline Management Act requirements.

The Project is not under the Jurisdiction of the SMA and is being permitted under Reasonable use: "the minimum use to which a property owner is entitled under applicable State and Federal constitutional provisions in order to avoid a taking and/or violation of substantive due process. "Reasonable use" shall be liberally construed to protect the constitutional property rights of the applicant. For example, the minimum reasonable use of a residential lot which meets or exceeds minimum bulk requirements is usually use for one single-family residential structure. Determination of "reasonable use" shall not include consideration of factors personal to the owner such as a desire to make a more profitable use of the site."

Comment #2

The details of potential stormwater impacts are lacking, too, without a definitive site plan to determine if the proposed stormwater management measures are sufficient to protect Little Bear Creek, its floodplain and buffer.
Not applicable – ACERA does not provide engineering services related to stormwater management.

Comment #3

There should be a figure that shows the regulated buffer against the existing site conditions and more detailed analysis about stream buffer functional impacts. From a rough estimate using the site plan, it appears that 12 trees that are 4 inches in diameter or greater will be permanently removed if the stream buffer reduction is permitted. However, we have yet to receive the tree inventory and may have further comments once we get this information. For what is provided in the Critical Areas Report, there is no detailed functional analysis about the reduced stream buffer that includes, but is not limited, to the loss of potential shade trees and future wood recruitment from the permanent removal of these trees. These are important issues as Little Bear Creek has problems with temperature, dissolved oxygen and a lack of wood to create habitat for salmon. The planted trees in the mitigation plan (all 1-gallon) are too small to function the same as the existing trees removed; therefore, they will only provide partial mitigation.

Existing baseline of stream buffer function and value and the net improvement with the proposed enhancement measures are provided in Table A (attached). Removal of the 12 trees (mostly Red Alder) will take place 100 feet or more from the stream. These trees are too far away to provide any significant shade or sources of large woody debris. One gallon size restoration plants have the best chance of survival and are the only size ACERA specifies in planting plans.

Comment #4

Several species of salmon, including ESA listed species are documented in Little Bear Creek, including the portion flowing through the property (see http://apps.wdfw.wa.gov/salmonscape/; http://www.govlink.org/watersheds/8/reports/fishmaps/default.aspx). The checklist indicates "none known" regarding fish species and ESA listed species. It is important that this information be correct, particularly if the applicant is one of the future tenants of the proposed housing units (assuming they are approved).

ACERA did not prepare the SEPA checklist. The SEPA checklist should be updated to be consistent with the species information in Section 3.5 of the report.

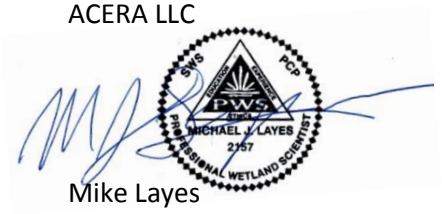
Comment #5

The mitigation plan as proposed is inadequate. The tree planting should be 10' on center in all planting sites; the site needs to be monitored for a minimum of 5 years and reports generated documenting mitigation success (or failure) accordingly; the mitigation areas needs to be protected in perpetuity with an easement or other land use mechanism and fenced from the development; and the planting areas should be expanded to include the east side of Little Bear Creek where it occurs on the property.

Mitigation, monitoring, and buffer signage are addressed in the response to the City's comments above. Tree spacing is specified at ~10-15 foot o/c because of the existing mature native trees located on site.

The report will be updated to be consistent with the responses above. If you have any questions regarding this technical memorandum please contact me at (360) 292-9639.

Sincerely,
ACERA LLC



Mike Layes
Professional Wetland Scientist

Table A. Baseline and Enhancement Functions Analysis

Location	Function	Current Baseline Conditions	Baseline Function Level	Conditions After Enhancement	Function Level After Enhancement
Stream banks, Floodplain, and portions of Wetland Buffer	Flood Control and Stormwater Attenuation	Invasive Knotweed and Himalayan Blackberry dominate the buffer along the stream bank, floodplain, and part of the wetland buffer. Both of these species completely shade out ground cover and typically have bare dirt and no herbaceous plants in the understory. Knotweed completely dies back in the winter and does not provide any structure to slow and attenuate flood waters. These species provide minimal-low levels of this function.	Minimal-Low	Invasive Knotweed and Himalayan Blackberry are removed allowing native herbaceous plants to establish. Dense plantings of native shrubs and trees provide structure to attenuate and slow flood waters.	Moderate-High
Wetland A	Flood Control and Stormwater Attenuation	Wetland A is elevated above the floodplain of the stream and does not provide flood control functions. Due to its small size and hydrogeomorphic classification of slope wetland, it provides minimal stormwater attenuation capacity.	Minimal	Proposed enhancements to wetland A and its buffer will not affect this function	Minimal
Stream and Wetland Buffers	Ground Water Recharge	There is sparse herbaceous understory within both stream and wetland buffer areas due to dense invasive blackberry and knotweed species. Native shrubs and trees are also present and intermixed with the invasives. Current buffer vegetation conditions provide a low - moderate level of function	Low-Moderate	Removal of invasive plants and dense plantings of native trees, shrubs, and herbaceous species will slow surface water runoff and result in an increased level of infiltration and groundwater recharge.	Moderate-High
Wetland A	Ground Water Recharge	The Hydrogeomorphic Classification of Wetland A is "Slope". These types of wetlands are seeps and are supported by groundwater moving to the surface and flowing out. Therefore Wetland A does not provide this function.	None	The Hydrogeomorphic Classification of Wetland A is "Slope". These types of wetlands are seeps and are supported by groundwater moving to the surface and flowing out. Therefore Wetland A does not provide this function.	None
Stream and Wetland Buffers	Water Filtration and Purification	There is sparse herbaceous understory within both stream and wetland buffer areas due to dense invasive blackberry and knotweed species. Native shrubs and trees are also present and intermixed with the invasives. Current buffer vegetation conditions provide a low - moderate level of this function	Low-Moderate	Invasive Knotweed and Himalayan Blackberry are removed allowing native herbaceous plants to establish. Herbaceous plants will slow surface sheet flows through the buffer allowing for the trapping of sediments and pollution. Dense plantings of native herbaceous plants, shrubs and trees provide additional structure to attenuate and slow surface flow through the buffer.	Moderate-High
Wetland A	Water Filtration and Purification	Wetland A is dominated by native shrubs with minimal understory of herbaceous plants. Water Filtration and Purification function is therefore low.	Low	Dense, native herbaceous plants are established in the understory of existing native shrubs. Herbaceous plants will slow surface sheet flows through the buffer allowing for the trapping of sediments and pollution.	High

Table A. Baseline and Enhancement Functions Analysis

Location	Function	Current Baseline Conditions	Baseline Function Level	Conditions After Enhancement	Function Level After Enhancement
Stream Buffers	Water Temperature Control	Invasive Knotweed and Himalayan Blackberry dominate the buffer along the stream bank, floodplain, and part of the wetland buffer. These species do not branch out over the stream channel and therefore do not provide any substantial shade to keep water temperature low in summer months	Low	Native trees and shrubs planted along the stream will provide increased shading over the stream resultung in lower water temperatures in summer months.	High
Stream and Wetland Buffers	Erosion Control	Invasive Knotweed and Himalayan Blackberry dominate the buffer along the stream bank, floodplain, and part of the wetland buffer. Both of these species completely shade out ground cover and typically have bare dirt and no herbaceous plants in the understory. The coarse rhizomes of both these species does not stabilize the banks as well as the finer roots of native trees, shrubs or herbaceous plants, making the stream banks and hillside more prone to erosion.	Low	Removal of invasive plants and dense plantings of native trees, shrubs, and herbaceous species will reduce exposed soils and stabilize the stream banks and hillslope within both the wetland and stream buffers.	High
Wetland A	Erosion Control	Wetland A is dominated by native shrubs with a minimal understory of herbaceous plants. Exposed soils are present.	Low	Herbaceous plants are established, limiting exposed soils.	Moderate
Stream and Wetland Buffers	Wildlife Habitat	Invasive Knotweed and Himalayan Blackberry dominate the buffer along the stream bank, floodplain, and part of the wetland buffer. Native vegetation is interspersed through out and dominated by young Red Alder trees over a Salmonberry shrub understory. Current buffer vegetation is low in species diversity and provides low functions for wildlife cover and forage opportunities. There are very few trees currently present along the stream bank to provide cover for native fish and a source of large woody debris for recruitment into the stream channel to create fish habitat and stabilization of the stream channel.	Low	Removal of invasive plants and dense plantings of native trees, shrubs, and herbaceous species will substantially increase both plant species and plant structural diversity within the stream and wetland buffers. The native plantings will attract greater diversity of animal species to the site and also result in increased invertebrate pray production for fish. Planting of coniferous trees will provide increased screening for wildlife from residential and highway disturbance.	High