

**Wetland, Stream, and Buffer Mitigation Plan
West Bay Drive Northwest Corridor Project
Olympia, Washington**

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Prepared for

**City of Olympia
Olympia, Washington**



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1.0 INTRODUCTION

The City of Olympia (City) Public Works Department (Public Works) is proposing the West Bay Drive NW Sidewalk Project, which includes construction of approximately 1,500 linear feet of sidewalk along the west side of the West Bay Drive Northwest (NW) corridor from 1515 West Bay Drive NW to 1115 West Bay Drive NW in Olympia, Washington (project area; Figure 1). The project is located in Olympia along West Bay Drive NW, within the Deschutes watershed (Water Resource Inventory Area 13) in Section 31, Township 10 North, and Range 8 West. In some areas, the existing roadway prism will be expanded and new right-of-way will be acquired prior to construction. Due to the steep slopes adjacent to the west of West Bay Drive NW, the proposed project will require retaining walls. Disturbed areas adjacent to retaining walls will require vegetation in part to enhance slope and soil stability. The West Bay Drive NW project has been included in the Olympia Bicycle Master Plan (City of Olympia 2009) and is part of the Olympia Comprehensive Plan.

Landau Associates conducted a delineation of wetlands and waterways within 300 feet (ft) of the proposed improvements (study area); the results of that delineation are documented in the *Wetland Report West Bay Drive NW Sidewalks Project* (wetland report; Landau Associates 2013) and summarized in Table 1. Two category III wetlands (Wetlands A and B) and one drainage ditch¹ connected to Wetland B were delineated within 300 ft of the proposed improvements. It has been determined that the man-made drainage ditch connected to Wetland B does not constitute as a critical habitat (Stevie, M., 2013) and therefore, not regulated by the City. Two Type 3 streams (Schneider Creek and an unnamed stream) are located within 300 ft of the proposed improvements; however, both streams are completely piped and below ground within the study area (Landau Associates 2013). As such, these streams have interrupted buffers (pipes) and do not have regulated buffers within the study area (City of Olympia 2002 and 2006). The wetlands and waterways (including piped stream segments) and proposed project improvements are shown on the Site Plan (Figure 2). A portion of the project area is located within 200 ft of the West Bay shoreline, which is designated as urban shoreline (Thurston County 1990). The project will result in unavoidable temporary impacts to the buffer of Wetland A.

Under contract to Public Works, Landau Associates is providing this mitigation report to compensate for unavoidable impacts to wetland buffer areas. This report includes:

- A functional assessment and evaluation of existing conditions of the wetland buffer
- An analysis of potential wetland buffer impacts, including assessment of impacted functions
- A compensatory buffer mitigation plan.

¹ Determined not to be regulated as a critical area by the City.

2.0 METHODS

Landau Associates conducted an impact assessment and prepared a mitigation sequencing plan for impacts to critical areas associated with the proposed project according to the methods described below.

2.1 MITIGATION SEQUENCING AND DESIGN

This project was designed in accordance with City, U.S. Army Corps of Engineers, and Washington State Department of Ecology (Ecology) guidance and requirements in the Olympia Municipal Code (OMC) for mitigation sequencing, which generally includes avoidance, minimization, and compensatory mitigation.

2.1.1 IMPACT ASSESSMENT

To determine project impacts, the proposed project plans were overlaid on the wetland and buffer boundaries using AutoCAD[®] software. The areas of wetland buffer impacts were calculated using AutoCAD software.

As necessary, existing buffer functions were assessed in a narrative evaluation using the *Wetland Mitigation in Washington State Part 1: A Synthesis of the Science* (Granger, T. et al. 2005) and best professional judgment given specific indicators. Buffer functions include water quality and wildlife habitat.

2.1.2 MITIGATION PLAN

The proposed mitigation includes revegetation of impacted areas to restore buffer function. The mitigation plan will be incorporated into the project tree plan, and the specific plantings will be included in the detailed project plans and specifications. Landau Associates compared pre- and post-mitigation buffer functions using best professional judgment and incorporated this into the functional assessment for the mitigation project.

3.0 IMPACT ASSESSMENT

Temporary impacts to the buffer of Wetland A will occur in order to provide slope stabilization associated with the proposed sidewalk improvements. The area of temporary impacts is estimated to be approximately 732 square feet (sf) to the buffer of Wetland A (Figure 3A). The area and extent of these temporary impacts may change pending the final retaining wall design. All areas that are temporarily impacted will be enhanced with native vegetation following construction.

These impacts will include clearing of vegetation [red alders (*Alnus rubra*), English ivy (*Hedera helix*), and Himalayan blackberry (*Rubus armeniacus*)] and grading the slope back for stabilization. The temporary impacted areas will be replanted with native trees and shrubs in accordance with the project tree plan. All exposed soil will be hydroseeded to prevent soil erosion.

4.0 MITIGATION

This section presents the proposed mitigation sequencing, impact analysis, and mitigation plan for unavoidable impacts to the wetland buffer and its functions.

4.1 MITIGATION SEQUENCING

Mitigation sequencing is a process that proposed projects undertake to ensure site developments avoid, minimize, rectify, and reduce impacts to wetlands and to ensure no net loss of critical area functions or values. As stated in OMC 18.32.135, mitigation requirements must:

- Avoid the impact altogether by not taking a certain action or parts of an action
- Minimize impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts
- Rectify the impact by repairing, rehabilitating, or restoring the affected environment
- Reduce or eliminate the impact over time by preservation and maintenance operations
- Compensate for the impact by replacing, enhancing, or providing substitute resources or environments
- Monitor the impact and take appropriate corrective measures.

However, based on the OMC 18.32.135.B: *‘Wetlands and "small lakes" between one thousand (1,000) and four thousand (4,000) square feet shall be exempt from the mitigation sequencing requirements of OMC 18.32.135.A, provided that the wetland or small lake:*

1. *Is rated as a Category III or IV wetland,*
2. *Is not associated with a riparian corridor,*
3. *Is not part of a wetland mosaic,*
4. *Does not score 20 points or greater for habitat in the Washington State Wetland Rating System for Western Washington (2004),*
5. *Does not contain habitat identified as essential for local populations of priority species identified by Washington Department of Fish and Wildlife, and*
6. *A wetland mitigation report is provided as required by OMC 18.32.590.’*

Wetland A is between 1,000 and 4,000 sf in size with a habitat score below 20. Wetland A is not associated with riparian corridors, is not part of a wetland mosaic, and is not identified by Washington State Department of Fish and Wildlife (WDFW) as containing essential habitat for priority species (WDFW website 2014); therefore, mitigation for potential impacts to Wetland A are not required to follow the order of preference in OMC 18.32.135. However, potential impacts to Wetland A are still subject to mitigation in accordance with OMC 18.32.540.

Although not required by the City, the proposed project follows mitigation sequencing to avoid, minimize wetland, stream, and buffer impacts, and compensates for unavoidable impacts as outlined below.

4.1.1 AVOIDANCE

The project avoids impacts to Wetland A, Wetland B, Wetland B buffer, the drainage ditch connected to Wetland B, Schneider Creek², and the unnamed stream² as described in the wetland report (Landau Associates 2013) as shown on Figure 3B.

Within the buffer area of Wetland A, the sidewalk will be constructed in existing disturbed areas including the roadway prism of West Bay Drive NW and its roadside ditch, existing stormwater culverts, and driveways. Therefore, the project will avoid permanent impacts to the buffer.

4.1.2 MINIMIZATION

Within the buffer area of Wetland A, the sidewalk will be constructed within existing disturbed areas within and adjacent to West Bay Drive NW. Therefore, the project will minimize impacts to undisturbed areas of the buffer.

Best management practices will be used to prevent water runoff or materials from entering wetlands and waterways outside of the impacted area during construction. Minimization includes placement of facilities and construction staging areas outside of Wetland A buffer, when feasible.

4.1.3 UNAVOIDABLE IMPACTS

There will be temporary impacts to the outer buffer areas of Wetland A that are disconnected from the wetland by existing site improvements. It is anticipated that impacts will consist of vegetation removal (including, but not limited to, red alder; English ivy; and Himalayan blackberry), and soil grading in order to stabilize the steep slope adjacent to the west of West Bay Drive NW (Figure 3A).

The Wetland A buffer is currently impacted by existing development such as West Bay Drive NW, surrounding developed properties, and driveways. The proposed impacted buffer areas are isolated from Wetland A by two driveways. This limits the ability of the buffer to provide habitat and water quality functions. Although the impacted buffer areas contain some mature tree species (red alder) the buffer is dominated by English ivy and Himalayan blackberry, both listed as Class C noxious weeds (Washington State 2013).

² Piped stream segment and is not assigned a buffer

As stated in the *Wetlands in Washington State – Volume 2: Guidance for Protecting and Managing Wetlands* (Granger T. et al. 2005) Appendix 8C “...A vegetated buffer on the other side of the road would not help buffer the existing impacts from the road...” As these isolated buffer areas are providing limited buffer functions, impacts to these areas are considered minimal.

4.2 MITIGATION REQUIREMENTS

Per OMC 18.37.070, non-conforming structures and uses within critical area buffers may continue additionally, per subsection C, “*That portion of a parcel which contains existing structures...and related development...shall be exempt from further review of OMC Chapter 18.32.*” The buffers were reviewed by Landau Associates during a site visit on January 21, 2014 with the City (Cari Hornbein, Jim Rioux, and Marc Petreye) where it was determined that existing development in the buffer area, such as West Bay Drive NW and its associated roadside ditch, existing stormwater culverts, and driveways are exempt from further review under OMC Chapter 18.32. However, OMC 18.32.535 D states “.... *If the vegetation and other buffer elements are inadequate, then the buffer shall be planted to a density of four hundred (400) tree units per acre pursuant to OMC 16.60 including an understory of native plants commonly found in riparian areas of Thurston County.*”

4.3 MITIGATION PLAN

The project’s tree plan will provide a native tree and shrub planting plan in accordance with OMC 16.60 for areas along the slope temporarily disturbed due to project clearing and grading activities. This will include the impacted isolated buffer areas adjacent to Wetland A. The planting plan will replace the native trees that were removed during the grading activities, and as part of grading activities, invasive species will be removed; therefore, the mitigation plan will restore habitat functions lost by the removal of native trees (red alder) and reduce invasive species impact.

5.0 CONCLUSION

The proposed project has been designed to avoid impacts to wetlands and waterways and to avoid permanent impacts to buffer areas. Only temporary impacts will occur to the outer edges of Wetland A buffer, which are separated from the wetland by existing impervious surfaces (i.e., driveways). The temporary impacted buffer area will be revegetated in accordance with the project's tree plan.

6.0 USE OF THIS REPORT

This wetland buffer mitigation plan has been prepared for the exclusive use of the City of Olympia Public Works Department and agencies directly involved in the permitting and regulation of activities within critical areas on the project area. No other party is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of Landau Associates. Further, the reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by Landau Associates, shall be at the user's sole risk. Landau Associates warrants that within the limitations of scope, schedule, and budget, our services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. We make no other warranty, either express or implied.

This document has been prepared under the supervision and direction of the following key staff.

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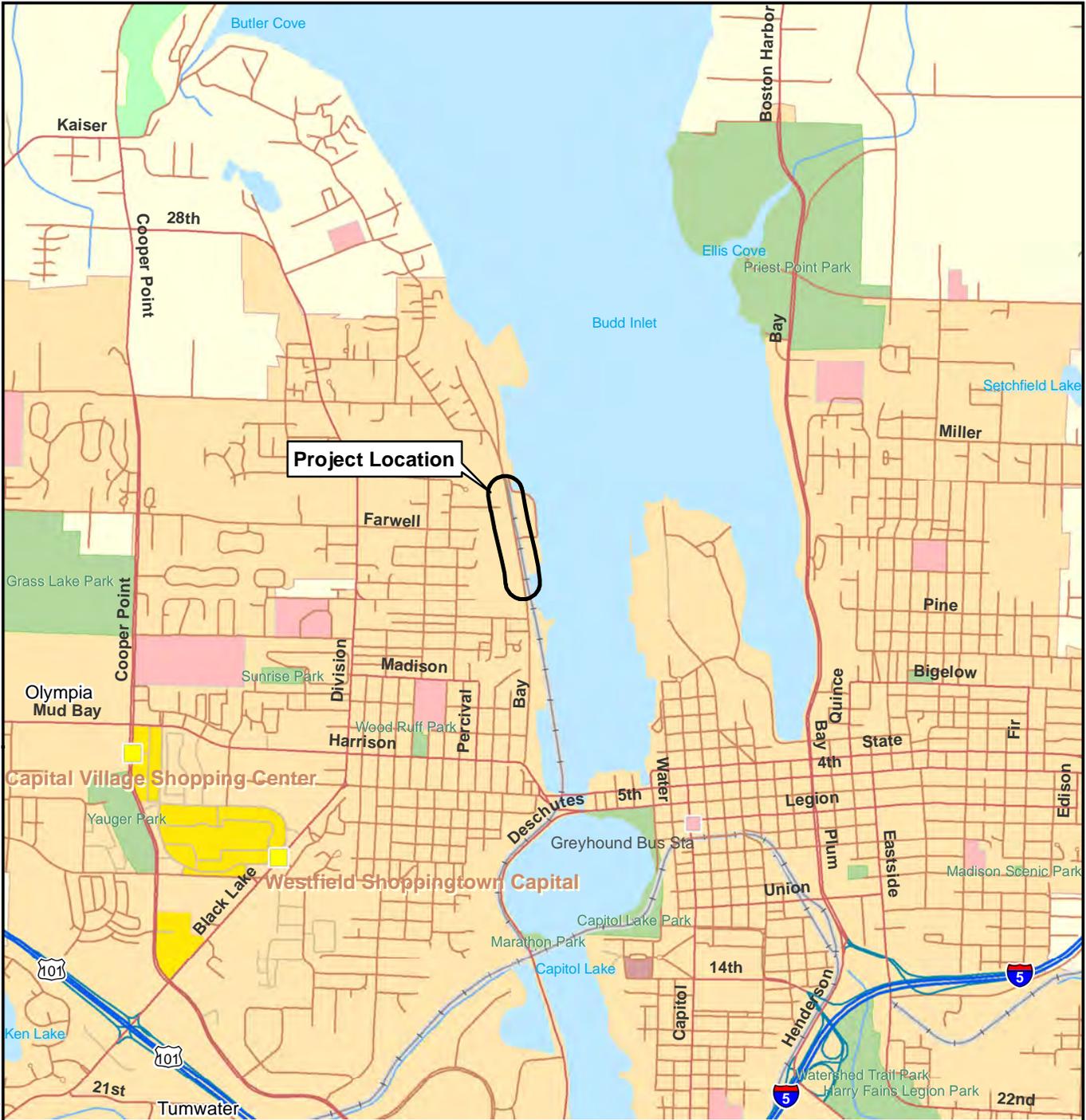


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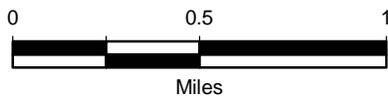
BNG/JCS/jrc

7.0 REFERENCES

- Granger, T, T. Hruby, A. McMillan, D. Peters, J. Rubey, D. Sheldon, S. Stanley, E. Stockdale. 2005. *Wetlands in Washington State – Volume 2: Guidance for Protecting and Managing Wetlands*. Publication No. 05-06-008 Washington State Department of Ecology Olympia, Washington. April.
- Landau Associates. 2013. *Wetland Report, West Bay Drive NW Sidewalks Project, Olympia, Washington*. Prepared for City of Olympia. May 31.
- Olympia, City of. 2006. *Extension of Shoreline Permit No. 02-1226, 1107 West Bay Drive, Olympia*. Hearing Examiner Decision (02-1226). July 27.
- Olympia, City of. 2009. *Olympia Bicycle Master Plan*. Olympia Public Works Department. December.
- Olympia, City of. 2002. *Smyth Landing*. Hearing Examiner Decision (97-0301). June 5.
- Stevie, M. 2013. Email message from Michelle Stevie City of Olympia, to Mark Petreye, Project Management Assistant, City of Olympia Public Works Department. Re: *No Subject*. October 18.
- Thurston County. 1990. *Thurston County Shorelines, Shoreline Environment Designations*. Shoreline Master Program. Available at: <http://www.trpc.org/regionalplanning/environment/Pages/ShorelineMasterProgram.aspx>. Accessed May, 2013.
- Washington State. 2013. *Noxious Weed List*. Noxious Weed Control Board. Available at: <http://www.nwcb.wa.gov/searchResults.asp?class=C>. Accessed July 30.
- WDFW website. 2014. *Priority Habitats and Species (PHS) on the web*. Washington State Department of Fish and Wildlife. Available at: <http://wdfw.wa.gov/mapping/phs/disclaimer.html> . Accessed February.



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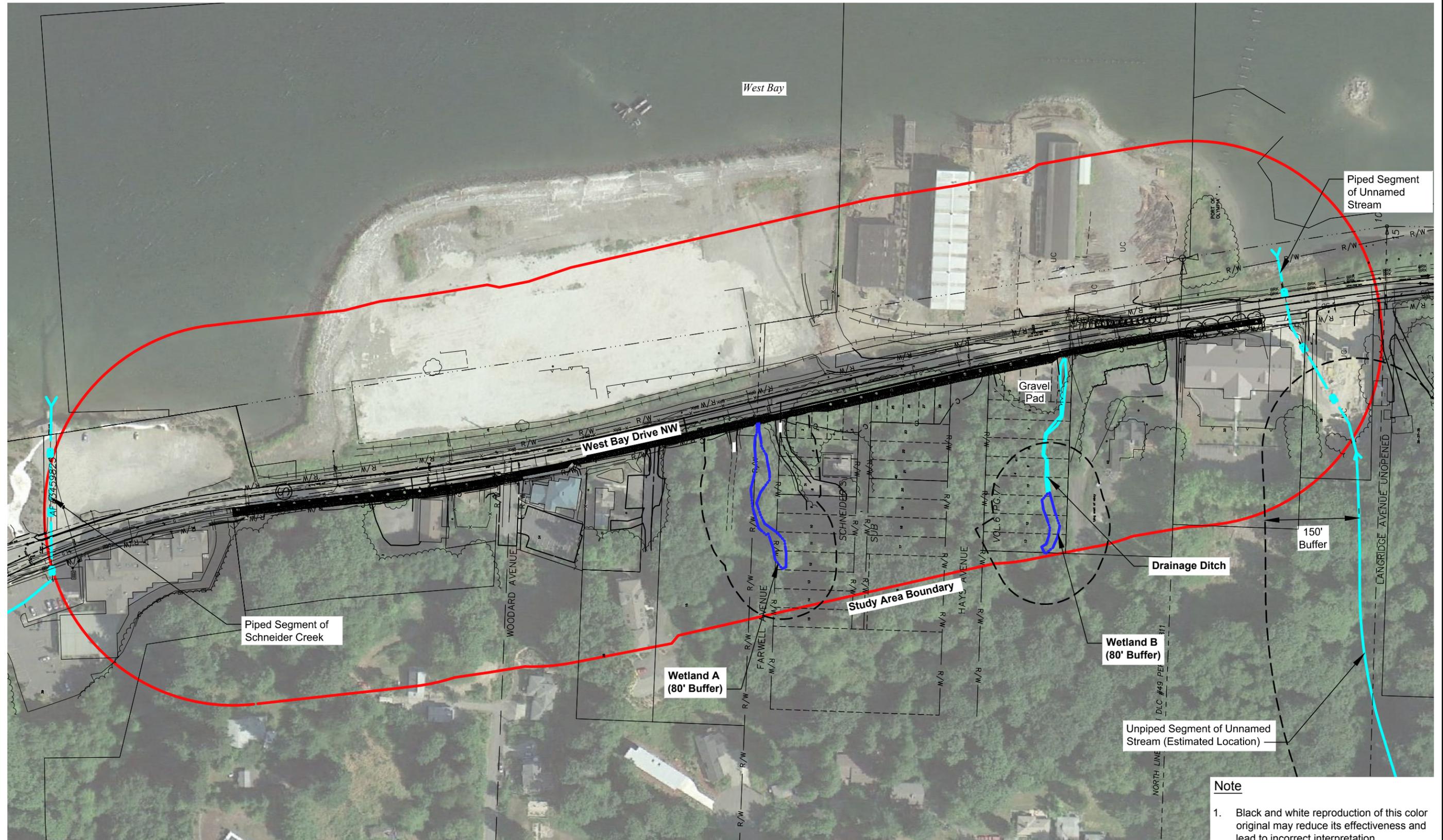
West Bay Drive Improvements
 City of Olympia
 Olympia, Washington

Vicinity Map

Figure
 1



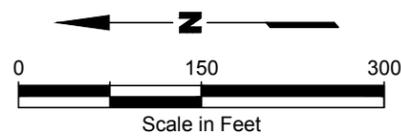
LANDAU ASSOCIATES, INC. | G:\Projects\258031030\031F_Wetland.dwg (A) Figure 2" 3/20/2014



Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Google Earth Pro 2010; Survey 2013

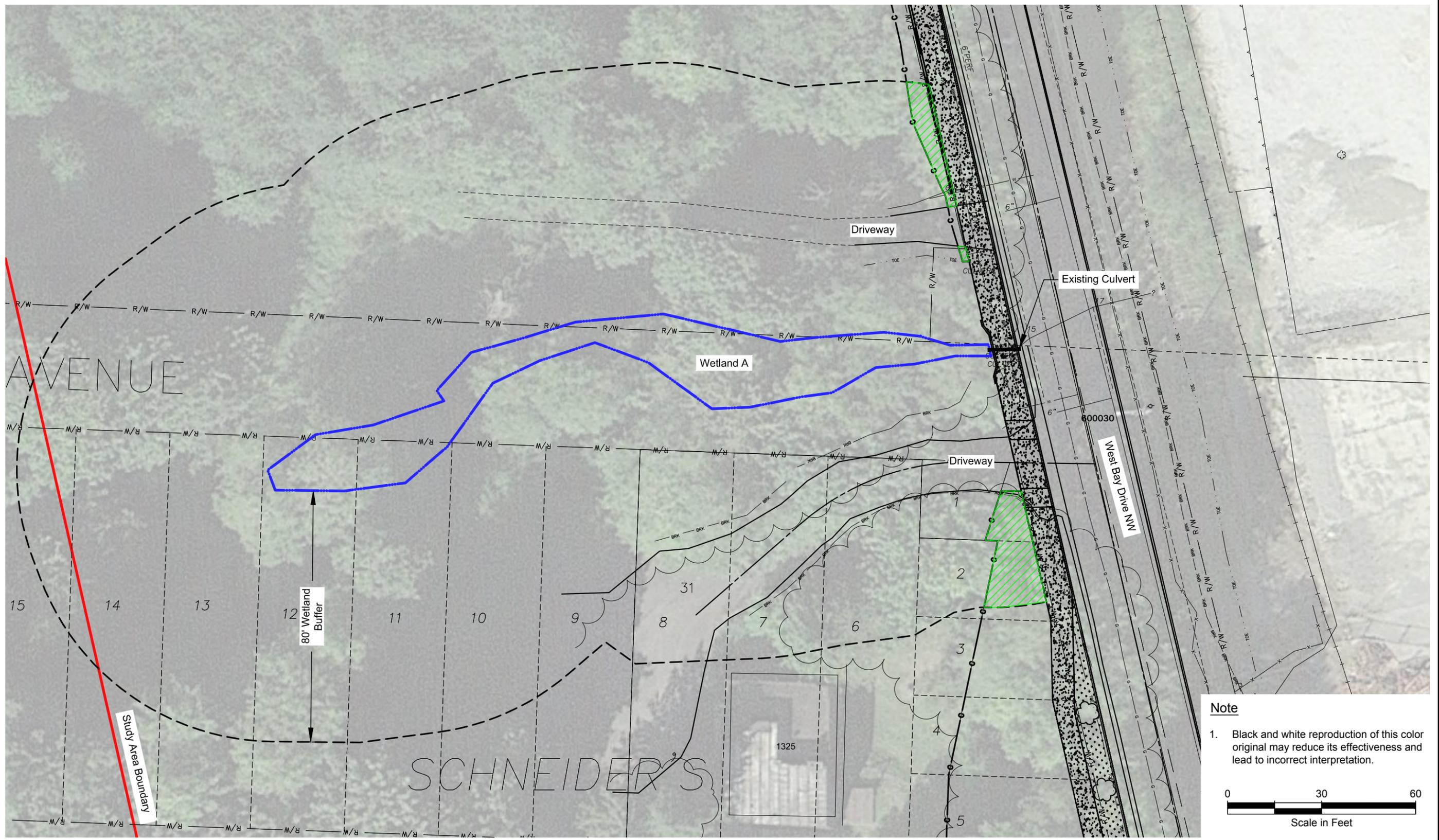


City of Olympia
 West Bay Drive
 Improvements
 Olympia, Washington

Site Plan

Figure 2

LANDAU ASSOCIATES, INC. | G:\Projects\25803103\031F_Wetland.dwg (A) Figure 3A* 3/20/2014



Note

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Legend

- Potential Temporary Wetland Buffer Impacts (732 SF)
- Proposed Improvements

Google Earth Pro 2010; Survey 2013

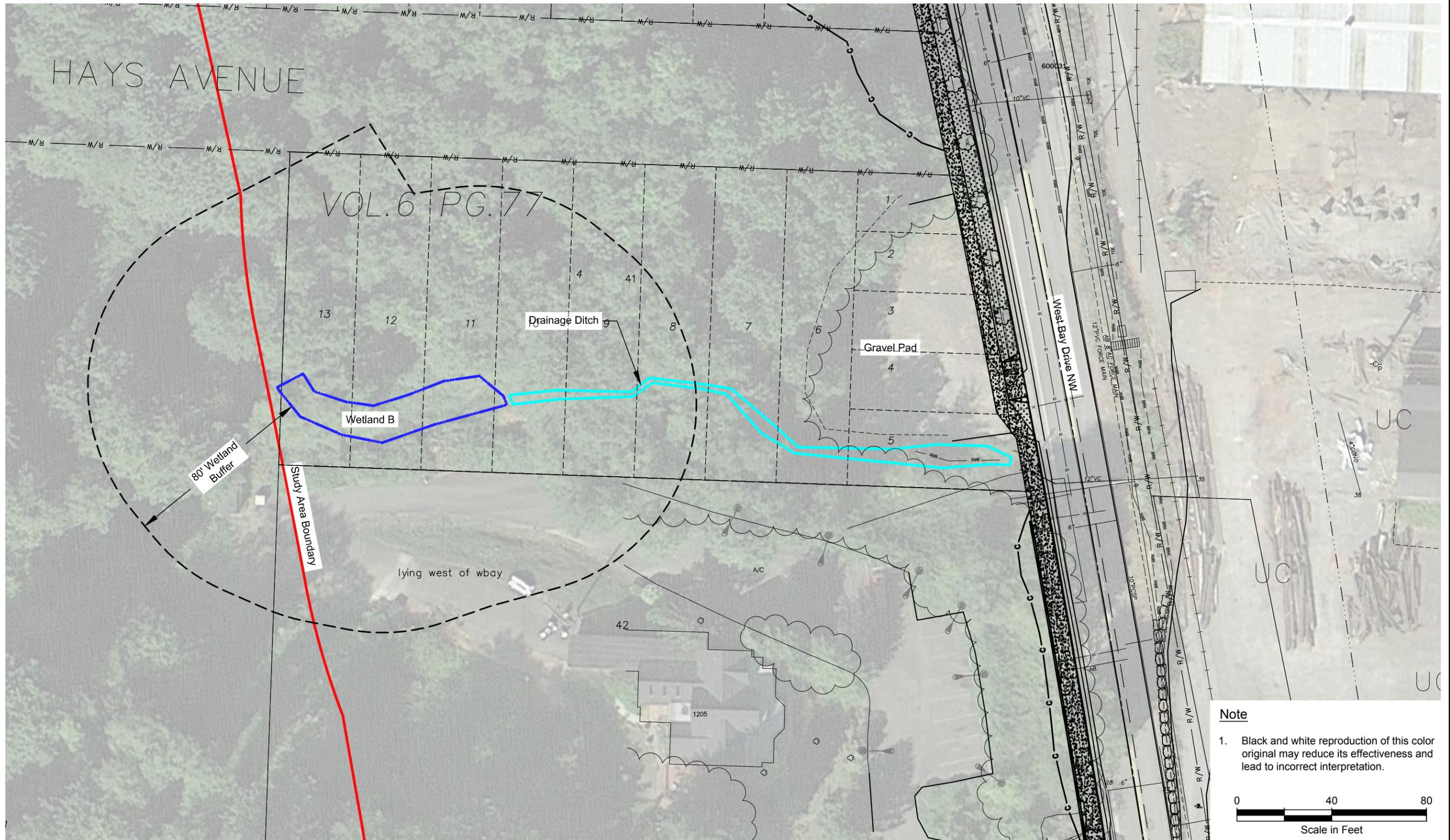
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Wetland A Buffer Impacts

Figure 3A



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Note

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0 40 80
Scale in Feet

Legend

— Proposed Improvements

Google Earth Pro 2010; Survey 2013

City of Olympia
West Bay Drive
Improvements
Olympia, Washington

**Wetland B, Drainage Ditch,
and Proposed Improvements**

Figure
3B



**TABLE 1
PROJECT IMPACTS
WEST BAY DRIVE NW IMPROVEMENTS
OLYMPIA, WASHINGTON**

Wetland/Waterbody	Category (Rating)	Size	Buffer Width	Impacts
Wetland A	III (36)	3,444 sf	80 ft	No wetland impacts, 732 sf of potential temporary buffer impacts [#]
Wetland B	III (35)	1,373 sf	80 ft	No project wetland or buffer impacts
Drainage Ditch	N/A	990 sf	N/A	Drainage ditch not regulated by City of Olympia, no project impacts to drainage ditch area
Unnamed Stream	N/A	*Piped	N/A*	Stream piped below study area, no project impacts
Schneider Creek	N/A	*Piped	N/A*	Stream piped below study area, no project impacts

Key:

sf = square foot

N/A = Not Applicable

* The segments of Unnamed Stream and Schneider Creek within the study area are piped, and stream buffers are not required (City of Olympia 2002).

[#]Wetland A buffer impacts are considered temporary as disturbed areas will be replanted.