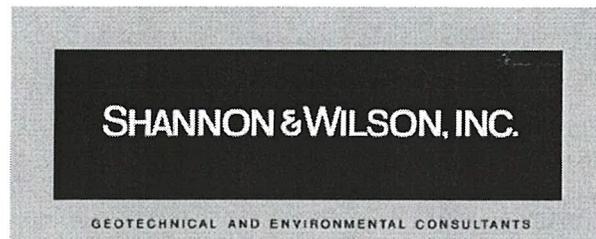


**Critical Areas Report
120th Avenue NE Corridor Project
Bellevue, Washington**

June 11, 2014



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**CRITICAL AREAS REPORT
120TH AVENUE NE CORRIDOR PROJECT
BELLEVUE, WASHINGTON**

Shannon & Wilson, Inc. (Shannon & Wilson) was contracted by Parsons Brinckerhoff on behalf of the City of Bellevue (the City) to complete a critical areas report for Stage 3A of the proposed 120th Avenue NE Corridor Project. The entire 120th Avenue NE Corridor Project extends from the intersection of NE 4th Street and 116th Avenue NE eastward to 120th Avenue NE and then northward along 120th Avenue NE to Northup Way. Stage 3A includes the portion of this project from NE 12th Street to NE 15th/16th Street (Figure 1).

The 120th Avenue NE Corridor Project proposed five-lane roadway is being designed to meet City standards for an urbanized arterial that has four through travel lanes: two 11-foot-wide lanes in each direction and a center 11- to 12-foot-wide turn lane. A 5-foot-wide bike lane will be provided on each side of the roadway adjacent to the curb and a 5-foot-wide planter strip is proposed between the curb and the 8-foot-wide sidewalk. However, the size and location of the sidewalks, bicycle facilities, and planter strips will vary somewhat along the corridor to accommodate future roadway connection points.

The purpose of this critical areas report is to identify critical areas in the Stage 3A corridor and to demonstrate that the proposed project will lead to equivalent or better protection of critical area functions and values than would result from a no action alternative.

1.0 CRITICAL AREAS

1.1 Wetlands

One wetland, identified as Wetland A, is in the Stage 3A project corridor. The wetland is located northeast of the NE 12th Street/120th Avenue NE intersection (Figures 1 and 2). Wetland A is a 8,266-square-foot depressional outflow wetland dominated by willow, spirea, and bentgrass. Wetland A has been rated as a Category III wetland using the 2004 Washington State Department of Ecology's (Ecology's) Wetland Rating System, which the City has adopted.

The rationale for this rating was the following functions of Wetland A:

- High water quality functions score (24 points) due to its organic soils, persistent vegetation, unconstructed surface outlet, and opportunity to remove pollutants;

- Low hydrologic functions score (8 points) due to the high dead storage during wet periods, the moderate ratio of the wetland's area to its basin, but lack of opportunity to reduce flooding downstream as the wetland drains to Lake Bellevue; and
- Moderate habitat functions score (14 points) due to its low diversity of vegetation, moderate interspersed hydroperiods, and the presence of other nearby wetlands in the developed landscape. Additionally, a standing snag was observed in the southern end of Wetland A with evidence that it has been used by pileated woodpeckers for foraging.

More information on Wetland A can be found in the 120th Avenue NE Corridor Project wetland and stream delineation report (Shannon & Wilson, 2011a).

1.2 Streams

No streams are located on or adjacent to the proposed project site. A ditch has been dug in Wetland A, adjacent to the fill slope of 120th Avenue NE, however, the ditch was not categorized as a stream because it is a wholly artificial channel that: (a) is not used by salmonids, and (b) does not convey a stream that occurred naturally before construction of the artificial channel. Wetland A drains into Lake Bellevue, which drains to Sturtevant Creek.

1.3 Shorelines

Lake Bellevue is located approximately 100 feet from the Stage 2 portion of the 120th Avenue NE project corridor, which is south of Stage 3A. However, it is located approximately 220 feet southwest of Stage 3A. Therefore, no shorelines are located in the Stage 3A project area.

1.4 Habitat Associated with Species of Local Importance

Pileated woodpecker use of a snag located in Wetland A was documented during the project State Environmental Policy Act review. Based on conversations with Mr. David Pyle, Senior Environmental/Land Use Planner at the City, we understand that the City will likely consider any natural significant trees (i.e., native tree species that meet the significant tree criteria and were not planted as part of landscaping) in the project corridor to be potential future pileated woodpecker habitat and require mitigation for these trees. However, it is our understanding that mitigation for removal of the trees that are within wetlands and wetland buffers will be satisfied by compliance with the City's wetland and wetland buffer mitigation requirements. Based on this information, an additional five natural significant trees (two red alder and three black cottonwoods) are located in the project area. These trees are located north and south of Wetland A but are located outside of the wetland buffer (Shannon & Wilson, 2011b).

No other habitat associated with species of local importance is known to occur in the project corridor.

1.5 Geologic Hazard Areas

A steep, 20-foot-high slope is located east of Wetland A (Figures 1 and 2). The slope has previously been classified as a steep slope. No landslide hazards, coal mine hazard areas, or other steep slopes have been identified in the project corridor (Parsons Brinkerhoff, 2011).

1.6 Areas of Special Flood Hazard

The 100-year floodplain of Lake Bellevue is located west of 120th Avenue NE, south of NE 12th Street. The proposed project improvements will not extend into the floodplain area.

2.0 IMPACTS

The Bellevue City code allows new or expanded public rights-of-way (ROWs) in critical areas where it is shown that the impacts cannot be avoided and have been minimized, and where temporary and permanent impacts can be mitigated.

2.1 Wetlands and Habitat Associated with Species of Local Importance

Project impacts to Wetland A, its buffer, documented pileated woodpecker habitat, and five natural significant trees are unavoidable. In order to minimize impacts, the design team looked at widening the roadway further to the west to avoid impacting Wetland A, its buffer, and the woodpecker habitat. However, this would also involve shifting the roadway south of Stage 3A toward Lake Bellevue. The existing roadway south of Stage 3A is currently about 100 feet from the lake shoreline; moving the roadway alignment to the west, closer to the lake, would infringe into the shoreline buffer.

In addition, load-sensitive, highly compressible (peaty) soils extend close to the west edge of the existing two-lane roadway. Moving the roadway further to the west would require overexcavating these peat soils to build the proposed roadway fills and retaining walls, or to bridge over this area. Either of these options would result in greater construction and long-term maintenance risks.

Because Wetland A is relatively small and narrow, and is constrained to the east by a steep slope and to the west by the existing roadway, we could not realign the road or design the project in a way that would preserve a portion of the wetland or associated pileated woodpecker habitat. The

additional natural significant trees are also located in a narrow strip of road ROW and could not be avoided.

No temporary impacts are anticipated. Permanent wetland, pileated woodpecker habitat, and natural significant tree impacts will be mitigated in accordance with Bellevue City Code, as detailed in Section 3.

2.2 Geologic Hazard Areas

The project includes fill at the base on the steep slope east of Wetland A. The project will also include cutting into the hillside between Wetland A and NE 12th Street and installing a soldier pile wall. Because these actions are anticipated to increase the stability of the steep slope, this is considered a positive impact. Therefore, no mitigation is proposed.

3.0 PROPOSED MITIGATION

3.1 Mitigation Requirements

In 2008, the U.S. Army Corps of Engineers identified their preferred approach to wetland mitigation to be wetland banking and/or in-lieu fee mitigation (Section 33, Parts 325 and 332 of the Code of Federal Regulations). Based on discussions with Paul Krawczyk, the Bellevue City Council has mandated that wetland mitigation be completed within the City limits. There are no approved wetland mitigation banks or in-lieu fee sites within the City limits; therefore, a project-specific mitigation site is required.

Table 1 summarizes the City, state, and federal wetland mitigation ratio requirements for the proposed wetland impacts during Stage 3A construction.

**TABLE 1
STAGE 3A WETLAND MITIGATION REQUIREMENTS**

Impacted Area	Impact Area (sf)	Bellevue	U.S. Army Corps of Engineers/ Washington State Department of Ecology Options * (one of the below options required)				
		R/C (sf)	R/C (sf)	RH (sf)	R/C and RH (sf)	R/C and E (sf)	E (sf)
Wetland A	8,266	16,532	16,532	33,064	8,266 R/C + 16,532 RH	8,266 R/C + 33,064 E	66,128
Wetland A Buffer	20,761	20,761	None specified				

Notes:

* Wetland replacement ratios source: Wetland Mitigation in Washington State – Part 1: Agency Policies and Guidance (Version 1) (published by the Washington State Department of Ecology in 2006).

E = Wetland Enhancement

R/C = Wetland Re-establishment or Creation

RH = Wetland Rehabilitation

sf = square feet

The Bellevue Municipal Code 20.25H.105 indicates the City's order of preference for location and type of mitigation for wetland impacts. For location, in-kind mitigation, either onsite or in the same sub-basin, is preferred. Mitigation may be conducted offsite and outside of the sub-basin if it can be demonstrated through a critical areas report that: (a) there are no reasonable on-site or in-sub-basin opportunities that have a high likelihood of success, (b) off-site mitigation has a greater likelihood of providing equal or better wetland functions, and (c) watershed goals for wetland functions have been established and strongly justify location of mitigation at another site.

As for type of mitigation, the Bellevue Municipal Code indicates that restoring wetlands on upland sites that were formerly wetlands is preferred. Creating wetlands on disturbed upland sites is considered second choice. Wetland enhancement is the City's last choice in wetland mitigation.

3.2 Mitigation Site Selection

On-site mitigation is not considered feasible since the project is located within road ROW. Shannon & Wilson conducted a wetland mitigation site selection study in July 2013 to determine whether a suitable site could be found in the sub-basin of the proposed wetland impacts (Sturtevant Creek) (Shannon & Wilson, 2011b). The potential sites considered in the project sub-basin could not provide sufficient mitigation, were slated for other City projects, and/or were

located on parcels where it was unclear whether the property owners would be willing to sell their properties.

Of the eight potential mitigation sites studied, the Benitez Properties location was considered the most suitable mitigation site for project wetland, wildlife, and buffer impacts because the City can mitigate for all impacts in one location, the property owners are willing to sell, and the cost of the property is relatively reasonable. Although not located in the sub-basin of the Stage 3A wetland impacts, the Benitez Properties site drains to the same receiving water (Mercer Slough) and would provide additional wetlands and buffer along a relatively large wetland/wildlife area in Bellevue.

3.3 Proposed Mitigation

The large existing wetland located on the south end of the Benitez Properties is a Category I wetland. Based on the wetland's rating and habitat score, the Bellevue City Code would likely require a 110-foot buffer around this wetland. The wetland is a large complex of riverine and palustrine wetlands associated with Kelsey Creek. Based on our site observations, most of the wetland's hydrology is provided by a seasonally high groundwater table.

We designed the wetland mitigation to be in an area of the site that will not impose additional buffers on adjacent property owners and existing land uses. We also placed the wetland mitigation area in low-quality uplands that are dominated by invasive species (reed canarygrass, evergreen blackberry, and Himalayan blackberry). Mature native vegetation was omitted/excluded from the wetland mitigation area where feasible. The proposed buffer mitigation will include demolishing existing sheds, removing invasive species, and establishing native woody vegetation in the lower-quality areas of the site buffer.

Our wetland mitigation approach includes excavating uplands adjacent to the large wetland system to an elevation suitable to create wetland conditions. A total of 22 pit-and-mound habitat features with logs will also be created to mimic downed trees (Figure 3). Brush piles, consisting of woody vegetation cleared during construction, will also be placed in the mitigation area to provide habitat for insects, small mammals, and passerine birds. A variety of shrubs and tree species are included in the mitigation plan to provide vegetation structure, and emergent plant species are proposed for the wetter areas that will have seasonal ponding.

We propose to mitigate the pileated woodpecker habitat and natural significant trees impacted by Stage 3A by installing seven snags in the Stage 3A mitigation area (Figure 3) and planting native tree species in both the wetland creation area and the buffer enhancement area.

See the project wetland mitigation plan report (Shannon & Wilson, 2014) for more details regarding the mitigation plan.

3.4 Wetland Functions Assessment

Based on Ecology's *Wetland Rating System for Western Washington*, Wetland A has high water-quality functions, low hydrologic functions, and moderate habitat functions. In accordance with the project wetland mitigation plan:

“To compensate for the wetland water-quality and hydrologic functions that will be lost, the wetland mitigation will need to be located in an area that receives untreated stormwater runoff and drains to a river or stream that has flooding problems. The wetland mitigation will need to establish persistent vegetation with a minimum of two vegetation classes that includes a variety of native species. To mitigate for the known pileated woodpecker habitat in Wetland A, snags and native tree species should be installed in the mitigation area to provide immediate and future habitat for this species.” (Shannon & Wilson, 2014).

Wetland A hydrologic and water quality functions will be mitigated at the Stage 3A project location and at the mitigation site. At the project location, stormwater detention will be added in the vicinity of Wetland A in an effort to mimic the existing stormwater flow patterns from the wetland. Flow rates, recurrence intervals, and frequencies are expected to closely match, and in some cases will even be below, the existing flow conditions. The proposed mitigation site receives untreated stormwater runoff and drains to Kelsey Creek, which has flooding problems. We expect that the mitigation site will provide additional flood storage and water quality functions.

For habitat functions, wetland vegetation proposed at the mitigation site includes three vegetation classes with a variety of native species. Snags and native tree species are included throughout the wetland mitigation site to provide immediate and future pileated woodpecker habitat.

4.0 CONCLUSIONS

Stage 3A of the 120th Avenue NE Corridor Project will have unavoidable impacts to Wetland A, its buffer, documented pileated woodpecker habitat, and five natural significant trees. The project design team evaluated whether the impacts could be avoided and/or minimized by moving the roadway; however, this would result in shoreline impacts and greater construction and long-term maintenance risks. Therefore, the resulting project impacts will be mitigated

according to Bellevue City Code. The proposed mitigation will replace the wetland hydraulic, water quality, and habitat functions. The project also includes installing snags and planting native tree species at the mitigation site to replace current and future pileated woodpecker habitat and natural significant trees.

5.0 CLOSURE

This report has been prepared for specific application to Stage 3A of the 120th Avenue NE Corridor Project and was prepared for the exclusive use of the City of Bellevue, Parsons Brinkerhoff, and their representatives. This report has been developed in a manner consistent with the level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in the area. The conclusions presented in this report incorporate professional opinions based on interpretation of information currently available to us and was completed within the operational scope, budget, and schedule constraints of this project. No warranty, express or implied, is made.

SHANNON & WILSON, INC.

Becki Kniveton, P.W.S.
Senior Principal Biologist

BSK:KLW/bsk

6.0 REFERENCES

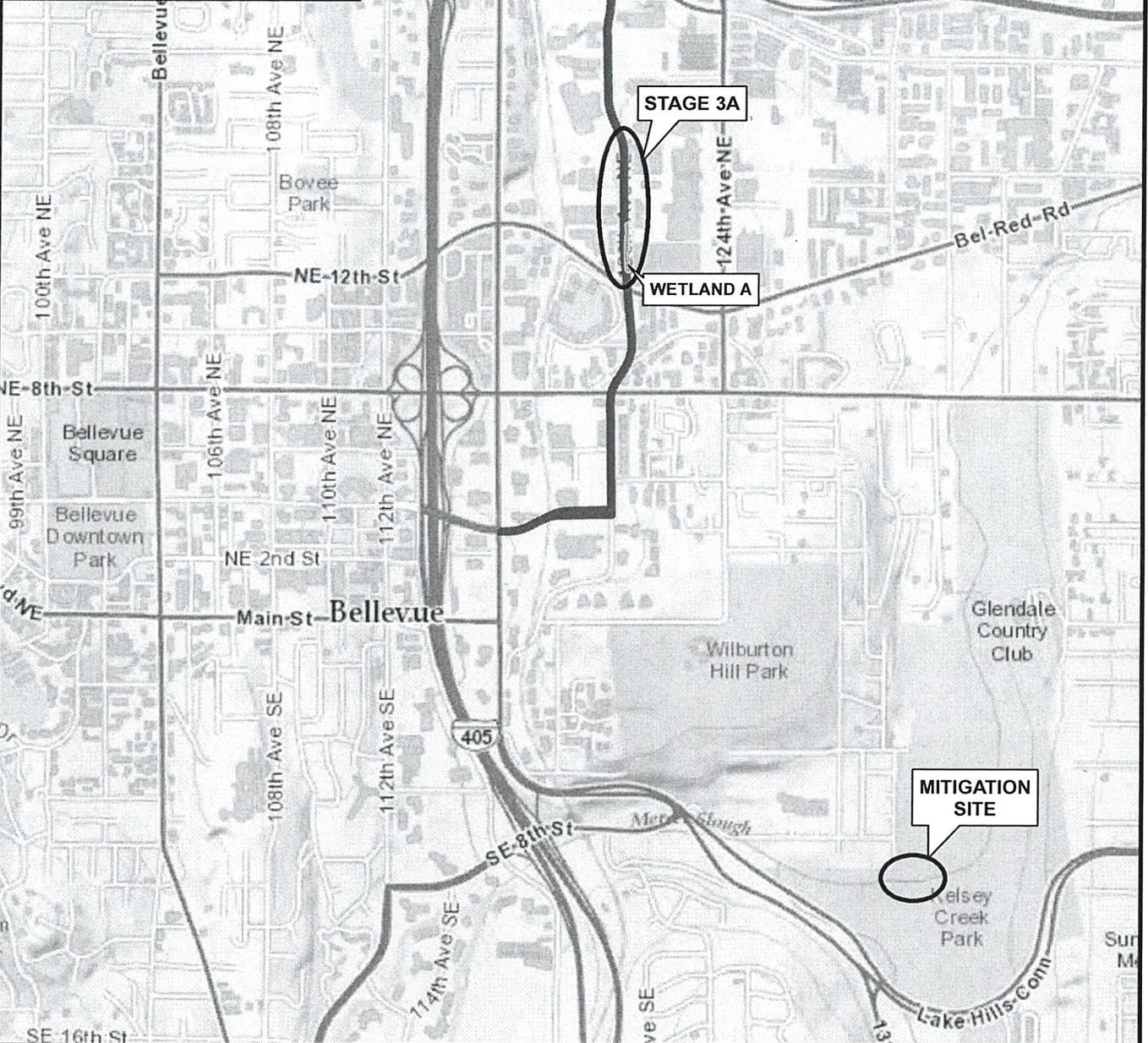
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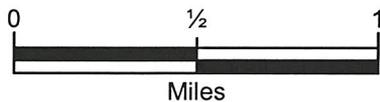
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— 120 Ave NE Corridor Project



120th Ave NE Corridor Project, Stage 3A
Bellevue, Washington

VICINITY MAP

June 2014

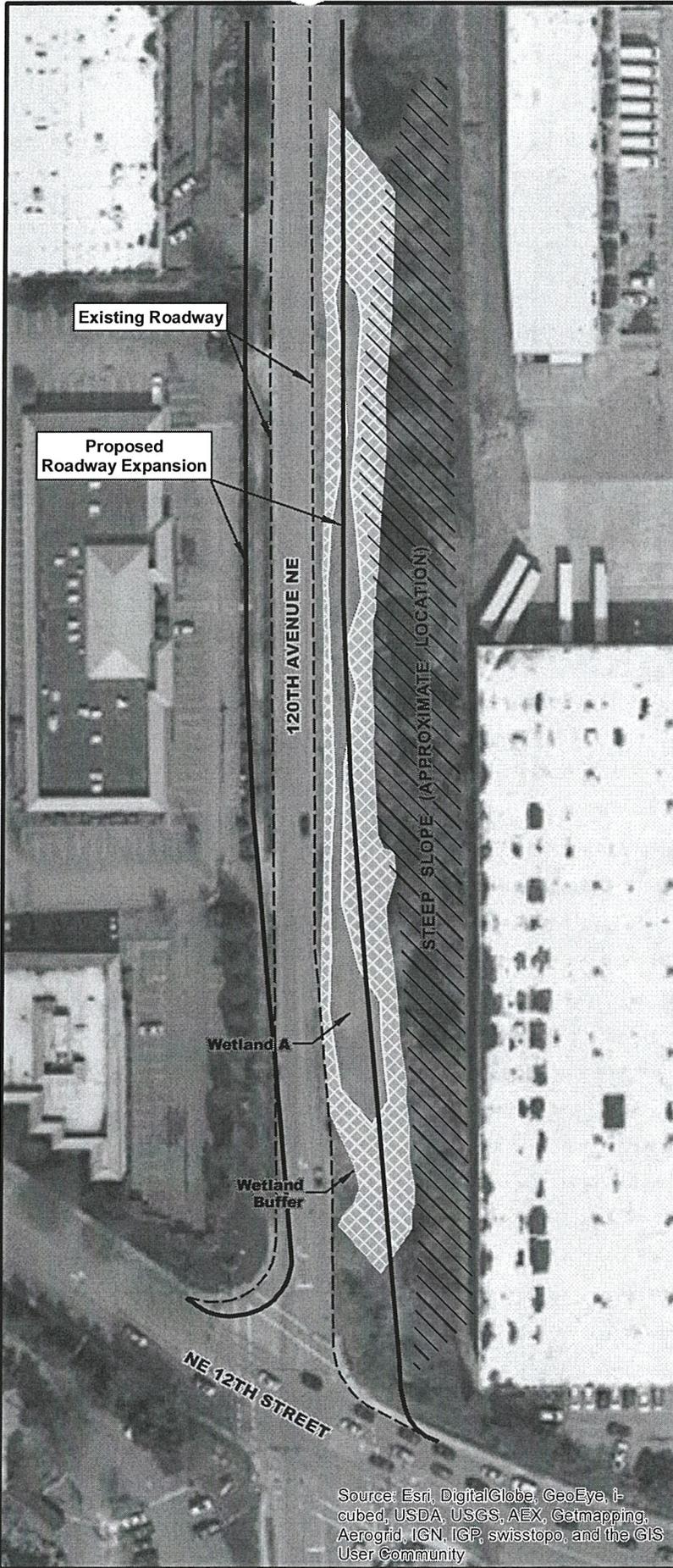
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FIG. 1

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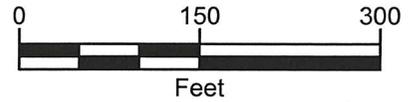
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Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

LEGEND

- Existing Roadway
- Proposed Roadway Expansion
- Wetland Impacts
- ▨ Wetland Buffer Impacts
- ▧ Steep Slope (Approximate Location)



Note: The wetland boundary is based on the NE 4th Street/120th Avenue NE Corridor Project Wetland and Stream Delineation Technical Report, dated June 2011. The wetland buffer impacts and proposed roadway expansion lines are based on a drawing received from Parsons Brinckerhoff, dated May 13, 2014. Steep slope areas are approximately located.

120th Ave NE Corridor Project, Stage 3A
Bellevue, Washington

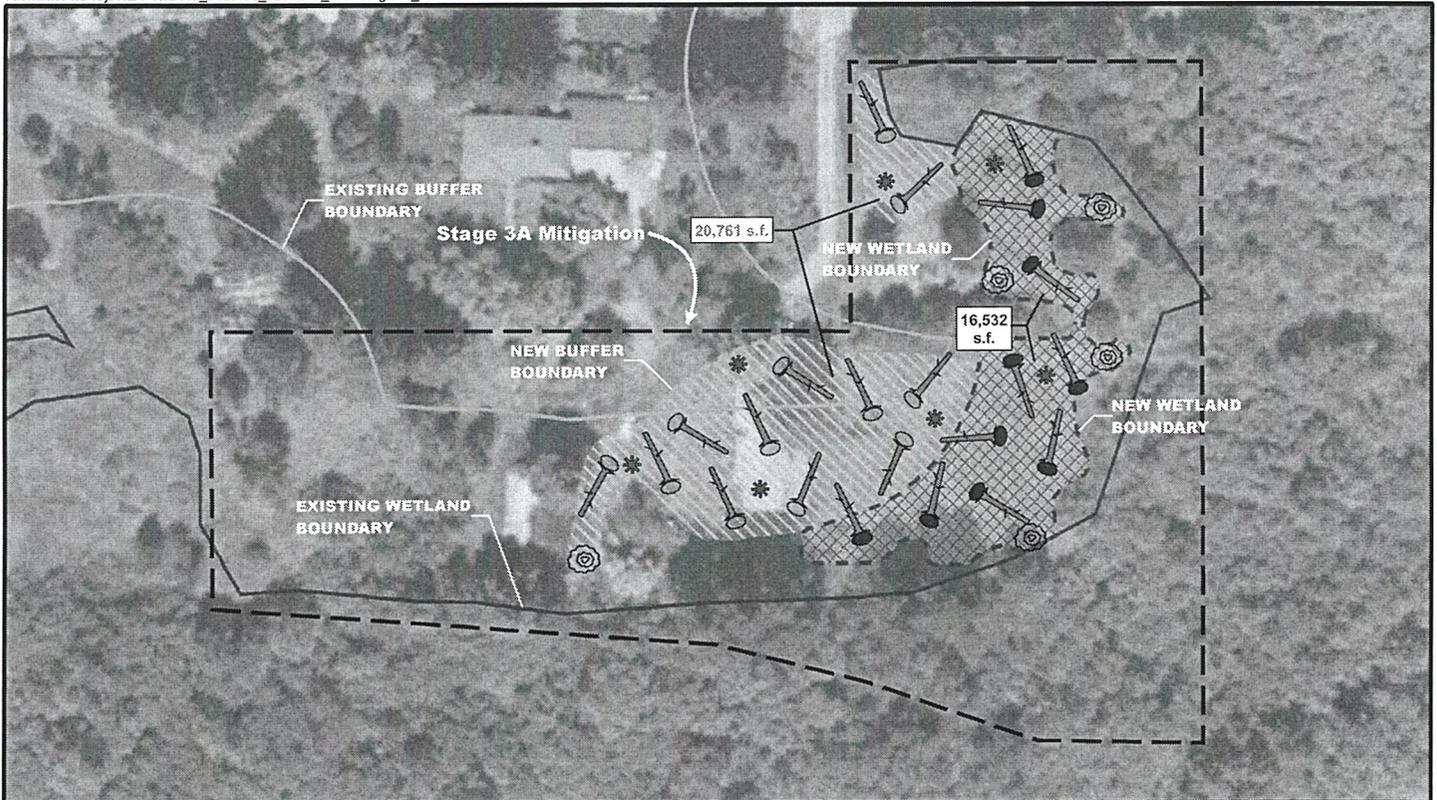
**STAGE 3A
WETLAND IMPACTS**

June 2014

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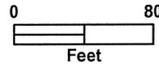
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FIG. 2



LEGEND

-  Pit and Mound Features (N.T.S)
-  Brush Pile
-  Snag
-  Buffer Enhancement
-  Wetland Creation - Woody Vegetation
-  Wetland Creation - Emergent Vegetation



120th Ave NE Corridor Project, Stage 3A
Bellevue, Washington

STAGE 3A MITIGATION PLAN

June 2014

21-1-12417-004

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FIG. 3

FIG. 3