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FINAL MITIGATION PLAN
for
Unavoidable Project Wetland Buffer Impacts

For
REASONABLE USE EXCEPTION

Snohomish County Parcel No.
00596901100100

XXX 3rd Street
City of Mukilteo, Washington

Prepared for:
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REVISION 1
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EXECUTIVE SUMMARY

The SOUND Project Site, XXX 3rd Street is located generally south of 3rd Street, in the City of Mukilteo, Washington. The project site is one parcel approximately 1.04 acre. The site is bounded on the south, west and east by residential and commercial development.

As part of the site planning process an assessment of the project site was completed following the procedures outlined in the *Washington State Wetlands Identification and Delineation Manual* (Wash. Manual) and the *Corps of Engineers Wetland Delineation Manual* (2010 Supplement). Drainage corridors were also assessed in accordance with the criteria established by the City of Mukilteo and the State of Washington Department of Natural Resources (WDNR) Forest Practice Rules (WAC 222-16-030). These assessment activities resulted in the identification of one wetland area and one stream. The site is totally encumbered by regulated wetlands and their buffers.

The selected site development action for this project site is the development of a single-family house in the southeast corner of the site. Through site planning the project team has been able to design the home site to minimize impacting the identified onsite wetlands. However, to obtain use of the site, the Cat. 3 Wetland buffer on the site must be reduced by 1,587 sq. ft. To mitigate for the encroachment into the standard buffer, the reduced degraded buffer area of 6,743 sq. ft. will be enhanced by removing exotic invasive vegetation and revegetated with native trees and shrubs.

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STANDARD OF CARE

Prior to extensive site planning, this document should be reviewed and the wetland boundaries verified by the appropriate resource and permitting agencies. Wetland boundaries, wetland classifications, wetland ratings, proposed buffers, and proposed compensatory mitigation should be reviewed and approved by City of Mukilteo Planning dept. personnel and potentially other resource agency staff. BCES has provided professional services that are in accordance with the degree of care and skill generally accepted in the nature of the work accomplished. No other warranties are expressed or implied. BCES is not responsible for design costs incurred before this document is approved by the appropriate resource and permitting agencies.

Mark Heckert
Beaver Creek Environmental Services [BCES]

INTRODUCTION

This report details activities to mitigate for unavoidable impacts to regulated City of Mukilteo environmentally Critical Areas as an initial element of the site planning process for the SOUND project (Parcel # 00596901100100). The project site is one parcel, approximately 1.04 ac. The site is bounded on the south, west and east by residential and commercial development and on the north by 3rd Street.

STUDY PURPOSE

This purpose of this document is to present the plan for mitigation of unavoidable impacts to the regulated wetland buffer. This study was designed to accommodate site planning and potential regulatory actions. This report is suitable for submittal to federal, state, and local authorities for wetland boundary verification and permitting actions.

SITE DESCRIPTION

The site is currently undeveloped. The site consists of a ravine beginning at 3rd street and continuing south approximately 1 block. The site is bounded on the west by a community center and parking lot, on the south by a single-family house, and on the east by a church, and single-family house. The ravine is steeply sloped on all sides. The site is forested in deciduous trees and shrubs in the bottom and blackberry along the eastern slope. A stream transects the site through the center east-west, flowing north. At the north boundary the stream enters a 48 in. culvert approximately 150 ft. in length. The site is entirely encumbered by wetland, stream, and their associated buffers. The standard 105 ft. wetland buffer is considerably reduced by existing development on all sides.

MITIGATION PLAN

The selected site development action for the Sound is the development of a single-family house site consistent with the City of Mukilteo comprehensive plan and local land use zoning. The development of this site includes the mitigation for unavoidable buffer reduction. Through site planning the project team has been able to design the homesite to minimize adversely impacting the identified onsite wetland and buffer. The standard buffer of the wetland must be reduced by 1,587 sqft. to obtain a building site.

Mitigation Sequencing:
Site planning for impact mitigation follows the required mitigation sequencing protocol of Avoidance, Minimization, Mitigation.
Avoidance: The selected site is the furthest onsite point from the critical areas. It is the only possible development location.
Minimization: The selected development is the minimum necessary to derive reasonable use of the site.
Mitigation: Impacts which cannot be avoided or minimized are enumerated according to City of Mukilteo regulations. The proposed development is the minimum required to achieve reasonable use of the site. The development is situated as far from the wetland as possible.

Through this compensatory mitigation the development would **not** result in a "net loss" of regulated wetland area, function, or value consistent with City of Mukilteo Zoning Code.

Due to site constraints and the imperative of reasonable use, the buffer must be reduced by 1,587 sq. ft. for this impact.

Proposed mitigation for the permanent alteration of the buffer of Wetland A will focus on enhancing the remaining onsite buffer.

This development is essential to obtain use of the site. As a consequence, the development will result in unavoidable reduction to the wetland buffer.

Impact Area Analysis – (in sq. ft.)

Area	Development Impact	Mitigation required?	Mitigation ratio	Mitigation Sq. Ft.
Buffer – Impact of house site	1,587	YES	As possible	6,743 Buffer Enhancement
TOTAL BUFFER IMPACT	1,587	YES	4.3 : 1 Enhancement to Impact	6,743

The wetland and buffer area has been intensively manipulated in the past. The site appears to have been cleared 50 years ago and left to revegetate unplanted. The standard buffer of 105 ft. has been reduced considerably by encroaching development on the north, east, and west. Organic debris and soil fill has been introduced, and continues on the east sidewall. In the area of the proposed development, Himalayan blackberry is the dominant vegetation.
The proposed development reduces the buffer by approximately 70 linear feet. However, that buffer is currently reduced by 5-30 linear ft. by previous development.

Wetland enhancement will include installation of trees and shrubs in the buffer area currently dominated by blackberry. The entire wetland will derive functional lift from enhancement.

City of Mukilteo regulations:

17.52.025 Reasonable use provisions.

A. The standards and requirements of these critical area regulations are not intended and shall not be construed or applied in a manner to deny all reasonable use of private property. If the applicant demonstrates to the satisfaction of the planning director or his or her designee that strict application of these standards would deny all reasonable use of a property, development may be permitted subject to appropriate conditions. A reasonable use exception is intended as a "last resort" when no plan and/or mitigation can meet the requirements of this chapter and allow the applicant a reasonable viable use of his or her property.

B. The applicant must demonstrate to the planning director or his or her designee all of the following:

1. That no reasonable use with less impact on the critical area and/or the buffer is feasible and reasonable;

RESPONSE: This parcel is zoned RD 7.5 Single Family Residential and the Land Use Single Family Residential - High Density

No single-family residential use with less impact is possible on the site. Four percent of the site is proposed for development. The remaining 96% of the site will remain undeveloped. The development is constrained to the very southeast corner of the site. In this area no new access is necessary, as it adjoins a parking lot and the terminus of a city street (4th Street) which has previously reduced the standard buffer under regulated use. Any location on the west side of the wetland will require access thru the community center. The proposed location is the only horizontal site on the parcel. Any other location would require major fill of the buffer or wetland or extraordinary engineering.

2. There is no feasible and reasonable on-site alternative to the proposed activity or use that would allow reasonable use with less adverse impacts to the critical area and/or buffer. Feasible on-site alternatives shall include, but are not limited to: reduction in density or building size, phasing of project implementation, change in timing of activities, and revision of road or parcel layout or related site planning considerations;

RESPONSE: One single-family dwelling is proposed. That is the minimum development to obtain reasonable use of the parcel. No single-family residential use with less impact is possible on the site. Four percent of the site is proposed for development. The remaining 96% of the site will remain undeveloped. The development is constrained to the very southeast corner of the site. In this area no new access is necessary, as it adjoins a parking lot and the terminus of a city street (4th Street) which has previously reduced the standard buffer under regulated use. Any location on the west side of the wetland will require access thru the community center. The proposed location is the only horizontal site on the parcel. Any other location would require major fill of the buffer or wetland or extraordinary engineering.

3. There are no practical alternatives available to the applicant for development of the property. An alternative is practical if the property or site is available and the project is capable of being done after taking into consideration existing technology, infrastructure, and logistics in light of the overall project purpose;

RESPONSE: The proposed development was designed through careful consideration of site conditions. The proposed development is the only horizontal site on the parcel, and is located on a previous fill, which was permitted by the City. Any other location would involve additional impact from access development and substantial fill of critical area wetland and buffer to

create a building pad. The remainder of the site outside the wetland boundary has slopes greater than 33%, making development untenable. The proposed house is two-story to reduce the footprint, and is in accord with, or smaller, than the neighboring houses.

4. The proposed activity or use will be mitigated to the maximum practical extent and result in the minimum feasible alteration or impairment of functional characteristics of the site, including contours, vegetation and habitat, groundwater, surface water, and hydrologic conditions, and consideration has been given to best available science;

RESPONSE: RESPONSE: Standard regulation would require 12,696 sq. ft. as mitigation for the 1,587 sqft impact to the wetland buffer. We have defined 6,743 sqft of buffer that would be improved by enhancement, the area of which is a previous fill. The remainder of the site is fully vegetated and additional plantings would be redundant. We cannot discern any additional creation, enhancement, or preservation opportunities on the site.
We cannot meet the standard regulation of 8:1 mitigation : impact on this site. This requires an additional 5,943 sq ft. of mitigation enhancement.
The purpose of the RUE process is to allow development in areas designated for the zoned use when other reg. restrictions would make it unbuildable.
If we could meet the standard regulations, we would not be applying for an RUE.
If the City has any additional or novel ideas for mitigation, we would be happy to entertain them, or cooperate on a regional mitigation area.

5. There will be no material damage to nearby public or private property and no material threat to the health or safety of people on or off the property;

RESPONSE: No development or action is proposed outside the extreme Southeast corner of the parcel.

6. The proposed activity or use complies with all local, state, and federal laws and the applicant has applied for or obtained all required state and federal approvals; and

RESPONSE: The proponent is now actively pursuing the city permits for development. No wetland fill is occurring. No federal or state critical area permitting is known to be required.

7. The inability to derive reasonable use is not the result of actions by the applicant in segregating or dividing the property and creating the undevelopable condition after March 23, 1992.

RESPONSE: No information on the creation of the parcel is readily available.

C. Allowed Reductions for Single-Family Residential Reasonable Use Lots. As provided under state law and the guidelines of the Department of Commerce, reasonable use

permits shall allow the development of a modest single-family residential home on a critical area lot.

RESPONSE: Four percent of the site is proposed for development. The remaining 96% of the site will remain undeveloped. The development is constrained to the very southeast corner of the site. The house has a footprint of 1,352 sq. ft., which appears to be "modest" and in accord with the houses in the neighborhood.

1. Building setbacks may be reduced by up to fifty percent where the applicant demonstrates to the city that the development cannot meet the city's code requirements without encroaching onto a critical area or its buffer.

RESPONSE: The entire parcel is enclosed in the standard 105 ft. wetland buffer. This buffer has been previously reduced by the community center in the west, and up to 70 linear feet in the east by a parking lot. No area on the parcel is more than 50 ft from the wetland boundary.

2. Development on reasonable use lots shall leave at least seventy percent of the lot undisturbed to protect the critical areas. On small lots seven thousand five hundred square feet or less, a maximum building footprint of one thousand five hundred square feet would be allowed. Additional impervious area for the driveway will be permitted which provides the shortest and most direct access to the house with minimal encroachment or impact into the critical area or buffer. When determining if the access has minimum encroachment or impact on a critical area the use of bridges and open bottom culverts are shall be considered minimal impact. Yard areas will be permitted only if they do not encroach into the critical area or buffer.

RESPONSE: The parcel is 45,303 sqft. Four percent of the site is proposed for development. The remaining 96% of the site will remain undeveloped. 300 sq. ft. of driveway is proposed connecting directly to the parking lot to the east, providing the shortest and most direct access to the house. The house footprint is 1,351 sq ft, under the allowable threshold for smaller parcels. The development is constrained to the very southeast corner of the site. In this area no new access is necessary, as it adjoins a parking lot and the terminus of a city street (4th Street) which has previously reduced the standard buffer under regulated use. Any location on the west side of the wetland will require access thru the community center. The proposed location is the only horizontal site on the parcel. Any other location would require major fill of the buffer or wetland or extraordinary engineering.

3. Critical area regulations, buffers and/or steep slope setbacks may be reduced as follows:

a. Less than twenty-five percent is an administrative process.

b. Twenty-five percent to fifty percent where the applicant demonstrates to the city that the development cannot meet the city's code requirements without encroaching onto a

critical area or its buffer is an administrative process. In order for the property owner to receive this administrative reduction, the applicant must provide a report relying on best available science and prepared by a qualified specialist to the city that demonstrates the reduction is warranted.

c. Fifty percent or greater reduction requires approval by the hearing examiner through a variance process and with the submittal of a report relying on best available science and prepared by a qualified specialist to the city that demonstrates the reduction is warranted.

RESPONSE: GeoTech Consultants, inc. provided a report of February 14, 2022 attesting the reduction is warranted. Included in submittal package.

4. In order for the property owner to receive a reduction in the required critical area buffer, administratively or through a variance, the remaining buffer shall be enhanced to reduce significant adverse impacts to the critical area and off-site buffer mitigation shall be required for the area of buffer reduced. Mitigation can be in the form of payment of a fee in-lieu of buffer mitigation through use of the Mukilteo habitat reserve (MHR) as described in the Mukilteo CAMP. Mitigation may also be in the form of off-site buffer restoration or enhancement as described in the Mukilteo critical areas mitigation program (CAMP) or some other available site per an approved mitigation plan as required by the city's critical areas regulations.

RESPONSE: We have defined 6,743 sqft of buffer that would be improved by enhancement, the area of which is a previous fill. The remainder of the site is fully vegetated and additional plantings would be redundant. We cannot discern any additional creation, enhancement, or preservation opportunities on the site.
We cannot meet the standard regulation of 8:1 mitigation : impact on this site. This requires an additional 5,943 sq ft. of mitigation enhancement.
The purpose of the RUE process is to allow development in areas designated for the zoned use when other reg. restrictions would make it unbuildable.
If we could meet the standard regulations, we would not be applying for an RUE.
If the City has any additional or novel ideas for mitigation, we would be happy to entertain them, or cooperate on a regional mitigation area.

Fencing: A fence will be installed at the entire facing line to the wetland and reduced buffer, inhibiting access. City of Mukilteo wetland buffer boundary will be attached on every third post. No further activity will occur within the fenced area once enhancement planting is complete.

The existing wetland in the interior of the site has been degraded by prior filling and clearing of vegetation.

Potential impacts to habitat from the development are:

1). **Short-term construction disruption**. This impact will be mitigated thru the placement of silt fence barriers in every area which may flow into the wetland and stream (see Sound Site Civil Plans, erosion control Plan) and oversight by the project biologist during construction. The project biologist will observe and consult with construction crews during construction to ensure compliance with best management practices during the excavation of the buffer area.

2). **Long-term impacts from development**:

a). Permanent loss of habitat area. There will be no functional loss of habitat area. The present wetland and buffer in the mitigation area is poor functional. Functional buffer area will increase as a result of installation of trees and shrubs.

b). Loss of habitat utility due to light and noise from the development and increased visitation by people. Lighting of the developed area will increase "spill-over" of light to the mitigated buffer and wetland. All lighting will be directed away from the mitigation area. A boundary planting of shrubs will be placed within the retained buffer to provide light and auditory shading. The boundary fence will be a 2-post cedar fence to inhibit intrusion by people.

MITIGATION FUNCTIONAL COMPARISON

ENVIRONMENTAL FUNCTION	EXISTING	PROPOSED
Hydrological Support Function	Low	Moderate
Stormwater Storage Function	High	High
Floodwater Storage Function	High	High
Water Quality Function	Moderate	High
Groundwater Recharge Function	Moderate	Moderate
Natural Biological Functions	Moderate	High
Education and Recreational Opportunities	Low	Moderate
Threatened and Endangered Specie	Moderate	High

(after Adamus et al. 1987: Reppert et al. 1979)

MITIGATION PLAN ELEMENTS- BUFFER

The proposed mitigation for 1,587 sq. ft. of buffer impact will be (Att. 1):

- 6,743 sq. ft. of buffer enhancement contiguous with the existing wetland = 4.3:1 mitigation ratio

1. As mitigation for the unavoidable impact to 1,587 sq. ft. of City of Mukilteo regulated Category 3 Wetland buffer, an area of 6,743 sqft of the remaining buffer will be enhanced with native trees and shrubs. The buffer area to be enhanced is presently dominated by Himalayan blackberry. The buffer areas to be enhanced will be cleared of exotic species and planted with native trees and shrubs. Supportive hydrology will continue to be provided by the existing flow.

2. Reed Canarygrass and other exotic invasives will be removed by hand pulling and raking.

3. The development boundary will be enclosed in silt fence to inhibit erosion and transport of sediment into the remaining wetland and buffer.

4. Pulled and cleared areas will be hydroseeded with buffer emergents.

MITIGATION PLAN ELEMENTS - COMMON

1. All onsite activities will be monitored by the project biologist. Following the completion of onsite planting activities a "record-drawing" plan will be prepared and submitted to City of Mukilteo. A **five-year** monitoring program will be undertaken to assure the success of the buffer enhancement program. A series of financial guarantees will also be implemented to assure that the proposed work is completed and is successful.

2. The outer boundaries of the established buffer tract would be marked with standard City of Mukilteo buffer boundary signs. The buffer boundaries will be fenced to limit human intrusions between the upland boundary of the remaining buffer and the developed portion of the site. In addition, the project team will remove the trash, debris, and invasive shrubs within the retained wetland and buffer areas.

3. Wetland and buffer vegetation cleared or otherwise damaged during the installation of the mitigation plan shall be revegetated with appropriate native plants installed at an appropriate density to restore the damaged condition. These plants shall be subject to the same performance standards indicated in the mitigation plan.

GOAL AND OBJECTIVE OF THE MITIGATION PLAN

The **GOAL** of the Mitigation Plan is to fully compensate for the unavoidable adverse impact to regulated wetland and buffer areas. Upon the completion of this mitigation plan there will be no net loss of wetland acreage, functions, or values; and an increase in the potential for the buffer to protect aquatic habitats.

To achieve the defined **GOAL**, the following **OBJECTIVES and PERFORMANCE CRITERIA** have been established to apply to the compensatory mitigation wetland area.:

Objective A. The enhanced buffer area will total 6,743 sq. ft. and be located in all areas facing development. The enhanced buffer will be hydrologically connected to the adjacent City of Mukilteo Category III wetland. The enhanced wetland area will exhibit a tree vegetation class within five years following initial planting.

Performance Criterion #A1: As defined by plant counts 100% of the trees and shrubs installed as a part of the initial planting phase will be alive at the end of the first growing season.

Performance Criterion #A2: As defined by plant counts 80% of the shrubs installed as a part of the initial planting phase will be alive at the end of the fifth growing season.

Performance Criterion #A3: As defined by aerial cover, invasives will cover less than 10% of the planting area in any one year.

SELECTED PLANT COMMUNITIES

The plant communities and plants selected for the created wetland and buffer areas will be obtained as nursery stock. These selected species are native and commonly occur in the local area. The plant species prescribed are selected to increase plant diversity, match present onsite communities, increase wildlife habitats, and enhance the aquatic environment. Plantings will be distributed evenly through the proposed mitigation enhancement area as depicted on the attached Sound Mitigation Plan drawing.

BUFFER MITIGATION PLANTING AREA: A
Retained Buffer Enhancement –
100% Himal Blackberry
All exotic invasive vegetation to be removed by grubbing

6,743 sq. ft. @ 0.012/sq. ft. = 81 trees
To be planted evenly through the mitigation site

	COMMON NAME SCIENTIFIC NAME	LOCATION	PROPOSED SPACING (oc)	PROPOSED SIZE	INDICATOR STATUS
14	Western red cedar (THP) *Thuja plicata*	Buffer	9 ft	4 ft height minimum	FAC
14	Sitka spruce (PIS) *Picea sitchensis*	Buffer	9 ft	4 ft height minimum	FAC
14	Western Paper Birch (BEP) *Betula papyrifera*	Buffer	9 ft	4 ft height minimum	FAC
14	Scouler willow (SAC) *Salix scouleriana*	Buffer	9 ft	4 ft height minimum	FAC
14	Cascara (RAP) *Rhamnus purshiana*	Buffer	9 ft	4 ft height minimum	FAC
14	Western (black) Hawthorne (CRD *Crataegus douglasii*	Buffer	9 ft	4 ft height minimum	FAC

6,743 sq. ft. @ 0.028/sq. ft. = 189 shrubs

	COMMON NAME SCIENTIFIC NAME	LOCATION	PROPOSED SPACING (oc)	PROPOSED SIZE	INDICATOR STATUS
21	Western crabapple (PYF) *Pyrus fusca*	Buffer	6 ft	2 gal	FACW
21	Vine maple (ACC) *Acer circinatum*	Buffer	6 ft	2 gal	FACU
21	Wild rose (ROG) *Rosa gymnocarpa*	Buffer	6 ft	2 gal	FACU
21	Black twinberry (LOI) *Lonicera involucrata*	Buffer	6 ft	2 gal	FAC
21	Hazelnut (COC) *Corylus cornuta*	Buffer	6 ft	2 gal	FACU
21	Wild Gooseberry (RID) *Ribes divaricatum*	Buffer	6 ft	2 gal	FAC
21	Nootka Rose (RON) *Rose nutkana*	Buffer	6 ft	2 gal	FAC
21	Stink currant (RIB) *Ribes bracteosum*	Buffer	6 ft	2 gal	FAC
21	Thimbleberry (RUP) *Rubus parviflorus*	Buffer	6 ft	2 gal	FAC

Emergent reseeding

6,743 sq. ft. @ 1 lb./500 sq. ft. = 14 lbs. native wetland plant seed mix hydroseeded over plantings.

Native buffer emergent mix

- 45% Rice Cutgrass
- 40% NW Mannagrass
- 10% Bluejoint Reedgrass
- 3% Spike Bentgrass
- 2% Wool-grass

PLANTING GUIDELINES

1. Trees 9' O.C., or 0.012 per square foot of area; (this assumes 2-5 gal. size) — such trees are to be at least 50% conifers;
2. Plus shrubs 6' O.C., or 0.028 per square foot (this assumes 1-2 gal. size);

**To be planted opportunistically around existing trees

3 Created Wetland hydroseeded @ 1 lbs. / 500 sq. ft.

CONSTRUCTION INSPECTION

Essential to the success of the compensatory mitigation program is the accurate inspection of onsite activities immediately prior to and during the wetland creation and planting phases. These activities include pre-construction site inspection, onsite inspection and technical direction during wetland creation and planting activities, and post-creation/planting site inspection and evaluation.

The pre-creation site inspection allows the project proponent and the project biologist to evaluate and, if necessary, adjust the onsite construction steps. These steps include analysis of project site elevation features, project sequencing and timing, final grade analysis, unforeseen required minor modifications to the original establishment plan, and the establishment of environmental protections (silt fences, etc.) required during construction. Interaction with City of Mukilteo wetland staff is also an essential element during pre-construction site inspections and discussions. Onsite technical inspection during construction and planting activities will be implemented by the project biologist. The project biologist will perform oversight and address minor unforeseen difficulties to assure that the intent of the wetland mitigation plan is met.

The project biologist shall also be responsible for ensuring that the species and sizes of native plants selected are utilized during initial planting. If selected native species become unavailable, the project biologist will consult with City of Mukilteo wetland staff for substitute plant species to ensure that the intent of the wetland mitigation plan is met. Post-creation site inspection/evaluation will include the preparation of a "record-drawings" which will be submitted to City of Mukilteo wetland staff.

VEGETATION MAINTENANCE PLAN

Maintenance of the created wetland and buffer plant communities may be required to assure the long-term health and welfare of the wetland's and buffer's environmental

functions. The overall objective is to establish undisturbed plant communities that do not require maintenance.

The reduced wetland buffer will require irrigation for the monitoring period. Irrigation will be supplied June 1 thru September 1 at a rate of 1 inch per week.

Activities will include, but are not limited to, the removal of invasive non-native vegetation and the additional irrigation of selected areas. Established maintenance activities include the removal of any trash within the buffer.

MITIGATION CONSTRUCTION SCHEDULE

PROJECT TASK	TASK SCHEDULE (on or before)
Onsite pre-creation meeting	September, 2023
Placement of protective fencing, final marking, and identification of work area.	September, 2023
Planting of enhancement wetland & buffer	November, 2023
Record-drawings report to City	December,2023

PROJECT MONITORING

Following the successful completion of the proposed compensatory mitigation plan a **five-year** monitoring and evaluation program will be undertaken. The purpose of this program is to assure the success of the selected mitigation as measured by an established set of performance criteria (*see above*). This monitoring will also provide valuable information on the effectiveness of mitigation procedures.

STANDARDS OF SUCCESS

Vegetation Sampling Methodology and Monitoring Schedule

Onsite monitoring will count and clearly identify each tree and shrub installed during the initial planting phase. Such monitoring will also include any subsequent planting required to meet the performance criteria. These defined performance criteria will be applied at the time of monitoring. All installed trees and shrubs will be visually evaluated to determine the rate of survivorship, health, and vigor of each plant.

Vegetation Monitoring

1. Upon the completion of initial planting and as a part of each monitoring period the project biologist will count the number of live plants which were planted within the wetland and buffer areas. Plants will be identified to species and observations of general plant condition (i.e., plant health, amount of new growth) are to be recorded for each plant.

2. The project biologist will count the number of undesirable invasive plants and estimate the aerial coverage (as if the observer were looking straight down from above) of these invasive plants. Undesirable plants include blackberries, Scot's broom, tansy ragwort, and other such plants listed in the Washington State Noxious Weed List.

3. The project biologist will count the number of desirable "volunteer" plants and estimate the aerial coverage of these plants within the mitigation area.

4. The project biologist will take photographs that show the entire mitigation area. During the five-year monitoring period photos will be taken in the same direction and at the

same location to provide a series of photos. These photos will show plant growth, plant species, and plant coverage.

5. Upon the completion of the initial project planting and upon the completion of each monitoring period the project biologist will prepare a report defining methods, observations, and results along with the date the observations were completed. Each report will be sent to the City of Mukilteo Planning Dept..

6. The monitoring schedule is defined as:

A. **At the completion of initial project planting**. This report will include a "record drawing" defining the species used, locations, and general site conditions. This report will also include a "lessons learned" section to assist in future monitoring and final project assessment. This "record drawing" and report will be provided to the City within two weeks after the completion of onsite planting.

B. **Once per year for five years following the completion of initial onsite planting.** Onsite monitoring will be completed once near the end of the growing season (late September). For each onsite monitoring activity a report will be prepared and provided to the City within two weeks after the completion of onsite monitoring.

The last monitoring report will include notification to the City biologist that the monitoring program has concluded and that City review and site inspection is required for project analysis and release of the financial guarantee. This final report will also include a "lessons learned" section to assist and final project assessment and to potentially assist in the evaluation other mitigation projects.

Vegetation Monitoring Sequencing

IDENTIFIED TASK	DATE OF COMPLETION (on or before)
First growing season fall plant inspection	September 30, 2023
First growing season fall report	October 15, 2023
Second growing season fall plant inspection	September 30, 2024
Second growing season fall report	October 15, 2024
Third growing season fall plant inspection	September 30, 2025
Third growing season fall report	October 15, 2025
Fourth growing season fall plant inspection	September 30, 2026
Fourth growing season fall report	October 15, 2026
Fifth growing season fall plant inspection	September 30, 2027
Fifth growing season fall report	October 15, 2027

WILDLIFE OBSERVATIONS

Observations of wildlife will coincide with the onsite activities undertaken as part of the Vegetation Monitoring Program. The onsite team will document the extent of bird species

abundance, site utilization, nesting and feeding activities, and species diversity. In addition, documentation of terrestrial and aquatic reptiles, amphibians, and mammals observable without trapping will also be documented. Wildlife observations will be documented within the Vegetation Monitoring Reports noted above.

REMOVAL OF INVASIVE NON-NATIVE VEGETATION

As a contingency, should the removal of invasive non-native vegetation become necessary, the project proponent will contact City of Mukilteo wetland staff to establish and define specific actions to be taken. Resultant contingency plan activities will be implemented when the ongoing vegetation monitoring program indicates that plants listed in the Washington State Noxious Weed List and Scot's broom are becoming dominant in the community (greater than 20%).

Following initial planting of the wetland and buffer areas the project team will undertake an invasive vegetation control program through the five-year monitoring program. This control program will focus on biannual hand-removal of re-sprouting invasive shrubs and will not adversely impact the desirable plants within the wetland and buffer.

SALVAGE AND REUSE OF WOODY MATERIAL

Woody material salvaged from trees cleared for construction of the new home will be salvaged and installed as large woody debris in the retained wetland and the wetland mitigation planting areas. No woody material will be imported to the site.

Vegetation Control Program Schedule

TASK	TO BE COMPLETED ON OR ABOUT
First growing season fall removal	September 15, 2023
Second growing season fall removal	September 15, 2024
Third growing season fall removal	September 15, 2025
Fourth growing season spring removal	September 15, 2026
Fifth growing season fall removal	September 15, 2027

COVERAGE FOR EXPOSED BUFFER AREA

Coverage for all exposed surfaces within the mitigation area will be completed within two weeks following the completion of onsite grading.
Coverage will be by hydroseeding wetland buffer mix.

CONTINGENCY PLAN

As a contingency, should the proposed compensatory plan fail to meet the performance criteria the project proponent will undertake required remedial actions. Where plant survival is the failing component the project proponent will replant and ensure the success of this second planting which would be held to the same standard of success as measured by threshold criteria and monitoring processes. Should additional remedial actions be

required, the project proponent will meet with City of Mukilteo environmental staff to establish and define actions to be taken to meet the desired goal of this program.

PLANTING NOTES

All plant materials shall be native to the southern Puget Sound Region. The project biologist shall inspect plant materials to ensure the appropriate plant schedule and plant characteristics are met. The project proponent shall warrant that all plants will remain alive and healthy for a period of one year following completion of planting activities. The project proponent shall replace all dead and unhealthy plants with plants of the same specifications.

WETLAND MITIGATION PERFORMANCE BOND

A Wetland Mitigation Performance Bond will be provided for this project. This bond will be held by the City of Mukilteo and be equal to 150% of the actual estimated costs for identified activities. This increased percentage will allow for adequate funds to be available as a contingency should actions be required to meet the goals of these plans.

The Performance Bond will be deemed to be released upon meeting the established threshold criteria and acceptance by the City of Mukilteo of the required reporting documents after completion of the 5-year monitoring period.
The amount of these guarantees shall be established as a part of the final mitigation plan.

Construction Guarantee: (see Bond Quantity Worksheet, Attached)

TASK	**ASSOCIATED COST**
Plants and installation	$ 15,717
Habitat Structures	$
Erosion Control	$ 1,284
Fencing	1168
Mobilization	1,855
30% contingency	$5,565
CONSTRUCTION GUARANTEE TOTAL	$25,972

Performance Guarantee

TASK	**ASSOCIATED COST**
Onsite Maintenance ($500/yr. x 5 years)	$ 2,500
Onsite Monitoring with report ($900/yr. 5 years)	$ 7,200
PERFORMANCE GUARANTEE TOTAL	$9,700

The Performance Bond (150%) total $53,508, to be provided prior to construction

REFERENCE LIST

Adamus, P.R., E.J. Clairain Jr., R.D. Smith, and R.E. Young. 1987. Wetland Evaluation Technique (WET); Volume II: Methodology, Operational Draft Technical Report Y-87, U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. Office of Biological Services, U.S. Fish and Wildlife Service, U.S. Department of the Interior, FWS/OBS-79/31.

Environmental Laboratory. 1987. "Corps of Engineers Wetlands Delineation Manual," Technical Report Y-87-1, US army Engineer Waterways Experiment Station, Vicksburg, Miss.

Hitchcock, C.L., A. Cronquist. 1977. Flora of the Pacific Northwest. University of Washington Press. Seattle, Washington.

Reppert, R.T., W. Sigleo, E. Stakhiv, L. Messman, and C. Meyers. 1979. Wetland Values - Concepts and Methods for Wetland Evaluation. Research Report 79-R1, U.S. Army Corps of Engineers, Institute for Water Resources, Fort Belvoir, Virginia.

U.S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

U.S. Department of Agriculture, Soils Conservation Service. Soils Survey of King County Area Washington, February 1979.

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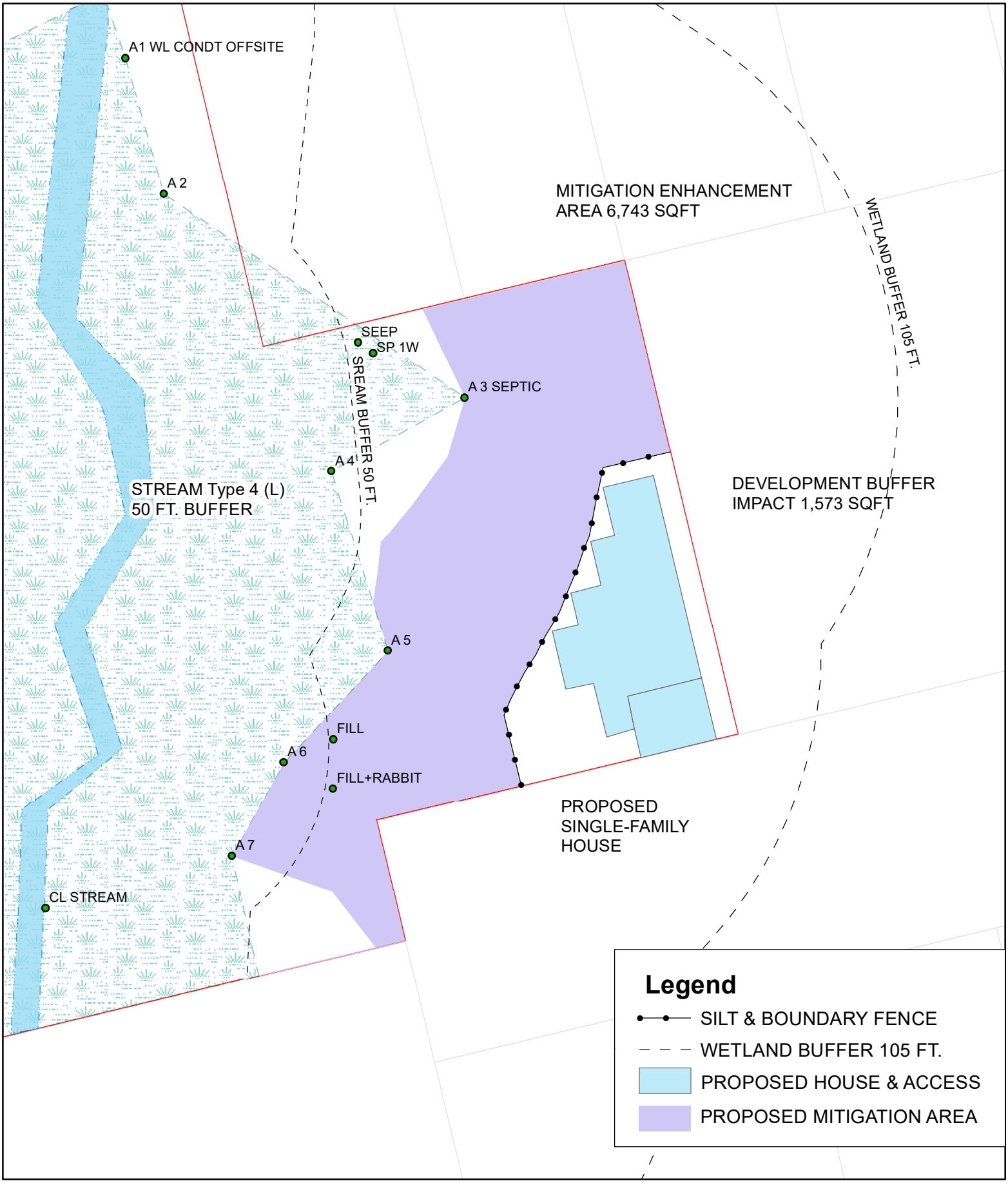

Beaver Creek Environmental Services
MHeckert@Q.com
253 732 6515
March 4, 2022

1 inch = 30 feet

0 15 30 60 90 Feet

Att. 1
SoundEarth Mukilteo Site
Parcel # 00596901100100 DETAIL
Wetland Buffer Mitigation Map
From Survey

Critical Areas Mitigation
Bond Quantity Worksheet

Project Name: Sound Mukilteo Date: 3/4/22 Prepared by: Mark Heckert

Project Number: Project Description: BUFFER ENHANCEMENT

Location: xxx 3rd street Applicant: Washington Timber Compa Phone: 425 210 9884

PLANT MATERIALS (includes labor cost for plant installation)

Type	Unit Price	Unit	Quantity	Description	Cost
PLANTS: Potted, 4" diameter, medium	$5.00	Each			$ -
PLANTS: Container, 1 gallon, medium soil	$11.50	Each			$ -
PLANTS: Container, 2 gallon, medium soil	$20.00	Each	189.00		$ 3,780.00
PLANTS: Container, 5 gallon, medium soil	$36.00	Each	81.00		$ 2,916.00
PLANTS: Seeding, by hand	$0.50	SY			$ -
PLANTS: Slips (willow, red-osier)	$2.00	Each			$ -
PLANTS: Stakes (willow)	$2.00	Each			$ -
PLANTS: Stakes (willow)	$2.00	Each			$ -
PLANTS: Flats/plugs	$2.00	Each			$ -
				TOTAL	**$ 6,696.00**

INSTALLATION COSTS (LABOR, EQUIPMENT, & OVERHEAD)

Type	Unit Price	Unit			Cost
Compost, vegetable, delivered and spread	$37.88	CY	150.00		$ 5,682.00
Decompacting till/hardpan, medium, to 6" depth	$1.57	CY	375.00		$ 588.75
Decompacting till/hardpan, medium, to 12" depth	$1.57	CY			$ -
Hydroseeding	$0.51	SY	750.00		$ 382.50
Labor, general (landscaping other than plant installation)	$40.00	HR	20.00		$ 800.00
Labor, general (construction)	$40.00	HR			$ -
Labor: Consultant, supervising	$55.00	HR	10.00		$ 550.00
Labor: Consultant, on-site re-design	$95.00	HR	10.00		$ 950.00
Rental of decompacting machinery & operator	$70.00	HR			$ -
Sand, coarse builder's, delivered and spread	$42.00	CY			$ -
Staking material (set per tree)	$7.00	Each			$ -
Surveying, line & grade	$250.00	HR			$ -
Surveying, topographical	$250.00	HR			$ -
Watering, 1" of water, 50' soaker hose	$3.62	MSF			$ -
Irrigation - temporary	$3,000.00	Acre	0.15		$ 450.00
Irrigation - buried	$4,500.00	Acre			$ -
Tilling topsoil, disk harrow, 20hp tractor, 4"-6" deep	$1.02	SY			$ -
				TOTAL	**$ 9,403.25**

HABITAT STRUCTURES*

ITEMS	Unit Cost	Unit			Cost
Fascines (willow)	$ 2.00	Each			$ -
Logs, (cedar), w/ root wads, 16"-24" diam., 30' long	$1,000.00	Each			$ -
Logs (cedar) w/o root wads, 16"-24" diam., 30'	$400.00	Each			$ -
Logs, w/o root wads, 16"-24" diam., 30' long	$245.00	Each			$ -
Logs w/ root wads, 16"-24" diam., 30' long	$460.00	Each			$ -
Rocks, one-man	$60.00	Each			$ -
Rocks, two-man	$120.00	Each			$ -
Root wads	$163.00	Each			$ -
Spawning gravel, type A	$22.00	CY			$ -
Weir - log	$1,500.00	Each			$ -
Weir - adjustable	$2,000.00	Each			$ -
Woody debris, large	$163.00	Each			$ -
Snags - anchored	$400.00	Each			$ -
Snags - on site	$50.00	Each			$ -
Snags - imported	$800.00	Each			$ -
* All costs include delivery and installation				*TOTAL*	**$ -**

EROSION CONTROL

ITEMS	Unit Cost	Unit			Cost
Backfill and Compaction-embankment	$ 4.89	CY			$ -
Crushed surfacing, 1 1/4" minus	$30.00	CY			$ -
Ditching	$7.03	CY			$ -
Excavation, bulk	$4.00	CY			$ -
Fence, silt	$1.60	LF	100.00		$ 160.00
Jute Mesh	$1.26	SY	750.00		$ 945.00
Mulch, by hand, straw, 2" deep	$1.27	SY			$ -
Mulch, by hand, wood chips, 2" deep	$3.25	SY	55.00		$ 178.75
Mulch, by machine, straw, 1" deep	$0.32	SY			$ -
Piping, temporary, CPP, 6"	$9.30	LF			$ -
Piping, temporary, CPP, 8"	$14.00	LF			$ -
Piping, temporary, CPP, 12"	$18.00	LF			$ -
Plastic covering, 6mm thick, sandbagged	$2.00	SY			$ -
Rip Rap, machine placed, slopes	$33.98	CY			$ -
Rock Constr. Entrance 100'x15'x1'	$3,000.00	Each			$ -
Rock Constr. Entrance 50'x15'x1'	$1,500.00	Each			$ -
Sediment pond riser assembly	$1,695.11	Each			$ -
Sediment trap, 5' high berm	$15.57	LF			$ -
Sediment trap, 5' high berm w/spillway incl. riprap	$59.60	LF			$ -
Sodding, 1" deep, level ground	$5.24	SY			$ -
Sodding, 1" deep, sloped ground	$6.48	SY			$ -
Straw bales, place and remove	$600.00	TON			$ -
Hauling and disposal	$20.00	CY			$ -
Topsoil, delivered and spread	$35.73	CY			$ -
				TOTAL	**$ 1,283.75**

GENERAL ITEMS

ITEMS	Unit Cost	Unit			Cost
Fencing, chain link, 6' high	$18.89	LF			$ -
Fencing, chain link, corner posts	$111.17	Each			$ -
Fencing, chain link, gate	$277.63	Each			$ -
Fencing, split rail, 3' high (2-rail)	$10.54	LF	100.00		$ 1,054.00
Fencing, temporary (NGPE)	$1.20	LF			$ -
Signs, sensitive area boundary (inc. backing, post, install)	$28.50	Each	4.00		$ 114.00
				TOTAL	**$ 1,168.00**

OTHER

				(Construction Cost Subtotal)	**$ 18,551.00**

ITEMS	Percentage of Construction	Unit			Cost
Mobilization	10%	1			$ 1,855.10
Contingency	30%	1			$ 5,565.30
				TOTAL	**$ 7,420.40**

MAINTENANCE AND MONITORING

NOTE: Projects with multiple permit requirements may be required to have longer monitoring and maintenance terms. This will be evaluated on a case-by-case basis for development applications. Monitoring and maintance ranges may be assessed anywhere from 5 to 10 years.

Maintenance, annual (by owner or consultant)					
Less than 1,000 sq.ft. and buffer mitigation only	$ 1.08	SF		(3 X SF total for 3 annual events; Includes monitoring)	$ -
Less than 1,000 sq.ft. with wetland or aquatic area mitigation	$ 1.35	SF		(3 X SF total for 3 annual events; Includes monitoring)	$ -
Larger than 1,000 sq. ft. but less than 5,000 sq.ft. of buffer mitigation	$ 180.00	EACH		(4hr @$45/hr)	$ -
Larger than 1,000 sq. ft. but less than 5,000 sq.ft. of wetland or aquatic area mitigation	$ 270.00	EACH		(6hr @$45/hr)	$ -
Larger than 5,000 sq.ft. but < 1 acre -buffer mitigation only	$ 360.00	EACH		(8 hrs @ 45/hr)	$ -
Larger than 5,000 sq.ft. but < 1 acre with wetland or aquatic area mitigation	$ 450.00	EACH		(10 hrs @ $45/hr)	$ -
Larger than 1 acre but < 5 acres - buffer and / or wetland or aquatic area mitigation	$ 1,600.00	DAY		(WEC crew)	$ -
Larger than 5 acres - buffer and / or wetland or aquatic area mitigation	$ 2,000.00	DAY		(1.25 X WEC crew)	$ -
Monitoring, annual (by owner or consultant)					
Larger than 1,000 sq.ft. but less than 5,000 wetland or buffer mitigation	$ 720.00	EACH		(8 hrs @ 90/hr)	$ -
Larger than 5,000 sq.ft. but < 1 acre with wetland or aquatic area impacts	$ 900.00	EACH		(10 hrs @ $90/hr)	$ -
Larger than 1 acre but < 5 acres - buffer and / or wetland or aquatic area impacts	$ 1,440.00	DAY		(16 hrs @ $90/hr)	$ -
Larger than5 acres - buffer and / or wetland or aquatic area impacts	$ 2,160.00	DAY		(24 hrs @ $90/hr)	$ -
				TOTAL	**$ -**

Total	**$25,971.40**