

Exhibit A
Advance Wetland Mitigation Plan

For City of Marysville owned properties and easement area within the Qwuloolt Estuary
Restoration Project



April 1, 2013

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Introduction and Background

This Advance Wetland Mitigation Plan (Plan) is intended to provide a framework for how credits will be generated and released for use by the City of Marysville (City) for debit projects within the geographic area depicted on Figure 2 of the Advance Mitigation Agreement (Agreement). Each debit project proposing to utilize credits generated by successful implementation of specific compensatory mitigation actions on City owned parcels and easement area will be evaluated on a case-by-case basis to determine if use of Advance Mitigation credit is acceptable and adequate to compensate for adverse impacts.

The property subject to this Plan includes parcels owned by the City (18.10 acres) and which the City has a permanent flood easement across (3.14 acres), for a total of 21.24 acres.

The Advance Wetland Mitigation Project parcels are within the footprint of the overall U.S. Army Corps of Engineers (Corps) Section 544 Qwuloolt Estuary Restoration (QER) Project located within the historic Snohomish estuary. The QER 544 Project includes levee construction and breaching of the existing levee system. The activities approved for the Section 544 QER Project will restore tidally influenced hydrologic conditions to approximately 400 acres, including the City’s advance mitigation area, subject of this

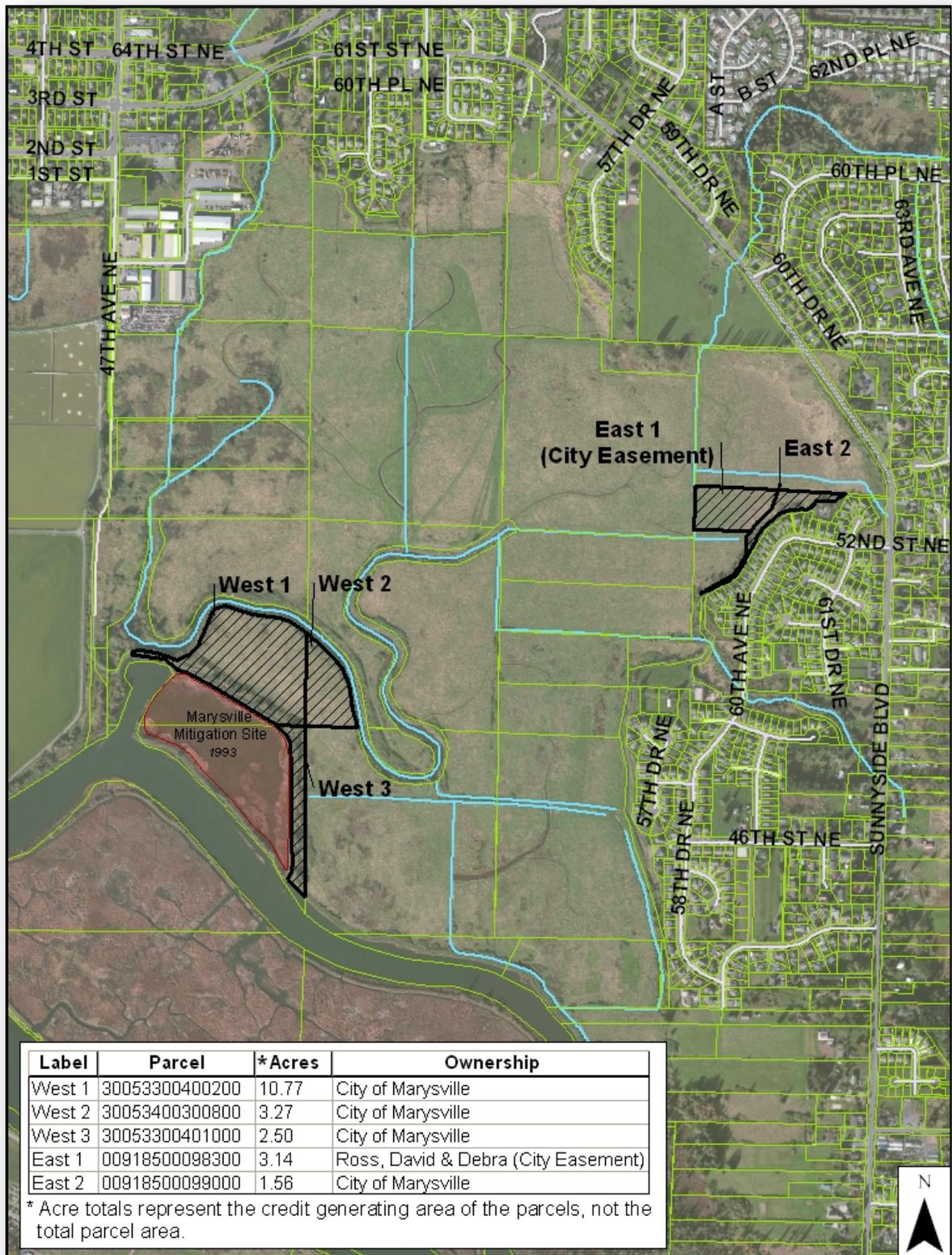
Plan. The Section 544 QER Project is, in turn, one element of a larger overall restoration effort occurring on the 400 acres that includes activities undertaken by the Tulalip Tribes, National Oceanic and Atmospheric Administration (NOAA), US Fish and Wildlife Service, and the Washington State Department of Ecology (Ecology). The overall Qwuloolt Restoration Project has been underway since 1998, when the Natural Resource Conservation Service obtained a conservation easement under the Wetland Reserve program for most of the agricultural properties behind the Ebey Slough levee. However, the conservation easement does not encompass the City owned property or City flood easement area.

The City-owned properties and City flood easement property (Figure 1) that will be considered for advance mitigation crediting pursuant to the Agreement are expected to be subject to the ebb and flow of the tides as a direct result of the ecosystem restoration activities of the Corps' Section 544 QER project. Therefore, this Plan pertains to and describes the potential incremental functional lift achieved above and beyond the benefits resulting from the Corps' Section 544 QER Project.

Mitigation Plan Purpose

The larger QER Project area is approximately 400 acres, of which the City of Marysville owns 18.10 acres and has a permanent flood easement across 3.14 acres (total 21.24) that pertain to this Plan. This Plan describes the City's specific mitigation proposal on the 21.24 acres to increase and augment the benefits accruing when the Corps Section 544 QER Project is completed. See Figure 1 for the location of City owned properties and easement area.

Figure 1: Site Location map



Objectives

For purposes of a frame of reference, the goal of the Corps' Section 544 QER Project is to restore tidal processes to 400 acres of currently fallow pasturelands. This will improve local streams and wetlands for fish such as threatened Chinook salmon, bull trout and steelhead and provide access to the project area for refuge and feeding. The purpose of the QER Project is to restore the natural tidally influenced conditions at the site. The QER Project objectives include:

- Create a self-sustaining brackish (salinity values greater than or equal to 0.5 ppt) tidal site with minimal construction and maintenance; consistent with the Corps Environmental Operation Principles;
- Restore natural hydrology, salinity and sedimentation;
- Promote natural channel formation;
- Provide opportunities for juvenile salmon off channel rearing and forage areas;
- Facilitate natural processes and functions to occur (sedimentation, plant propagation, export of organic material, channel complexity, edge, salinity gradient, water quality);
- Assist recovery and re-vegetation of native species;
- Provide public education on marsh restoration (public meeting, web site and signage); and
- Balance public access with ecological objectives.

The end-state of the Section 544 QER Project, following execution of all project features and activities, establishes the baseline for determination of creditable incremental functional lift under this Plan. The goal of the City's Advance Mitigation Project is to successfully implement specific compensatory mitigation activities, as outlined in this Plan, on the City owned and easement properties (21.24 acres), and generate advance mitigation credit for City debit projects within the geographic impact use area as depicted in Figure 2 of the Agreement.

The objective of this Plan is to augment and increase functional lift on 21.24 acres of land above and beyond those benefits accruing from the Section 544 QER Project. The City intends to achieve this objective by successfully implementing specific activities that are intended to substantively accelerate the process of converting fallow palustrine pasture dominated by invasive species to tidally influenced marsh and mud-flat habitat. The Plan objectives also include: creating high quality and functioning fish and bird habitat, reducing fish stranding potential, increasing primary productivity and food-chain support functions, and providing substrate for native salt and/or brackish marsh plant recruitment and colonization.

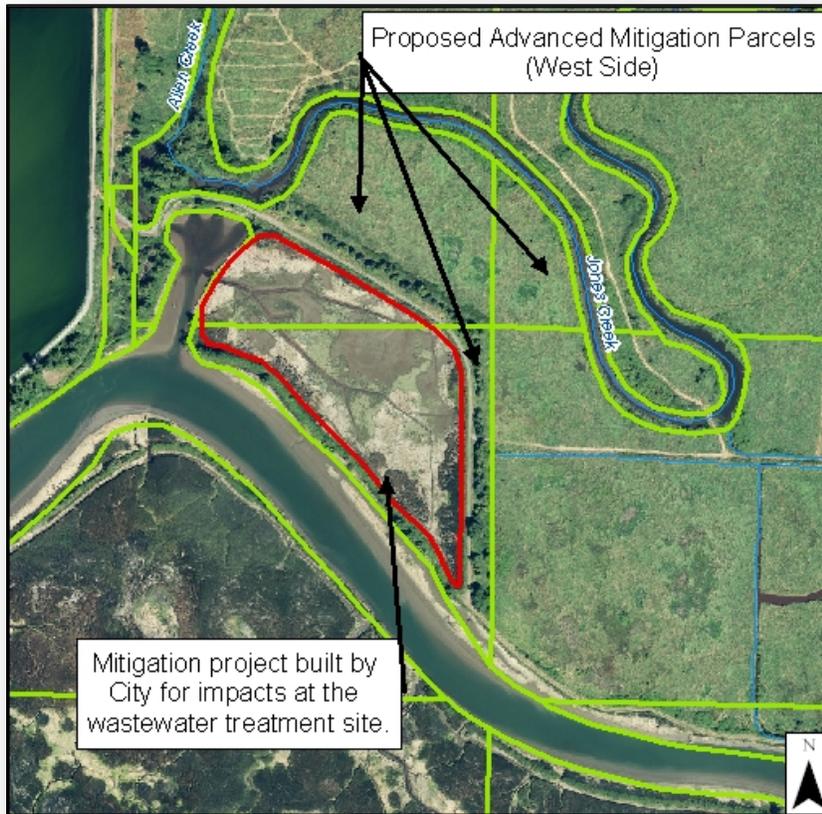
Site Selection

The QER Project area was identified within the Snohomish Estuary Wetland Integration Plan (SEWIP), finalized in 1997. SEWIP is a comprehensive watershed planning tool created "*to integrate the wetland regulatory frameworks of federal, state, and local agencies into one process on the basis of an agreed-upon plan*" (SEWIP, 1997). The

SEWIP identifies the Poortinga Property as the top priority for tidal restoration and mitigation options within the Snohomish Estuary.

The City owned and easement properties, subject to this Plan, are located within the larger QER 400-acre footprint (Figure 1) and will be subject to tidal influence once the levee has been breached. These properties are, therefore, ideally situated to benefit not only from the actions associated with the QER Project, but also from the intended functional lift generated by specific activities the City is proposing in this Plan. The City constructed a 13.7 acre wetland restoration mitigation project in 1993 adjacent to the QER Project area (Figure 2). The dike was breached restoring tidal flow of water from Ebey Slough into and out of the mitigation area. The mitigation project was successfully implemented and met all goals of the project. This project is being used as one of the reference sites for the QER Project as a whole and the City's Advance Wetland Mitigation Project.

Figure 2: 1993 City of Marysville Mitigation Site on Ebey Slough



Site Protection Instrument

As a prerequisite to the approval of utilization of any advance compensatory mitigation credits generated pursuant to this Plan, the City must demonstrate that it has instituted, and presently has in force and effect, a real estate site protection mechanism approved by the Corps and Ecology. The site protection mechanism must extend to the City owned

property and easement area, irrespective of the footprint on which the performance standards proposed as a basis for credit release have been accomplished.

City owned parcels subject to this Plan are proposed to be protected by execution of a restrictive covenant that prohibits future development and outlines consistent and allowable uses, as well as restricted and inconsistent uses. The location and limitations associated with the critical areas shall be included in the site protection instrument that is to be recorded with the Snohomish County Auditor's Office.

The City will work with the property owner of East 1 (Parcel #00918500098300) to execute an acceptable site protection instrument for that property. The site protection instrument will prohibit future development and outline consistent and allowable uses, as well as restricted and inconsistent uses on the City easement parcel. The location and limitations associated with the critical areas shall be included in the site protection instrument that is to be recorded with the Snohomish County Auditor's Office. If an acceptable site protection instrument cannot be recorded than the City will amend this Plan accordingly.

Existing Conditions and Baseline Information

For the purpose of wetland mitigation credit generation, the baseline condition is the condition of the advance mitigation site after the Corps Section 544 QER Project is completed. After Section 544 QER Project completion the site will be a tidally influenced area that will be in transition from the existing freshwater wetland dominated by reed canary grass (*Phalaris arundinacea*) to tidal marsh. In order to be eligible to generate advance mitigation credit under this Plan, the activities the City is proposing on the City properties and easement area must demonstrate a functional lift above and beyond those activities associated with the Corps Section 544 QER Project (baseline conditions).

For a thorough description of the existing conditions at the QER Project site, please refer to the Qwuloolt Ecosystem Restoration Project, Final Environmental Assessment, December 2010. The existing conditions section is included on pages 14 through 22 of that document.

The existing conditions on the City owned and flood easement properties were documented based on the overall QER project assessment, the Wetland Assessment for Restoration at Qwuloolt Marsh by Cereghino (2006), the Wetland Mitigation Monitoring-Year 10 report by Jones and Stokes, and a qualitative site assessment done in September 2012. Photos of the existing conditions onsite are on page 30.

Vegetation

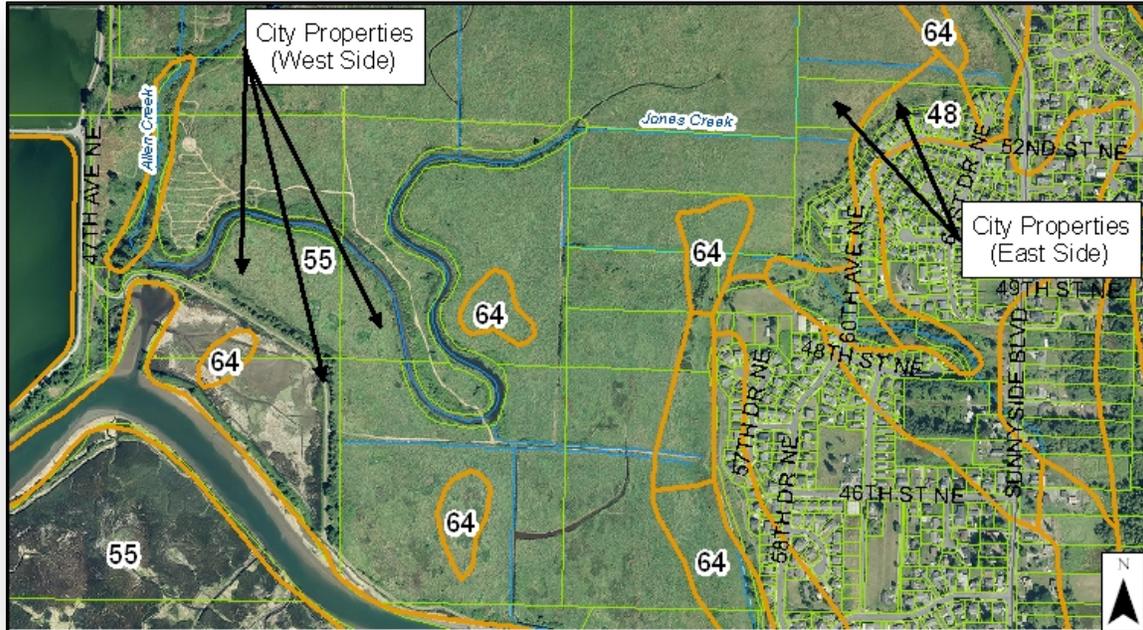
City properties and easement area are dominated by reed canary grass (*Phalaris arundinacea*). The western City properties are partially bordered and/or transected by the Marysville Mitigation Project constructed in 1993. The east and north sides of the existing planted dike are contiguous with the western edge of West 3 Parcel and the southern edge of West 1 Parcel of the Plan, respectively. As part of the 1993 mitigation

project, a dike was built along the edge of the mitigation area. The dike was planted with native species to provide a buffer for the mitigation area. Species noted as established in the 10 year monitoring report, completed in 2003, include Nootka rose (*Rosa nutkana*), hooker willow (*Salix hookeriana*), Sitka spruce (*Thuja plicata*), red osier dogwood (*Cornus stolonifera*) and volunteer species such as red alder (*Alnus rubra*). A site visit conducted in September 2012 confirmed that the plants have continued to thrive along the dike since the last monitoring period. See photos of the existing conditions onsite on page 30.

Soils

The City parcels are located within the Eastern Puget Riverine Lowland, a physiographic province characterized by unconsolidated deposits described as quaternary sediments, dominantly glacial drift, including alluvium. The Natural Resources Conservation Service (NRCS) Web Soil Survey classifies the City parcels as Pastik silt loam (48), Puget silty clay loam (55) and Snohomish silt loam (64). Figure 3 below shows where City properties are located in relation to the different soil types described by NRCS. These soils are in hydrologic soil Group C and D. Soil Group C has a slow infiltration rate when thoroughly wet, and consists chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. Soils in Group D also have a very slow infiltration rate when thoroughly wet. These soils consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Figure 3: City properties and easement area soil map (from NRCS soil data)



Wildlife

The Snohomish Estuary is a staging area and stop over area for bird migration along the West Coast Flyway. Monitoring at the existing Marysville mitigation site showed continued use of wetland-associated wildlife, particularly birds. Observations included waterfowl, shorebirds, raptors and songbirds. Similar wildlife is expected to utilize the Advance Wetland Mitigation Project sites.

Determination of Credits

The City may receive advance wetland mitigation credit for actions taken on City owned property and easement area located within the footprint of the Section 544 QER Project (Figure 1). The City will only receive credit if an ecological lift above the baseline condition is achieved, as documented by the successful completion of performance standards described herein. The total 21.24 acres, potentially generating credit within the project area, are as follows:

Table 2: City Properties and Easement Area

Parcel Label	Parcel #	* Acres	Ownership
West 1	30053300400200	10.77	City of Marysville
West 2	30053400300800	3.27	City of Marysville
West 3	30053300401000	2.50	City of Marysville
East 1	00918500098300	3.14	Ross, David & Debra (City Easement)
East 2	00918500099000	1.56	City of Marysville

Total 21.24

* Acre totals represent the potential credit generating area of the parcels, not the total parcel area.

Availability of Credits

Credits are expected to be released based on the location of the City's Advance Mitigation properties and easement area within the Section 544 QER Project site. Credits for City owned properties on the west side (West 1, 2 and 3 Parcels) of the Section 544 QER Project are expected to be released within 10 years if all performance standards are met. If the West parcels reach the Year 7 required condition, of performance standards number 4, by year 5 then monitoring for that standard can be discontinued and the credit release schedule will be accelerated for the West parcels.

The first 30% of credit accrued for these properties will become available when the As-built submittal is approved by the Corps and Ecology and the site protection mechanism has been recorded (2.40 credits). After all Year 3 performance standards, including performance standard 7, are met for the west side, 25% of credits are expected to be released (2.00 credits). After all Year 5 performance standards are met for the west side, 20% of credits are expected to be released (1.6 credits). After all Year 7 performance standards are met for the west side, 20% of credits are expected to be released (1.6 credits). After all Year 10 performance standards are met for the west side and a Long-Term Management and Maintenance Plan has been approved by the Corps and Ecology, the remaining 5% of credits are expected to be released (0.40 credits).

Credits are expected to be released only if monitoring shows that performance standards applicable to all three West parcels are being met. The western City owned properties have a high certainty of successfully returning to a tidally influenced wetland system once the QER Project levee breach is implemented. It is anticipated that transition from freshwater pasture wetland to tidal marsh will occur at an accelerated rate due to the City's activity of mowing and deep tilling the well-established reed canary grass community, as well as providing additional benefits from the other activities being performed by the City on the West parcels (blind channel construction, ditch filling and fish and bird habitat enhancement). These properties are bisected by Allen Creek and are near the levee breach. Furthermore, the City installed (existing) mitigation site at the southern and western ends of parcels West 1 (30053300400200), and West 3 (30053300401000), respectively, was a successful restoration. The site met all performance standards for vegetation, wildlife, fish, water, and substrate elevation as required by the Section 404/401 permits issued for that project (Jones and Stokes, 2003). The site had a 10-year monitoring period but did not take a full 10 years for tidal wetland functions to develop. It should be noted the existing mitigation site included active control and maintenance of reed canary grass throughout the monitoring period, which contributed significantly to the fairly rapid conversion from palustrine and upland pasture to tidal marsh.

If performance standards are not met or are not met as rapidly as predicted, the expected number of credits released and/or the expected credit release schedule may be adjusted to an appropriate schedule.

Table 3- Expected Mitigation Credit Accrual for Western Properties

Associated Performance Standard (PS)	Expected Credit Release					Total
	AS-built Submittal, and Site Protection Recording	YEAR 3 *	YEAR 5	YEAR 7**	YEAR 10 ***	
PS 4A, 4B: Control Invasive Species	2.40	0.98	1.60	1.60	0.40	6.99
PS 5A: Estuarine habitats		0.03				0.03
PS 5B: Fish stranding		0.47				0.47
PS6: Habitat Complexity		0.52				0.52
Total Released	2.40	2.00	1.60	1.60	0.40	8.01
Percent Released	30%	25%	20%	20%	5%	100%

*Credit release also contingent on PS 7: Tidal influence.

**If Year 7 standards are met by Year 5, credit release will be adjusted accordingly and monitoring for PS 4 may end.

*** Year 10 credits will not be released until PS are met and a detailed Long-Term Management Plan is approved by the Corps and Ecology.

The credits for the City owned and easement area on the east side (East 1 and 2 Parcels) of the Section 544 QER Project will be released separately. This area is expected to be subject to the ebb and flow of the tide, but inundation levels are uncertain. Therefore, the type of wetland that will develop on these properties is less certain. The first 33% of credit accrued for these properties are expected to become available when the As-built submittal is approved by the Corps and Ecology and the site protection mechanism has been recorded (0.78 credits). After all East parcel Year 3 performance standards, including performance standard 7, are met 22% of credits are expected to be released (0.52 credits). After all East parcel Year 5 performance standards are met 20% of credits are expected to be released (0.47 credits). After all East parcel Year 7 performance standards are met 20% of the credits are expected to be released (0.47 credits). After all East parcel Year 10 performance standards are met and a Long-Term Management and Maintenance Plan has been approved by the Corps and Ecology, the remaining 5% of credits are expected to be released (0.12 credits). Credits are expected to be released only if monitoring shows that performance standards applicable to both East parcels are being met. The expected release schedule and/or the expected number of credits available for City use may be adjusted based on the conditions that develop.

Table 4- Expected Mitigation Credit Accrual for Eastern Properties

Associated Performance Standard	Expected Credit Release					Total
	AS-built Submittal, and Site Protection Recording	YEAR 3*	YEAR 5	YEAR 7	YEAR 10**	
PS 1 all A's and B: Restore Plant communities and PS 3: Control invasive species	0.78					0.78
PS 2: Control invasive species, Reed canary grass		0.52	0.47	0.47	0.12	1.57
Total Released	0.78	0.52	0.47	0.47	0.12	2.35
Percent Released	33%	22%	20%	20%	5%	100%

*Credit release also contingent on PS 7: Tidal influence

** Year 10 credits will not be released until PS are met and a detailed Long-Term Management Plan is approved by the Corps and Ecology.

Credit Contingency Details

Expected credit ratios may be adjusted as needed based on site development. In order to receive mitigation credit all parcels must have daily tidal inundation, where inundation is defined as the presence of surface water. The expected performance standards for City properties and easement area that must be met in order for credit accrual and release begin on page 21.

Prior to any utilization of credits, if the City finds, during routine maintenance and monitoring that site conditions do not warrant credit accrual the City may relinquish claims for credit prior to any utilization of mitigation credits. In such a circumstance, the City will reduce or eliminate the maintenance and monitoring for areas that are not eligible for credit accrual. The City also has the option, prior to any utilization of credits, to develop a contingency plan if site conditions warrant a modification to the performance standards contained herein.

Following first utilization of any credits reflecting accomplishment of any performance standards on any portion of the advance mitigation site, the City may submit a request to discontinue accomplishment of subsequent performance standards, and to forgo generation of the corresponding compensatory mitigation credits. Such a request will be considered a request for amendment of this Plan and the Agreement, which may be accomplished only with the express written approval of the Corps and Ecology. The Corps and Ecology will act in good faith in reviewing any request for contingency amendment to this Plan following first utilization of credits generated under the

Agreement, and approval thereof shall not be unreasonably denied. Alteration to maintenance and monitoring described in this Plan must similarly be submitted to the Corps and Ecology through a requested amendment to the Plan, and must be approved by the Corps and Ecology prior to implementation.

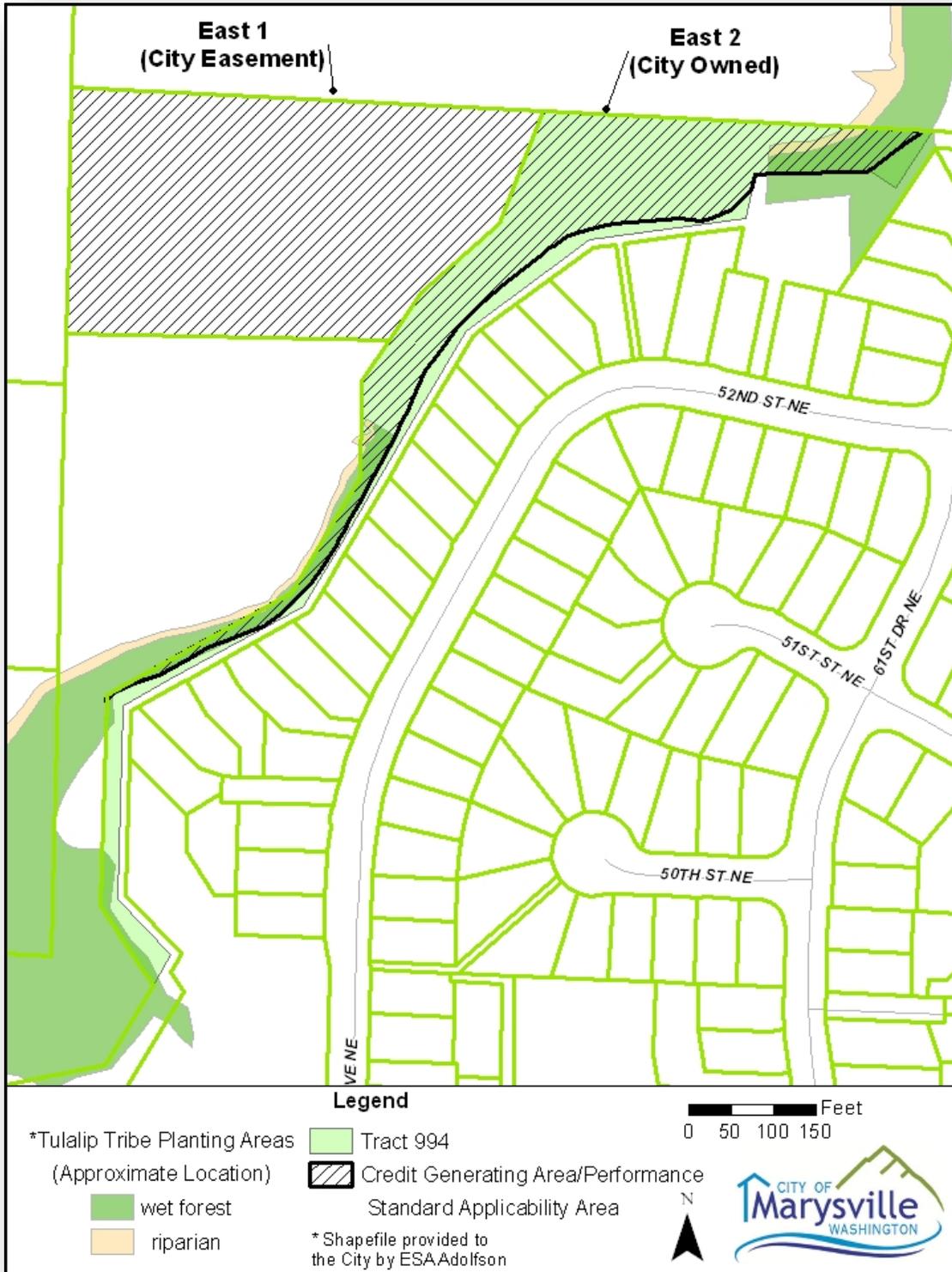
Requests may also be made to modify this Plan if favorable site conditions are developing faster than anticipated and the expected credit release schedule may be modified accordingly.

Mitigation Work Plan

Specific actions to be taken on the City's properties and easement area include:

1. The City will mow reed canary grass (*Phalaris arundinacea*) on all City properties and easement area. After mowing, the area will be tilled a minimum of 12 inches in depth. On East 2 parcel, the credit generating area within Tract 994 (see Figure 4) that has not already been planted by the Tulalip Tribe will be subject to mowing and tilling. Mowing and tilling will break up the rhizomatic mass of the grass, increase its rate of breakdown, and encourage its export from the site during tidal exchange. This will also create microtopography within the parcels and increase raptor predation on small mammals, which will minimize the exodus of mice and voles to the uplands upon tidal breaching. Exporting the reed canary grass biomass to Ebey Slough will likely transport to the starved downstream estuarine delta in Puget Sound, benefiting fish and other marine organisms by providing a lift in food chain support functions. In addition, mowing and tilling will help facilitate more rapid development of tidal channels, as well as mudflat and/or appropriate substrate for recruitment and colonization of native marsh vegetation. Mowing and tilling will occur late in the summer preceding the dike breach. The schedule may be adjusted as needed to ensure that mowing and tilling precede the breach as close in time as possible.

Figure 4: Mowing and Tilling Area on Parcel East 2



2. The City will remove existing stocks, and implement ongoing control methods for Himalayan Blackberry (*Rubus armeniacus*) both before and after tidal breaching on parcel East 2 (Tract 994 of 00918500099000). There is an existing trail on this property, which runs along the Harborview Village development, located uphill from the expected tidal inundation elevation. The down slope edge of the trail is bordered by a hedgerow of Himalayan Blackberry (*Rubus armeniacus*) which extends down toward the expected tidal inundation elevation. If invasive knotweed (e.g., Bohemian, giant, Himalayan and Japanese) species and hybrids (*Polygonum bohemicum*, *P. sachalinense*, *P. polystachyum*, and *P. cuspidatum*), purple loosestrife (*Lythrum salicaria*), or common reed (*Phragmites australis*) are encountered, control measures will also be implemented. See the maintenance plan below for an anticipated schedule of activities.

3. A mix of Palustrine Scrub Shrub and Palustrine Forested species will be planted by the City, or persons contracted by the City, on the East 2 parcel (Tract 994 of 00918500099000). The trail along this property already has some large trees and shrubs along the edge. These plantings were completed when the Harborview Village development built the trail. City planting activities will be delayed until after the Tulalip Tribe has modified City owned and maintained storm drain structures on this property and reed canary grass (*Phalaris arundinacea*) control measures can be implemented. Planting is expected prior to the breach, in the fall of 2013 or spring of 2014, whichever period is closer to the breach.

The planting area is between the expected mean higher high water (MHHW) elevation¹ and the 14 ft elevation, except where the trail prevents planting all the way to the 14 ft elevation. The area between the 10 ft contour and the 14 ft contour will be planted to provide a native wetland and upland buffer for the tidally influenced wetland areas. Wetland functions and values will be enhanced substantively in this area as primary productivity will increase as native vegetation cover becomes denser and diversifies. More extensive vegetation cover provides shade and greater fish rearing habitat for salmonids and other fish species as well as habitat for invertebrates and insects that provide a prey base for fish and other organisms. Figure 5 shows the buffer area and the area to be planted. Table 3 is a list of species to be planted.

Plants will be installed in groups by species, with trees placed closer to the existing trail. Willows (*Salix sp*) and Spiraea (*Spiraea douglasii*) will be placed near the MHHW elevation. Trees will be placed 10 foot on center and shrubs will be planted 5 foot on center (Per Marysville Municipal Code 22E). All planted stock will be placed in rows. The area between each row will be mulched to kill the reed canary grass (*Phalaris arundinacea*) that is already established in the planting area. Areas between the rows will be seeded with an appropriate mix of herbaceous native plants once the existing stands of reed canary grass (*Phalaris arundinacea*) have been diminished. Timing and seed selection will be based on

¹ 9.2ft, in NAVD 88, from Corps Analysis 2008

the data gathered during the required monitoring efforts. See Figure 5 for the proposed City planting area and the areas that have already been planted by the Tulalip Tribe.

Figure 5: Planting area on East 2 parcel.

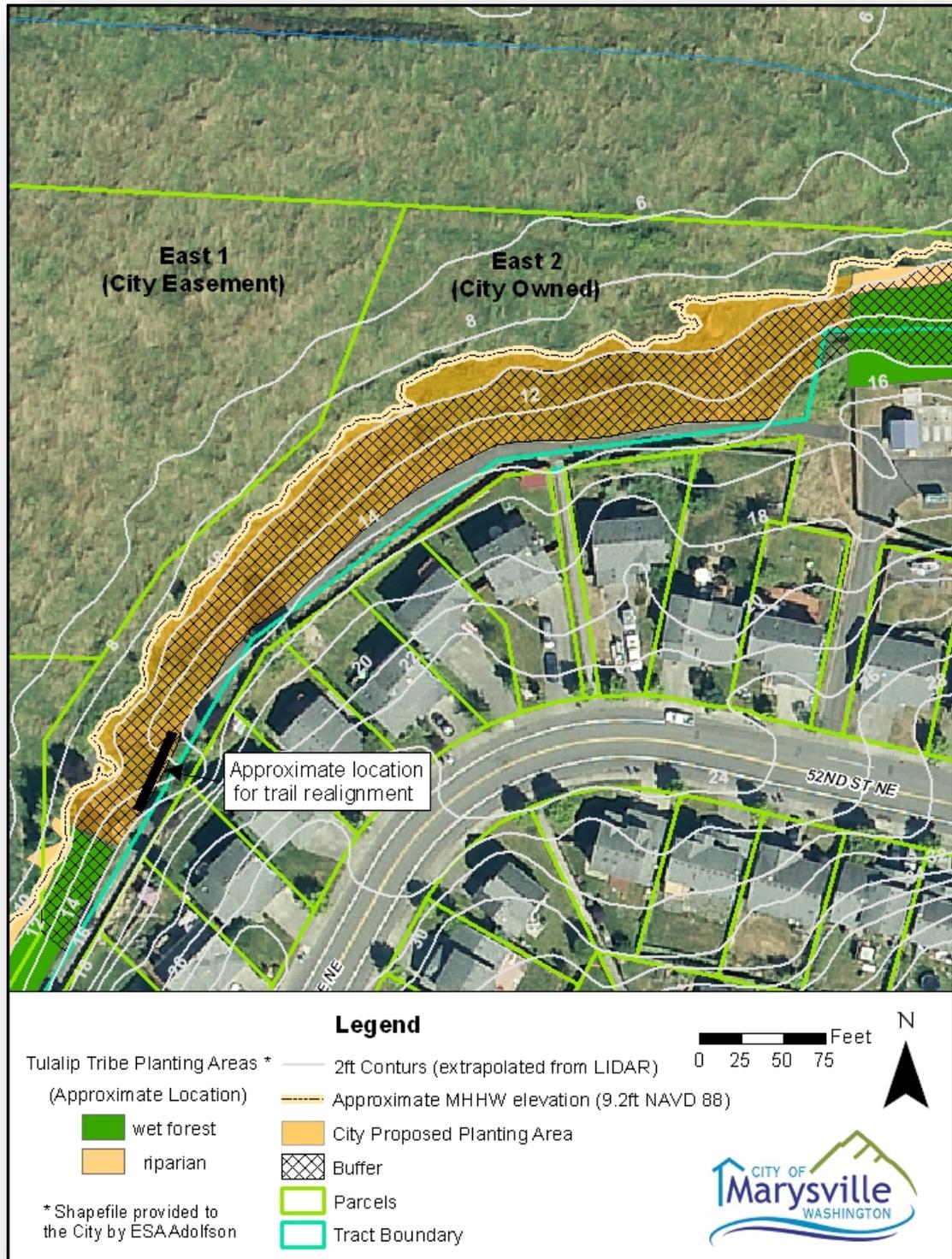


Table 3: Plant List

Scientific Name	Common Name	Size
Trees		
<i>Thuja plicata</i>	Western red cedar	1 gallon cont.
<i>Picea sitchensis</i>	Sitka Spruce	1 gallon cont.
Shrubs		
<i>Spiraea douglasii</i>	Douglas spiraea	1 gallon cont.
<i>Salix sitchensis</i>	Sitka willow	Live stake or 1 gallon cont.
<i>Salix scouleriana</i>	Scouler Willow	Live stake or 1 gallon cont.
<i>Salix hookeriana</i>	Hooker willow	Live stake or 1 gallon cont.
<i>Rosa pisocarpa</i>	Clustered rose	1 gallon cont.
<i>Rosa nutkana</i>	Nootka rose	1 gallon cont.

4. After planting is completed on the East 2 parcel, wetland signs will be installed every 100 feet along the Harborview trail. If the posted signs are not sufficient to deter encroachment onto the Advance Mitigation Project Site and adverse impacts to the site are occurring, it may be necessary for the City to install a fence to protect the Advance Wetland Mitigation Project.

5. On parcel West 1 (30053300400200) there is a 925 lineal foot ditch running from the northeast to the southeast, roughly parallel to the Marysville mitigation area dike. This ditch will be filled by the method shown in Figure 6. This activity will substantively reduce potential fish stranding on the parcel as well as facilitate creation of microtopography and sediment accumulation. The accumulation of fine sediments is anticipated to enhance the biological productivity of the area by creating substrate for native vegetation to recruit and colonize. Construction activities will be conducted by the City of Marysville and are expected to occur in the late summer of 2013, prior to the final breach. Approximately 700 CY of material excavated from the breach location will be used as fill. See Figure 7.

Figure 6: Ditch Fill Detail

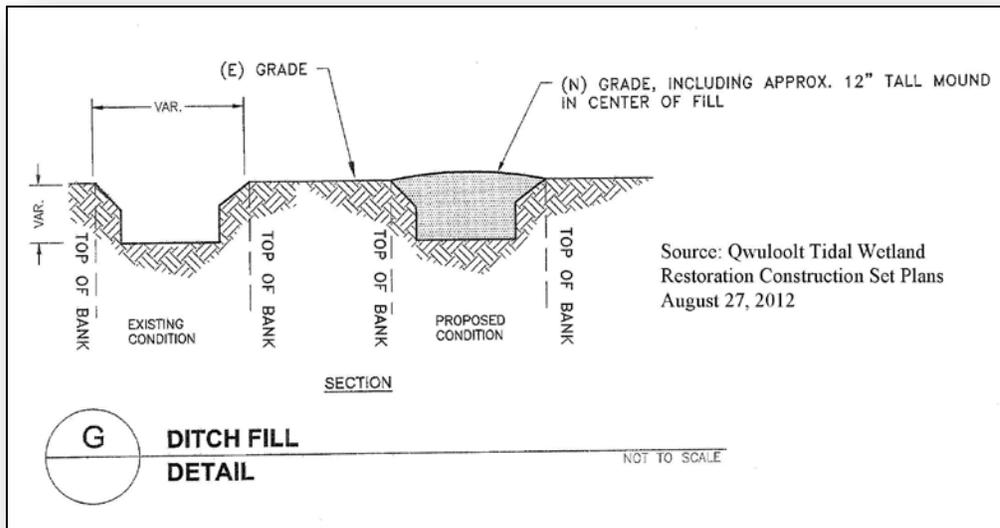
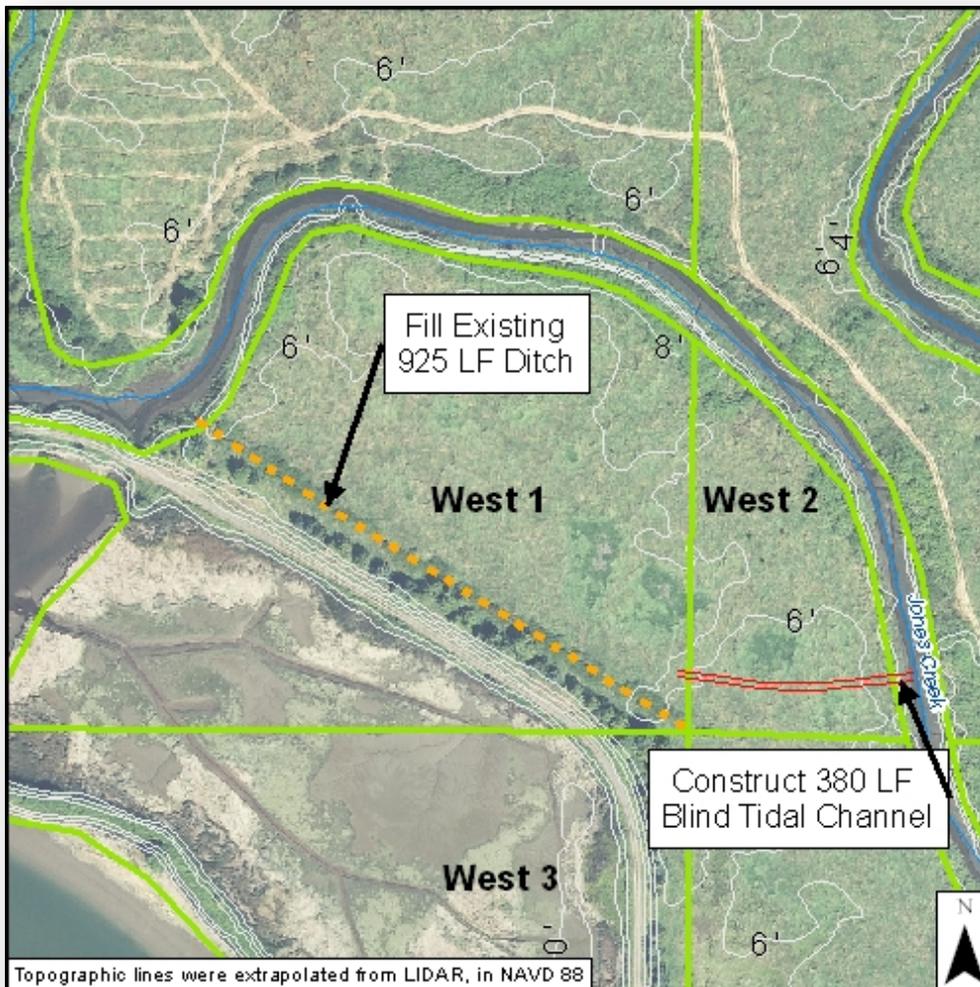


Figure 7: Ditch Fill, and New Tidal Channel Construction



6. Based on City of Marysville GIS topographic lines and spot elevations (which are extrapolated from LIDAR) there is a topographic depression adjacent to the ditch referenced in Figure 7 above. The lowest spot of the depression is approximately 3.8 feet in elevation (NAVD 88). The City will excavate a new blind tidal channel connecting the primary stream channel to the depression. The new starter channel will be excavated to approximately three feet in elevation (NAVD 88) in order to mimic natural dendritic channel formation. This will create fish rearing and refugia habitat, as well as provide habitat complexity on the West 2 Parcel. The final length and depth of the channel is subject to change based on actual site conditions. Construction activities are expected to occur in the late summer of 2013, prior to the final breach. See Figure 7.
7. The City will develop and submit to the Corps and Ecology an “As-built plan” for City properties and easement area based on a survey of the Advance Wetland Mitigation Parcels. General site topographic information, hydrologic monitoring stations and photo points will be documented for all City properties and easement area. Photo-documentation will include views of all City properties and easement area immediately after mowing has occurred, and a second time after these areas have been deep tilled. Photos will be taken from several locations and labeled with photo point number and compass direction of view. Each photo point location will be shown on the as-built map.

On the West Parcels, the As-built will show the location of the ditch that was filled, the new blind channel, and document the area of large woody debris accumulation and snag formation. The as-built will include cross-section drawings documenting the elevation across the filled ditch on West 1. Cross-sections will show micro topographical variances, but no depressions that could trap fish after the ditch is filled will remain. The As-built will also document the cross-sectional dimensions of the blind channel on West 2, including the connection to Jones Creek. The As-built will include photo-documentation of West 3 Parcel before levee breach and lowering from several locations. Photos will be labeled with photo point number and compass direction of view. The photo point locations will be included on the map.

The As-built requirement, monitoring requirements and performance standards related to activities on the West Parcels are applicable to the credit generating portions of the parcels (see Figure 8 below).

On the East 2 Parcel the As-built submittal will show the location of City plantings, wetland signs and a list of species that were planted. The As-built will be based on a survey and show the corners and boundary lines for Tract 994 of the Harbor View Village Plat (Snohomish County AFN 200102065008). Acreages will be adjusted if necessary. The As-built requirement, monitoring requirements and performance standards related to activities on East 2 are applicable to the credit generating portion of the parcel (see Figure 9 below).

The As-built plan will be prepared within sixty days of completion of all City proposed actions.

Figure 8: Performance Standard Applicability and As-built Area West

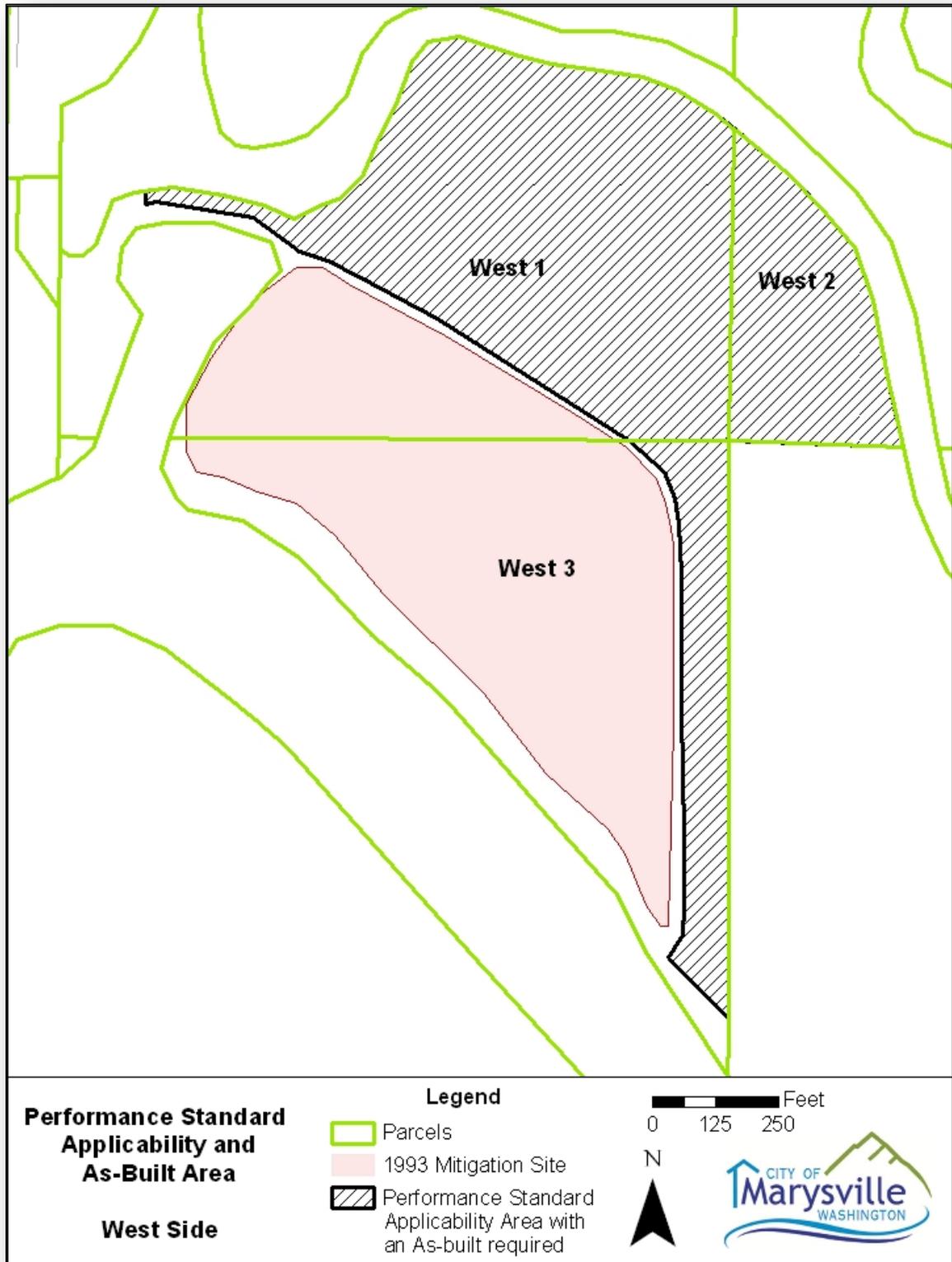


Figure 9: Performance Standard Applicability and As-built Area East



Goals, Objectives and Expected Performance Standards for City Properties and Easement Area

The following goals, objectives and expected performance standards are specific to the City properties and easement area. The performance standards are expected to be used to assess the success of the activities conducted on City properties and easement area. These standards are also expected to be used to determine the release of mitigation credit generated per the Agreement signed by the City, Corps and Ecology.

East Side

Goal 1: Restore native plant communities.

Objectives:

- 1A: Plant native vegetation: East 2 Parcel will be planted with native wetland species that are expected to thrive in the zone between the expected Mean Higher High Water elevation (9.2 ft, NAVD 88) and the 14 ft elevation, except where the trail prevents planting all the way to the 14 ft elevation.
- 1B: Protect planted areas: Wetland signs will be installed along the trail on East 2 Parcel.

Performance Standards:

- 1A.1: Shrub Survival: There will be 80% survival of all installed native shrub species for years 1 and 2 (on East 2 Parcel). Volunteers of desirable native shrub species cannot count towards satisfying this performance standard.
- 1A.2: Tree Survival: There will be 100% survival of all installed native tree species for years 1 and 90% in years 2 through 5 (on East 2 parcel). Volunteers of desirable native tree species cannot count towards satisfying this performance standard.
- 1A.3: Percent aerial cover by woody species: No percentage cover requirement for Year 1. Years 2 and 3: 20%; Year 5: 50%; Years 7 through 10: 70% (on East 2 Parcel). Volunteers of desirable native shrub and tree species can count towards satisfying this performance standard.
- 1B: Protect planted areas: During the As-built survey, document that wetland signs were installed every 100 feet along the Harborview trail, adjacent to the East 2 Parcel planting area.

Goal 2: Control Invasive Species on East 1 Parcel (and non-planted area of East 2).

Objectives:

- 2: Control invasive species: Reed canary grass (*Phalaris arundinacea*) on East 1 will be mowed and deep tilled to facilitate the breakup of the standing

stock and rhizomatic mass of grass and encourage its export from the site during tidal exchange.

Performance Standards:

- 2A: Control invasive species: On East 1 Parcel;
- Year 1 – Monitoring must demonstrate a reduction in reed canary grass over initial conditions
 - Year 3 – Maximum aerial cover of reed canary grass cannot exceed 50%
 - Year 5 – Maximum aerial cover of reed canary grass cannot exceed 20%
 - Year 7 – Maximum aerial cover of reed canary grass must be below 10%. Submit a qualitative survey documenting mudflat development and/or native vegetation communities.
 - Year 10 – Submit a qualitative survey documenting mudflat development and/or native vegetation communities.
- 2B: Control difficult invasive species: On East 1 Parcel, there will be 0% cover (no presence) by invasive knotweed (e.g., Bohemian, giant, Himalayan and Japanese) species and hybrids (*Polygonum bohemicum*, *P. sachalinense*, *P. polystachyum*, and *P. cuspidatum*), purple loosestrife (*Lythrum salicaria*), and common reed (*Phragmites australis*).

Goal 3: Control Invasive Species on East 2 Parcel

Objectives:

- 3: Control invasive species: Reed canary grass (*Phalaris arundinacea*) on East 2 will be mowed and deep tilled to facilitate the breakup of the standing stock and rhizomatic mass of grass and encourage its export from the site during tidal exchange. Himalayan Blackberry (*Rubus armeniacus*), Scot's broom (*Cytisus scoparius*), and bindweed (*Convolvulus arvensis*, *Calystegia sepium*, etc.) will be controlled by cutting and herbicide treatments as necessary.

Performance Standards:

- 3A: Control invasive species: For all years of the monitoring period, there will be no more than 10% aerial cover by non-native invasive species including (but not limited to): Himalayan and evergreen blackberry (*Rubus armeniacus* and *R. laciniatus*), Scot's broom (*Cytisus scoparius*), and bindweed (*Convolvulus arvensis*, *Calystegia sepium*, etc.). Reed canary grass (*Phalaris arundinacea*) aerial cover will be below 20% within the planting area on East 2 Parcel (see performance standard 2 for areas outside of planting area).

- 3B: Control difficult invasive species: On East 2 Parcel, there will be 0% cover (no presence) by invasive knotweed (e.g., Bohemian, giant, Himalayan and Japanese) species and hybrids (*Polygonum bohemicum*, *P. sachalinense*, *P. polystachyum*, and *P. cuspidatum*), purple loosestrife (*Lythrum salicaria*), and common reed (*Phragmites australis*).

West Side

Goal 4: Control Invasive Species on West 1, 2 and 3 Parcels.

Objectives:

- 4: Control invasive species: Reed canary grass (*Phalaris arundinacea*) on West 1, 2 and 3 Parcels will be mowed and deep tilled to facilitate the breakup of the standing stock and rhizomatic mass of grass and encourage its export from the site during tidal exchange.

Performance Standards:

- 4A: Control invasive species: On West 1, 2 and 3 Parcels, reed canarygrass (*Phalaris arundinacea*)
- Year 1 – Monitoring must demonstrate a reduction in reed canary grass over initial conditions
 - Year 3 – Maximum aerial cover of reed canary grass cannot exceed 50%
 - Year 5 – Maximum aerial cover of reed canary grass cannot exceed 20%
 - Year 7 – Maximum aerial cover of reed canary grass must be below 5%. Submit a qualitative survey documenting mudflat development and/or native vegetation communities.
 - Year 10 – Submit a qualitative survey documenting mudflat development and/or native vegetation communities.

- 4B: Control difficult invasive species: On West 1, 2 and 3 Parcels, there will be 0% cover (no presence) by invasive knotweed (e.g., Bohemian, giant, Himalayan and Japanese) species and hybrids (*Polygonum bohemicum*, *P. sachalinense*, *P. polystachyum*, and *P. cuspidatum*), purple loosestrife (*Lythrum salicaria*), and common reed (*Phragmites australis*).

Goal 5: Allow estuarine habitats such as mudflats, salt-tolerant vegetation communities, or channels to become established and prevent fish stranding.

Objectives:

- 5A: Estuarine habitats: Excavate a new blind tidal channel connecting the primary stream channel to a depression on West 2 Parcel.
- 5B: Fish Stranding: A ditch on West 1 Parcel will be filled to prevent fish stranding and create microtopography.

Performance Standard:

- 5A: Estuarine habitats: Document that the blind channel on West 2 Parcel continues to be connected to Jones Creek for the duration of the monitoring period.
- 5B: Document that the filled ditch area on West 1 Parcel does not contain depressions deep enough to cause potential fish stranding.

Goal 6: Increase fish habitat complexity on West 3 Parcel.

Objectives:

- 6: Habitat Complexity: The trees on Parcel West 3 will remain in order to recruit and increase large woody debris (LWD) accumulation on West 3 Parcel.

Performance Standard:

- 6: Habitat Complexity: LWD must begin to accumulate during the monitoring period, as document by photos of West 3 Parcel before and after levee breach.

All Properties

Goal 7: Restore a tidally influenced hydrologic regime to City properties and easement area.

Objectives:

- 7: Tidal influence: The Section 544 QER Project will breach the dike in the fall of 2013 in order to restore tidal influence to City properties and easement area. After City planting (see Goal 1) staff gauges will be installed to measure the surface water inundation on the City properties and easement area. The locations will be surveyed at the time of installation.

Performance Standards:

- 7: Tidal influence: Surface water will be present at least daily on the City properties and easement area as documented for years 1-3.

Monitoring Requirements

The City properties and easement area are a small component of the much larger QER Project, so the City will pursue joint monitoring efforts wherever possible to provide a science-based evaluation of the restoration project and provide public information on restoration activities.

Onsite monitoring activities will include collecting qualitative photographic site documentation, vegetation information, invasive species control, and surface water depth data. Monitoring of City properties and easement area will be undertaken for up to ten years. The western City properties are not going to be planted by the City and are close to

the breach location, so monitoring for performance standards 5, 6 and 7 will only continue until year 5. Monitoring for Reed canarygrass (*Phalaris arundinacea*), performance standard 4, is expected for 10 years but may reach year 7 standards by year 5. If site conditions reach year 7 standards early, then monitoring will be discontinued for that performance standard. Year 1 monitoring will begin the first growing season, one calendar year after the plants are installed on parcel East 2. Monitoring will be conducted in years 1, 2, 3, 5, 7 and 10. Vegetation monitoring will occur late summer/early fall (before leaf drop) in each monitoring year.

Mitigation monitoring reports will be submitted to the Corps and Ecology by January 31st describing monitoring and maintenance actions for the previous year. The mitigation monitoring report will include the following components:

- An introduction, including a description of the site and the monitoring schedule;
- A discussion of the restoration goals, objectives and performance standards;
- A discussion of the monitoring methods used;
- A results section with an evaluation of the site with regard to the performance standards;
- Conclusion, including management recommendations and maintenance and contingency measures, if necessary;
- Site photographs;
- A map of photo sites and monitoring locations and
- Monitoring data sheets.

Monitoring Methods

Overview photos will be taken from the same vantage points each monitoring year to document overall appearance of the mitigation area before, during, and after construction. Site photos will be used to document the success or failure of performance standard numbers 5 and 6. In Years 1, 3, and 5, photos will be taken during low tide to document the filled ditch area on West 1 and the blind channel on West 2. In Years 1, 3, and 5 photos will also be taken of West 3 to document presence and increase in large woody debris and snag development. Photos will be taken from several locations. Each photo will be labeled with photo point number and compass direction of view. A minimum of 2 permanent photo point locations will be established on the West and East (4 total) advance mitigation parcels and permanently marked. Photos from these stations will be taken for all monitoring years. Photo point locations will be shown on the As-built drawings and included in the monitoring reports.

In order to estimate shrub and tree survival, and demonstrate compliance with performance standard 1A.1 and 1A.2, trees and shrubs will be counted in the City planting area on parcel East 2. The trees and shrubs will be recorded as live, stressed, or dead. Plants are considered “dead” when more than 50% of the plant is decadent, with the exception of willow (*Salix sp*), which will be considered live if any part of the plant is living, but may be recorded as stressed. When evaluating if performance standards have

been met, stressed plants will be considered “live” when determining the total survival rate.

On East 2 the baseline and transects, described below, will be used to determine the percent aerial cover of native species and non-native invasive species demonstrating compliance with performance standard 1A.3. The line intercept method will be used to determine the aerial cover of woody plant species.

To address performance standards 2, 3 and 4, related to control of invasive species, monitoring plots will be established on City properties and easement area, using permanent baseline and monitoring transects. Permanent baseline transects will be established in each parcel where reed canary grass control (mowing and deep tilling) has occurred (West 1, West 2, West 3, East 1 and a portion of East 2 Parcels). To mark the location of the baseline transects in the field, 6-foot heavy-duty metal fence posts (or equivalent) will be installed at each end of the baseline transect. Each post will be labeled with the baseline transect number/designation. A GPS location will be recorded at each of the fence post locations so they can be replaced when/if they are lost.

- Establish 2, 500 ft long baseline transects on West 1
- Establish 1, 400 ft long baseline transect on West 2
- Establish 3, 100 ft long baseline transects on West 3
- Establish 1, 400 ft long baseline transect on East 1
- Establish 3, 100 ft long baseline transect on East 2

Permanent monitoring transects will be established perpendicular to the baselines every 100 ft along the baseline. Each monitoring transect will be between 50 and 100 ft long. A GPS location will be recorded at each of the transect locations so they can accurately located in the field each year.

- Establish a minimum of 12, 100 ft long monitoring transects in West 1
- Establish a minimum of 5, 100 ft long monitoring transects in West 2
- Establish a minimum of 9, 50 ft long monitoring transects in West 3
- Establish a minimum of 5, 100 ft long monitoring transects in East 1
- Establish a minimum of 9, 50 ft long monitoring transects in East 2

During monitoring events, a measuring tape will be extended along each monitoring transect. A random distance (between 1-10) from the baseline transect will be selected as a starting point for quadrat sampling for each monitoring event. Each quadrat will be placed ten feet apart. A solid one-meter square frame will be used to outline the quadrat area. For each quadrat the percent aerial cover of reed canarygrass will be estimated and recorded.

- There must be a minimum of 120 monitoring plots in West 1; approximately 10 plots per transect.

- There must be a minimum of 50 monitoring plots in West 2; approximately 10 plots per transect.
- There must be a minimum of 45 monitoring plots in West 3; approximately 5 plots per transect.
- There must be a minimum of 50 monitoring plots in East 1; approximately 10 plots per transect.
- There must be a minimum of 45 monitoring plots in East 2; approximately 5 plots per transect.

Monitoring data sheets will be created and used each year to ensure that the same information is recorded. In the planting area on East 2, the number and vigor of the planted trees and shrubs will be recorded. Plants will be recorded as live, stressed, or dead. Plants are considered “dead” when more than 50% of the plant is decadent, with the exception of willow (*Salix sp*), which will be considered live if any part of the plant is living but may be recorded as stressed. Data sheets will also list other factors that could affect survival and eventual dominance of the planted material, such as animal herbivory, insect infestation, human disturbance, inadequate growing conditions, disease, or other factors. Desirable native volunteers, including cottonwood (*Populus balsamifera*), and red alder (*Alnus rubra*) will be included in aerial cover percentages. Monitoring data sheets will also be used to record aerial cover within quadrat sampling plots and intercepts on line intercept transects.

Monitoring hydrologic attributes of surface water depth will be conducted using electronic data loggers, and staff gauges to demonstrate compliance with performance standard 7. At least four hydrologic monitoring stations will be established on the City properties and easement area. At least two will be located on the West properties and two on the East. Monitoring stations will be located to represent the expected gradient of tidal inundation across each parcel. The locations of the monitoring stations will be documented in the as-built report and georeferenced with established local vertical datum.

Data will be retrieved from the electronic loggers quarterly. Water levels on staff gauges will be recorded during vegetation sampling efforts and during logger data retrieval. Hydrology (water depths) should be monitored continuously for a minimum of one year. The maximum extent of tidal inundation will be monitored by mapping the high tide using GPS in the field, a minimum of four times per year (seasonally) for years 1, 2, and 3.

Vegetation monitoring data sheets and electronic data downloaded from loggers will be maintained by the City. Information will be compiled, summarized and a report will be submitted to the Corps and Ecology on an annual basis.

Table 4: Summary of Monitoring Actions

Performance Standard	Action	When
1A.1	Shrub survival	Years 1, 2, 3, 5, 7 and 10
1A.2	Tree survival	Years 1, 2, 3, 5, 7 and 10
1A.3	Percent aerial cover by woody species	Year 2, 3, 5, 7 and 10
1G	Protect planted areas: Wetland signs	As-built
2A	Control invasive species: Reed canary grass	Years 1, 3, 5, 7 and 10
2B	Control difficult invasive species	Years 1, 2, 3, 5, 7 and 10
3A	Control invasive species: Reed canary grass	Years 1, 3, 5, 7 and 10
3B	Control difficult invasive species	Years 1, 2, 3, 5, 7 and 10
4A	Control invasive species: Reed canary grass	Years 1, 3, 5, 7 and 10
4B	Control difficult invasive species	Years 1, 2, 3, 5, 7 and 10
5A	Estuarine habitats	Years 1, 3, and 5
5B	Fish stranding	Years 1, 3, and 5
6	Habitat complexity: LWD	Years 1, 3, and 5
7	Tidal influence: Map the maximum tidal inundation	4 times a year- Years 1, 2 and 3
7	Tidal influence: Use electronic loggers to monitor water level	Continuously Year 1

Maintenance Plan

Existing stands of Himalayan Blackberry (*Rubus armeniacus*) will be maintained early in the summer by cutting the new growth back to the ground. Early fall 2013, the blackberries will be sprayed with herbicides. Fall is the best time to use herbicides because the plants are pulling nutrients into the root systems and the chemicals are transported from the leaves to the roots. By cutting the stocks down to size in spring/summer 2013, the quantity of herbicide required to cover the plants will be minimized. This procedure will be repeated as needed to control re-growth.

Plants on the East 2 will be planted in rows to allow for ongoing Reed canarygrass (*Phalaris arundinacea*) control measures. Measures may include mulching/covering the area between rows, mowing, hand weeding and/or herbicide treatments. Spot treatments of reed canary grass will occur as needed on all City properties and easement area.

Ongoing maintenance needs will be assessed based on the information gathered during monitoring efforts. The information will be used to identify the need for maintenance or corrective action. If problems are encountered during monitoring, the first step will be to identify the reason for the problem, then to implement an appropriate corrective or maintenance action.

Adaptive Management Plan

Unforeseen conditions may result from a project of this magnitude. One of the largest questions associated with City properties and easement area relates to the inundation of surface water on the Eastern parcels. Maintenance actions will be addressed by the City if planted material is not performing as expected. Contingency measures for this condition may include:

- Determining the salinity at the site by completing short term frequent salinity measurements, then:
- Replanting with fresh water or salt tolerant species to fit actual site conditions.

If trespass and encroachment from the adjacent development becomes an issue on the advance mitigation parcels, the City will evaluate what measures can be taken to address the issue. Contingency measures may include the installation of fencing between the pedestrian trail and East Parcel 2.

Long-term Management and Maintenance Plan

The City is responsible for ensuring that a Long-term Management and Maintenance Plan (LTMM) is developed and implemented to protect and maintain in perpetuity the aquatic functions and values of the advance mitigation sites. This plan must be approved by the Corps and Ecology prior to the termination of the monitoring period of the advance mitigation project and before the Year 10 credits are released. The LTMM Plan will consist of enumerated objectives. The City will document that it is achieving each objective by submitting status reports to the Corps and Ecology on an approved schedule.

The LTMM Plan will include those elements necessary to provide long-term protection for the aquatic ecosystem and habitat resources of the advance mitigation site. The specific elements of the LTMM Plan must be tailored to meet the specific protection needs of the advance mitigation site. At a minimum the following core elements will be included in the LTMM Plan:

- (1) Periodically patrol the advance mitigation site for signs of trespass and vandalism. Maintenance will include reasonable actions to deter trespass and repair vandalism.
- (2) Monitor the condition of structural elements to the advance mitigation site, such as signage, the LTMM Plan will include provisions to maintain and repair signage as necessary.
- (3) Inspect the advance mitigation site annually to locate and control invasive species and noxious weeds. Control measures may include mechanical vegetation control and herbicide treatments.
- (4) Remove trash and litter from the site as necessary.
- (5) Monitor tidal channel and ensure connection is intact to Jones Creek

Photos



View of the western property edge, from the north end of the dike surrounding the Marysville Mitigation area, looking southeast. The trees that were planted as part of the mitigation are quite large now.



View from the western property, looking north. The vegetation is dominated by reed canary grass (*Phalaris arundinacea*). The patch of Spiraea (*Spiraea douglasii*) marks the edge of a ditch the City is proposing to fill (see #6 in the Mitigation Work Plan section).



From the Harborview trail, this is a view of the East property, looking northeast. Most of the property is dominated by reed canary grass (*Phalaris arundinacea*)



From the Harborview trail, this is a view of the East property looking at one of the large stands of blackberry (*Rubus armeniacus*) adjacent to the trail.

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Exhibit B

Potential Debit Project Descriptions

SR 92 BREAK IN ACCESS

Construct provisions for a future fourth leg to the intersection at SR 9 & SR 92, which include widening improvements along SR 92, portions of SR 9 and signal modification.

40TH ST. EXTENSION

Construct a new arterial roadway between SR 9 and Sunnyside Boulevard. Portions of this alignment will require new construction; other portions will entail upgrading existing roads. This new connection will tie into the SR 92 Break in Access and become the fourth leg of the intersection.

SUNNYSIDE BOULEVARD EXPANSION

Expansion of the existing two-lane roadway to a five-lane roadway between 47th Ave. NE to 52nd St. NE and a three-lane section south to Soper Hill Road. New traffic signals at 53rd Ave NE and 52nd St NE will be incorporated as well as curb/gutter, sidewalk and bike lanes.

SOPER HILL ROAD EXPANSION

Expansion of the existing two-lane roadway to a three-lane roadway tying into the Sunnyside Boulevard Expansion. Signalization or roundabout at Soper Hill Road and 71st St. NE

1ST ST. BYPASS

Construct a new bypass connection between 1st St. NE and 61st Street NE/Sunnyside Boulevard. This connection would provide a more direct connection to SR 529 while helping route heavy morning and evening commutes around the downtown area.

83RD AVE NE EXPANSION

Expansion of the existing two-lane roadway to sections of three and five lanes. Install improvements including curb/gutter and sidewalk.

DEERING PARK FRONTAGE

Improve the existing substandard two-lane roadway to City standards including pedestrian facilities.

BAYVIEW TRAIL CORRIDOR

Construct a multi-use asphalt trail along the Puget Sound Energy transmission line corridor.

HARBORVIEW TRAIL CORRIDOR

Construct a multi-use trail connecting existing trails in the Harborview development to an improved trail along the Ebey Slough Dike.

67TH AVE NE EXPANSION

Expansion and improvements to the existing three and two-lane roadway including curb/gutter sidewalk and bike lanes.

88TH ST. NE EXPANSION (ALLEN CREEK CROSSING)

Roadway stabilization and expansion including repairs to the existing wall and structure over Allen Creek.

STATE AVE EXPANSION (QUILCEDA CREEK CROSSING)

Replacement of the existing culvert along State Ave across Quilceda Creek with a bridge. Roadway expansion from a two-lane roadway to a five lane with curb/gutter and sidewalks.

51ST AVE NE EXPANSION

Expansion of the existing two-lane roadway to section of three lane and five lane roadways including curb/gutter and sidewalk.

67TH/108TH INTERSECTION IMPROVEMENTS

Installation of a new traffic signal and potential roadway expansion to provide for left turn pockets.

132ND ST NE RETAINING WALL REPAIRS

Repairs to the existing soldier pile wall over the culvert on 132nd St. crossing the Middle Fork of Quilceda Creek.

NEW SEWER ALIGNMENT (156TH ST. NE TO 172ND ST. NE)

Construction of a regional sewer alignment to serve the northwest part of Marysville in the Lakewood area. Alignment will follow along the east side of BNSF from 156th St. to 172nd St.

FRONTIER FIELDS WETLANDS

Potential new park facilities.

SMOKEY POINT MASTER PLAN AREA

Development of the Smokey Point Master Plan area (the largest developable industrial area between the Canadian border and Lacey, WA) including associated roadways. Development uses include industrial, manufacturing, assembly, fabrication, processing, bulk handling, warehousing, retail, personal services and office.

STRAWBERRY FIELDS

Park expansion and improvements to provide additional usable area.

156TH ST. NE (WEST OF SMOKEY POINT MASTER PLAN)

Construct a new three-lane roadway including planter strips, curb/gutter and sidewalk with the provision to be expanded to a five-lane roadway in the future.

GEDDES MARINA REDEVELOPMENT

Redevelopment/clean up of existing marina, the marina is a former man-made detention pond that was built in conjunction with a former mill site. In the 1960's the pond was connected to Ebey Slough and converted to a marina.

REGIONAL POND #2

Construct a future regional pond 2 to accommodate stormwater from future commercial/industrial development associated with properties located within north Marysville area. The proposed pond is generally located south of 152nd St NE and east of 40th.

JENNINGS PARK

Park expansion/improvements to create additional useable area.

27TH AVE. NE EXTENSION

Construct a new three lane roadway including planter strips, curb/gutter and sidewalk from the south end of the existing section of 27th Ave. NE, around the west side of Twin Lakes Park and connecting into 156th St. NE and the new 156th St. NE Overcrossing.