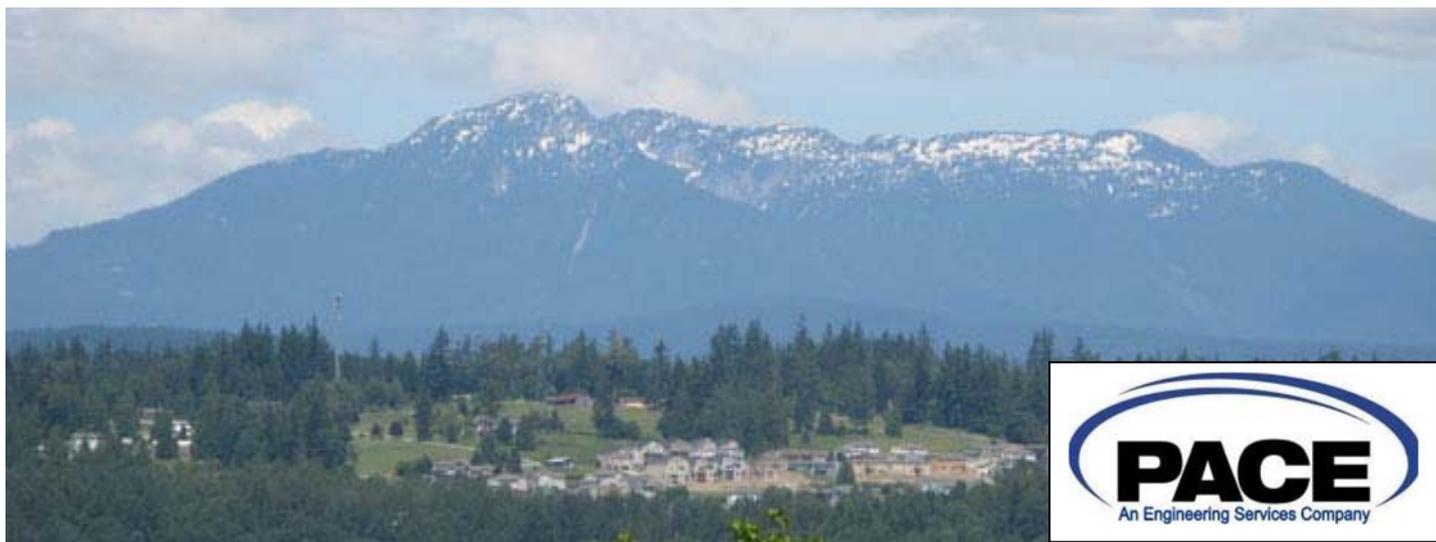


DRAFT Supplemental Environmental Impact Statement

East Monroe
Comprehensive Plan
Amendment and Rezone



2015



DRAFT

*Supplemental Environmental Impact Statement
East Monroe Comprehensive Plan Amendment
and Rezone*

Prepared by:



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WATERSHED
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Fact Sheet

This Draft Supplemental Environmental Impact Statement (DSEIS) responds to the Final Decision and Order and finding of noncompliance issued by the Puget Sound Region, State of Washington Growth Management Hearings Board (GMHB) in August 2014, corrected order dated September 19, 2014, in response to a Petition for Review filed with the GMHB in February 2014, regarding the proposed non-project action described herein.

NAME OF PROPOSAL

East Monroe Comprehensive Plan Amendment and Rezone Draft Supplemental Environmental Impact Statement (DSEIS).

PROPOSAL LOCATION

The Proposed Action is for a Comprehensive Plan amendment and rezone for five parcels of land within the eastern portion of the City of Monroe in Snohomish County, Washington. The 42.81 acre site is located within the City of Monroe's adopted Urban Growth Area (UGA) along the north side of State Route 2 (SR-2) near the eastern city limits. It is within Sections 5 and 6, Township 27N, Range 07E, W.M. The five parcels coincide with Snohomish County Assessor's Office parcel numbers: 270706-001-025-00 (Parcel A), 270705-002-061-00 (Parcel B), 270705-002-062-00 (Parcel C), 270705-002-063-00 (Parcel D), and 270705-002-064-00 (Parcel E).

PROPOSED ACTION

The Proposed Action is an amendment to the City of Monroe Comprehensive Plan for certain properties from "Limited Open Space" to "General Commercial" and with a concurrent rezone from the Limited Open Space (LOS) zoning district to General Commercial (GC).

Four alternatives are analyzed, with the "No Action-No Development" alternative added as required by the GMHB Corrected Final Decision and Order.

- **No Action - No Development Alternative**

The No Action - No Development Alternative establishes the baseline for this analysis and presents a scenario where the property remains in its current undeveloped condition.

- **Alternative 1**

This alternative presents a potential development scenario that considers collective development of five parcels under the current LOS land use plan designation and zoning district.

- **Alternative 2 (Proposed Action)**

Alternative 2 contemplates collective development of the five parcels as allowed under GC land use designation and zoning district as allowed under the Monroe Municipal Code (MMC). Alternative 2 is the Proposed Action of this FEIS.

- **Alternative 3**

Alternative 3 contemplates development of the property under a Comprehensive Plan designation of Mixed Use (MU) and zoning district of Mixed Use Commercial (MUC) under allowable uses in Monroe Municipal Code (MMC).

ACTION SPONSOR

Heritage Baptist Fellowship
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Monroe, WA 98272

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ACTIONS REQUIRED

City of Monroe

- Issuance of Draft Supplemental Environmental Impact Statement (DSEIS)
- Issuance of Final Supplemental Environmental Impact Statement (FSEIS)
- Adoption of ordinance amending comprehensive plan land use designation.
- Adoption of ordinance rezoning property.

State of Washington Growth Management Hearings Board

- Finding of Compliance

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DATE OF ISSUANCE OF DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT (DSEIS)

August 28, 2015

DATE COMMENTS ON DRAFT SUPPLEMENTAL EIS ARE DUE September 28, 2015

PUBLIC HEARING

A public hearing to accept comment on the Draft SEIS has been scheduled for September 23, 2015, 7:00 pm, Monroe City Hall Council Chambers, 806 West Main Street, Monroe, Washington.

NEXT ACTIONS

Following issuance of the DSEIS, the City of Monroe Planning Commission will hold a public hearing on the Comprehensive Plan Amendment and rezone. The Planning Commission will then forward a recommendation on the Comprehensive Plan amendment and rezone to the City Council. A Planning Commission public hearing date has not yet been set.

Final action on the proposed comprehensive plan amendment and rezone by the City Council has not been scheduled at this time, although it is anticipated to occur in late 2015. Once final action has been taken by the City Council, the DSEIS will be submitted to the Growth Management Hearings Board for a Finding of Compliance. There is no administrative appeal of the SEIS.

SUBSEQUENT ENVIRONMENTAL REVIEW

Additional environmental review will be required at the time application for a non-exempt project action is made to the City. No dates are known at this time.

LOCATION OF BACKGROUND MATERIAL

Materials such as the Monroe City Code, other planning documents, September 2013 Final Environmental Impact Statement, and historical information pertaining to the site are available for review at the City of Monroe City Hall at 806 W Main Street in Monroe, WA. Additionally, the public may find information on the City's website:

<http://www.monroewa.gov/eastmonroe>

AVAILABILITY OF DSEIS AND APPENDICES

The complete East Monroe Comprehensive Plan Amendment and Rezone Draft Supplemental Environmental Impact Statement (DSEIS) and Appendices can be downloaded from the project website:

www.monroewa.gov/eastmonroe

Copies of these documents are available for public review at the following locations:

Monroe City Hall
806 West Main Street
Monroe, WA 98272

Monroe Library
1070 Village Way
Monroe, WA 98272

Copies on CD-ROM are available for purchase for \$5.00 from the City of Monroe at 806 West Main Street, Monroe, WA 98272. Printed copies can be acquired for the cost of reproduction by either the City of Monroe (limited number) or at Staples in Monroe.

If you have special accommodation needs, please contact the City of Monroe at (360)-794-7400.

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Attachment A: Department of Ecology Wetland Rating Forms

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Attachment A: Table A-1 - Flow Velocity Comparison & Figure A-1 Hydrograph

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Attachment C: Cross Section Comparison - Existing vs. Proposed Conditions

Appendix D: GeoEngineers Focused Geological Hazards Evaluation

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Introduction

This Draft Supplemental Environmental Impact Statement (DSEIS) provides additional information and data regarding the proposed East Monroe Comprehensive Plan Amendment and Rezone. It supplements the September 2013 Final Environmental Impact Statement (FEIS) and environmental documents prepared for the Proposed Action. This DSEIS responds to the Washington State Growth Management Hearings Board (GMHB and herein after referred to as the “Board”) Final Decision and Order, dated August 24, 2014 and corrected September 19, 2014¹.

Based on the Board’s Final Decision and Order, this DSEIS evaluates:

- A No Action- No Development Alternative, to provide a baseline to inform decisions-makers of the relative impacts of other alternatives.
- Alternative sites in the City of Monroe.
- Environmental values of the entire property, including those related to wetlands, the stream/slough, and habitat, with additional analysis on potential impacts to stream/slough, wetlands and salmon habitat.
- Volumes and placement of fill.
- Flood hazards and hydraulic analysis related to flood water velocities and potential erosion of stream banks.
- Landslide history and potential.

The following environmental elements are analyzed in response to the Board decision:

- Earth (Topography, Soils, Erosion and Landslide Hazard).
- Surface Water (Streams, Wetlands and Flood Hazards).
- Plants and Animals.

Certain environmental elements of the September 2013 FEIS that were not found deficient by the Board are not included in this DSEIS as the legal challenges related to these elements were dismissed by the Board. These include Noise, Aesthetics, Light and Glare, Transportation, Public Services, Land Use and Utilities. The Board’s Final Decision and Order is provided in Appendix A.

¹ Growth Management Hearings Board Corrected Final Decision and Order, Case No. 14-3-0006c

Background and History

The September 27, 2013 FEIS presented an analysis of potential environmental impacts, mitigation measures, and significant unavoidable impacts associated with the proposed East Monroe Comprehensive Plan Amendment and Rezone.

Subsequent to its issuance, an appeal on the adequacy of the FEIS was filed with the City of Monroe. The appeal was denied by the City Hearing Examiner.

Subsequently, in December 2013, the City of Monroe approved the Comprehensive Plan amendment by Ordinance No. 022/2013. The rezone was approved by Ordinance No. 024/2013.

Three separate Petitions for Review challenging the City's action were filed with the Board in February 2014. These challenges were consolidated and addressed as one appeal.

The Board ultimately rejected/dismissed the vast majority of the issues raised by the petitioners. However, the Board found the FEIS to be deficient in certain areas, remanded the FEIS back to the City, and entered a determination of invalidity for City of Monroe Ordinances No.'s 022/2013 and 024/2013. The deficiencies found by the Board are addressed herein.

Section 1 - Summary

This DSEIS addresses deficiencies found in the September 2013 FEIS by the Growth Management Hearings Board (GMHB). Additional documentation and review of baseline data (i.e. existing conditions) and additional analysis of certain elements of the environment are provided.

In summary - the DSEIS:

- Evaluates a No Action - No Development Alternative to establish baseline conditions for the entire 43 acre site to inform decisions-makers on the impacts of other alternatives.
- Assesses the maximum development of the entire site under the proposed zoning designation.
- Considers the impacts to landslide and erosion hazard areas and the impacts of fill placement within the floodplain areas.
- Identifies the existing values and functions of environmental site features and assesses potential development impacts to the ecological function of the stream, wetlands, and listed wildlife species and their habitat.
- Addresses flood history and potential future flooding of the site, including upstream and downstream properties that may be impacted.
- Considers alternative locations for General Commercial development within the City at less comparative environmental costs consistent with WAC 197-11-440(5)(b).

1.1 RESPONSE TO GROWTH MANAGEMENT HEARINGS BOARD DECISION

The following summarize key findings of the Board and the responses provided in this DSEIS.

GMHB Comment: *Consideration of the entire 43 acre site is required. FEIS focus was primarily on the area determined as "developable".*

Response: This DSEIS reviews potential development impacts on the entire 43 acre site. Impacts to the 43 acre site and surrounding area under development alternatives allowed under City of Monroe Municipal Code as well as county, state and federal regulatory requirements are considered.

As noted throughout the DSEIS, the regulatory framework pertaining to steep slopes, streams, shorelines and wetlands prohibit development of the majority of the site. A designated Native Growth Protection Area (NGPA) combined with critical area designations required by the Monroe Municipal Code limits the developable area to approximately 11.3 acres regardless of the land use development alternative.

Although buildings and parking are not allowed within the recorded NGPA or within designated stream or wetland boundaries, compensatory storage and enhancements may occur as mitigation measures within portions of the NGPA and stream buffer and wetland buffer areas. The potential impacts of these improvements are analyzed in this DSEIS. No clearing or grading is proposed within the Ordinary High Water Mark (OHWM) of the stream/slough, designated wetland boundaries, or along the north bank of the stream/slough in the vicinity of steep slopes.

Analysis Provided In: Expanded analyses of geotechnical conditions, landslide/erosion potential, flood hazard potential, and impacts to habitat and critical areas are provided in Section 3 (Affected Environment, Impacts and Mitigation Measures) of the DSEIS. Section 3 summarizes the more detailed sub-consultant Critical Area, Flood Modelling,

and Geotechnical Evaluations provided in Appendices B, C and D respectively. The NGPA boundary is shown on the Boundary Line Adjustment Map provided in Appendix E.

GMHB Comment: *A No Action Alternative is required to define a baseline for evaluation of other alternatives.*

Response: A new No Action - No Development Alternative has been added to establish baseline conditions for a comparative analysis of all other alternatives in accordance with WAC 197-11-450. It is noted that under current City Limited Open Space (LOS) district zoning as many as five homes could be developed as permitted uses. This alternative was not evaluated in favor of the true No Action Alternative (with no development) identified by the GMHB to establish baseline conditions.

Analysis Provided In: Section 1.3 (Existing Conditions), Section 2.3 (Alternatives) and Section 3 (Affected Environment, Impacts and Mitigation Measures).

GMHB Comment: *Supporting documentation demonstrating habitat value of the site, especially salmon habitat, is required.*

Response: Additional field reconnaissance and evaluation by critical areas and habitat specialists (Wetland Resources, Inc.) and field reconnaissance and hydraulic modelling by hydrologists (Watershed Science & Engineering) was performed to identify historical stream configuration, hydrology, and surface water characteristics of the site and neighboring properties. Appendix B (Wetland Resources Inc.) provides a revised Critical Area Study and Habitat Conservation report that includes standard Washington State Department of Ecology wetland and habitat rating forms to document findings. As noted in Appendix B, no salmon were observed during field reconnaissance.

A key new finding of this Draft SEIS is that the onsite stream/slough is not directly connected to the Skykomish River at the “upstream” side, at the southeastern corner of the site. This is contrary to longstanding previous assumptions that, during flood conditions, water from the Skykomish River entered the stream/slough at the upstream corner of the property and drained back to the River through culverts at the downstream end of the slough.

Instead, the stream/slough is fed by a combination of local drainage ditches draining to the stream/slough at the southeastern corner of the site and backwater from the Skykomish River, during high water events, through a culvert located at the southwestern corner of the site.

This new information was used in hydraulic modelling of existing and proposed conditions and results in a 100-year flood elevation approximately 1.7 feet lower than indicated on Preliminary FEMA floodplain mapping. The lack of a connection to the river at the southeast end of the slough also limits fish access directly from the Skykomish River to just one culvert, not two as originally assumed in the September 2013 FEIS. Additional detail regarding this finding and documented stream conditions is provided in Appendix C (Watershed Science & Engineering Hydraulic Analysis).

Analysis Provided In: Section 3.3 (Plants), Section 3.4 (Animals), Wetland and Habitat Evaluation and Rating Sheets included in Appendix B (Wetland Resources, Inc.) and Appendix C (Watershed Science & Engineering).

GMHB Comment: *The FEIS failed to assess impacts of fill required for development of the site. A more thorough evaluation of impacts associated with fill on the site is required.*

Response: Additional analysis has been performed on the potential impacts associated with fill required to bring the developable portions of the site to above floodplain elevation levels. Updated fill volumes have been identified, reflecting the new information regarding the flood elevation. Fill volume estimates derived from hydraulic modelling are nearly 30% lower than those put forth in the September 2013 FEIS. Current fill estimates are approximately 33,000 cubic yards compared to 46,500 cubic yards put forth in the September 2013 FEIS.

Analysis Provided In: Section 3.1 (Earth) and Section 3.2 (Surface Water), Watershed Science & Engineering East Monroe Rezone Area - Hydraulic Analysis (Appendix C), GeoEngineers, Inc. Focused Geological Hazards Evaluation (Appendix D).

GMHB Comment: The FEIS fails to address impacts on flood/landslide hazards.

Response: Detailed hydraulic modelling was conducted for the current conditions and proposed development by Watershed Science & Engineering and shows that the flood volumes and velocity would not have a significant adverse impact. Flood volumes could be mitigated with compensatory flood storage. Field reconnaissance, soils testing, and review of past geologic activity was conducted by GeoEngineers, Inc. (see Appendix D). Landslide hazard analysis is provided in conjunction with the flood analysis performed by Watershed Science & Engineering. (See Appendix C.)

Analysis Provided In: Section 3.1 (Earth), Watershed Science & Engineering stream and flood hazard analysis (Appendix C), GeoEngineers, Inc. geotechnical hazards analysis (Appendix D).

GMHB Comment: Changed hydrology of the stream/slough from development, including added impervious surfaces, reconfiguration of the floor channel, may influence slope stability by eroding the toe of the slope.

Response: Reconfiguration of the stream/slough corridor is prohibited except where the south side of the stream/slough may be graded to provide compensatory flood storage and mitigate placement of fill on the property.

No work or disturbance is permitted within the OHWM of the steam slough or within the wetlands. Replanting of adjacent compensatory flood storage areas would be anticipated to enhance stream/slough conditions and animal habitat. Evaluation of existing stream/slough, erosion, and landslide conditions has been accomplished through additional field explorations and analyses. As noted in Section 3 and in the detailed reports provided in the appendices, changes to stream hydrology will be minimal, especially when considered in relation to the low anticipated stream velocities.

Analysis Provided In: Section 3 (Affected Environment, Impacts & Mitigation Measures), Watershed Science & Engineering stream and flood hazard analysis (Appendix C) and GeoEngineers geotechnical hazards analysis (Appendix D).

1.2 OVERVIEW OF THE PROPOSED ACTION AND ALTERNATIVES

Four alternatives have been evaluated, Alternatives 1, 2, and 3 were included in the September 2013 Final Environmental Impact Statement (FEIS). A new No Action - No Development Alternative is included in this DSEIS to document baseline conditions for comparative analyses of other alternatives.

The Proposed Action as put forth in the September 2013 FEIS is identified as Alternative 2 - an amendment to the City of Monroe's Comprehensive Plan changing the land use designation from "Limited Open Space" to "General Commercial" and allowing for rezone of the property

from Limited Open Space (LOS) to General Commercial (GC) for five adjacent parcels of land totaling approximately 43 acres.

To provide a comprehensive analysis, conceptual site plans (See Figures 4 through 6 of the September 2013 FEIS) were prepared taking into consideration site opportunities and constraints. All alternatives recognize that a recorded Native Growth Protection Area (NGPA) and various setbacks and buffers associated with critical areas, regulated by the City of Monroe Municipal Code (MMC), prohibit certain development such as parking areas and buildings on approximately 31.51 acres of the 43 acre site.

Figures 1 and 2 of the DSEIS provide a Vicinity Map and Project Area Map. Figures 3 and 4 show the site during summer and winter seasons and demonstrate lower stream flow conditions during summer month's weather. Figure 5 provides a Critical Areas Composite Map showing the critical areas, critical area buffers, and the NGPA easement recorded on the property. The NGPA boundary is also shown on the Boundary Line Adjustment Map provided in Appendix E.

As a Non-Project Action, no project specific plans for development exist. The conceptual site development and associated analyses represent the intensity and possible types of development, potential impacts, and mitigation strategies that could reasonably occur under each alternative. Any future project action must comply with the City's Municipal Code and all other applicable local, state, and federal regulations at the time of application for development. The regulatory framework that applies to the site limits development to approximately 11 acres of the entire 43 acre site regardless of zoning.

1.3 EXISTING CONDITIONS

This DSEIS presents findings from additional field reconnaissance and reports by PACE Engineers, GeoEngineers, Watershed Science & Engineering (WSE), and Wetland Resources, Inc. (WRI). The reports address baseline conditions for the entire site and surrounding areas to accurately depict and evaluate potential landslide, erosion, flood, and habitat impacts.

The work accomplished included:

- Additional field survey along the stream/slough channel, development of cross sections of the stream/slough, and confirmation of LiDAR data outside of vegetated areas;
- Field reconnaissance, data review, and comparative review of historical aerial imagery by GeoEngineers to analyze past and present erosion and landslide activity;
- Update of the Wetland Resources Inc., "Critical Areas and Habitat Conservation Report" to more explicitly describe baseline site conditions; and,
- Additional analysis of flood hazard potential on the site and adjacent areas including:
 - A computerized hydraulic and hydrologic model that was constructed using a trimmed version of FEMA's model of the Snoqualmie and Skykomish River floodplains, adding the stream/slough across the subject property as a tributary.
 - Hydraulic Modelling and analysis determination that the 100-year flood elevation, under developed conditions, is at 65.35 feet. This is 1.7 feet lower than the flood elevation shown on FEMA Preliminary (unadopted) Flood Maps and used in the September 2013 FEIS. Reduction of the floodplain elevation is primarily due to the lack of connectivity to the Skykomish River at the eastern (upstream) side of the stream/slough. Reduction of the floodplain elevation, combined with more detailed and topographic information obtained from additional field work results in an approximately 25% reduction in the

anticipated amount of fill required to accommodate Alternatives 1, 2, and 3. Compensatory flood storage requirements were similarly reduced.

As explained in the September 2013 FEIS, the 43 acre site is presently undeveloped and vacant. The entire site is located within the Urban Growth Area (UGA) established for the City of Monroe, near the City of Monroe's eastern boundary.

The site's physical character is derived from its location between a steep hillside to the north and SR-2 to the south. Just south of the highway are the Burlington Northern/ Santa Fe Railroad (BNSF) tracks and the Skykomish River.

The proposed plan amendment /rezone property is relatively flat to slightly rolling land and is buttressed by steeply rising topography to the north and to the west. Most of the slope is located north of and outside of the property boundaries. The slope is mostly characterized by thickly vegetated deciduous trees and shrubs (and occasional evergreen trees). The toe of the slope and small portions of the steep hillslope are located along the northern edge of the proposed plan amendment /rezone property.

The site has three distinct topographies that consist of a lower pasture located south of the stream/slough and below the 100-year flood elevation, the stream/slough corridor that bisects the site (located between the lower pasture and the steep hillside to the north), and the upper terrace, which is located within Parcel D northeast of the slough. These areas are shown in Figure 2 and are discussed further in Section 3.1.1 (Affected Environment).

The property is currently dominated by herbaceous plants, pasture grasses and invasive species. Dense established Himalayan blackberry and reed canary grass stands are located within and along the edges of the Type 1 oxbow stream/slough channel that moves through the site. A narrow stand of trees is located in the northeast section of the property.

As mentioned earlier, the oxbow stream/slough starts near the southeast corner of the site, turns west just south of the northern project boundary, and flows through a 24-inch culvert located at the parcel boundary between Parcels C and D (See Figure 5).

A significant finding of the field work conducted for this DSEIS, that affects flooding, fill and habitat analysis, showed that contrary to prior assumptions, there is no culvert under the BNSF tracks at the southeast end of the stream/slough. Therefore, there is no connection between the stream/slough and the Skykomish River at the southeast corner of the property. Instead, at this location the stream receives water from drainage ditches adjacent to SR-2.

The stream/slough also enters the property at the southwest corner of the property through large box culverts located under the BNSF railroad corridor and SR-2. These culverts allow the Skykomish River to backwater onto the site during high flow events and allows the water in the stream/slough to recede back to the river when water levels go down.

Riparian habitat provided by the stream/slough corridor adds to the diversity and complexity of the habitat elements provided by the adjacent wetland complex. Stream/slough functions are limited by several factors including but not limited to a lack of diverse vegetation within buffer areas along the banks. Appendix B (Wetland Resources Inc., Critical Area Study and Habitat Conservation Report) discusses the existing characteristics and values of the stream/slough in detail.

Three wetlands exist on-site (identified as Wetlands A, B, and C). Wetland A is a category II wetland. Wetland B and Wetland C are classified as Category III wetlands. Appendix B (Wetland Resources Inc., Critical Areas Study and Habitat Conservation Report) discusses the existing characteristics and values of each wetland in detail (and also includes the Washington State Department of Ecology Wetland Rating Forms).

Shoreline, stream, and wetlands are critical areas protected under Monroe Municipal Code (MMC). Critical area buffers, a Native Growth Protection Area, and an Urban Conservancy (UC) shoreline designation restrict and regulate development of the majority of the site, as detailed in Section 2 (Proposed Action and Alternatives) and Section 3 (Affected Environment, Impacts & Mitigation Measures) of this DSEIS.

Figure 1: Vicinity Map

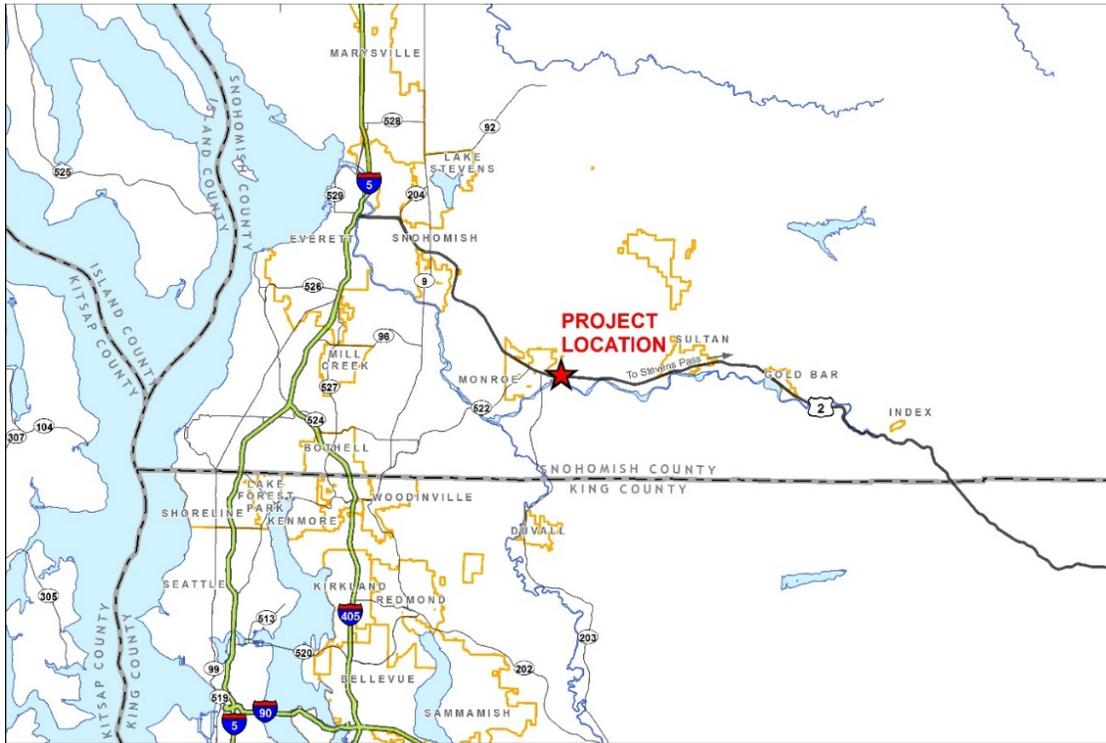
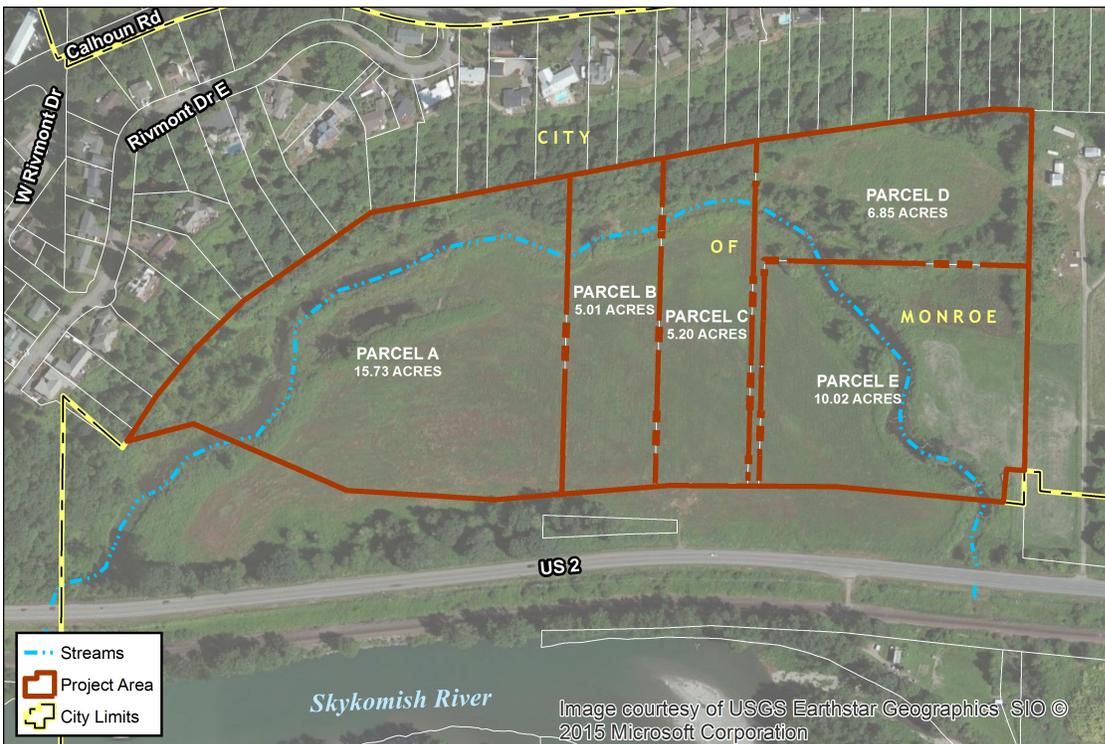


Figure 2: Project Area Map



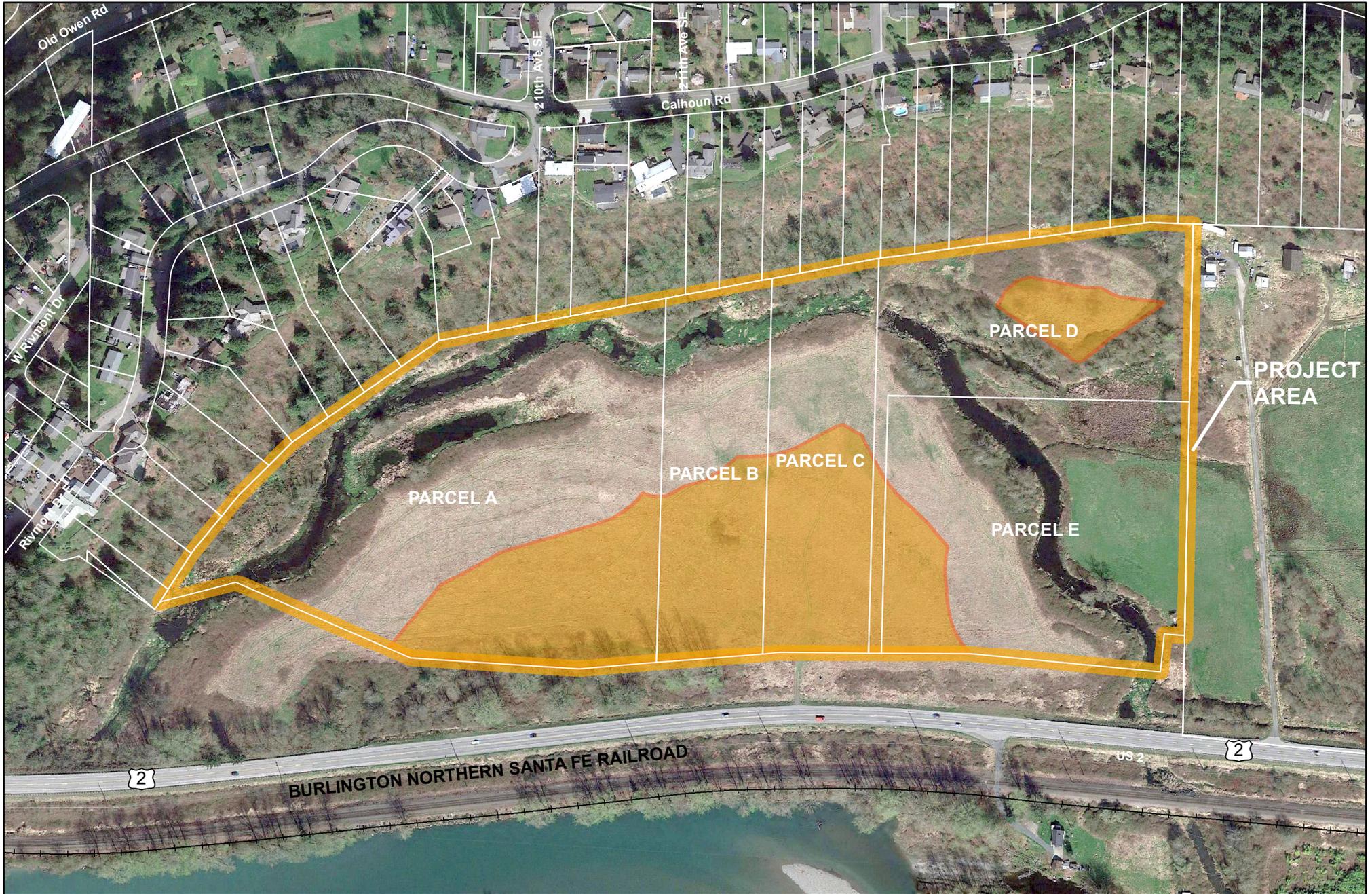


Legend

 Potential Developable Area (Approx. 11.33 acres)

Source: Imagery from Google Earth

Figure 3
July 2014 - Summer Conditions

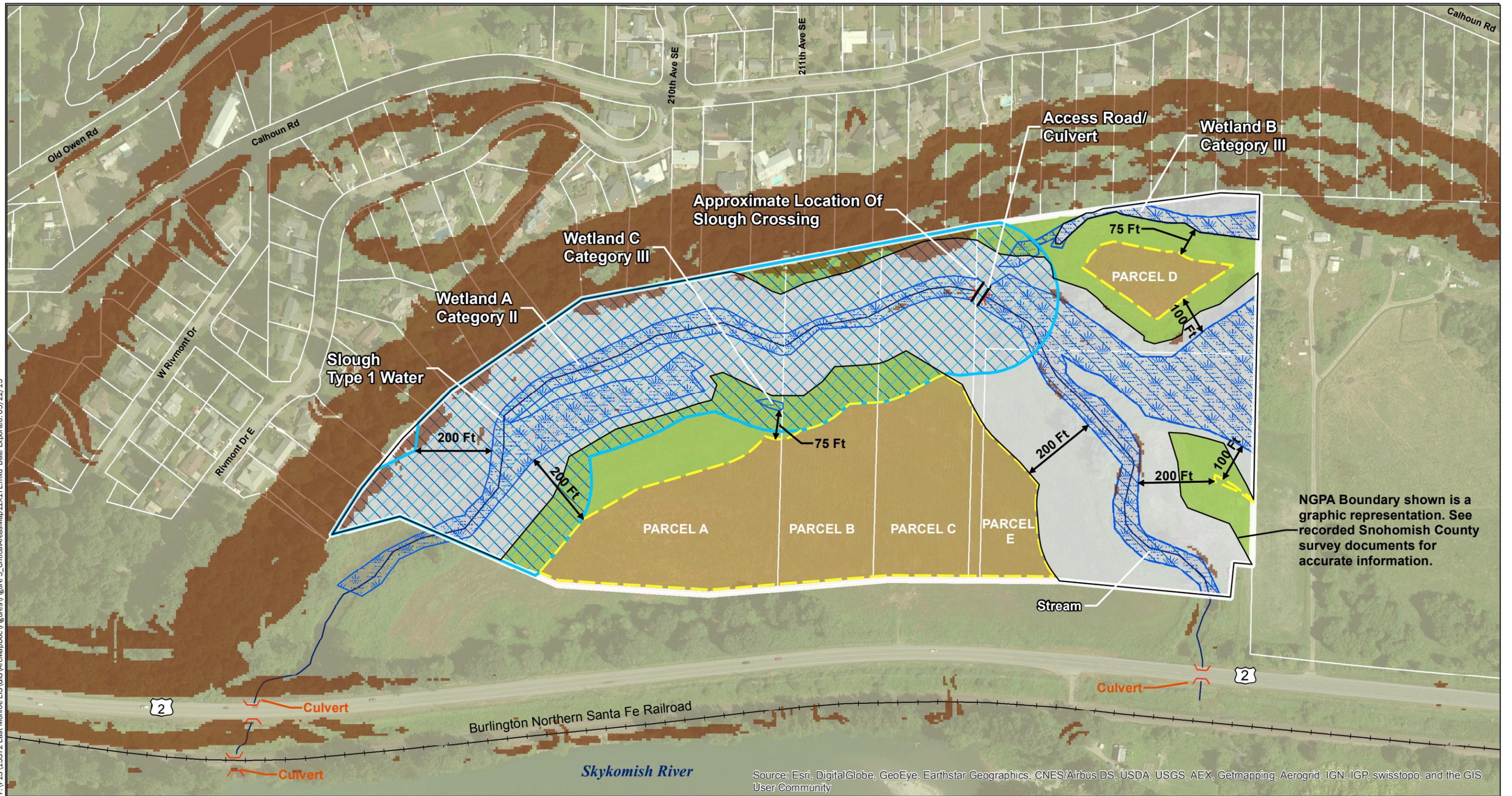


Legend

 Potential Developable Area (Approx. 11.33 acres)

Figure 4
March 2014 - Winter Conditions

P:\P13\13372 East Monroe EIS\GIS\ArchMapDoc\Figures\Figure 5_CriticalAreasMap11X17L.mxd Date Exported: 05/22/15



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Critical Areas

-  Delineated Wetland
-  Shoreline (Per Ecology)
-  Urban Conservancy / Shoreline (Per 2008 Monroe Shoreline Master Plan)
-  Steep Slope (> 40 %)

-  Native Growth Protection Area (Approx. 23.73 ac)
-  Potential Developable Area (Approx. 11.33 ac)
-  Outside NGPA Within Critical Area (Approx. 7.74 ac)
-  Wetland and Stream Buffer

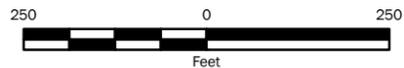


Figure 5

Critical Areas Composite Map

1.4 PROPOSED ACTION

The Proposed Action is for a Comprehensive Plan Amendment from “Limited Open Space” to “General Commercial” and a rezone from Limited Open Space (LOS) to General Commercial (GC) for a 43 acre site located within the City of Monroe and entirely within the established Urban Growth Area (UGA). The affected property is located adjacent to SR-2. Figures 1 and 2 (page 12) provide a Vicinity Map and a Project Location Map.

Under all Alternatives, the property would be subject to the conditions of development established by the Native Growth Protection Area (NGPA) and critical areas designations prohibiting development such as buildings and parking on all but approximately 11.3 acres of the site, regardless of the land use proposed. Buildings and parking areas would be located outside of the existing NGPA and steep slope, stream, and wetland critical areas and their buffers.

If the remaining developable portion of the site were to be developed to its full potential as allowed by code, grading within the stream/slough buffer and wetland buffers will be required for flood management and protection (i.e. compensatory storage) and would be regulated by Monroe Municipal Code (MMC) 19.01 (Shoreline Management), MMC 20.05.080 (Wetland Development Standards), MMC 20.05.090 (Stream Development Standards), and applicable state and federal requirements.

Grading, planting and habitat enhancement in stream/slough buffers would be accomplished in accordance with MMC 19.01 (Shoreline Management), MMC 20.05.090 (Stream Development Standards), and MMC 20.05.100 (Fish and Wildlife Habitat Conservation Areas Standards), and applicable state and federal requirements. Work would be accomplished in accordance with the goals and policies of the “Urban Conservancy” designation pursuant to the City of Monroe’s 2008 Shoreline Master Program as well as Chapter 90.58 RCW - the Shoreline Management Act.

No development or work would occur within the Ordinary High Water Mark (OHWM) of the stream/slough or wetlands, or within the steep slope or associated buffers.

Four alternatives are evaluated in this DSEIS. Alternatives 1, 2, and 3 were included in the FEIS and are summarized in Section 2.3 (Alternatives) of this DSEIS. A No Action - No Development Alternative (summarized in Section 1.4.1 below) has been added in direct response to the Board’s Final Decision and Order. All alternatives acknowledge development restrictions associated with the NGPA as detailed in Section 2 (Proposed Action and Alternatives).

1.4.1 NO ACTION - NO DEVELOPMENT ALTERNATIVE

Under the No Action - No Development Alternative, the property would retain its current Comprehensive Plan designation of “Limited Open Space”. No development would occur under this alternative. The No Action - No Development Alternative establishes the baseline alternative for the impact and mitigation analysis conducted for this DSEIS. Alternatives 1, 2, and 3 are summarized in Section 2.3 (Alternatives).

1.5 METHODOLOGY AND SUMMARY OF POTENTIAL IMPACTS

Additional environmental analysis of the 43 acre site was performed by PACE Engineers and a team of subconsultants specializing in their respective fields. In summary, this additional analysis includes:

- Wetland Resources Inc. performed site reconnaissance, stream characteristic, wetland and habitat evaluations for the September 2013 FEIS. Additional analysis has been performed to document the functions and values of existing critical areas such as the stream/slough and wetland. (See Appendix B).

- Watershed Science & Engineering was retained to prepare additional hydraulic and hydrologic analysis, including surface water modeling and flood hazard evaluation in the context of proposed fill and compensatory flood storage. (See Appendix C)
- GeoEngineers performed additional geological hazards evaluation (Appendix D). Using information from both Wetland Resources Inc. and Watershed Science & Engineering, GeoEngineers expanded on its work on the September 2013 FEIS with additional field reconnaissance and flood/landslide hazard evaluation to address Board concerns expressed in their Final Decision and Order.
- Existing site conditions including landslide history are documented, and anticipated flood volumes and flow velocities during a 100-year flood event are presented.

Subconsultant reports are provided in the Appendices and summarized below.

1.5.1 WETLAND RESOURCES, INC. - CRITICAL AREAS AND HABITAT CONSERVATION REPORT (APPENDIX B):

Wetland Resources Inc. (WRI) provided an updated Critical Areas and Habitat Conservation Study (Appendix B.) The updated report addresses the Board's concerns regarding existing conditions of critical areas (i.e. Wetland A, B, and C, stream/slough) as well as habitat.

Wetlands

For the three on-site wetlands, the updated report confirms that:

- Hydrologic function values within the wetlands are low (Wetland A), low to moderate (Wetland B) and moderate (Wetland C) with scores of 6 to 14. Factors influencing the various ratings include heavy vegetation within the stream, shallow water depths, and connection to a river with flooding problems that provide an opportunity for the wetlands to improve flood storage.
- Water quality within the wetlands provide low to moderate (Wetlands B and C) and moderate to high (Wetland A) water value scores of 10 to 24. Factors influencing the various ratings include their urban location, connection to the river, and diverse vegetation within some areas that provide an opportunity for the wetlands to improve water quality.
- Wildlife habitat values within the wetlands range from low (Wetlands B and C) to moderate (Wetland A) with scores of 12 to 25. The low to moderate habitat value is attributable to the lack of plant diversity in most of the wetland areas, nearby roadway and urban development that disturb wildlife corridors, and the presence of invasive plant species.

Stream/Slough Functions and Values

The stream/slough (Type 1) provides floodwater storage and sediment and organic transport. Riparian habitat is also provided. However, the surrounding urban area, dense invasive plant species along the banks, lack of forested canopy along the banks for thermal control, and culverts along the stream restrict the functions that the stream/slough provides.

Stream/Slough/Wetland Buffers

The buffers of the stream/slough and wetlands were also evaluated.

- Water quality functions are provided by the stream (and wetlands) by on-site buffers, but this function is limited by the lack of diverse vegetation canopy and historical soil disturbance/tilling.
- Hydrologic functions (i.e. moderating water level) are provided by the stream (and wetland) buffers; however, the function is limited by the lack of diverse vegetation structure.
- The stream/wetland buffers appear to provide cover for safety, breeding and escape, as well as a food source for some native wildlife species. However, overall, the on-site buffer areas provide low value for habitat functions. Of the three wetlands and the slough, the buffer for Wetland A has a higher potential for providing wildlife habitat than the other wetlands (Wetlands B and C) or the stream/slough.

Fish and Wildlife Habitat

The updated Wetland Resources Inc., Critical Area Study and Habitat Conservation Report (Appendix B) reiterates information from the September 2013 FEIS with respect to wildlife and fish identified at the site. The Skykomish River is known to contain several anadromous and salmonid fish species including federally listed threatened and endangered (T and E) species. Fish and avian species and mammals expected to use the site are identified in the Critical Area Study and Habitat Conservation Report. Evidence of North American beaver was observed within the stream/slough, downstream of the plan amendment/rezone property.

The stream/slough is classified as a Shoreline of the State and has the potential to provide habitat for anadromous fish as well as other aquatic species due to its connectivity with the Skykomish River. No salmonid were observed during site visits by Wetland Resources Inc.

Summary

The Wetland Resources Inc. report (Appendix B) concluded that,

“Any development scenario will likely require mitigation involving controlling at least a portion of the invasive plant species located within the site and buffers. Planting native trees and shrubs within the on-site buffers that would provide shade and enhance water quality within the stream and wetlands are just some of the available mitigation options. This type of restoration and/or enhancement would provide a long-term benefit for fish and wildlife species located on-site and in the immediate vicinity.

Any proposed development would need to be located outside of the OHWM of the stream and wetlands to avoid impacts. In order to avoid temporal losses of habitat and the potential for sending silt laden water downstream, it is not recommended that vegetation within the ordinary high water mark of the stream and wetlands be removed. Other means of mitigation or invasive species control such as planting trees and shrubs along the banks of the stream/slough to create shade can be utilized in order to avoid this temporal disturbance to the stream and wetlands while still providing a long term lift to the functions and values of the system.”

Table 1 summarizes the potential impacts and possible mitigation measures presented in Section 3 (Affected Environment, Impacts & Mitigation Measures).

Table 1:

Potential Impacts & Mitigation Measures

Potential Environmental Impacts	Mitigation Measures	Applicable City of Monroe Municipal Code	Significant Unavoidable Adverse Impacts
EARTH			
<u>Topography & Soils</u>			
<i>No Action - No Development Alternative</i>			
Continued erosion along poorly defined channels from top of north slope area and delivery of sediment to north side of channel would continue to constrict stream flows	Mitigation measures not required	Not applicable	None
<i>Alternatives 1, 2 and 3</i>			
Clearing and excavation within critical areas buffers as allowed by MMC 20.05.070, Protection and Mitigation, to provide compensatory flood storage and critical areas enhancement / restoration	Areas of excavation and clearing would be replanted to enhance habitat, wetlands, streams and water quality. Excavated areas would provide flood storage to compensate for lost flood capacity from development. Use of best management practices per City code	MMC 20.05.070, Protection and Mitigation Measures, MMC 20.05.080, Wetland Development Standards, MMC20.05.090, Stream Development Standards, MMC 20.05.100, Fish and Wildlife Habitat Conservation Areas Standards, MMC 20.05.110, Flood Hazard Area Development Standards, and MMC 20.05.120, Geologically Hazardous Areas	Unavoidable impacts from clearing and excavation would be temporary and limited to disturbance of soils and vegetation in buffer areas for compensatory flood storage and critical area enhancement/restoration activities
Fill placement within floodplain as allowed by MMC 20.05.110, Flood Hazard Area, would result in lost flood capacity	Fill placement for future development would be engineered to enhance site drainage and protect against flooding and raise site above floodplain as needed for development. Fill would be placed as regulated by the City of Monroe. Excavation along stream and wetland buffers would add compensatory flood storage and result in no net loss of flood storage capacity	MMC 20.05.110, Flood Hazard Area Development Standards, and MMC 20.05.120, Geologically Hazardous Areas	Fill placement for development would change the site's existing topography to raise the developable area above the floodplain
Clearing of vegetation within the floodplain including grasses, ground cover, invasive plants and noxious weeds	Areas not used for development would be replanted to protect the adjacent NGPA and other critical areas and enhance habitat and water quality	MMC 20.05.070, Protection and Mitigation Measures	Unavoidable impacts from clearing would be temporary and limited to undeveloped areas and buffer areas and used for critical area enhancement/restoration
Temporary construction impacts such as trucks importing fill materials and dust from construction	A traffic control plan could be prepared to control the flow of traffic and ensure safety when construction vehicles enter and leave the site. Use of construction best management practices to control dust	MMC 10.26.010, Highway Access Management	Temporary unavoidable impacts could include dust and increased traffic from construction
Development within the floodplain and northeastern portion of the project property	Certification by a geotechnical engineer regarding suitable soils and site preparation (pre-loading, if necessary) to ensure proper compaction and stability, Use of Best Available Science, conceptual development would meet City design standards including clustering to avoid geologically hazardous areas and other critical areas	MMC 20.05.120, Geological Hazard Areas MMC 15.04, Building Code	Placement of fill for new development within the area would permanently alter the topography of the site
<u>Landslide & Erosion Hazard</u>			
<i>No Action - No Development Alternative</i>			
Landslide activity on the northern slope will continue as it currently occurs under existing conditions	Mitigation measures not required	Not Applicable	None
<i>Alternatives 1, 2, 3:</i>			
During construction, removal of vegetation during grading activities would expose soil and could temporarily increase the potential for erosion along stream banks	Temporary erosion and sediment control measures would be used to control erosion and sediment runoff during storm events that occur during construction; restoration plantings within graded areas will mitigate potential erosion and contribute to stabilization of south bank of slough	MMC 20.05.070, Protection and Mitigation Measures, MMC 20.05.120, Geologically Hazardous Areas	Temporary unavoidable impacts to soils that would be exposed during grading activities associated with development and enhancement/restoration activities
Runoff from impervious surfaces following construction can also increase erosion if concentrated flows are allowed to discharge into the stream	Full compliance with the DOE Stormwater Management Manual for Western Washington and preparation of a Stormwater Pollution Prevention Plan (SWPPP) to mitigate construction impacts and control stormwater runoff as required under NPDES General Construction Permit administered by Department of Ecology	MMC Title 15, Buildings and Construction	Increased impervious surface from development within the floodplain

Table 1:
Potential Impacts & Mitigation Measures

Potential Environmental Impacts	Mitigation Measures	Applicable City of Monroe Municipal Code	Significant Unavoidable Adverse Impacts
Erosion could occur along the north bank of the channel if impacted by potential development	No grading or earthwork is contemplated north of the slough; any development would occur outside of a boundary offset approximately 200 to 400 feet south of the toe of the slope and approximately 100 to 200 feet south of the stream/slough	MMC Title 20, Environment MMC Title 19, Shoreline Management	None
SURFACE WATER			
<u>Stream/Slough</u>			
<i>No Action - No Development Alternative</i>			
Erosion will continue to occur on the northern slopes located on- and off-site at the existing rates with continued sediment delivery to the stream channel and increased vegetation growth resulting in reduced channel capacity	Mitigation measures not required	Not Applicable	None
<i>Alternatives 1, 2, 3:</i>			
Potential erosion and degradation of water quality from construction activities and site runoff after development	Temporary erosion and sediment control measures would be used to protect the stream from sediment and pollutants, and a SWPPP would be prepared per Ecology regulations	MMC 20.05.070, Protection and Mitigation Measures, MMC Title 15, Building and Construction	Temporary unavoidable impacts to critical areas buffers during clearing and excavation and compensatory flood storage and restoration activities
Loss of water quality improvement functions and/or loss of hydrologic functions	Stream protection measures during excavation; Mitigation and protection will occur in accordance with MMC and state and federal regulation. Potential measures include: building setback lines; signage and/or fencing; monitoring; and performance standards	MMC20.05.090, Stream Development Standards MMC 20.05.070, Protection and Mitigation Measures, MMC Title 15, Building and Construction	Permanent impacts include improved water quality and habitat function within the stream from restoration plantings
Increased stormwater runoff entering the stream due to increased impervious surfaces	Adherence to the 2012 DOE Manual Volume II: Construction Stormwater Pollution Prevention	MMC 20.05.070, Protection and Mitigation Measures, MMC Title 15, Building and Construction	None
Excavation and grading within the stream buffer to provide on-site compensatory flood storage	Planting and grading along south side of slough will enhance stream and habitat	MMC 20.05.070, Protection and Mitigation Measures MMC Title 19, Shoreline Management MMC20.05.090, Stream Development Standards	Temporary unavoidable impacts to stream buffer from non-native vegetation clearing and restoration activities; improved water quality within stream from enhancement plantings
<u>Wetlands</u>			
<i>No Action - No Development Alternative</i>			
No Impacts	Mitigation measures not required	Not Applicable	None
<i>Alternatives 1, 2, 3:</i>			
Possible degradation of habitat, water quality, and hydrologic function from construction activities and site runoff after development	Stormwater runoff treatment to protect water quality in the wetland; ensure no increase in peak flows from an increase in impervious surfaces; Maintain the hydrology of on-site wetlands	MMC 20.05.070, Protection and Mitigation Measures MMC Title 19, Shoreline Management MMC 20.05.080, Wetland Development Standards, MMC20.05.090, Stream Development Standards, MMC 20.05.100, Fish and Wildlife Habitat Conservation Areas Standards,	Temporary unavoidable impacts to critical areas buffers from vegetation and excavation during construction and restoration /enhancement activities; permanent impacts include improved water quality and wetland habitat function
Excavation and grading for compensatory flood storage and for buffer enhancement within wetland buffers	Wetland and stream corridor enhancement through expanded and enhanced buffers and new wetland creation; Wetland/buffer enhancement and restoration	MMC 20.05.070, Protection and Mitigation Measures MMC Title 19, Shoreline Management MMC 20.05.080, Wetland Development Standards, MMC20.05.090, Stream Development Standards, MMC 20.05.100, Fish and Wildlife Habitat Conservation Areas Standards	Temporary unavoidable impacts to critical areas buffers during clearing and excavation activities; Benefits of new plants will not be recognized until plants are established/matured but plantings would provide shading to stream and enhance habitat
<u>Flood Hazard Area</u>			
<i>No Action - No Development Alternative</i>			
No Impacts	Mitigation measures not required	Not Applicable	None
<i>Alternatives 1, 2, 3:</i>			

Table 1:

Potential Impacts & Mitigation Measures

Potential Environmental Impacts	Mitigation Measures	Applicable City of Monroe Municipal Code	Significant Unavoidable Adverse Impacts
Negligible changes in stream velocity and water surface elevation	Changes in stream velocity and water surface elevation can be avoided with compensatory flood storage	MMC 14.01, Special Flood Hazard Area Regulations FEMA Floodplain Habitat Assessment and Mitigation Draft Regional Guidance (2011)	None
Increased impervious surface within floodplain and possible loss of flood storage capacity	Reduced development to reduce surface water impacts, compensatory flood storage, site development such as open space areas that allow for flooding in some areas	MMC 20.05.110, Flood Hazard Area Development Standards MMC 14.01, Special Flood Hazard Area Regulations	Site grading and excavation within buffer areas to provide compensatory storage
PLANTS			
<i>No Action - No Development Alternative</i>			
Non-native invasive species would continue to spread and could further impact stream flows and water quality	Mitigation measures not required	Not Applicable	None
<i>Alternatives 1, 2, 3:</i>			
Clearing and grading would remove vegetation such as grassland/pasture, which would be converted to impervious surface and landscaping/open-space	Retain native plant species to the greatest extent possible, removal of invasive non-native species and replacement with native plant species that would help minimize erosion, improve earth stabilization, provide screening for development, attract wildlife, improve water quality to enhance stream and wetlands	MMC 20.05.070, Protection and Mitigation Measures MMC 20.08, Land Clearing and Forest Practices	Temporary impacts during vegetation removal and replacement; impervious surface from new development
Removal of invasive plant species such as Reed canarygrass and Himalayan Blackberry bushes	Vegetation removed for development and compensatory flood storage would be replaced with native plant species that would enhance buffers and help improve water quality and habitat along the stream corridor and within wetlands	MMC 20.05.070, Protection and Mitigation Measures MMC Title 19, Shoreline Management MMC 20.05.080, Wetland Development Standards, MMC20.05.090, Stream Development Standards, MMC 20.05.100, Fish & Wildlife Habitat Conservation Areas Standards	Temporary impacts during vegetation removal and replacement; benefits of new plants will not be recognized until plants are established/matured but plantings would provide shade and improve fish habitat
ANIMALS			
<i>No Action - No Development Alternative</i>			
No Impacts	Mitigation measures not required	Not Applicable	None
<i>Alternatives 1, 2, 3:</i>			
Habitat degradation and deterred animal use	Restoration and enhancement within critical area buffers, using native vegetation, would shade the stream, enhance habitat, and improve water quality	MMC Title 19, Shoreline Management MMC 14.01, Special Flood Hazard Regulations FEMA Floodplain Habitat Assessment and Mitigation Draft Regional Guidance (2011) Washington Department of Fish and Wildlife, Land Use Planning for Salmon, Steelhead, and Trout Department of Ecology, Wetlands in Washington State, Volume 2	Temporary disturbance of all habitat; permanent impacts include improved habitat function from native vegetation plantings along stream banks and within wetland buffer areas
Enhanced fish habitat from stream bank enhancement and restoration	Plantings to shade stream and improve habitat and water quality	MMC 20.05.100, Fish and Wildlife Habitat Conservation Areas Standards	Temporary impacts to habitat during enhancement/restoration activities that include removal of non-native vegetation; restoration plantings would improve water quality and fish habitat by providing shade to the stream

1.5.2 WATERSHED SCIENCE & ENGINEERING - HYDRAULIC ANALYSIS (APPENDIX C)

Watershed Science & Engineering (WSE) was retained to conduct hydrologic and hydraulic analyses needed to address the Board's comments about potential impacts of proposed fill and compensatory flood storage.

A 1-dimensional hydraulic model of the area was created to investigate the effects of potential future fill associated with conceptual development of the property.

The analysis was conducted to provide information on flooding impacts and the amount of compensatory flood storage that could be required if the site were to be developed as proposed for Alternatives 1, 2, and 3.

As a baseline for comparison, the Watershed Science & Engineering memorandum cites and uses the 100-year flood model contained in the 2006 Federal Emergency Management Agency (FEMA) Study of the Snoqualmie and Skykomish Rivers (developed by Northwest Hydraulic Consultants.)

The May 28, 2015 Watershed Science & Engineering memorandum findings are summarized as follows.

Under existing baseline conditions (2006 FEMA model):

- The stream/slough, its overbank areas, and the parcels to the east of the site provide flood storage for waters from the Skykomish River.
- During the peak of a flood event, velocities along the stream/slough are very slow, ranging from 0.01 feet per second (fps) to 0.07 fps.
- The maximum water surface elevation across the property is essentially flat at an elevation of 65.31 feet. (Water also fills the properties north of Highway 2 to the east of the property at this same elevation.)
- Water to the stream/slough is supplied by the Skykomish River from the west and from roadside ditches, and drainage north of the railroad, from the east. There is no connection to the river at the east end of the stream/slough.

Proposed Development Conditions

Watershed Science & Engineering ran a second 100-year storm event model to show conditions associated with conceptual development that could be achieved under Alternatives 1, 2, and 3. This evaluation assumed fill of the developable area to an elevation above the 100-year water surface elevation with compensatory storage provided.

Flow velocities were evaluated at three points in time during a 100-year flood event:

- 1) As the stream/slough is filling with flood waters from the Skykomish River;
- 2) At the peak of the flood event; and,
- 3) As the stream/slough is draining back into the Skykomish River.

The Watershed Science & Engineering memorandum concludes:

- The simulated 100-year water surface elevation within the site for the proposed conditions model is 65.35 feet, which represents an increase of 0.04 feet over the baseline elevation of 65.31 feet.

- The higher water surface elevation is the result of the loss of storage volume in the project area due to differences between proposed cuts and fills.
- Maximum water surface elevations offsite in the Skykomish River are unaffected by the proposed fill on the property.
- Current stream/slough velocities are very low at less than 0.07 fps.
- Flow velocities between baseline 100-year flood event conditions and the 100-year flood event proposed conditions are expected to be “negligible” with mitigation, with the maximum velocity difference between the baseline condition and proposed conditions being an increase of 0.01 fps (see Table 1, WSE Memorandum).
- Alternative compensatory flood storage approaches and/or a smaller development footprint could reduce water surface elevation differences between the baseline conditions and proposed conditions to zero.
- Mitigation through project specific on-site stormwater design, to comply with MMC Chapter 15.01 (Storm Water Management) and the Washington State Department of Ecology Stormwater Design Manual, will ensure that there will not be an increase in peak flows from an increase in impervious surface if application for development is made in the future.

1.5.3 GEOENGINEERS. INC. - FOCUSED GEOLOGICAL HAZARDS STUDY (APPENDIX D)

The geological analysis (titled “Focused Geological Hazards Evaluation”) prepared by GeoEngineers (Appendix D) addresses the Board’s concerns related to topography and soils, and landslide and erosion hazards.

A comparative analysis of existing soils and terrain was conducted using cross section and topography information provided by Watershed Science & Engineering (Appendix C), aerial imagery, and site survey data collected by PACE, Watershed Science & Engineering, and GeoEngineers.

The GeoEngineers Focused Geological Hazards Evaluation relied on hydraulic modelling performed by Watershed Science & Engineering (Appendix C), includes information on landslide and erosion hazards, and is provided in the site focused geological study provided in Appendix D.

In summary, the GeoEngineers Focused Geological Hazards Evaluation discusses:

- Site observations of existing slopes, exposed soil conditions, hillside seepage, and the existing stream configuration at the toe of the slope.
- Evidence of soils deposition located at the base of the slope and along the north bank of the stream channel.
- Changes to the hillslope from significant vegetation removal for development on the top of the hillside between 1948 and 2014.
- Changes in the course or meander pattern of the stream channel at the toe of the slope between the period of 1948 and 2014. No major changes in the meander pattern were observed. The beaver dam constructed near the southwest corner of the property was constructed between 1990 and 2002 and resulted in an increase in water depth at the location of the dam.
- There does not appear to be active erosion along the banks of the channel within the project area.
- Flow velocities within the channel are very low; typically less than 0.3 feet per second (fps).

- Flows in the vicinity of the beaver dam are higher; estimated to be at 3.2 fps. No indication of erosion (i.e. eroding banks or bare soil in the channel) was observed at the beaver dam at the time of GeoEngineers' visit.
- No erosion was observed along the north bank of the stream.
- Soils along the northern edge of the site and on the steep slope are rated "very limited" for development by the Natural Resource Conversation Service (NRCS) Soil Survey.
- Evidence of occasional soil exposures, landslides and slope failure, erosion, and several seeps and springs along the steep slope. The slides observed were shallow and not deep-seated.
- As an existing condition, landslide activity is generally expected to increase during periods of extended precipitation or rain-on snow events, but may be episodic and sporadic.
- Removal of tree cover, mass added at the top of the slope, and removal of materials at the toe of the slope are likely causes of slope instability. Because conceptual development would only occur south of the stream, and away from the toe of the slope, there would be no construction related impact to the north stream bank and there would be no impacts or change in slope stability or landslide activity.
- Based on the amount of vegetation within the stream channel, there is sufficient vegetation to maintain low velocity flows within the stream and prevent significant erosion in the channel during higher velocity flow events.

1.6 CUMULATIVE IMPACTS

Cumulative Impacts of the alternatives discussed in this DSEIS are summarized below and discussed in further detail in Section 4 (Cumulative Impacts).

The site is currently undeveloped and has remained vacant for a number of years. Clearing and tilling of the property have occurred, within the open pasture area present south of the stream/slough.

The only known foreseeable future project in the vicinity of the rezone property is a long standing Washington State Department of Transportation (WSDOT) plan to widen SR-2, which could increase the demand for development in the vicinity of the improvements.

If future development occurs, it would be expected that there would be an increase in impervious surface and a change in site conditions. The placement of fill and development of the area would have an impact on earth, surface water, plant, and animal resources within the property and the surrounding properties.

Mitigation measures for impacts to buffer areas resulting from creating compensatory flood storage would result in positive cumulative impacts including enhancement of wetland and surface water by improving water quality, habitat, and hydrological functions and values.

1.7 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

Unavoidable impacts to the site would mostly be temporary and include construction impacts during development such as increased dust, and impacts to the critical area buffers for mitigation measures.

Permanent impacts would result from the mitigation measures in the form of stream and wetland enhancement/restoration and a change in topography from fill placement to elevate the developable area above the floodplain.

All significant impacts can be mitigated.

Section 2 - Proposed Action and Alternatives.

Alternatives 1, 2, and 3 remain the same as identified in the September 2013 FEIS and include options for development of the site under the City of Monroe's Limited Open Space (LOS), General Commercial (GC) and Mixed Use (MU) zoning districts.

Although Alternatives 1, 2, and 3 remain unchanged, additional analyses have been accomplished to address the Board's Corrected Final Decision and Order. This DSEIS also adds the No Action - No Development Alternative in response to the Board's Final Decision and Order as a baseline to analyze potential impacts of the other alternatives.

This DSEIS also responds to the need to identify potential alternative locations for commercial development within the City. Section 2.4 (Alternate Commercial Evaluation) evaluates the availability of other potential commercial properties to accommodate commercial development comparable to that identified for the proposed plan amendment/rezone site.

2.1 PROPOSED ACTION

The Proposed Action remains as stated in the September 2013 Final Environmental Impact Statement (FEIS) for the East Monroe Comprehensive Plan and Rezone. The Proposed Action is for an amendment to the City of Monroe's Comprehensive Plan to change the land use designation from "Limited Open Space" to "General Commercial" and a rezone from Limited Open Space (LOS) to General Commercial (GC).

2.2 EXISTING CONDITIONS

The site subject to the proposed Comprehensive Plan amendment/rezone consists of five undeveloped parcels that are currently designated "Limited Open Space" on the City of Monroe Comprehensive Plan Land Use Map and are zoned Limited Open Space (LOS). Combined, the five parcels are approximately 43 acres in area and are located within the adopted Urban Growth Area (UGA) for Snohomish County and the City of Monroe.

The site is currently undeveloped and has been vacant for a number of years. The current LOS zoning designation allows, as a permitted use, for low density residential uses of up to one dwelling unit per five acres per Monroe Municipal Code (MMC) 18.10.045 (Purpose of Limited Open Space Zoning District).

The property is bordered by a steep hillside and single family lots to the north and by SR-2 to the south. Just south of SR-2 are the Burlington Northern/ Santa Fe Railroad tracks and the Skykomish River. An oxbow Type 1 stream/slough bisects the property and is hydraulically connected to the Skykomish River at the southwest corner of the site via large box culverts under SR-2 and the BNSF railroad tracks.

The site has three distinct topographies:

- 1) A lower pasture located south of the stream/slough and below the 100-year flood elevation;
- 2) The stream/slough corridor that bisects the site, located between the lower pasture and the steep hillside to the north; and,
- 3) The upper terrace, which is located within Parcel D, northeast of the stream/slough.

These areas are shown in Figure 2 and are discussed further in Section 3.1.1 (Affected Environment).

Recent field reconnaissance and technical analyses confirm that the stream/slough is fed at the southeast corner of the property by drainage ditches to the east and a 36-inch culvert under SR-2. One finding of the field reconnaissance is that, contrary to the FEIS, there is no culvert under the BNSF railroad corridor and therefore, no direct connection to the river at the southeast corner of the property. Detailed information on the stream/slough is provided in Section 3 (Affected Environment, Impacts and Mitigation).

The property is relatively flat to slightly rolling land and, as noted above, is buttressed by steeply rising topography to the north and to the west. Most of the slope is located north of and outside of the project property boundaries and is mostly characterized by thickly vegetated deciduous trees and shrubs (and occasional evergreen trees). The hillside has slopes that exceed 40% with the toe of the slope and small areas of the hillside located along the northern edge of the property, between about 50 feet and 150 feet north of the OHWM of the slough. The majority of the steep hillside is located outside of the rezone property.

The property is currently dominated by herbaceous plants, pasture grasses and invasive species. Dense established Himalayan blackberry and reed canary grass stands are located within and along the edges of the Type 1 oxbow channel that transects the site. A narrow stand of trees is located in the northeast section of the property.

As mentioned earlier, the oxbow stream/slough starts near the southeast corner of the site, turns west just south of the northern project boundary, and flows through a 24-inch culvert located at the parcel boundary between Parcels C and D. This side of the stream/slough receives water from the ditches located along SR-2. (Again, a significant finding of the field work conducted showed that there is no connection between the slough and the Skykomish River at the southeast corner of the property.)

The stream/slough enters the property at the southwest corner of the property through large box culverts located under the BNSF railroad corridor and SR-2. The stream/slough is fed by backwater from the river during high flow events. Water in the stream /slough recedes back to the river when water levels go down. Flows in the stream/slough are restricted in areas of heavy vegetation within the channel.

Riparian habitat provided by the stream/slough corridor adds to the diversity and complexity of the habitat elements provided by the adjacent wetland complex. Stream/slough functions are limited by several factors including but not limited to low plant diversity within the buffer area along the stream/slough banks. Appendix B (Wetland Resources Inc., Critical Area Study and Habitat Conservation Report) discusses the existing characteristics and values of the stream in detail.

Three wetlands exist on-site (identified as Wetland A, B and C). Wetland A is a Category II wetland. Wetlands B and C are classified as Category III wetlands. Appendix B (Wetland Resources Inc., Critical Area Study and Habitat Conservation Report) discusses the existing characteristics and values of each wetland in detail and also includes wetland rating forms that led to the conclusions regarding wetland values.

Shoreline, stream, and wetlands are critical areas protected under Monroe Municipal Code (MMC). Critical area buffers, a Native Growth Protection Area (NGPA) and an Urban Conservancy (UC) shoreline designation restrict development of the majority of the site, as detailed in Section 3 (Affected Environment, Impacts & Mitigation Measures) of this DSEIS.

A hydraulic and hydrologic modelling memorandum detailing existing stream conditions and potential flood risks is provided in Appendix C (Watershed Science & Engineering Memorandum, May 28, 2015). Other technical reports prepared for this DSEIS include a Geotechnical Report evaluating landslide and erosion hazards (Appendix D, GeoEngineers, June 10, 2015) and an

updated Critical Area Study and Habitat Conservation Study (Appendix B, Wetland Resources Inc. Revised June 3, 2015).

The landslide and erosion hazard analysis included in the GeoEngineers Geotechnical Report (Appendix D) confirms that surficial landslide activity has occurred on and adjacent to the northeastern portion of the site (and also discusses potential future landslide hazards.)

Figures 3 and 4 (Pages 14 and 16) show the site under summer and winter conditions and demonstrate seasonal variances in stream flows. During the wetter winter months flows in the stream are higher due to precipitation, hillside seepage, and higher river levels. During the drier summer months flows in the stream are lower due to less rain and lower river levels. Figure 5 (Page 18) provides a composite map of critical areas present on the property and surrounding area and the approximately 31.51 acres prohibited from development such as buildings and parking areas by the NGPA and the critical area buffers.

2.3 ALTERNATIVES

Four Alternatives have been considered in this DSEIS. Alternatives 1, 2, and 3 are provided in the September 2013 FEIS and are summarized (further) below.

A new No Action - No Development Alternative has been developed in response to the GMHB Final Decision and Order. In addressing this issue, the GMHB Final Decision and Order stated,

“The Department of Ecology stated that the Draft EIS did not accurately portray environmental impacts because the City failed to use the existing, undeveloped site condition as the baseline for environmental review:

“Because the existing undeveloped site condition is not used as the baseline for alternatives comparison, it gives the impression that the DEIS is not a balanced, objective analysis of the alternatives or potential impacts. To avoid the possible impression of being pre-decisional and to accurately portray potential impacts, the existing undeveloped condition needs to be used as the baseline for alternative comparisons in the final environmental impact statement (FEIS). There is no discernible difference in the developed footprint in the conceptual drawings for the three proposed alternatives, only in the intensity of development within that footprint. All of the alternatives area significant change from the existing site conditions and it is unclear how the proposed no action alternative accurately reflects existing conditions and use of the property.”

The City did not follow Ecology’s recommendation to more accurately portray environmental impacts in the FEIS by adding a true no-action alternative as the baseline using existing, undeveloped site conditions.” *GMHB Final Decision and Order, Case No. 14-3-006c, September 19, 2014 Pgs. 24-25.*

A new No Action - No Development Alternative has been developed in response to the GMHB Final Decision and Order. It is summarized in the following section (2.3.1).

2.3.1 NO ACTION - NO DEVELOPMENT ALTERNATIVE

Under the No Action - No Development Alternative, the property would retain its Limited Open Space (LOS) zoning and no development would occur. There would be no development related impacts to existing site conditions. This alternative serves as the baseline for the alternatives analysis conducted for this DSEIS.

2.3.2 ALTERNATIVE 1

Alternative 1 evaluates development of the site under its existing Limited Open Space (LOS) zoning. Under this alternative no changes to the zoning designation (or Comprehensive Plan designation) would be made. The property would be developed as permitted by the City of Monroe Municipal Code (MMC 18.10, Land Use Zoning District and District Requirements). A full discussion of Alternative 1 is provided in Section 2.3.1 of the September 2013 FEIS.

2.3.3 ALTERNATIVE 2

Alternative 2 represents the Proposed Action for an amendment to the City of Monroe Comprehensive Plan changing the land use designation from “Limited Open Space” to “General Commercial” to allow for rezone of the property from Limited Open Space (LOS) to General Commercial (GC). Alternative 2 proposes a mixture of commercial development, including retail and restaurant development that could occur as permitted by the City of Monroe Municipal Code (MMC 18.10.030, Purpose of Commercial Zoning Districts). A full discussion of Alternative 2 is provided in Section 2.3.2 of the September 2013 FEIS.

2.3.4 ALTERNATIVE 3

Alternative 3 would also require an amendment to the City of Monroe Comprehensive Plan to change the land use designation from “Limited Open Space” to “Mixed Use” and a rezone from Limited Open Space (LOS) to Mixed Use Commercial (MUC). As discussed in the September 2013 FEIS, development under Alternative 3 could include a mixture of commercial, office and residential development as allowed by the City of Monroe Municipal Code (MMC 18.05.035, Purpose of the Mixed Use Zoning Districts). A full discussion of Alternative 3 is provided in Section 2.3.3 of the September 2013 FEIS.

2.4 ALTERNATE SITES

In response to the Board’s Order, alternative locations for potential General Commercial zoned development have been considered. In certain cases, the alternate sites are currently zoned General Commercial; in other cases a Comprehensive Plan amendment/rezone would need to be processed to allow for General Commercial development.

Six alternate sites have been identified (See Figure 6, Page 38, for mapped locations) and are described and evaluated in comparison to the proposed East Monroe plan amendment/rezone site. The following describes these sites, including discussion of how the sites could or could not feasibly attain or approximate a proposal’s objectives, and how this might occur at a lower environmental cost or decreased level of environmental degradation (WAC 197-11-440(5)(b)).

Site 1 consists of two (2) parcels, located at the western City limit line. The parcels are designated “Industrial” on the City of Monroe Comprehensive Plan land use map and are zoned Light Industrial (LI). The site currently has a vacant block plant on it and is located adjacent to the BNSF railroad, which would limit access to the site. The 9.48 acre site does not have direct access to SR-2. The properties would require a Comprehensive Plan map amendment from “Industrial” to “General Commercial” and would require a rezone to GC.

The site could offer lower environmental costs in that it is already developed and does not have a stream/slough bisecting it; however, it does lie in the FEMA 100-year flood hazard area and is within the shoreline management jurisdiction of Tye Lake. The parcel is also located

within the Monroe Airport overlay zone. The City of Monroe Airport Overlay zoning would limit employment density at this parcel.

Site 2 is a gateway property, located near the western City limit line. The three (3) parcels are designated “Limited Open Space-Airport” and “Parks/Open Space” on the Comprehensive Plan Map, are zoned Public Open Space, and would require a Comprehensive Plan amendment and rezone to GC. The parcels are located within the Monroe Airport flight path. The City of Monroe Airport Overlay zoning would limit employment density for these parcels.

The properties would also need to address environmental issues, but are not within shoreline jurisdiction nor does it have a stream bisecting it. The City of Monroe Critical Areas Map indicates that the majority of the 46.71 acre property contains wetlands and is adjacent to Creation and Cripple creeks. Direct access to the property would require impacting the wetlands and may not be available from SR-2

Site 3 is the City owned old landfill site, located north of Highway 522. It is comprised of three (3) separate parcels that total 16.62 acres. One parcel (4.27 acres) is zoned Public Open Space; the remaining two (2) parcels (12.35 acres) are zoned GC. The parcels would not have direct access from SR-2. Past use of the property as a landfill would necessitate environmental analysis before the property were to be redeveloped.

The property does offer less environmental costs given that it is not within shoreline jurisdiction, is not within a floodplain, and does not have a stream running through it.

Site 4 is made up of two (2) parcels designated “R8-11” on the City of Monroe Comprehensive Plan Map and zoned MR6000-Multi-Family Residential. The parcels are located adjacent to the BNSF right of way and total approximately 13.33 acres. The site would require a Comprehensive Plan Map amendment and rezone. Development of this site would not have direct access to SR-2 because access would not be permitted over the BNSF tracks. One of the two parcels was subject to a City pre-application meeting in June 2015 for a multi-family development, so the overall site’s availability for commercial development may or may not be likely.

The properties are undeveloped and could result in the loss of vegetation and habitat, but they are not within shoreline nor do they have environmental features such as a stream or lie within a floodplain.

Site 5 is zoned GC, but does not have direct access from SR-2. The property is owned by WalMart and a portion of the vacant parcel has been developed. A Final Binding Site Plan, which would divide the vacant portion of the parcel from the developed portion was recently recorded. This reduced the amount of vacant land on the 11.42 acre property to about five (5) acres of remaining undeveloped land. The remaining five acres does not have flooding issues, nor is it within shoreline jurisdiction, have wetlands or a stream.

Site 6 is located immediately east of the East Monroe Comprehensive Plan amendment/rezone property and is made up of two (2) parcels that equal 35.5 acres in size. The properties would require a Comprehensive Plan amendment from “Limited Open Space” to “General Commercial” and rezone from LOS to GC. These properties have similar environmental issues as the proposed East Monroe Comprehensive Plan amendment/rezone property with respect to vegetation, flooding and, to some extent habitat. However, they are less impacted by shoreline management issues and issues related to the stream/slough.

The six alternate sites show possible locations in the City where commercial development may occur. However, consideration of the development characteristics of each site indicate that these properties do not provide the same size and access attributes associated with the proposed East Monroe Comprehensive Plan amendment/rezone site. Several of the alternate

sites would also require a Comprehensive Plan amendment/rezone. Depending on the specific alternate site, less environmental degradation could occur as the alternate sites are not as encumbered by the environmental issues characterized by the East Monroe Comprehensive Plan amendment/rezone site.

Table 2 from the City of Monroe’s 2005-2025 Comprehensive Plan summarizes available, vacant commercial and industrial land located within the City limits by zoning district. This includes other commercial zoning districts such as Mixed Use, Downtown Commercial and Professional Office. Vacant Industrial zoned land is also identified in Table 2.

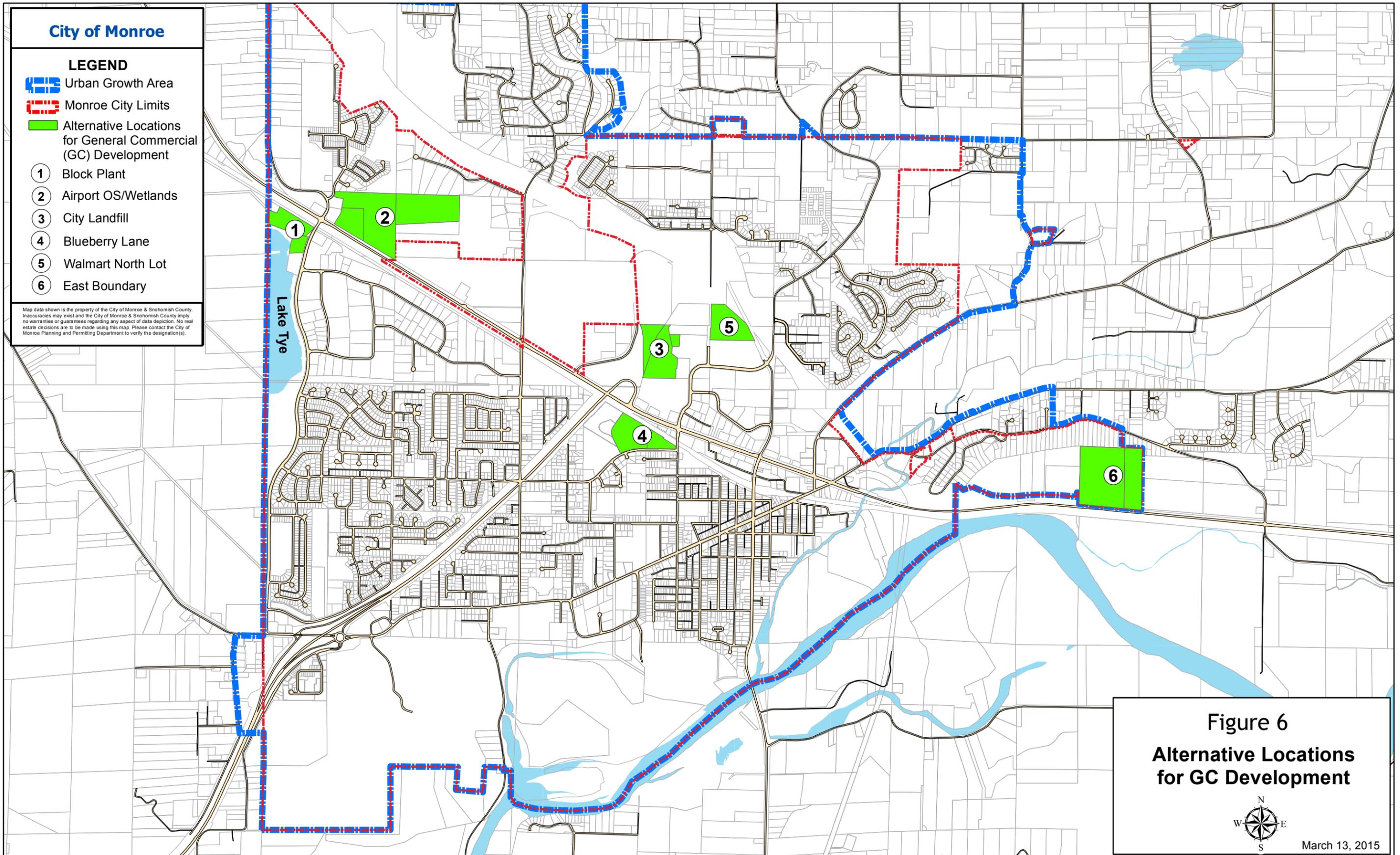
Table 2: City of Monroe Vacant Commercial and Industrial Land

Zoning Classification	Available Gross Area	Number of Parcels
Downtown Commercial	4.1	15
General Commercial	57.7	29
Mixed Use	12.2	20
Service Commercial	11.4	3
Professional Office	2.7	5
Industrial	22.6	1
Total	110.7	

Source: City of Monroe Comprehensive Plan 2005-2025, Land Use Element LU-7

The majority of the 57.7 acres of vacant CG property, 49.5 acres, is located in the North Kelsey area and includes the City owned former land fill site (Site 3), a portion of the Walmart property (Site 5), and 6.4 acres owned by and to be developed by the Snohomish PUD. There is no direct access to SR 2 from any of these parcels.

Figure 7 (Page 40) shows the location of the vacant potential commercially developable properties located within the City limits using Snohomish County Assessor’s Office parcel database in September 2013.



City of Monroe

LEGEND

-  Urban Growth Area
-  Monroe City Limits
-  Vacant Commercial Property*

*Zoning districts selected include the following:
DC (Downtown Commercial),
GC (General Commercial), MUC (Mixed Use Commercial),
MUNC (Mixed Use Neighborhood Commercial),
SC (Service Commercial), PO (Professional Office).

Map data shown is the property of the City of Monroe & Snohomish County. Inaccuracies may exist and the City of Monroe & Snohomish County imply no warranties or guarantees regarding any aspect of data depiction. No real estate decisions are to be made using this map. Please contact the City of Monroe Planning and Permitting Department to verify the designation(s).

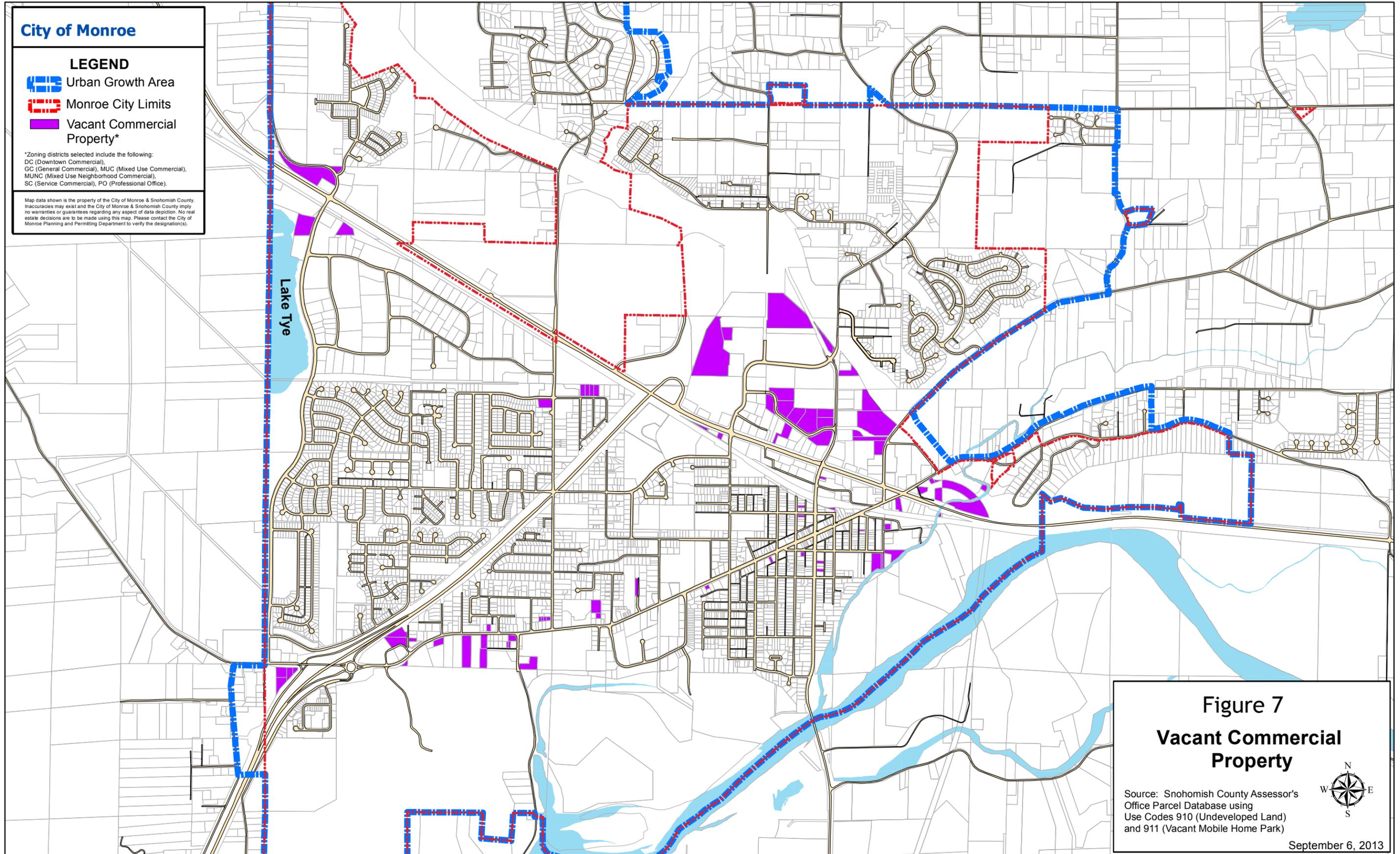


Figure 7
Vacant Commercial
Property

Source: Snohomish County Assessor's
Office Parcel Database using
Use Codes 910 (Undeveloped Land)
and 911 (Vacant Mobile Home Park)



September 6, 2013

Section 3 - Affected Environment, Impacts & Mitigation Measures

This DSEIS responds to the GMHB order requiring additional documentation and analysis to:

- Evaluate a new No Action - No Development Alternative to establish baseline conditions for the entire 43 acre site to inform decision-makers on the impacts of the other three alternatives.
- Identify potential alternative sites in the City of Monroe.
- Assess the maximum development of the entire 43 acre site under the proposed “General Commercial” Comprehensive Plan land use designation and General Commercial (GC) zoning district.
- Review historical landslide and erosion data, and evaluate landslide and erosion hazard impacts, including the impacts of fill placement within the floodplain areas.
- Identify the existing values and functions of environmental site features and assess development impacts to the stream/slough, wetlands, and wildlife species.
- Address flood history and potential future flooding of the site.
- Evaluate impact of fill placement and provision of compensatory flood storage.

The new No Action - No Development Alternative has been evaluated in response to the Board’s Decision and Order. The No Action - No Development alternative establishes a baseline for the comparative analyses of potential impacts under other alternatives. Baseline conditions are discussed in the Affected Environment subsections below.

In response to the GMHB Decision and Order, this Section of the DSEIS provides additional detail and analyses on the following elements of the environment:

- Earth (i.e. geo-technical evaluation, cut and fill volumes, erosion, landslide hazards);
- Surface Water (i.e. flooding, wetlands, stream/slough);
- Plants (i.e. existing conditions, habitat); and,
- Animals (i.e. existing conditions, habitat).

The DSEIS does not discuss the affected environment, impact and mitigation measures for Noise, Aesthetics, Light and Glare, Transportation, Public Services, Utilities and Land Use. Impacts to these elements from Alternatives 1, 2, and 3 are adequately addressed in the September 2013 FEIS and the Board dismissed challenges to these elements.

Development of the DSEIS included additional field reconnaissance by land surveyors, professional engineers, hydrologists and biologists for consideration of potential impacts to critical areas and habitat and evaluation of flood hazards, erosion hazards and landslide risks. Additional field surveying was also conducted to verify, confirm and/or refine previous surveys and LiDAR data.

A key finding of the work performed in response to the Board’s Decision and Order, as it relates to the stream/slough, is that there is no connection to the Skykomish River at the southeast corner of the property, which directly affects the hydrology of the stream/slough. Detailed information on the hydrology within the stream/slough is provided in this section and in the hydraulic analysis provided in Appendix C.

Figures 1 and 2 in Section 2 (Proposed Action and Alternatives) provide an overview of the site location and configuration of existing parcels. Baseline conditions of the 43 acre site are documented in the reports provided in Appendices B, C, and D.

New information is summarized in the paragraphs below. However, this summary does not replace the actual reports provided in Appendices B, C, and D. These appendices provide the detailed information on the analyses performed, anticipated impacts, and mitigation strategies.

3.1 EARTH

Response to the GMHB Order required further analysis of the potential impacts associated with topography and soils, and erosion and landslide hazards. As stated in the September 2013 FEIS, fill will be required to bring the potential developable area (areas of the overall site that are not prohibited from development by the Native Growth Protection Area, critical areas, and critical area buffers) above the preliminary 100-year flood elevation.

Additional land surveying and field reconnaissance was performed to better define current site topography, calculate the required amount of fill to bring the site above the floodplain elevation, identify the 100-year flood elevation given anticipated fill, and analyze the potential for erosion and landslides within the stream and on the steep slopes on and adjacent to the northern portion of the site associated with a 100-year flood event.

3.1.1 AFFECTED ENVIRONMENT

Topography and Soils

Topography of the site ranges from a flat open field south of the stream/slough to steep slopes along the north property line north of the stream/slough.

Overall, the site has three distinct topographies:

- 1) Lower pasture - flat area located south of the stream/slough where development could occur outside of critical areas and related protected areas of the property. The southern portions of Parcels A, B, C, D, and E are included in the lower pasture area.
- 2) Stream/slough corridor - oxbow stream/slough that bisects the site, located between the lower pasture and the steep hillside to the north. There are three wetlands associated with the stream that drain to the Skykomish River during high flow events. No disturbance is proposed within the OHWM of the stream/slough or in the wetlands.
- 3) Upper terrace - includes the developable portion of Parcel D located in the northeast portion of the property, northeast of the stream/slough.

As part of the DSEIS, field surveying was conducted by PACE Engineers to evaluate perceived differences between actual site conditions and LiDAR data used in the September 2013 FEIS. While the LiDAR provides an accurate depiction of the lower pasture area and upper terrace area, ground surface elevations of the stream/slough corridor and steep slope area were influenced by limitations of LiDAR in heavily vegetated areas in the immediate vicinity of the stream/slough.

Survey crews collected actual ground and water surface elevations to supplement LiDAR and previous survey information. The field survey confirmed the accuracy of previous data on the topography and elevation in the lower pasture.

Topography of the lower pasture south of the stream/slough, where the conceptual development would occur under Alternatives 1, 2, and 3, is generally flat, ranging from an approximate elevation of 55 feet to an approximate elevation of 66 feet above sea level. There is some variation in topography along the banks of the stream/slough

corridor and the topography reaches an elevation of approximately 80 feet above sea level in the developable area on Parcel D. (see Figure 2, Appendix D)

In addition, stream bank elevations and toe of slope information was collected at 100 foot intervals for the purpose of developing stream/slope cross sections. Cross sections are presented in the geotechnical report provided in Appendix D, Figures 7, 8, and 9.

The additional topographic information improves the accuracy of the amount of earthwork needed for development of the alternatives. The additional topographic information also provides baseline data for the site specific hydrologic model used in the analyses of erosion and landslide hazards and in the identification of flood hazard impacts.

Steep slopes characterize the area north of the site and reach elevations of approximately 210 feet above sea level at the top of the slope (off-site from the East Monroe Comprehensive Plan Amendment/rezone property). Although very little of the steep hillside is located on-site, no portion of the slope would be disturbed by the development of any of the alternatives. The hillside is heavily vegetated and single family homes are present at the top of the slope along Rivmont Drive and Calhoun Road.

The toe of the slope extends onto the property on Parcels A, B, and C to within approximately 50 to 150 feet north of the stream/slough, west of the access road/culvert crossing to Parcel D. As shown on the Critical Areas Composite Map provided in Figure 5, a Native Growth Protection Area and other critical areas and their setbacks, prohibit development (other than activities such as buffer enhancement and restoration or grading for compensatory flood storage) on the northern portions of the site on Parcels A, B, and C as well as most of Parcels D and E. The steepest slope identified in the project area is approximately 40% located in the northern portion of Parcel C.

Much of the lower pasture area is within the preliminary FEMA 100-year floodplain (NOTE: The property is not within an adopted FEMA 100 year floodplain, but has been identified as a 100-year flood hazard area on preliminary FEMA maps that are not adopted by FEMA). As detailed in Section 3.2 (Surface Water), computerized modelling of surface water hydrology, conducted for this DSEIS, indicates a 65.31 foot 100-year flood elevation under existing conditions. This represents a 1.7 foot difference (lower) in comparison to the 67 foot flood elevation shown on preliminary FEMA mapping and used for analysis in the September 2013 FEIS.

The importance of the 100-year flood elevation to topography and soils is that the elevation at flood stage establishes the amount of fill required to develop the site, as discussed in Section 3.1.2 (Environmental Impacts).

Additional soils information was compiled as part of the DSEIS. As shown in Figure 4 of the June 10, 2015 GeoEngineers Focused Geological Hazards Evaluation (Appendix D), the following soils are present on the site and surrounding area:

- Alderwood-Everett gravelly sandy loams, 25 to 70 percent slopes;
- Kitsap silt Loam, 8 to 25 percent slopes;
- Kitsap silt loam, 25 to 50 percent slopes;
- Everett gravelly sandy loam, 8 to 25 percent slopes;
- Pilchuck sandy loam;

- Puget silty clay loam;
- Puyallup fine sandy loam, and
- Sultan silt loam.

Landslide and Erosion Hazard

GeoEngineers was retained to identify baseline landslide and erosion risks and determine the potential impacts associated with the four DSEIS alternatives. The complete GeoEngineers geotechnical evaluation is provided in Appendix D. A combination of field reconnaissance, analytical research, and soil sampling was done to establish baseline conditions of the 43 acre site and evaluate erosion and landslide hazards. Hydraulic evaluations by Watershed Science & Engineering (Appendix C) provide flood velocity data that has been used for GeoEngineers' erosion and landslide risk analysis.

As noted above and mapped in the GeoEngineers Focused Geological Hazards Evaluation (Appendix D - Figure 4), Alderwood - Everett gravelly sandy loam soils are present on the site and are rated "very limited" for buildings and roadways. This soil type is present along the stream/slough, and on the northern portions of Parcels A, B, C, and D.

Review of historical landslide activity indicates one landslide mapped in 2011 occurring in the western corner of the property and on the adjacent slope to the north. Field reconnaissance conducted in February 2015, coupled with the interpretation of land surveying and cross sections, indicate that this landslide area is not a deep-seated landslide. It is instead characterized as an area affected by erosion along drainage channels in the slope and shallow landslides (typically less than about 10 feet deep).

Recent field reconnaissance also revealed a 30 to 40 foot wide area of the slope where tree cover and stumps were distinctly missing along the fall line of the slope. This area is interpreted as an older landslide (See Appendix D, Figure 2).

A more recent landslide area approximately 25 to 35 feet wide was observed about 50 to 60 feet above the channel, in the northwest area of the site (See Appendix D, Figure 2). The estimated depth of this landslide failure is about 6 to 10 feet. Soils, erosion hazards, landslides and cross sections used for analysis are provided in the GeoEngineers June 10, 2015 Focused Geological Hazards Evaluation report provided in Appendix D.

The GeoEngineers Focused Geological Hazards Evaluation report indicates that there does not appear to be active erosion along the banks of the abandoned meander channel (stream/slough) within the project property. Based on hydraulic analyses, most flow velocities within the stream/slough channel are very low, typically less than 0.3 feet per second (fps). Higher flows are estimated in the vicinity of the existing beaver dam, located downstream of the project property, and in the vicinity of a culvert in the meander channel about 2,400 feet upstream from U.S. Highway 2.

Flows in the vicinity of the beaver dam are estimated at 3.2 fps. The banks in the vicinity of the beaver dam are densely vegetated with tall grasses and the channel bottom downstream of the dam is also densely vegetated. GeoEngineers did not observe indications of erosion, such as eroding banks or bare soil, in this area at the time of its visit.

3.1.2 ENVIRONMENTAL IMPACTS

Topography and Soils

Additional survey field data and computer modelling of flood hazard events have been performed by Watershed Science & Engineering. This allows for more specific analysis of potential flood hazard related erosion and landslide hazard impacts associated with development. The impact analyses addresses the 43 acre site and not just the developable area associated with Alternatives 1, 2, and 3.

Watershed Science & Engineering's modelling of surface water hydrology (further discussed in Section 3.2-Surface Water) indicates a 65.31 foot 100-year flood elevation under existing conditions, which is a more accurate elevation level than the 67 foot flood elevation shown on preliminary FEMA mapping and used in the September 2013 FEIS.

The computer model indicates that flood elevations, after development and with compensatory storage, could reach an elevation of 65.35 feet during a 100-year storm event.

The amount of fill required to accommodate the potential development contemplated under Alternatives 1, 2, and 3 is estimated at approximately 33,000 cubic yards. Fill placement for development would occur in the developable portions of the lower pasture area and is calculated assuming that the developable area (i.e. buildings, parking) would be brought to an elevation one (1) foot above the 100-year flood elevation (to 66.35 feet). Fill placement for development would permanently alter the topography in the lower pasture area.

Average depth of fill would be approximately 2.5 feet and would reach approximately 7 feet in one isolated depression in the northern portion of Parcel C, (See Figure 2) just south of the culvert/stream crossing. As discussed in Section 2 (Proposed Action and Alternatives), the developable area excludes the NGPA (shown in Appendix E, Boundary Line Adjustment Map), all critical areas, and their associated buffers.

Refinement and reduction of the 100-year floodplain elevation by 1.7 feet results in an approximately 25% reduction in required fill in comparison to the estimated fill quantity of 46,500 cubic yards put forth in the September 2013 FEIS. This reduction reflects the more extensive field survey data and computer simulated modelling of the surface water hydrology and reflects a more precise floodplain elevation. The reduction in fill confirms the conservative nature of the fill quantity analyses performed in the September 2013 FEIS but does not alter the impact analysis or anticipated mitigation strategies put forth in the FEIS.

Under Alternatives 1, 2, and 3, placement of fill for development would be limited to areas outside of critical areas, buffers, and the NGPA, and accomplished in accordance with all applicable codes, standards and regulations. Placement of fill would be done using appropriate construction, best available management practices, and erosion control measures.

Placement of fill to bring the developable area above the 100-year floodplain elevation requires compensatory flood storage. Grading of stream buffers and other areas outside of the stream/slough OHWM would allow for some compensatory storage. To completely compensate for lost flood storage due to fill placement, some compensatory storage will most likely also be required within the developable areas. No grading would be proposed in wetland areas.

An estimated 18,000 cubic yards of compensatory storage would be required if the developable area of the property were filled to an elevation of 66.35 feet. Note that compensatory storage excavation is less than the 33,000 cubic yards of fill because of available storage adjacent to stream boundaries and wetlands, especially near the eastern property line on Parcel E. Estimated compensatory storage is considerably less than what was estimated in the September 2013 FEIS due to more accurate topographic data and calculation methodology using hydraulic modelling of flood events.

Alternatives 1, 2, and 3 would likely require importing of fill material and may require disposal of unsuitable material from excavation for compensatory flood storage.

Potential impacts resulting from excavation and fill activities include erosion on the site, including within critical areas and their buffers. Temporary erosion impacts such as sedimentation into wetlands and the stream could occur unless mitigated through erosion control measures.

In addition, temporary construction impacts could include increased dust. As discussed in Section 3.1.3 (Mitigation Measures) below, sound construction practices in accordance with City of Monroe regulations would avoid significant adverse dust impacts associated with excavation and fill activities.

Excavation of soil and placement of fill would not occur under the No Action - No Development Alternative. No adverse impacts would result.

Landslide and Erosion

Under all Alternatives, no disturbance of vegetation or alteration of the ground surface is proposed on or near steep slopes where landslide activity and erosion could be expected.

It is also noted that all but approximately 11.3 acres of the 43 acre site are prohibited from development under the Monroe Municipal Code. This represents a maximum lot coverage of approximately 26% under any development alternative, which is below the 30% allowed under current LOS zoning. GeoEngineers has determined that even with development of the East Monroe rezone site, landslide activity will continue as it currently occurs under existing conditions.

With regards to erosion from flood events, GeoEngineers indicates that there may be some slight variations in the elevation of the flood flows and slight changes to flow velocities in the stream/slough under the proposed conditions. The most significant change was in the vicinity of the existing beaver dam, where there appears to be a relatively short duration of slightly higher flow velocity during rising floodwaters. However, GeoEngineers concludes that the flow velocity changes will not result in significant erosion along the channel banks because of the existing dense vegetation along the channel, provided that the vegetation is maintained.

Removal of site vegetation during grading activities will expose soil and increase the potential for local erosion. However, GeoEngineers notes that the proposed grading is located away from steep slopes or will reduce slope gradients adjacent to the slough on the left bank. GeoEngineers does recommend that a temporary erosion and sedimentation control plan (TESCP) be developed during the design phase to minimize the potential for erosion during grading.

Although no significant adverse impacts to slope stability are associated with any alternative, the GeoEngineers report concludes that landslide activity is generally

expected to occur during periods of extended precipitation or rain on snow events and may be episodic and sporadic.

Other factors that would contribute to landslide hazards include tree removal on slopes resulting in loss of root strength and decreases in slope stability. Uncontrolled runoff from properties above the slope could also increase erosion and result in landsliding. Dumping of yard waste or other materials at the top of the slope, or removal of materials at the toe of the slope could also trigger slope movement under existing, baseline conditions.

The GeoEngineers Focused Geological Hazards Evaluation does mention that development in the northeastern portion of the property could include excavation and recommends the need to evaluate excavation near the toe of the slope, if any, during the design phase.

3.1.3 MITIGATING MEASURES

Topography and Soils

Mitigation for impacts associated with placement of fill within the floodplain area is achieved through mitigation measures regulated by the City of Monroe, and state and federal regulations. Mitigation measures associated with site grading and fill include temporary erosion and sedimentation plans and dust abatement plans.

Mitigation measures for impacts to topography and soils, and landslide and erosion hazards required by MMC 20.05.070 (Protection and Mitigation Measures) could include vegetation management and erosion control.

This analysis is provided in Appendix C (Watershed Science & Engineering memorandum dated May 28, 2015) and in Appendix D (GeoEngineers “Focused Geological Hazards Evaluation” dated June 10, 2015).

Specifically, GeoEngineers recommends the dense vegetation within the stream/slough channel banks be maintained so that flow velocity changes will not result in significant erosion along the channel banks.

GeoEngineers also notes that runoff from impervious surfaces following site development can also increase erosion if concentrated flows are allowed to discharge onto sloped surfaces. GeoEngineers concludes that final site drainage should be designed to control runoff on-site and prevent concentrated flows onto slopes steeper than 3H:1V (to be reevaluated during the design phase). GeoEngineers also anticipates that permanent stormwater control will be routed to on-site detention facility (ies), allowing for water to be discharged to an appropriate location with appropriate erosion control measures at the outfall.

Other GeoEngineers recommendations include:

- If erosion is observed along the north bank of the abandoned meander channel (stream/slough) in the future, vegetation may be used to stabilize the bank. Other measures could include the installation of straw, logs, cribwalls or other types of bank stabilization (as described in the Washington State Department of Fish and Wildlife “Integrated Stream Protection Guidelines” (2002)).
- Evaluation of stream flow velocities at the access road crossing of the abandoned meander channel (stream/slough) during project design. Bank protection may be needed to address erosion concerns. As an alternative, the existing culvert could be replaced with a larger culvert or bridge.

- Grading activities in the vicinity of the landslide hazard areas (as defined by the Monroe Municipal Code) should be evaluated during the design phase to avoid impacts.
- Establishing setbacks from the toe of the slope in the northeastern portion of the property during the design phase. (Additional setbacks from landslide hazards for the primary development area where fill is proposed do not appear necessary.)
- Some measures suggested for erosion mitigation along the stream/slough (e.g. cribwalls, riprap) could be designed and implemented along the north bank of the channel to help improve slope stability if slope movement becomes a concern. However, GeoEngineers' opinion is that the need for such measures is low provided that conditions at the top of the slope are properly managed (e.g. yard waste or other materials are not deposited on slopes and runoff is controlled so as not to exacerbate erosion of the slope.)

Wetland Resources Inc. (Appendix B) also addresses peak flows from development and concludes,

“Increased peak flows from an increase in impervious surfaces on-site will require mitigation in compliance with MMC stormwater regulations if application for development is made in the future. This will effectively protect the slough and associated wetland from experiencing peak flows due to development.”

Temporary increased potential for erosion will occur as a result of excavation, fill and grading activities. Preparation and implementation of a Surface Water Pollution Protection Plan (SWPPP), Temporary Erosion Sedimentation Control Plan (TESCP) and erosion and other best management practices will address anticipated temporary impacts.

Although critical areas buffers will be disturbed through grading for compensatory storage, restoration of the area in the form of native plantings would enhance buffers and the adjacent stream corridor and improve water quality, hydrologic functions, and wildlife habitat values.

Currently these values are limited by the lack of diverse vegetative structure (see Appendix B, Wetland Resources Inc. Critical Area Study and Habitat Conservation Report for discussion of existing buffer conditions and values). Additional discussion of critical area and habitat protection is provided in Section 3.4 (Animals). Flood storage and flood protection is detailed in Section 3.2 (Surface Water).

3.1.4 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

Unavoidable impacts to topography, soils, landslide, and erosion hazard areas from clearing and excavation would be temporary and limited to soils and vegetation in buffer areas for compensatory flood storage and critical area enhancement/restoration. There would also be temporary construction impacts such as an increase in dust.

Placement of fill for new development within the area would permanently alter the topography of the site and development of the site would increase the amount of impervious surface within the floodplain.

These impacts are not considered to be significant or adverse with mitigation.

3.2 SURFACE WATER

Evaluation of impacts to surface water features and adjacent critical area buffers and habitat have been accomplished in this DSEIS.

Additional field reconnaissance was performed by hydrologists, professional engineers, biologists, and land surveyors to document existing conditions, establish a baseline for the No Action - No Development Alternative, and perform additional analysis of potential impacts and mitigation strategies to address the Board's decision.

Field reconnaissance conducted by Watershed Science & Engineering determined that there is no connection between the Skykomish River and the on-site slough at the southeast corner of the property. This finding is discussed further in Section 3.2.1 (Affected Environment). The lack of a direct connection to the Skykomish River at the eastern end of the stream/slough represents a significant change from the previous flood analysis by FEMA which was relied upon in the September 2013 FEIS.

Wetland Resources, Inc. assisted with surface water and habitat characterization and evaluation while Watershed Science & Engineering provided state of the art hydrologic modelling and evaluation of potential flood hazards and mitigation measures. A computerized hydrologic model of the on-site slough and its relationship to the Skykomish River was developed using a basin wide model of the Skykomish River developed for and used by FEMA in identifying 100-year flood hazard events.

The model results were also used to evaluate the relationship of surface water and hydrology during a 100-year flood event and the possible effects of development on the floodplain, slough, wetlands, and steep slope areas. The 100 year storm event was used rather than typical evaluation criteria (i.e. 2-year storm events as dictated by DOE Stormwater manual) to evaluate a scenario with potentially greater impact.

3.2.1 AFFECTED ENVIRONMENT

Stream/Slough

The subject property is located approximately 400 feet north of the Skykomish River, a Type S water and shoreline of the state. A Type 1 oxbow stream/slough corridor bisects the site and separates the flat lower pasture area from the heavily vegetated slopes that characterize the north and northeastern portion of the site.

Recent field reconnaissance of the area and development of a surface water model to evaluate potential impacts led to clarification of the relationship of on-site surface water to the Skykomish River and confirms that the oxbow stream/slough is fed from multiple directions as follows:

- From the southeast through drainage ditches and a 36-inch culvert under SR-2 (No direct connection to the Skykomish River);
- From the east through a series of connected ditches located east and south of the proposed plan amendment/rezone area along SR-2;
- From the southwest where large box culverts under SR-2 and the adjacent railroad tracks allow water from the Skykomish River to flow onto the site during high flow events;
- From natural on-site drainage of the plan amendment/rezone property and higher elevations to the north of the site.

A dirt and gravel road crosses the stream/slough over a 24-inch culvert located near the parcel line between Parcels C and D and provides access to the developable area located on Parcel E in the upper terrace area of the site (See Figure 2).

The lack of a direct connection to the Skykomish River at the eastern end of the oxbow stream/slough indicates that the western portion of the stream/slough is typically fed by backwater from the Skykomish River during high water events. Figures 3 and 4 reflect this condition, indicating that the stream/slough is fed from, and drains back to, the southwest corner of the property. This understanding clarifies flooding characteristics of the site.

Regardless of how the stream/slough is fed or its connectivity to the Skykomish River, the on-site stream/slough is classified as a Type 1 Stream, in part, because of its location within a designated shoreline area. Any stream falling within a designated shoreline is considered Type 1 regardless of stream or habitat value. The area west of the on-site 24-inch culvert is designated as "Urban Conservancy" by the City of Monroe's Shoreline Master Program.

The culverts, ditches, access road, lack of forested canopy along the banks, and the surrounding urban area have significantly altered the stream/slough from its natural condition and have lowered the hydraulic and habitat values.

A beaver dam on the western portion of the stream/slough, downstream of the rezone property, was noted during recent field reconnaissance.

Per MMC 20.05.090(D) (Stream Development Standards), a 200-foot buffer is required, as measured from the ordinary high water mark (OHWM) of Type 1 streams. A 23.73 acre Native Growth Protection Area (NPGA) recorded on the property provides additional protection of on-site critical areas and their associated buffers. Approximately 7.74 acres of the property are protected in addition to the NPGA due to the presence of critical areas and their buffers.

Wetlands

Additional field reconnaissance and evaluation of the site does not alter the wetland delineation presented in the September 2013 FEIS, but does establish additional baseline conditions associated with the new No Action - No Development Alternative.

As detailed in the Wetland Resources, Inc. Critical Area Study and Habitat Conservation Report (Appendix B) and shown on the Critical Areas Composite Map included as Figure 5 of the DSEIS, the area south of the stream/slough is relatively flat and contains one Class II wetland (Wetland A) that is directly associated with the stream/slough, and one Class III wetland (Wetland C). The area to the northeast of the slough contains one Class III wetland (Wetland B). All three wetlands are hydraulically connected to the stream/slough and drain to the Skykomish River during high flow events.

The designated wetlands meet the criteria for hydrophytic vegetation, hydric soils and hydrology as required by the US Army Corps of Engineers guidelines.^[1] As stated in the Wetland Resources, Inc. Critical Area Study and Habitat Conservation Report (Appendix B), the wetlands have a low to moderate habitat value due to a lack of native plant diversity and disturbed wildlife corridors from SR-2 and nearby urban development.

^[1] Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), May 2010.

Flood Hazard Area

Much of the potential developable area of the site lies below FEMA's preliminary 100-year floodplain elevation (See Figure 8). Figure 9 (Page 56) provides a graphic representation of historical flooding on the property and documents site conditions during the most recent, highest recorded, flooding of the Skykomish River, which occurred in 2006.

In response to the Board's findings, the DSEIS includes additional analyses to determine the amount of fill required to develop the site consistent with MMC 20.05.070 (Protection and Mitigation Measures) and to refine estimates of potential compensatory flood storage volumes. Section 3.1 (Earth) provides detailed information regarding topography, soils, and potential fill required to accommodate Alternatives 1, 2, and 3.

As detailed in the Watershed Science & Engineering hydraulic analysis report (Appendix C), an existing conditions model of area hydrology was constructed using a trimmed version of the existing FEMA model of the Snoqualmie and Skykomish River floodplains. The existing conditions model was based on existing site topography and FEMA's 100-year event flow inputs to obtain a baseline 100-year water surface elevation within the rezone area.

In the event of a 100-year flood, the existing conditions analysis shows that the stream/slough and its overbank areas act as a large storage area for flood waters from the Skykomish River. Flooding extends east onto the adjacent vacant parcels. As stated in the Watershed Science & Engineering Hydraulic Analysis provided in Appendix C,

"It is important to note that the model indicates that there is a backwater effect during the FEMA 100-year flow event, such that water flows into the channel from the downstream end during the rise of flood water in the Skykomish River. Water then drains out of the channel during the retreat of the flood water."

This downstream backflow is the only connection between the slough and the river.

At the peak of the 100-year flood event, velocities are very slow, ranging from 0.01 feet per second (fps) to 0.07 fps along the stream/slough.

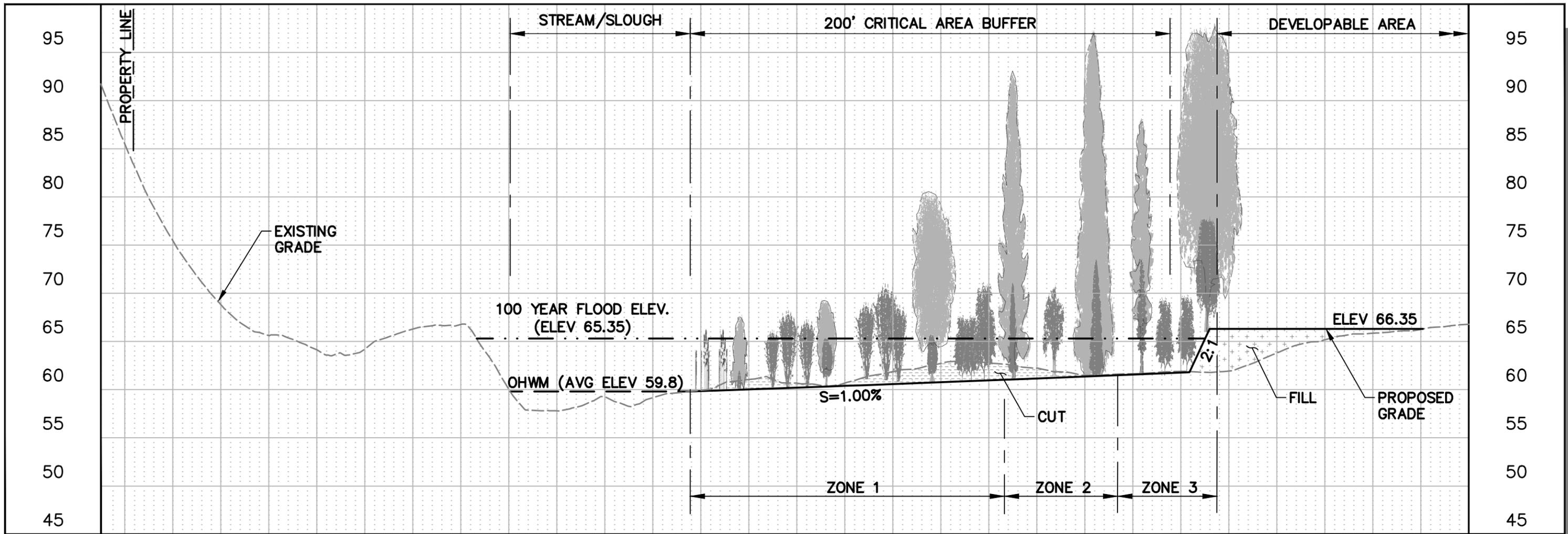
The water surface elevation within the East Monroe Comprehensive Plan amendment/rezone area is essentially flat and peaks at 65.31 feet under existing conditions, which is 1.7 feet lower than the previously estimated 100-year flood elevation put forth in the September 2013 FEIS.

The flood information provided in the September 2013 FEIS was based on Preliminary FEMA mapping data. Current modelling indicates that the maximum 100-year surface water elevation on the East Monroe plan amendment/rezone site and areas to the east of the site and north of Highway 2 is 65.35 feet under developed conditions. This is 0.04 feet (0.48 inches) higher than the baseline condition model.

The City is aware of exhibits (pictures) provided by appellants that presumably showed flooding of the site. The photographs did not provide any new information over what is already acknowledged in the September 2013 FEIS or in this DSEIS analysis. There is already recognition that the site is subject to backwaters from the Skykomish River. Further, the photographs lacked clarity as to how much of the property was being shown and the extent of the flooding in general.

Per Chapters 14 (Floodplain Regulations) and 15 (Building and Construction) of the Monroe Municipal Code, development may occur within a flood hazard area with mitigation, stormwater management, and following the General Standards in MMC 14.01130 (Methods of Reducing Flood Losses).

**TYPICAL ENHANCEMENT AREA/COMPENSATORY FLOOD STORAGE
CROSS SECTION**



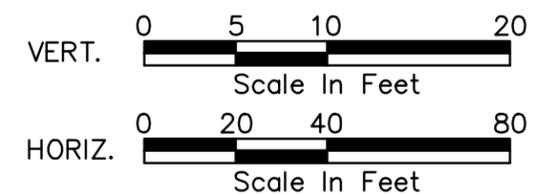
LEGEND



HEIGHT AT TIME OF PLANTING

APPROXIMATE 20 YEAR HEIGHT

WEST SIDE



**Figure 8 - Typical Enhancement Area/
Compensatory Flood Storage**

Zone 1 Typical Planting Plan

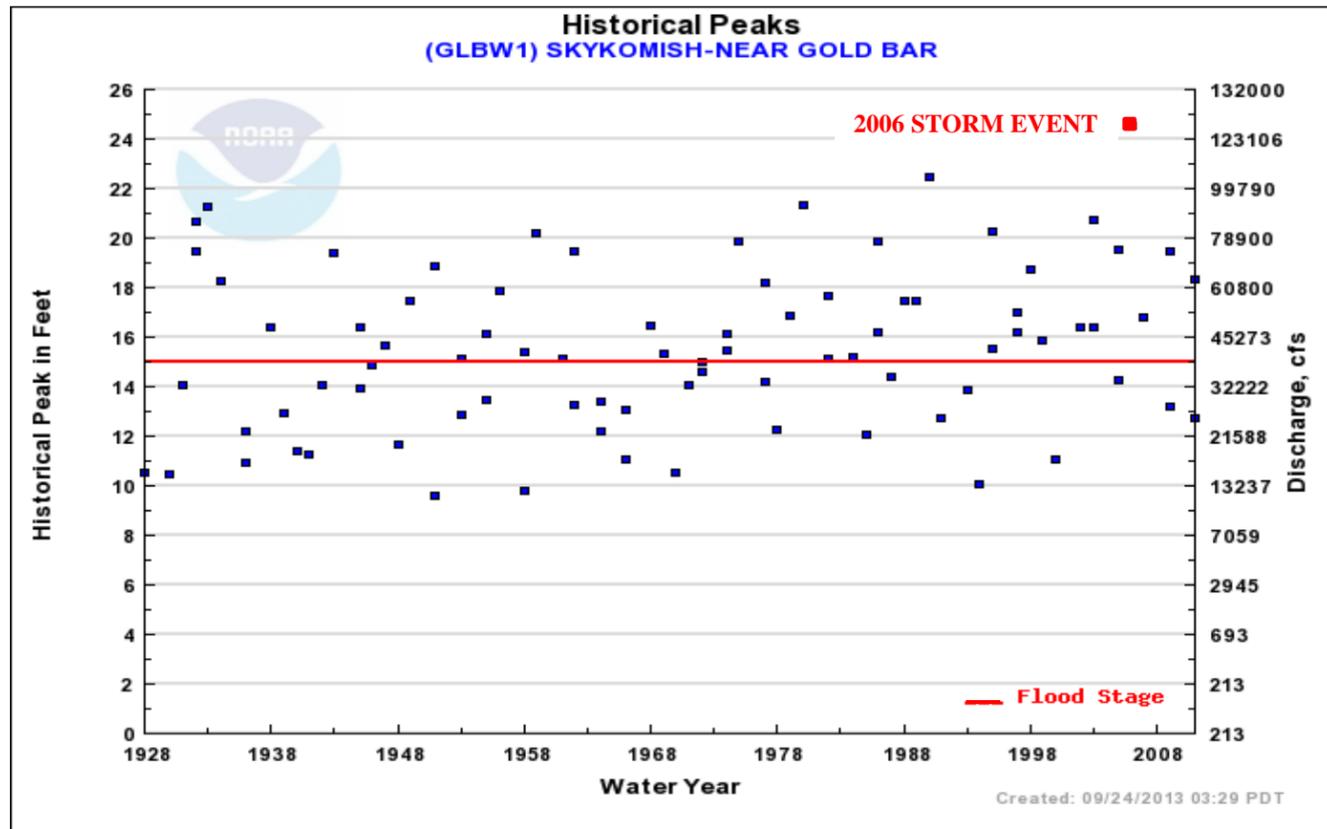
COMMON NAME	LATIN NAME	Spacing	Est. Height At Maturity
PACIFIC WILLOW	<i>SALIX LUCIDA</i>	5'	40'
SITKA WILLOW	<i>SALIX SITCHENSIS</i>	5'	26'
RED OSIER DOGWOOD	<i>CONUS SERICEA</i>	5'	20'
BLACK TWINBERRY	<i>LONICERA INVOLUCRATA</i>	5'	10'
SLOUGH SEDGE	<i>CAREX OBNUPTA</i>	18"	5'
SAWBEAK SEDGE	<i>CAREX STIPATA</i>	18"	3'-4'
SMALL-FRUITED BULRUSH	<i>SCIRPUS MICROCARPOS</i>	18"	5'

Zone 2 Typical Planting Plan

COMMON NAME	LATIN NAME	Spacing	Est. Height At Maturity
WESTERN RED CEDAR	<i>THUJA PLICATA</i>	10'	200'
SITKA SPRUCE	<i>PICEA SITCHENSIS</i>	10'	230'
WESTERN CRABAPPLE	<i>MALUS FUSCA</i>	10'	40'
SCOULER WILLOW	<i>SALIX SCOULERIANA</i>	5'	40'
SALMONBERRY	<i>RUBUS SPECTABILIS</i>	5'	13'

Zone 3 Typical Planting Plan

COMMON NAME	LATIN NAME	Spacing	Est. Height At Maturity
BIG LEAF MAPLE	<i>ACER MACROPHYLLUM</i>	5'	100'
DOUGLAS FIR	<i>PSEUDOTSUGA MENZIESII</i>	5'	230'
WETERN HAZELNUT	<i>CORYLUS CORNUTA</i>	5'	13'
OCEANSPRAY	<i>HOLODISCUR DISCOLOR</i>	5'	13'
BALD HIP ROSE	<i>ROSA GYMNOCARPA</i>	18"	5'
SNOWBERRY	<i>SYMPHORICARPOS ALBUS</i>	18"	6'-7'
SALAL	<i>GAULTERIA SHALLON</i>	18"	15'

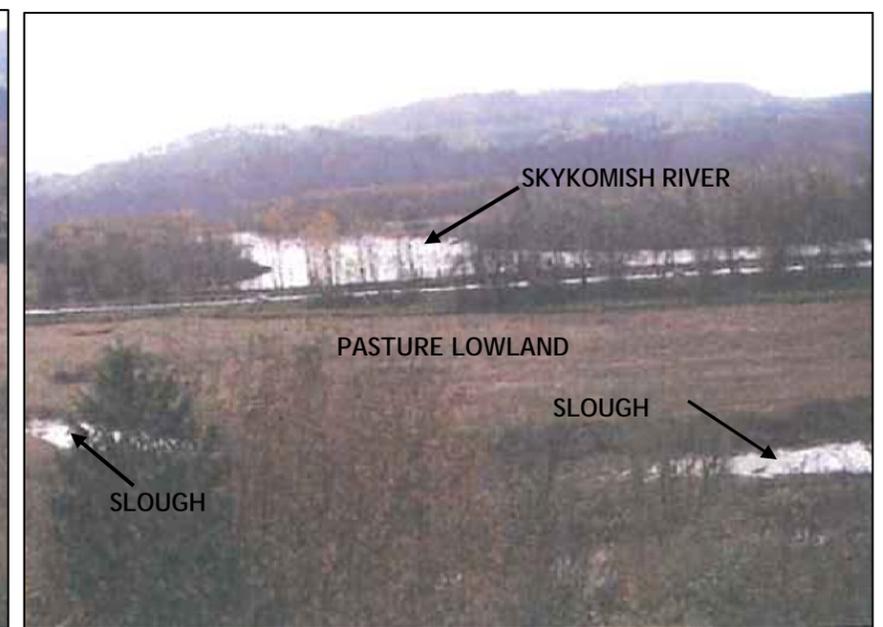
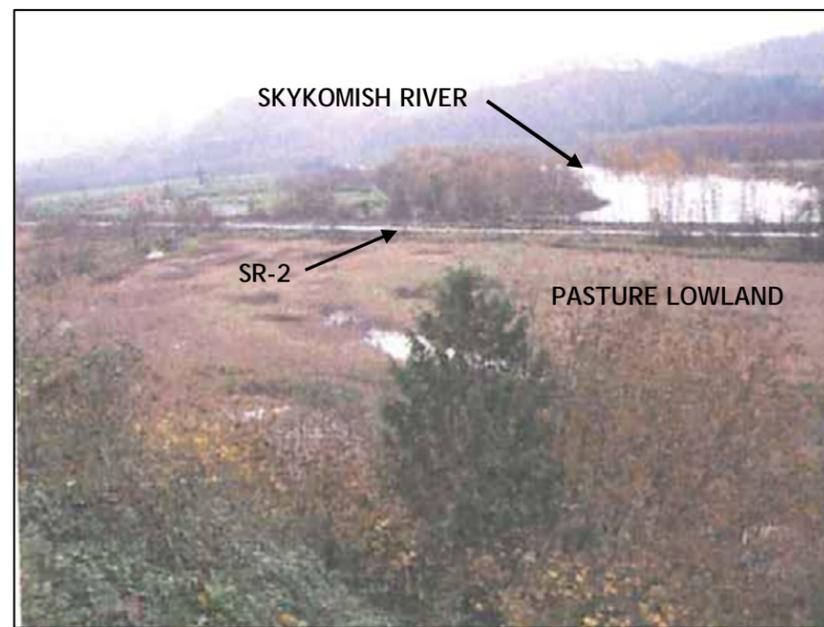
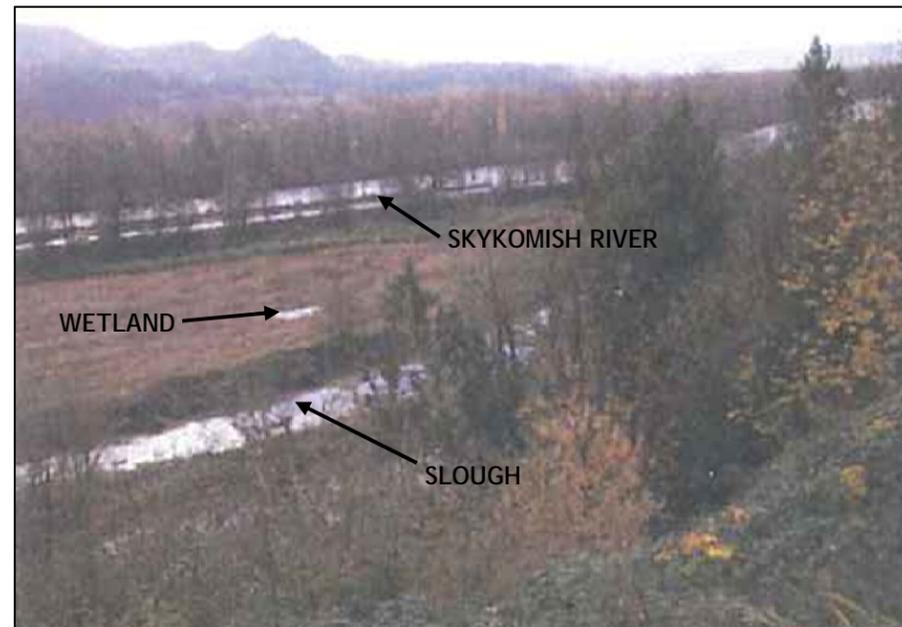


The ‘Historical Peaks’ graph to the left shows that the year 2006 had the highest recorded flood water elevations in the history of Snohomish County. The images below are official City photos (date) and show site conditions of the project area during the 2006 flood, under the highest river levels for the Skykomish River since 1928.

Note; even when flood waters reached their highest elevations, the conceptual developable area remained above water.

Photos were taken from the terrace above and north of the rezone site and face south towards the Skykomish River.

SOURCE; http://www.nwrfc.noaa.gov/peak/peak_page.cgi?id=GLBW1 March 2015



PHOTOS SHOW SKYKOMISH AND REZONE SITE AT FLOOD LEVELS DURING 2006 STORM EVENT

Figure 9 - 2006 Historical Flooding Data

3.2.2 ENVIRONMENTAL IMPACTS

Stream/Slough

No significant adverse impacts to the stream/slough are associated with the No Action - No Development Alternative, although as noted in Appendix C (Hydraulic Analysis) flows are limited in the central portion of the stream/slough, just west of the on-site culvert and stream/slough crossing.

Heavy vegetation characterizes this portion of the stream/slough as shown on aerial photographs included in Section 2 (Proposed Action and Alternatives, Figures 3 and 4). If left in its current condition, invasive vegetation such as blackberries and reed canary grass could further degrade the habitat value of the stream/slough corridor.

Potential adverse impacts from Alternatives 1, 2, and 3 are stated in the September 2013 FEIS and include potential erosion and degradation of water quality from construction activities and site runoff after development. Although no activity or work is proposed within the OHWM of the stream/slough channel, excavation and grading within the stream/slough buffer is anticipated for on-site compensatory flood storage and mitigation.

There will not be any removal of vegetation within the OHWM of the stream and therefore, no direct vegetation removal impacts to the stream/slough under any alternative.

Work in the stream/slough buffer is subject to the City's Shoreline Master Program policies and regulations and other city regulations. This work would likely include removal of existing non-native and invasive plants, excavation and grading, and replanting to restore and enhance the stream/slough buffer. Excavated materials could be used for on-site fill or, if unsuitable, hauled offsite for disposal.

Temporary potential adverse impacts to the stream/slough buffer include transient impacts associated with site grading and construction activities. The temporary impacts can be addressed through mitigation measures discussed below. No disturbance is proposed under any of the alternatives, within the ordinary high water mark of the stream/slough channel.

Permanent impacts to the buffer area include enhancement and restoration of the buffers as part of mitigation. This impact would benefit the stream/slough by improving water quality and shading.

It is also noted that under any of the alternatives, all but approximately 11.3 acres of the 43 acre site are prohibited from development. The 11.3 acres represents approximately 26% of the entire 43 acre site, less than the 30% maximum lot coverage allowable under current LOS zoning. Overall site development is therefore constrained under all alternatives.

Wetlands

There would be no adverse impacts to on-site wetlands with the No Action - No Development Alternative.

No development, including grading or excavation, is proposed within the wetlands for Alternatives 1, 2, and 3. Potential impacts from Alternatives 1, 2, and 3 are stated in the September 2013 FEIS and include degradation of habitat and water quality from construction activities and site runoff after development.

Excavation and grading is anticipated within certain wetland buffers for compensatory storage and mitigation. Work within the wetland buffers would be permanent and would provide an opportunity to mitigate potential impacts by improving habitat and water quality with buffer plantings, restoration, and enhancement.

Flood Hazard Area

The Watershed Science & Engineering (WSE) modelling and analyses confirm how water flows in and out of the property during a 100-year flood event. Water surface elevations and representative velocities modeled for existing (no development) and proposed (with development) 100-year flood conditions are detailed in the Watershed Science & Engineering hydraulic analysis memorandum dated May 28, 2015 (Appendix C.)

The Watershed Science & Engineering memorandum (pg. 4) states that,

“Flow velocities simulated with the developed conditions model were compared to the existing conditions run and differences were found to be negligible.”

The same Watershed Science & Engineering Memorandum (pgs. 4-5) also states that,

“As shown in Table A-1 flow velocities in the slough are generally very low (0-1 fps) and changes in velocities are very minor (less than 0.03 fps). The lone exception to this is near the culverts connecting the slough to the Skykomish River where velocities at the peak of the event are higher (+/- 2 fps) and the proposed conditions velocities are lower than the existing condition velocities by about 0.1 fps (because there is less water flowing into the slough from the river).”

The Watershed Science & Engineering memorandum (Appendix C) adds that if full compensatory storage were to be provided, any minor differences in flow velocities could be reduced or eliminated.

As for water surface elevations, the Watershed Science & Engineering memorandum (Appendix C) identifies a baseline water surface elevation of 65.31 feet under existing conditions. With development of the property, the water surface elevation is estimated to increase by 0.04 feet to 65.35 feet in the slough and surrounding floodplain. The potential increase in water surface elevation could also be eliminated with alternative compensatory storage strategies.

3.2.3 MITIGATING MEASURES

Mitigation is not proposed for the No Action - No Development Alternative for any of the elements discussed below because the alternative would have no impacts on these elements.

Stream/Slough

No construction or development activities are proposed within the delineated OHWM of the stream/slough. Per MMC 20.05.090 (Stream Development Standards), a 200-foot buffer is required, as measured from the OHWM, for Type 1 streams.

Mitigation for stream/slough buffer impacts associated with Alternatives 1, 2, and 3, such as clearing and grading activities for compensatory storage and stream buffer enhancement, would be required per MMC 20.05.090 (Stream Development Standards). Potential mitigation measures for Alternatives 1, 2, and 3 are stated in the September 2013 FEIS and include stream/slough bank enhancement and treatment of stormwater

runoff to protect water quality. Mitigation for flood protection is discussed below. Alternatives 1, 2, and 3 would have no construction impacts on the stream/slough channel as no development would occur within the OHWM of the stream/slough channel.

Mitigation will occur through project specific stormwater design that complies with MMC Chapter 15.01 (Storm Water Management) and the Washington State Department of Ecology Stormwater Design Manual. The Manual is specifically developed to reduce the hydrologic impact of impervious surfaces from development (impervious surfaces) and will address peak flows from an increase in impervious surface.

Wetlands

No construction or development is proposed within the wetlands as stated in the September 2013 FEIS. Buffer widths for Category II and Category III wetlands are 100 feet and 75 feet respectively per MMC 20.05.070 (Protection and Mitigation Measures) and any impacts to the wetland buffers would require mitigation per MMC 20.05.080 (Wetland Development Standards) Subsection B - Best Available Science; Subsection C - NGPA; Subsection D - Minimum Buffers; and Subsection H - Additional Wetland Mitigation Requirements.

Other mitigation measures could include wetland enhancement through the elimination of invasive species and replanting with native species, expanded buffers, the creation of new wetlands, and stormwater runoff treatment to protect water quality. With mitigation, Alternatives 1, 2, and 3 would not negatively impact wetlands.

Flood Hazard Area

Watershed Science & Engineering (Appendix C) concluded that increases to flood elevation can be reduced to zero through adjustment to compensatory flood storage or footprint sizes during final design development. There are various possibilities for compensatory storage on the East Monroe Comprehensive Plan amendment/rezone site that could be explored.

Possible mitigation measures for Alternatives 1, 2, and 3 are stated in the September 2013 FEIS. Development is subject to MMC 20.05.110 (Flood Hazard Area Development Standards) and MMC 14.01 (Flood Hazard Regulations).

Mitigation measures include providing compensatory flood storage. Other possible measures could include terraced parking lots and open space areas that would be allowed to flood, and a reduction of the developable area. Excavation and vegetation removal would, however, not occur within the OHWM of the stream/slough channel. Figure 8 (Page 54) shows options for typical compensatory flood storage and possible planting options for buffer enhancement.

3.2.4 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

Impacts to surface water that might occur from development activity such as grading would be temporary. These impacts, with mitigation, are not considered to be significant or adverse.

Permanent impacts to surface water include improved water quality and improved habitat and plant diversity from buffer enhancement/restoration activities.

3.3 PLANTS

This section describes the vegetation found within the East Monroe Comprehensive Plan amendment/rezone area. Wetland Resources Inc. was retained to provide analysis of existing vegetation and habitat within the area. Additional information on potential construction impacts to existing vegetation, and possible mitigation measures that could enhance stream and wetland habitat by the removal of non-native, invasive plant species is provided in the Wetland Resources Inc. Critical Area Study and Habitat Conservation Report (Appendix B).

3.3.1 AFFECTED ENVIRONMENT

A mix of native and non-native grasses currently dominates the upland portion of the East Monroe Comprehensive Plan amendment/rezone area. Various non-mature trees, non-native and native shrubs, grasses, sedges, rushes, and forbs dominate a large riparian wetland that exists on the fringe of the stream/slough channel that spans the northern third of the plan amendment/rezone site.

A more detailed site description, including a list of observed species can be found in the Critical Area Study and Habitat Conservation Report in Appendix B.

Three dominant vegetation types are located within the East Monroe Comprehensive Plan amendment/rezone site:

1. Palustrine Emergent dominated wetland;
2. Himalayan blackberry dominated upland/riparian interface; and,
3. Regularly maintained (mowed) upland non-native grasses.

Within a small portion of the northwest corner of the East Monroe Comprehensive Plan amendment /rezone area, overlap exists between the emergent wetland and maintained grasses. Generally, the on-site vegetation is comprised of large areas of non-native, invasive Himalayan blackberry and reed canary grass, with small areas of native species in the vicinity of the wetlands and stream/slough.

No rare, sensitive, or threatened plant species, or high quality ecosystems, were observed on-site or noted in the information provided by the Washington State Department of Natural Resources (DNR), Washington Natural Heritage Program (WNHP) list of surveyed land sections in Washington that contain Natural Heritage Features (Data current as of March 1, 2013).

The vegetation found on-site does not provide habitat for any rare, sensitive, or threatened animal species, and vegetation adjacent to the south side of the stream/slough is primarily Himalayan blackberry, which provides little cooling shade over the open water for fish species.

3.3.2 ENVIRONMENTAL IMPACTS

Much of the site is previously disturbed yet undeveloped land that is dominated by non-native herbaceous vegetation such as field grasses and Himalayan blackberry.

Development of the area south of the OHWM of the stream/slough corridor and wetlands would impact these undeveloped areas. However, given the restrictions to development in the areas north of the stream/slough that protect the steep slopes, the 200-foot buffer required for the stream/slough, and the limits on development within the NGPA, no vegetation or temporal losses are expected to occur within the habitat conservation area north of the slough.

Impacts associated with the No Action-No Development Alternative are limited to increases in invasive vegetation in and adjacent to the stream/slough corridor.

3.3.3 MITIGATING MEASURES

Any development scenario will likely require mitigation per MMC 20.05.070 (Protection and Mitigation Measures) involving controlling at least a portion of the invasive plant species and planting native trees and shrubs on-site. Critical area buffer enhancement could also be required to mitigate for impacts to these areas.

Water quality, hydrologic and wildlife habitat functions could be improved over existing conditions with enhancement of the wetland buffers. Wetland enhancement in the form of invasive vegetation removal and enhancements within the buffer areas could have a positive impact on water quality and wildlife habitat by increasing plant diversity and stream shading.

The City also has landscaping requirements which will apply to the developed portion of the site.

3.3.4 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

Unavoidable impacts to plants include clearing of vegetation (non-native and native) on the site from clearing/grading for compensatory flood storage, critical area buffer enhancement/restoration, and site development.

Permanent impacts include improved water quality and improved habitat and plant diversity from buffer enhancement/restoration activities.

These impacts are not considered to be significant or adverse with mitigation.

3.4 ANIMALS

Section 3.5 of the September 2013 FEIS describes animal use of the East Monroe Comprehensive Plan amendment/rezone site and the availability of habitat with a focus on listed threatened and endangered species.

Wetland Resources Inc. was retained to provide analysis of listed species and habitat within the area. Additional information is provided in the Wetland Resources Inc. Critical Area Study and Habitat Conservation Report (Appendix B.)

3.4.1 AFFECTED ENVIRONMENT

The Critical Area Study and Habitat Conservation Report (Appendix B) notes that during their site visits in 2013, Wetland Resources Inc. observed few wildlife species. Avian species expected to use the site and mammals that may use the site are also identified in the Critical Area Study and Habitat Conservation Report. Evidence of North American beaver was observed within the stream/slough, downstream of the plan amendment /rezone property.

The Skykomish River is known to contain several anadromous and salmonid fish species including federally listed threatened and endangered (T and E) species. Because the stream/slough is connected to the Skykomish River, all species of fish known to use the Skykomish River could also be expected to use the stream/slough channel. However, additional field reconnaissance performed by Watershed Science & Engineering, revealed that the stream/slough is not connected to the river at the southeast culvert. This is a significant change from the September 2013 FEIS and presents the possibility of limited fish passage.

Fish were not observed during the June 2013 site visits by Wetland Resources Inc. The surrounding urban development, dense invasive plant species within the stream/slough channel and along the stream/slough bank, a lack of forested canopy to provide shade, and culverts restrict the stream/slough's habitat function.

Detailed information on fish species that may use the stream is provided in the September 2013 FEIS and in Appendix B of this DSEIS. These species include Cutthroat trout, Chinook salmon, Chum salmon, Coho salmon, Bull trout, and Pink salmon.

3.4.2 ENVIRONMENTAL IMPACTS

There would be no impacts to wildlife or habitat with the No Action - No Development Alternative. However, invasive species and a lack of plant diversity are expected to continue to exist, thus limiting wildlife habitat functions of the wetlands and stream.

Impacts from Alternatives 1, 2, and 3 are stated in the September 2013 FEIS and include temporary impacts to animals and habitat during construction, clearing, and excavation for mitigation measures.

The finding that the slough has only one connection to the river reduces the potential for fish presence and impacts in comparison to the conclusions of the September 2013 FEIS.

Construction activities for compensatory flood storage and buffer enhancement would have beneficial impacts on animal species using the site by improving habitat with native plant species.

3.4.3 MITIGATION MEASURES

All development on-site will be required to comply with MMC 20.05, the City of Monroe Shoreline Master Program, and Shorelines Management Act Chapter 90.58 RCW as well as other local, state, and federal regulations and guidelines.

Development will likely require mitigation to control at least a portion of the invasive plant species located within the site and critical area buffers. Planting native trees and shrubs within the critical area buffers will provide shade and enhance water quality within the stream/slough and wetlands. This type of restoration and/or enhancement would provide a long term benefit for fish and wildlife species located on-site and in the immediate vicinity.

No development will occur within the OHWM of the stream/slough and/or in the wetlands to avoid impacts. To avoid temporal losses of habitat and the potential for sending silt laden water into the stream/slough and wetlands, Wetland Resources Inc. recommends that vegetation within the OHWM of the stream/slough and in the wetlands not be removed, but that other means of mitigation and invasive species control such as planting native trees and shrubs along the banks of the stream/slough to create shade be utilized. These measures will avoid temporal disturbance to the stream/slough and wetlands while still providing a long term lift to the functions and values of the system. Retention of vegetation within the stream/slough is also consistent with mitigation recommended by GeoEngineers to address erosion of the stream/slough channel.

Wetland mitigation in the form of invasive vegetation removal and enhancements within the buffer areas could have a positive impact on water quality and wildlife habitat by increasing plant diversity.

3.4.4 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

Unavoidable impacts to animals from clearing in certain areas of non-native vegetation and excavation for compensatory flood storage and critical area enhancement/restoration would be temporary.

Permanent impacts to animals include improved water quality and improved habitat and plant diversity from buffer enhancement/restoration activities.

These impacts are not considered to be significant or adverse with mitigation.

Section 4 - Cumulative Impacts

4.1 INTRODUCTION

Cumulative impacts are the result of combining the potential effects of a project with other planned developments, as well as with any past, present, or reasonably foreseeable future development projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time and can result in the degradation of important resources. Cumulative impacts can be positive or negative, and direct or indirect.

This non-project DSEIS considers four alternatives, three of which (Alternatives 1, 2, and 3) are potential developmental scenarios under varying zoning designations. The Preferred Alternative (Alternative 2) considers commercial uses under the proposed General Commercial (GC) zoning designation. The No-Action - No Development Alternative was added in this DSEIS.

4.2 PAST AND PRESENT ACTIONS

The subject property is currently undeveloped and has remained vacant for a number of years, although portions of the site have been cleared of vegetation. Land clearing often results in deposition of sedimentation in streams and wetlands. This can degrade water quality, hydrologic functions, and wildlife habitat in nearby water bodies.

4.3 REASONABLY FORESEEABLE FUTURE ACTIONS

For the purposes of this DSEIS, reasonably foreseeable future actions consist of the potential for development of Alternatives 1, 2, or 3 and other off-site development activities that result in cumulative impacts to elements of the environment.

The only known project in the vicinity of this proposal is a long standing WSDOT plan to widen SR-2. As discussed in the September 2013 FEIS, any plans for future development of the East Monroe plan amendment/rezone site will require coordination with WSDOT for ingress and egress.

Improvements to SR-2 could increase the demand for commercial property in the vicinity of the improvements and, in conjunction with this proposed action, result in additional requests for comprehensive plan amendments and/or rezone requests.

For instance, while speculative, a similar change in the land use designation and zoning designation might be requested for the approximately 35.5 acres of "Limited Open Space" designated property situated on two parcels between this proposal and the eastern city limits of Monroe.

4.4 CUMULATIVE IMPACT ASSESSMENT

Transportation improvement projects, such as the improvement to SR 2, and other future developments in the project vicinity, could contribute to cumulative impacts on ecosystem resources through increased runoff.

Not all reasonably foreseeable actions, however, have the potential to result in adverse effects on the environment. For example, in general, transportation projects often have culvert replacement and retrofitting projects that may improve fish access to streams.

The impacts of additional development in the vicinity of the proposed East Monroe plan amendment/rezone site could result in loss or degradation of vegetation and/or wildlife habitat. These impacts would be both short-term (e.g. temporary disturbance during construction) or long term (e.g., conversion of vegetated areas to impervious surface).

Environmental review of future development in the vicinity will be necessary to evaluate such impacts, and, as is the case with the proposed East Monroe plan amendment/rezone site, applicable local (i.e.

SEPA, critical areas ordinance, and flood hazard regulations), state (i.e. water quality) and federal regulations (i.e. wetlands) will be applied to address such impacts.

Cumulative impacts from future development on nearby properties can be appropriately addressed through environmental review requirements and existing (or newly adopted) regulations.

These review and permitting processes will require the implementation of mitigation measures to avoid or minimize impacts on ecosystem resources. Such processes would also provide, where applicable, mitigation for any unavoidable impacts on critical areas,, and/or their buffers.

When combined with the effects of the proposed East Monroe rezone, there could be higher cumulative effects on ecosystem resources than if the impacts of each project were considered on its own. However, if applicable avoidance and mitigation measures, such as those described in the September 2013 EIS and this DSEIS, are applied to all projects, cumulative effects would be appropriately addressed.