# CKCB MADISON AVE DEVELOPMENT

# HABITAT MANAGEMENT PLAN

FEBRUARY 5, 2018 BGE18\_0110



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### HABITAT MANAGEMENT PLAN

**FEBRUARY 5, 2018** 

PROJECT LOCATION
MADISON AVE S
BAINBRIDGE ISLAND, WA 98110

TAX ACCOUNT 262502-3-078-2006 S 26, T 25 N, R 02E, SW QTR

PREPARED FOR CIHAN ANISOGLU PO BOX 10386 BAINBRIDGE ISLAND, WA 98110

PREPARED BY

BGE ENVIRONMENTAL LLC

MAIN OFFICE: 2102 BRASHEM AVE

(MAILING) BREMERTON, WA 98310

**BAINBRIDGE OFFICE: 755 WINSLOW WAY EAST** 

**SUITE 101** 

BAINBRIDGE ISLAND, WA 98110

360.710.6066

www.bgeenvironemental.com

BGE18\_0110

# **CERTIFICATION**

The technical material and data contained in this document were prepared under the supervision and direction of the undersigned, as a professional wetland scientist licensed to practice as such, is affixed below.

Robbyn Myers, PWS

Wetland Biologist/Environmental Planner

CKCB MADISON AVE DEVELOPMENT HABITAT MANAGEMENT PLAN BGE18\_0110



Date

### INTRODUCTION

Cihan Anisoglu (Client) is proposing the construction of an 8 suite inn (multi-family housing) on a single parcel located on Madison Avenue S, Bainbridge Island, Washington. The parcel is undeveloped bound to the west by right-of-way to Madison Ave S and existing developments north and south. To the east, topography defines a steep ravine setting which hosts a tidal estuarine complex. The hydrology is supported from a storm water facility outlet. The outlet is a 24-in cmp to heavy rip-rap prior to the defining natural features of the ravine and estuary. A sewer line easement enters the parcel from the southwest corner and zig-zags north then east around the ravine.

Shoreline designation is Urban with a 30-ft standard buffer. The parcel is fully encumbered within the 200-ft shoreline jurisdiction. The proposed project includes underground parking and an interior courtyard. The footprint is delineated from the east and south by the sewer easement. The property line and right-of-way setbacks define the limits of development north and east.

The parcel vegetation consists of mostly noxious, invasive species, specifically Himalayan blackberry. Significant vegetation (mature trees) are concentrated to the ravine. The project respects the 30-ft shoreline buffer and 15-ft structural setback. The proposed development is setback a range of 50 to 70-ft from the Urban 30-ft buffer standard.

All shoreline development and activities shall be located, designed, constructed, and managed in a manner that will result in a no net loss of ecological function. To ensure achievement of no net loss standards, a site-specific analysis of potential impacts within the 200-ft shoreline jurisdiction and appropriate mitigation measures is provided through this Habitat Management Plan (HMP). This HMP is designed to meet the following criteria of the Site-Specific Vegetation Management section of the Bainbridge Island Municipal Code (BIMC) Chapter 16.12 Shoreline Master Program (SMP):

- Assessment of existing baseline environmental conditions;
- · Assessment of priority habitat, species within the vicinity of the project;
- Project impact assessment;
- Analysis of mitigation sequencing; and
- Vegetation Management Plan.

### **BASELINE ENVIRONMENTAL CONDITIONS**

The subject parcel is located along Madison Avenue S, Bainbridge Island, Kitsap County, Washington. The parcel is flag shaped, facing west, with the extended acreage headed due south along the ravine. The parcel is 0.39 acres, undeveloped, and clear of significant vegetation outside of the ravine setting, see Exhibit A. Observed species include Himalayan blackberry, Scott's broom, common vetch, American holly, oceanspray, hawthorne, sword fern, grasses, and bracken fern. Mature trees are set at and along the top-of-slope and include red alder, big leaf maple, madrone, and Douglas fir. Additional species observed to the ravine include Oregon grape, flowering dogwood, baldhip rose, and predominate cover of Himalayan blackberry. English ivy is present from root to canopy among the mature trees.

The parcel is flat. The ravine has an immediate, steep break in slope with dense cover of mostly invasive species. There is a limited view to the bottom of the ravine. Developments to the opposite side are clearly visible. Rip-rap heavily covers the immediate cmp outfall and 30-ft waterward to the tidal region of the estuarine complex.

A public access is present as the eastern adjacent parcel. A trail extends from Bjune Dr SE to the start of the ravine. A sitting bench provides a resting place and peek-a-boo views through the ravine and Eagle Harbor. A heavily used path is present westward from the public access to Madison Ave S: established along the northern property line of the subject parcel.

The Washington Department of Fish and Wildlife Priority Habitat and Species within the vicinity of the project is limited to the estuary, as aquatic habitat.

### PROJECT DESCRIPTION

The proposed development is roughly 11,000 sq ft of structure and associated infrastructure, see Exhibit B. The project is delineated to the east by the existing sewer easement, resulting in a 50 to 70-ft setback from Ordinary High Water Mark (OHWM) to the estuary. The 30-ft shoreline buffer and 15-ft setback is maintained. No mature vegetation (< 15-ft in overall height) removal is required for the proposed development. A cluster of young alders and a single hawthorne are present within the action area. The remaining vegetation cover to be impacted is dominate Himalayan blackberry and smaller percentages of persistent noxious or weedy individuals.

# MITIGATION SEQUENCING

Permitted uses shall be designed and conducted to minimize, in so far as practical, any resultant damage to the ecology and environments. Impacts shall be mitigated according to BIMC 16.12.B.2.d, in a sequential analysis to avoid, minimize and mitigate. The mitigation analysis sequence for the shoreline in question is provided below.

MITIGATION MEASURE	MITIGATED ACTION(S)
AVOID the impact altogether by not taking a certain action or parts of an action	<ul> <li>The proposed development maintains the 30-ft shoreline buffer and 15-ft setback. Impacts to the buffer avoided.</li> </ul>
MINIMIZE impacts by limiting the degree or magnitude of the action and its implementation by using appropriate technology or by taking affirmative steps to avoid or reduce impacts	Development is designed landward of the sewer easement and all significant mature vegetation.
RECTIFY the impact by repairing, rehabilitating, or restoring the affected environment	<ul> <li>Restoration of degraded shoreline buffer landward of top-of-slope to native complex</li> <li>The fallow condition of the parcel has resulted in heavy accumulations of noxious, invasive species. Eradication of these species within the parcel boundaries is recommended, see Maintenance section of this report.</li> </ul>
REDUCE or eliminate the impact over time by preservation and maintenance operations	<ul> <li>Landscape structure and associated use with native vegetation where appropriate for lighting, soil structure, and wetness.</li> <li>No fertilizer, insecticide, or pesticide use recommended.</li> <li>Installation of directional lighting and timers recommended.</li> <li>Stormwater collection and compliance with current manual standards.</li> </ul>
COMPENSATE for the impact by replacing, enhancing, or providing substitute resources or environments	<ul> <li>Restore degraded shoreline buffer landward of the top-of-slope</li> <li>Restore and maintain a 10-ftvegetation buffer along the top-of-slope according to the Vegetation Management Plan.</li> </ul>
MONITOR the impact and the compensation project and take appropriate corrective measures	<ul> <li>Restoration area success, performance, maintenance and monitoring are defined in the <i>Vegetation Management Plan</i> section of this document.</li> <li>As-built, five-year monitoring and final compliance documentation required.</li> </ul>

### IMPACTS OF SITE DEVELOPMENT

There are no direct impacts to the 30-ft shoreline buffer. Vegetation disturbances with in the 200-ft shoreline jurisdiction include a cluster of young red alder, one hawthorne, and a dominant cover of Himalayan blackberry. There is no significant vegetation removal with the new construction.

Vegetation replanting is required for all development, uses or activities within the 200-ft shoreline jurisdiction that either alters existing native vegetation or any vegetation in the required shoreline buffer, whether a permit is required or not. This includes invasive species removal (Chapter 16.12.030(B)(2)(c), COBI-SMP).

### VEGETATION MANAGEMENT PLAN

To meet the goals and policies of the City of Bainbridge Island Shoreline Master Program (COBI-SMP), the new construction shall ensure that the parcels site specific ecological functions and processes are managed to meet the no net loss standard. The parcels 30-ft shoreline buffer is degraded, mostly absent of shrubs and ground covers beyond the top-of-slope. The ravines interior is dominated by noxious, invasive Himalayan blackberry. English ivy threatens mature native trees in the vicinity.

This site-specific analysis has identified two functional deficiencies present to the ravine bound estuarine complex which may be rectified within the subject parcel. The first is the prominence of noxious, invasive Himalayan blackberry and English ivy. The second is the absence of native vegetation cover along the top-of-slope and the 30-ft shoreline buffer. A *Vegetation Management Plan* has been developed to rectify the identified functional deficiencies as mitigation for new construction within the shoreline parcel.

#### **INVASIVE SPECIES**

Dense stands of Himalayan blackberry are observed along the northeastern corner of the parcel, landward of the top-of-slope. This species is equally present as individuals at and waterward of the top-of-slope for the western slope face within the property. Likewise, English ivy is dominating mature tree canopies and competing with blackberry for surface cover. Both species shall be aggressively targeted for removal and complete eradication from trees and surfaces landward of the top-of-slope. Where feasible, individuals along the slope face should also be removed to reduce the competitive cover. The action plan for eradication of these species is detailed in the Maintenance section of this report.

#### VEGETATION MANAGEMENT AREA

The Vegetation Management Area (VMA) includes the portion of the 30-ft shoreline buffer landward of the top-of-slope and areas 10-ft from the western top-of-slope void of vegetation, see Exhibit C. The VMA recommends the restoration of complex, diverse native vegetation along the top-of-slope. Existing mature trees shall not be disturbed. Limitations to the restoration area are identified with the steep grade of the slope face, although if feasible, additional native materials would benefit functional attributes within the ravine and the estuarine complex downgrade.

The conceptual planting plan presumes a dominance of native species along the north eastern corner of the property. This corner of the property was not well discernable in the field and included dense Himalayan blackberry and mature native shrubs. The Vegetation Management Plan prescribes the removal of all blackberry thickets beyond the top-of-slope. Once removed, additional plantings may be warranted along the top-of-slope to ensure no adverse effects, direct or independent to the invasive species removal, are anticipated to the downgradient estuarine complex.

#### PLANTING PLAN SPECIFICATIONS AND DETAIL

Individual species are depicted on Exhibit C for illustration of placement, distribution and density. A total of 69 individuals shall be installed within the VMA. The individuals shall be planted in groups as opposed to a symmetrical row crop pattern. Voids in the mitigation area are acceptable for natural spread and establishment of species to the mitigation area. Alternative species acceptable shall be native to the lower Puget Sound ecosystem and with prior approval by Restoration Specialist and/or City staff.

SPECIES	COMMON NAME	QUANTITY	SPACING	SIZE MIN.	
Vaccinium ovatum	Evergreen huckleberry	23	4-ft o.c.	1-gal	•
Pseudotsuga menziesii	Douglas fir	3	10-ft o.c.	5-gal	
Holodiscus discolor	Oceanspray	11	5-ft o.c.	1-gal	
Gaultheria shallon	Salal	16	4-ft o.c.	1-gal	

Plantings shall be established within the approximate locations indicated on Exhibit C. A conceptual planting plan is provided as guidance for calculated densities and distributions for healthy establishment and development of native vegetation. Field conditions overrule the prescribed planting plan and shall be recorded by the installation team and consultant for compliance reporting and as-built. Once invasive species have been removed from the northeast corner, the area shall be reevaluated for potential restoration to VMA vicinity.

### PERFORMANCE STANDARDS

Performance standards are necessary for the evaluation of success achieved with the implemented buffer restoration. If the standards are met at the end of the five-year monitoring period, the City shall issue release of the performance bond.

#### **SURVIVAL**

- 100% survival of all tree and shrub plantings at the end of Year One. This standard may be met through establishment of installed plants or by replanting as necessary to achieve the required numbers.
- 100% survival of all tree plantings and 80% survival of all shrub plantings at the end of Year Five.
   This standard may be met through establishment of installed plants or by replanting as necessary to achieve the required numbers.

#### **COVERAGE**

- Achieve at least 60% cover of native vegetation by the end of Year 3. This can be a combination of trees, shrubs and groundcover, but a minimum 40% must be composed of tree and shrub species.
   Volunteer species may count towards this standard.
- Achieve at least 80% cover of native vegetation by the end of Year 5. This can be a combination of trees, shrubs, and groundcover, but a minimum 60% must be composed of tree and shrub species. Volunteer species may count towards this standard.

#### **INVASIVE SPECIES**

- Removal and eradication of English ivy and Himalayan blackberry landward of the top-of-slope.
   No tolerance of the presence or establishment of invasive species, including all Class A, B, or C noxious weeds as listed by the Washington state Noxious Weed Control Board, within the Vegetation Management Area is applied.
- Tolerance of invasive species on slope face is acknowledged.
  - However, when and if accessible, these species should be cut back and removed for establishing a beneficial native complex to the slope face.
  - o Care shall be taken to minimize soil disturbances on the slope face.

### CONSTRUCTION AND SPECIFICATIONS

#### **GENERAL NOTES**

The proposed mitigation actions are limited in area and complexity. The applicant should seek professional help from a Restoration Specialist with implementation of the mitigation plan yet may complete the actions independently. BGE Environmental personnel, or other persons qualified to evaluate environmental restoration projects (Restoration Specialist), shall monitor the following:

- 1) Invasive and nonnative species removal
- 2) Surface preparation for planting
  - a. Evaluation of density and distribution to potential restoration areas within the VMA. The VMA is defined as 10-ft landward of the top-of-slope and the 30-ft shoreline buffer.
- 3) Plant material inspection.

#### PROJECT SEQUENCING

Planting shall occur during the dormant season, October 1 through March 31.

- 1) Independently remove invasive or weedy species.
- 2) Install vegetation materials according to specifications for species and spacing per planting detail.
- 3) Cover planting area with a two to three-inch layer of mulch.
- 4) As-built production and submittal to the City of Bainbridge Island within 60 days of planting.
- 5) Annual monitoring, late summer, and annual reporting City of Bainbridge Island for a minimum period of five-years.

#### EROSION CONTROL, POLLUTION PREVENTION AND SITE PREPARATION

Temporary erosion and sediment control (TESC) measures shall be implemented under the guidance of approval conditions using BIMP's outlined in the project's Stormwater Pollution Prevention Plan (SWPPP) and TESC Plan prepared by the Project Engineer. Approval by the responsible Restoration Specialist prior to mowing, hand-clearing and planting activities on-site is recommended.

#### PLANT SCHEDULING, SPECIES AND DENSITY

Planting should occur between October 1 and March 31. All materials to be used on the site will be nursery grown stock from a reputable, local source. Only native species are to be used; no hybrids or cultivars will be allowed. All plant material shall be inspected by the consultant/contractor upon delivery. Plant material provided will be typical of their species or variety and shall be sound, healthy, vigorous plants free from defects, and all forms of disease and infestation. Plant material not conforming to the specifications will be rejected and replaced by the contractor or supplier. Rejected plant materials shall be immediately removed from the site.

#### PRODUCT HANDLING, DELIVERY, AND STORAGE

All precautions customary in good trade practice shall be taken in preparing plants for moving. Workmanship that fails to meet industry standards will be rejected. Plants will be packed, transported, and handled with care to ensure protection against injury and from drying out. If plants cannot be planted immediately upon delivery they should be protected with soil, wet peat moss, or in a manner acceptable to the project biologist. Plants, fertilizer, and mulch not installed immediately upon delivery shall be secured on the site to prevent theft or tampering. No plant shall be bound with rope or wire in a manner that could damage or break the branches. Plants transported on open vehicles should be secured with a protective covering to prevent windburn.

#### PREPARATION AND INSTALLATION OF PLANT MATERIALS

Contractor shall verify the location of all elements of the mitigation plan with the materials count upon clearing of invasive and nonnative vegetation and prepping surface for installation. Plant quantities are based on field measurements and density calculations which have a standard error association with planning and implementation. Locations of proposed materials are accurate but may be moved as deemed necessary as the terraced conditions may restrict optimal root and species spacing requirements. All installed vegetation will be marked to a site plan for general areas and quantities. The documented actions will be used to produce an as-built once the mitigation actions are complete.

Circular plant pits with vertical sides will be excavated for all bare root and container stock. The pits should be at least 6 inches greater in diameter than the root mass or container. The pit should accommodate the entire root system. The bottom of each pit will be scarified to a depth of 4 inches. Add slow release Agroform tablet to planting pit. Set plant material upright in the planting pit to proper grade and alignment. Water plants thoroughly midway through backfilling. Water pits again upon completion of backfilling. No filling should occur around trunks or stems. Do not use frozen or muddy mixtures for backfilling. Form a ring of soil around the edge of each planting pit to retain water. Once planted, the entire area shall be covered with a minimum of two-inches of mulch with a diameter of 18-inches. Add additional mulch if existing grass or denuded soils are visible on the surface.

### **MONITORING**

BGE Environmental personnel, or other persons qualified to evaluate environmental restoration projects (Restoration Specialist), shall implement the Habitat Management Plan. Upon installation of vegetation, the Restoration Specialist shall create an as-built document and submit it to the City of Bainbridge Island within 60 days of completing the work. The document may consist of a summary of actions as they pertain to the restoration efforts defined in this mitigation plan to include alterations and deviations to species, placement, or other actions necessary for proper implementation. A list of planted species, time of installation and supporting photographs, before and after installation, should accompany the document.

Each year, for the following four monitoring years, the vegetation management area should be reviewed by the Restoration Specialist to ensure that the planted materials are healthy, vigorous, and present a high probability of success pursuant the Performance Standards. Conditions shall be documented with photographs during the same time frame. Late summer monitoring and documentation is required. Contingency efforts shall be implemented as deemed warranted by the Restoration Specialist to ensure a successful five-year response to mitigation efforts. Submittal of progress report to City of Bainbridge Island at the end of each monitoring year.

Five years post planting, a review of mitigation and compliance documents should be provided to the City of Bainbridge Island. The compliance documents should be a determination of success regarding vegetation coverage, health and sustainability. The assessment may evaluate, but not be limited to, observations of species survival, replacement vegetation since restoration and a summary of actions completed to support the success of the restored shoreline buffer (irrigation, trimming, fertilizer use, etc.). It may include an estimate of buffer area restoration and quantification of, if any, additional use of native vegetation which promotes ecoregional function within the landscape. The monitoring report shall include yearly photographs of the vegetation conditions and progression with a technical evaluation of success in achieving the no net loss standard.

### **MAINTENANCE**

Maintenance of the vegetation management area shall consist of all actions necessary to ensure that planted materials establish and thrive with the planted area, and that invasive species do not encroach, spread, or establish within the vegetation management area or vicinity. The prescribed maintenance plan shall be implemented for a minimum of five years following completion of the plant installation. However, proper stewardship of the shoreline buffer is the responsibility of the property owner in which effective implementation of this plan will restore natural function to the shoreline ecology which protects the integrity of environment and the residing structures and use.

Anticipated actions and necessary guidelines to meet the performance standards are as follows:

- 1) Replace each plant found dead in the summer monitoring visit after the first year of planting and subsequent years if mortality continues to occur.
- 2) Invasive species maintenance plan:
  - a. Himalayan blackberry, Japanese knotweed, Scot's broom, English ivy, and other invasive vegetation shall be grubbed out by hand on an ongoing basis, being careful to grub out roots where both safe and accessible. Such work should not result in heavy disturbance of soil surface or jeopardize the roots of installed native or volunteer native plants.
  - b. Where hand removal is observed to have no effect in control and spread, herbicide applications
    may be applied, particularly for Japanese knotweed. Application of Imazapyr is acceptable.
    Herbicide applications must be conducted only by a state-licensed applicator during the effective
    time frame between mid-spring and mid-summer. Applications should be a targeted method such
    as spot spray or wick.
- 3) At least twice a year, hand remove all competing weeds and weed roots from beneath each installed plant and any desirable volunteer vegetation to eighteen (18) inches from the main plant stem.
  Weeding should occur as needed during the spring and summer. Frequent weeding will result in lower mortality and lower plant replacement costs.
- 4) Do not weed the area near the plant bases with string trimmer (weed whacker).
- 5) Mulch the weeded areas beneath plant with wood chips as necessary to maintain a minimum two to three-inch thick mat to the planting area

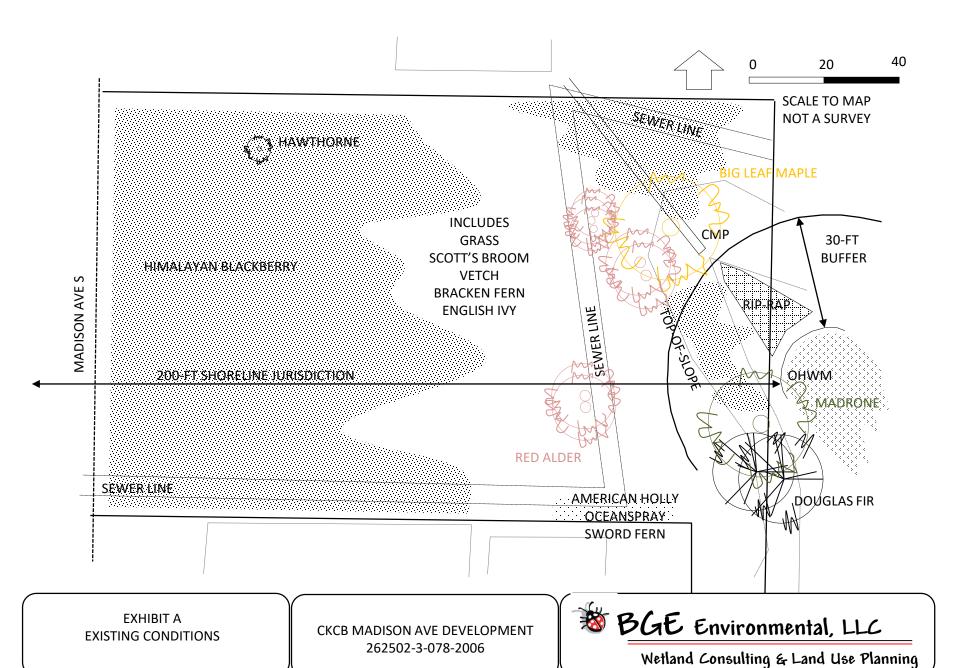
Care shall be taken to promote survival of the planted species. This does not include cutting of vegetation within the shoreline buffer. Height of the shrub cover is not expected to inhibit the view corridor. Pruning is acceptable to maintain building setbacks for structure maintenance and to maintain plant health. Pruning should primarily involve removing all dead, broken, diseased, or problem limbs by trimming them at the point of origin or back to a strong lateral branch or shoot. Removing this material often opens the canopy sufficiently so that no further pruning is necessary.

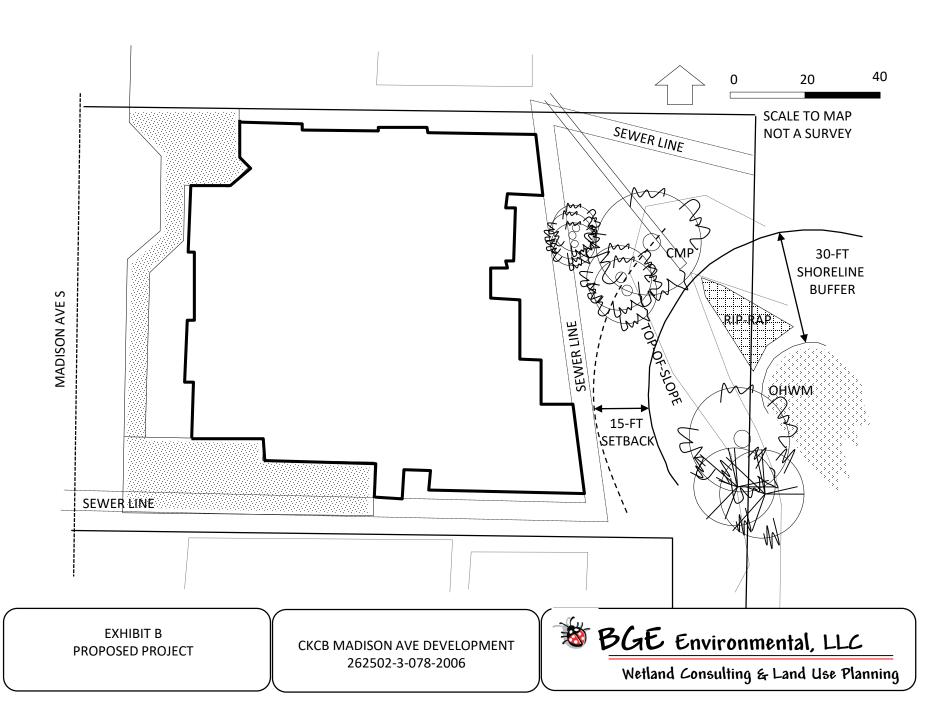
When trimming and pruning vegetation, pile the debris in an area somewhere within the property to create a brush shelter. Tucking the trimmings beneath the shrubs is a perfect option. Downed wood, even a pile of twigs provides food and shelter to many species, while slowly retuning nutrients to the soil. The pile can be in the sun or the shade, place it in an unused area of the property. Remove starts of invasive species immediately.

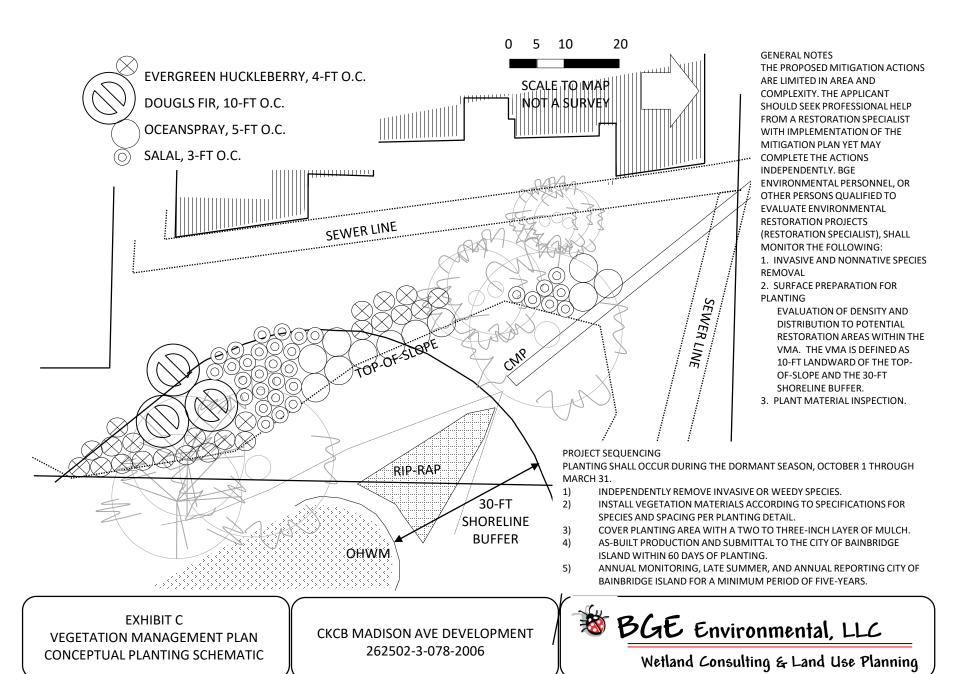
The use of herbicides, insecticides, or pesticides, particularly near the areas of berry, fruit or mast producing shrubs or trees, is not recommended. This will help ensure the availability of foraging for wildlife. Even fertilizing lawn can degrade nutrients and alter the decomposition process of the natural grasses. Limit the use of insecticides. Insect populations are important on many ecological levels particularly as a food source for insectivores.

### CONTINGENCY

If any part of the planting area fails to satisfy the goals and performance standards of this plan to such an extent that the failure cannot be adequately addressed through standard maintenance activities, a contingency plan shall be developed. A detailed contingency plan cannot be developed until the specific items that need to be addressed are known. Compliance with the installation procedures and maintenance plans are measures to properly promote a successful restoration. Where the performance is less than satisfactory, attention shall be given to, but not limited to, soil conditions, species installation, and temporal variations. Adaptive management actions taken to ensure success, when practical, are an acceptable means to ensure survival and growth of the planted species.









A R C H I T E C T U R E A R T A N D I D E A S 271 WYATT WAY NE, SUITE 102 BAINBRIDGE ISLAND, WA 9 8 1 1 0 p 2 0 6 2 2 6 8 3 1 3

> cih a n @ a n i s o g l u . c o m s e a n f a n c y @ g m a i l . c o m

REGISTERED ARCHITECT

Cihan H. Anisoglu
STATE OF WASHINGTON

STAIR II WER III RIIF

BUILDING

SERVICE I EALER

SERVICE

ZONING: MIXED-USE TOWN CENTER

LOT SIZE: 18112 SF (NOT COUNTING 20' STRIP)
BASE FAR: COMMERCIAL: 60%=10,867
RESIDENTIAL: 40%=7,244

# DESCRIPTION

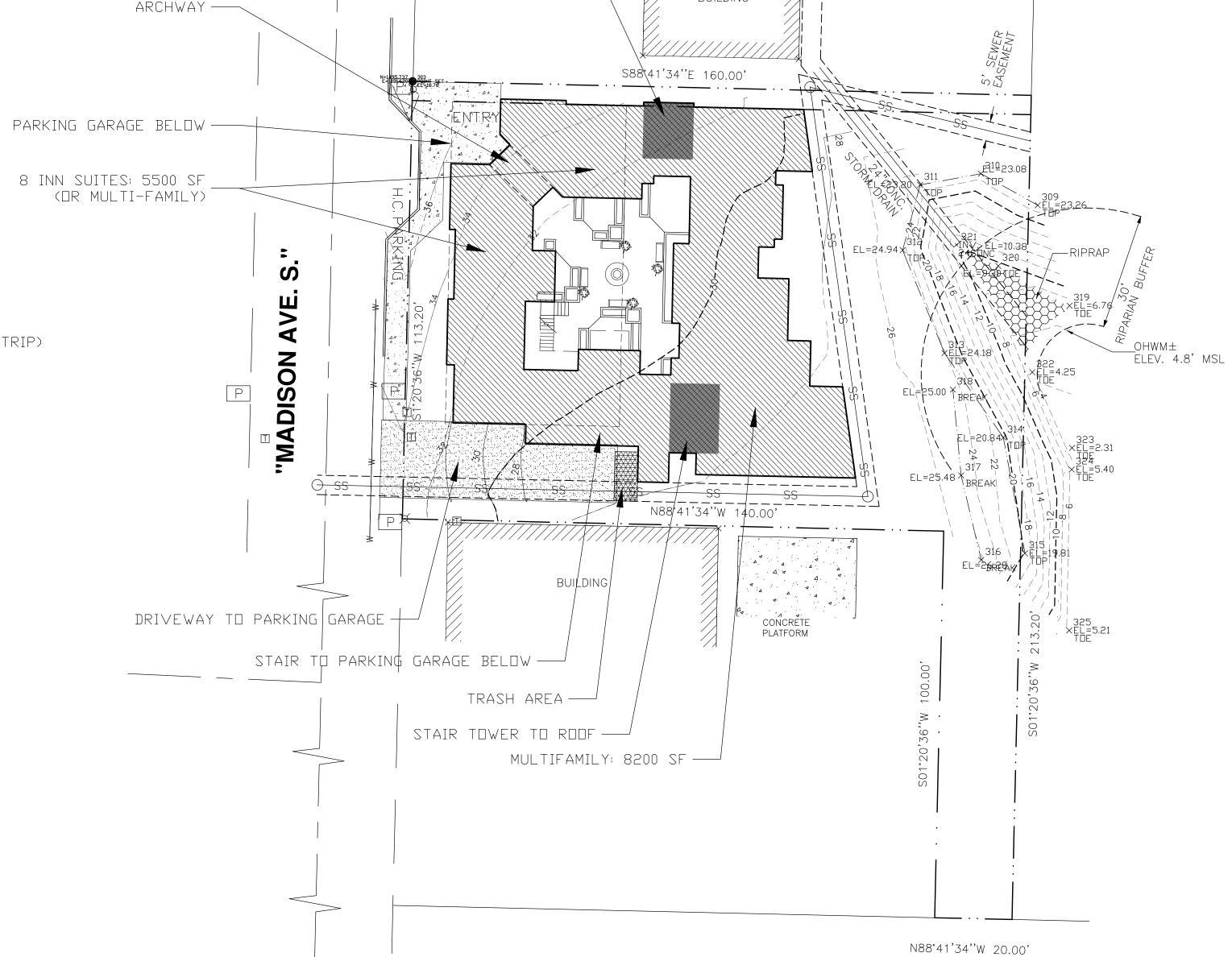
PARCEL B OF CITY OF WINSLOW SHORT PLAT (W-46) RECORDED UNDER AUDITOR'S FILE NO. 7801190137; THAT PORTION OF GOVERNMENT LOT 4, SECTION 26, TOWNSHIP 25 NORTH, RANGE 2 EAST, W.M., DESCRIBED AS FOLLOWS: BEGINNING AT THE NORTHWEST CORNER OF SAID GOVERNMENT LOT 4; THENCE SO\*32'40 W ALONG THE WEST BOUNDARY OF SAID GOVERNMENT LOT 4; A DISTANCE OF 280.18 FEET; THENCE N89\*30'E TO THE INTERSECTION OF THE EAST LINE OF MADISON STREET AND THE SOUTH LINE OF BJUNE DRIVE; THENCE SO\*32'40 W 210.00 FEET TO THE TRUE POINT OF BEGINNING; THENCE S0\*32'40 W 113.20 FEET; THENCE S89\*29'30 E 140.00 FEET; THENCE S0\*32'40 W 100.00 FEET; THENCE S89\*29'30 E 20.00 FEET; THENCE N0\*32'40 E 213.20 FEET; THENCE N89\*29'30 W 160.0 FEET TO THE POINT OF BEGINNING.

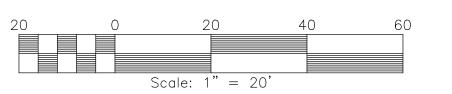
# REFERENCES

STANDARD OIL 74-4168
KING 86-8420
MILLER 97-S2875
LARSEN 98-S2986

# LEGEND

····	PROPERTY LINE
	ADJOINING PROPERTY LINE
	RIGHT-OF-WAY
	EDGE OF GRAVEL DRIVE
W W	WATER LINE
<del></del>	CENTERLINE OF ROAD
	TOE OF SLOPE
	TOP OF SLOPE
	CONTOUR LINE
$\odot$	SANITARY SEWER MAN HOLE
S <del>S SS SS</del>	SEWER LINE
	EASEMENT
Ø	LIGHT POLE
	TELEPHONE VAULT
Р	POWER VAULT
	SET 3/4" IRON PIPE YPC & 2"X2" STAKE





	 Date	Boompaon
	08.29.17	PRE-APPLICATION CONFERENCE
	10.27.17	PRE-APPLICATION CONFERENCE

### <u>CKCB</u> MADISON AVE PROJECT

Drawn

# **PHOTOGRAPHS**



VIEW TO EAST, THROUGH PARCEL FROM MADISON AVE S



**RAVINE SETTING OF MATURE TREES** 



PATH ALONG NORTHERN PROPERTY LINE



SOUTHERN VIEW THROUGH RAVINE



VIEW TO THE WEST; MADISON AVE S



**SOUTHERN ADJACENT** 



NORTHERN ADJACENT



DENSE NOXIOUS, INVASIVE COVER. NOTE IVY TO MATURE TREES ON RIGHT



LANDWARD OF TOP-OF-SLOPE. VIEW TO THE SOUTH



VIEW FROM THE SOUTHEAST CORNER



IVY ESTABLISHED TO MATURE TREES ALONG TOP-OF-SLOPE





VIEW TO CMP



**EASTERN SIDE OF RAVINE** 

### BOND ESTIMATE WORKSHEET CKCB MADISON AVE DEVELOPMENT

5-Feb-18

PROJECT LOCATION:

BY: BGE ENVIRONMENTAL, LLC

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BAINBRIDGE ISLAND, WA 98110		360.710.6066	
MADISON AVE S		BREMERTON, WA	98310
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MADISON AVE S				BREMERION, WA	98310
BAINBRIDGE ISLAND, WA 98110			1	360.710.6066	
PLANT MATERIALS					
Type	Unit Price	Unit	Quantity	Description	Cost
4" diameter		each			ļ
1 gallon	\$11.00	each	23	E. huckleberry	\$253.00
	\$9.00	each	11	Oceanspray	\$99.00
	\$11.00	each	16	Salal	\$176.00
2 gallon					
5 gallon	\$20.00	each	3	Douglas fir	\$60.00
Stakes (cost/linear ft)		each			
Plugs (10 in <sup>3</sup> )		each			
Seed (lbs/sq ft)		LB			
				SUBTOTAL	\$588.00
INSTALLATION COSTS (LABOR, EQUIPME	ENT, & OVERHEA	D)			
Туре	Unit Price	Unit	Quantity	Description	Cost
Compost		CY			
Labor, area preparation	\$45.00	hr	20	invasive removal	\$900.00
Labor, landscaping	\$45.00	HR	6	plant installation	\$270.00
Labor, restoration specialist	\$80.00	HR	10	includes As-built	\$800.00
Operations, machinery (bulk)		day		as necessary	
Agroform, equivalent fertilizer	\$0.25	each	53		\$13.25
Mulch; straw, 2" deep		CY			
Mulch; wood chip, 2" deep	\$20.00	CY	8		\$160.00
Stabilizer; jute, waddle, etc		unit			
Turf Staples; biodegradable		1			
Irrigation; temporary		Acre			
				SUBTOTAL	\$2,143.25
MAINTENANCE & MONITORING	Unit Price	Unit	Quantity	Description	Cost
Maintenance, annual					
Less than 1,000 sq ft of buffer	\$350.00	each	8	Twice/year	\$2,800.00
Larger than 1,000 sq ft, but					
< 5,000 sq ft of buffer		each			
Larger than 5,000 sq ft buffer only		each			
Monitoring, annual					
Less than 1,000 sq ft of buffer	\$650.00	each	4	Once / year	\$2,600.00
Larger than 1,000 sq ft, but					
< 5,000 sq ft of buffer		each			
Larger than 1 acre but < 5					
acres of buffer and/or wetland		day			
		•			
Final Monitoring Report	\$1,500.00	STD	1	Year 5	\$1,500.00

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**TOTAL** \$12,362.50 \$18,543.75 **BOND OF 150% OF TOTAL** 



Wetland Consulting and Land Use Planning

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