Attachment 14

CRITICAL AREAS REPORT

New North Redmond Elementary School

Redmond, Washington

Prepared for:

Lake Washington School District

Prepared by:

Amec Foster Wheeler Environment & Infrastructure, Inc.
11810 North Creek Parkway North
Bothell, Washington 98011

July 26, 2016

Project No. 6-917-17668-A

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CRITICAL AREAS REPORT
New North Redmond Elementary School
Redmond, Washington

1.0 INTRODUCTION

The Lake Washington School District (LWSD) is proposing to construct a new elementary school on an undeveloped parcel at the southwest corner of NE 122nd Street and 172nd Avenue NE in Redmond, Washington. The 9-acre site is characterized by gently rolling topography, and is vegetated with grassy areas, blackberry brambles and some mature trees. The proposed school structure would be a three-story building with 63,682 square feet of floor space. The first floor would be 46,684 square feet, the second floor would be 9,858 square feet, and the third floor would consist of three penthouses with a combined square footage of approximately 7,140. There are currently two alternative parking configurations proposed. Alternative One would have 83 on-site parking stalls with bus and parent drop-off queues, and Alternative Two would have 65 parking stalls, bus drop-off and a parent load/unload area. The conceptual landscape planning for both proposed configurations retains many existing trees along the eastern and northern borders of the project site and in the southwestern portion of the property in place (BLRB Architects 2016). Stormwater from the site would be collected in a stormwater system and conveyed to designated treatment and/or flow control facilities. The stormwater runoff will be discharged at rates allowed by the City of Redmond (City) code.

The City requires applicants for any development that has the potential to significantly adversely impact a critical area to prepare a critical areas report (Redmond Zoning Code 21.64 and 21.68). This Critical Areas report provides an analysis of the effects of the project on Critical Areas. No wetlands or other aquatic habitat exist on the property or within 200 feet surrounding the property boundaries.

There is no suitable habitat for protected bird or mammal species, so there is no effect on any species protected under the Endangered Species Act (ESA). The project is not situated within the City's shoreline management area (Redmond Zoning Code 21.68). Further, per the requirements of Section 21.68.060 of the Redmond Zoning Code, a habitat assessment would be needed for projects occurring within 200 feet of the Sammamish River or Bear Creek. The proposed project is not located within 200 feet of the Sammamish River or Bear Creek, and therefore neither a habitat assessment nor a Biological Assessment is required.

1.1 Study Area and Project Site

The proposed new North Redmond Elementary school is located in Section 25 of Township 26, Range 5 East in Redmond, King County, Washington (Figure 1). The site is bordered by NE 122nd

Street to the north, 172nd Avenue NE to the east, and residential properties to the west and south. The proposed structure would be installed along the eastern portion of the site. The proposed parking areas would be installed on the northern and eastern portions of the site.

The study area for this report includes the proposed the property area (Figure 2), along with the area 200 feet beyond the property boundary as required by the Redmond Zoning Code (Figure 2).

2.0 PREVIOUSLY DOCUMENTED SITE CONDITIONS

Available site information was reviewed to identify any documented wetlands, streams, or other site characteristics (e.g., vegetation patterns, topography, soils, or water courses) that would indicate the presence of Critical Areas within the study area. Documents reviewed include the following:

- National Wetlands Inventory (NWI) website (USFWS 2016);
- Natural Resources Conservation Service soils maps;
- United States Geological Survey Map Redmond Quadrangle 7.5-minute series, 2014;
- King County iMap showing wetlands, streams and preliminary FEMA 100-year and 500-year maps (available at: http://www.kingcounty.gov/services/gis/Maps/imap.aspx) ;
- City of Redmond Zoning Map (City of Redmond, 2015);
- City of Redmond Fish and Wildlife Habitat Conservation Area Critical Areas Map (City of Redmond, 2011a);
- City of Redmond Critical Wildlife Habitat: Willows/Rose Hill Neighborhood (City of Redmond 2011);
- City of Redmond Streams Classification Critical Areas Map (City of Redmond 2016a);
- City of Redmond Wetlands Critical Areas Map (City of Redmond, 2011c);
- City of Redmond Frequently Flooded Areas Critical Areas Map (City of Redmond 2011d);
- City of Redmond Wellhead Protection Zones Critical Areas Map (City of Redmond 2011e);
- City of Redmond Landslide Hazards Critical Areas Map (City of Redmond 2016b);
- City of Redmond Erosion Hazard Areas Critical Areas Map (City of Redmond 2011f);
- City of Redmond Seismic Hazard Areas Critical Areas Map City of Redmond 2011g);
- Environmental Site Reconnaissance Report (AMEC, 2013a);
- Preliminary Geotechnical Engineering Report (AMEC, 2013b);

LAKE WASHINGTON SCHOOL DISTRICT		NORTH REDMOND NEW ELEMENTARY SCHOOL Redmond, Washington	DATE: JULY 2016 SCALE: 1" = 400'
Amec Foster Wheeler Environment & Infrastructure, Inc. 11810 North Creek Parkway North Bothell, WA 98011	amec foster wheeler	SITE VICINITY	PROJECT NO.: 6-917-17668-B FIGURE: 1

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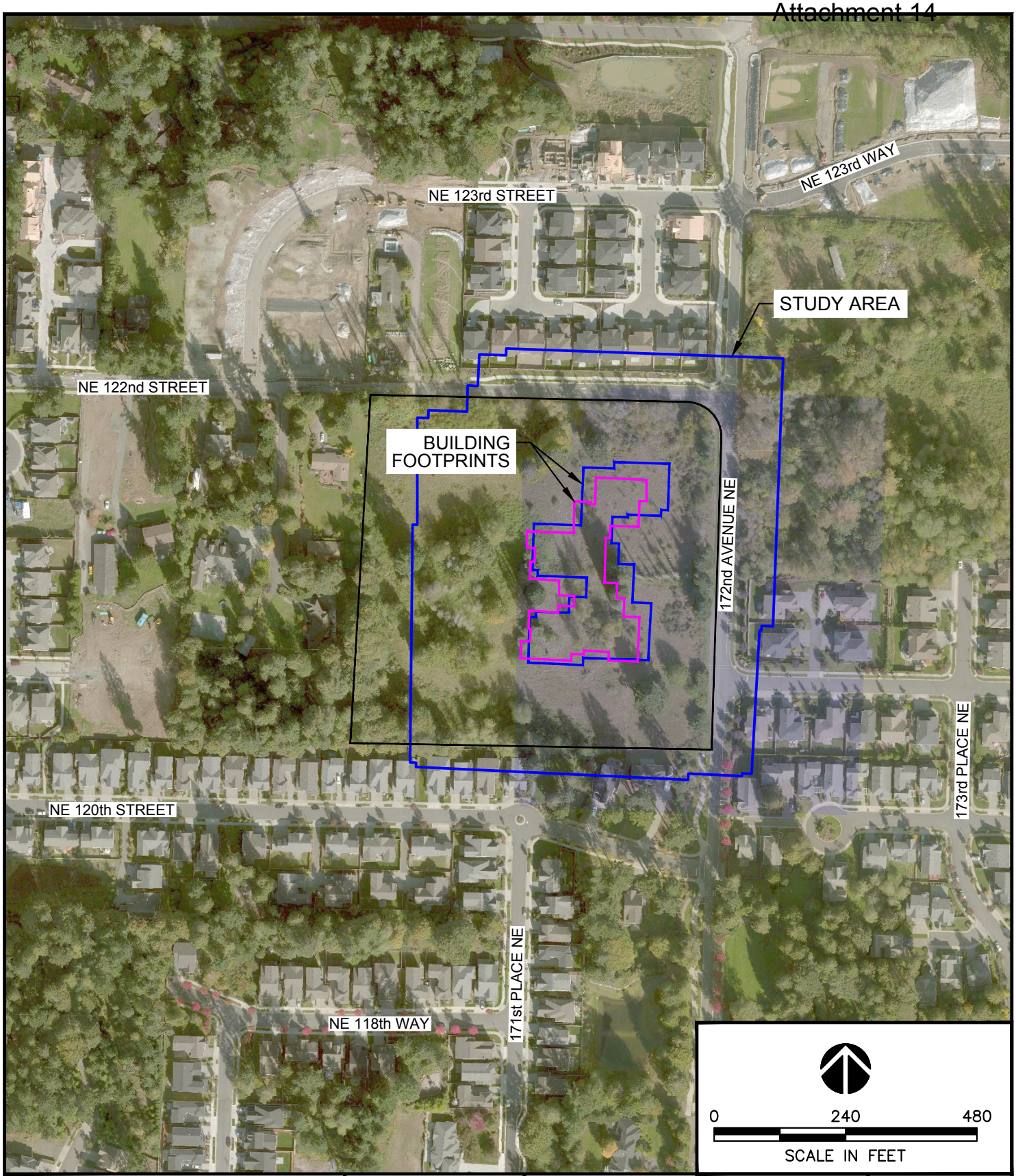

LAKE WASHINGTON SCHOOL DISTRICT		NORTH REDMOND NEW ELEMENTARY SCHOOL Redmond, Washington	DATE: JULY 2016 SCALE: 1" = 240'
Amec Foster Wheeler Environment & Infrastructure, Inc. 11810 North Creek Parkway North Bothell, WA 98011	amec foster wheeler	SITE PLAN, BUILDING FOOTPRINTS, AND STUDY AREA	PROJECT NO.: 6-917-17668-B FIGURE: 2

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- Cultural Resources Assessment (in progress Amec Foster Wheeler 2016); and
- Wetland and Stream Reconnaissance (Shannon & Wilson 2013).

2.1 Environmental Setting

The project site is located in WRIA 8, and is 775 feet south of a tributary to the Sammamish River. The project site is also approximately 1,600 feet (0.3 mile) west of Bear Creek. The Sammamish basin covers an area of approximately 153,600 acres that includes 62,080 acres in the Lake Sammamish basin, 32,000 acres in the Bear Creek basin, and 42,880 acres that are the combined Little Bear, Swamp, and North Creek basin. The remaining 16,640 acres make up the Sammamish River sub-basin. The Sammamish River sub-basin contains approximately 14 miles of stream.

2.2 Site History

The study area is located within Redmond and much of the vicinity has been developed or is in the process of being developed as residential properties.

An Environmental Site Reconnaissance Report for the project site (AMEC, 2013a) included the results of a site reconnaissance, review of historical records and environmental records for the property and which indicated that the property had been developed with agricultural and rural residential uses as early as 1936. Review of historical aerials from the 1950s onward of the property showed that agricultural use appeared to consist of livestock with no signs of agricultural crops. The residential and agricultural structures were demolished between 1990 and 2005. Neither wetlands nor other aquatic resources were identified on the property during that study.

2.3 Zoning

According to the City of Redmond Zoning Map (City of Redmond, 2015) the study area includes tax parcel numbers 2526059045 and 2526059072. These are zoned as Single Family Urban Zones (R-4). The City's Comprehensive Plan Land Use Map (City of Redmond, 2011h) identifies the parcels as Single Family Urban.

2.4 Topography

Topography of the project site slopes from the southwest to the northeast, with a slight hill in the northeast corner (Bush, Roed & Hitchings, Inc. 2013; USGS 2014). The highest point in the vicinity is located on the property to the west of the project site, but within the study area. The study area varies in elevation from 305 feet to approximately 330 feet. The site topography is shown on Figure 3.

2.5 Hydrologic Mapping

The highest elevation in the vicinity is approximately 340 feet and is located 250 feet west of the project site. Stormwater and groundwater would likely flow northeast and, due to the size of the project site, surface and ground water would end up at either the Sammamish River to the north or Beer Creek and an associated pond at NE Redmond Area Neighborhood Park to the east-northeast. The pond and Bear Creek are 0.3 mile east of the study area. Groundwater traveling to the pond and Beer Creek would likely travel through the palustrine scrub-shrub, seasonally-flooded system east of the study area. A Sammamish River tributary stream starts approximately 775 feet north of the project site.

During geotechnical drilling in 2013, Amec Foster Wheeler encountered perched groundwater at approximately 10 to 13 feet below ground surface (AMEC 2013b).

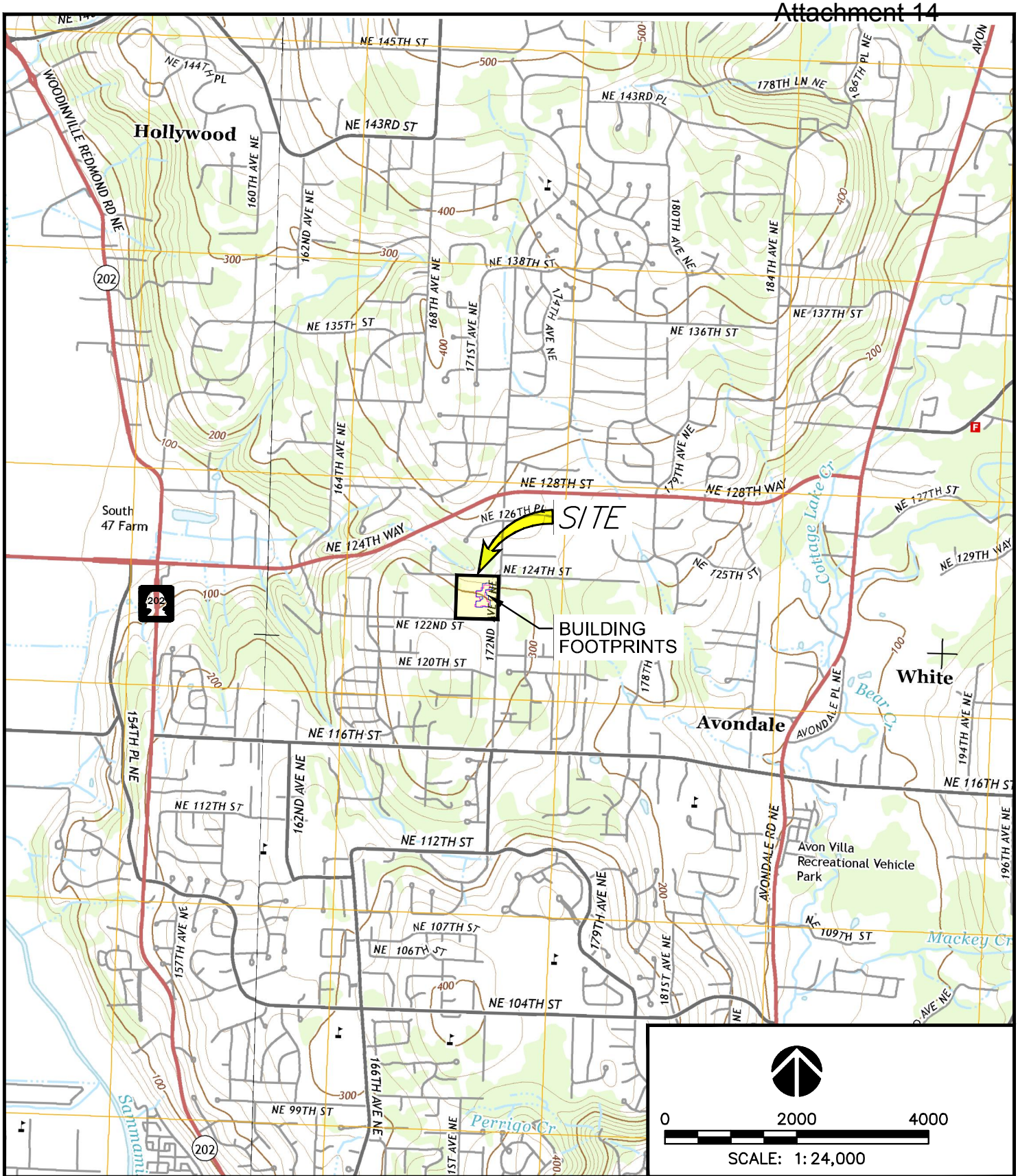
2.6 Wetlands in the Vicinity and Study Area

Neither the NWI (shown on Figure 4) nor the City's Fish and Wildlife Conservation Area Map (City of Redmond, 2011a) show any wetlands occurring in the study area. The NWI shows a palustrine scrub shrub, seasonally flooded system approximately 315 feet due east of the project site. The start of a tributary to the Sammamish River is noted 775 feet north of the project site. Beer Creek is located 0.3 mile east of the project site. City of Redmond Critical Areas Maps (2011a – 2011g and 2016a, 2016b) did not identify any wetlands or streams on the property.

In 2013, Shannon and Wilson, Inc. performed a pedestrian survey and inspection of the property for the purposes of identifying and delineating wetlands. They determined that there were no wetlands or other aquatic features on the site. They did not report on areas outside of the property boundary. A field review conducted by Amec Foster Wheeler (2016) assessed the off-property area within 300 feet of proposed property and determined that there were no wetlands or other aquatic resources present within the 300-feet adjacent area investigated.

2.7 Soils in the Vicinity and Study Area

Soils in the study area are mapped by the US Geological Survey (USGS 2016) as Alderwood Gravelly Sandy Loam. The Alderwood soil series is a moderately deep, moderately well drained soil. The soils are on glacial drift plains formed in glacial till. They are characterized by high saturation above the dense layer, with a perched water table at its highest from January through March. Soils mapped on the project site are shown on Figure 5.



LAKE WASHINGTON SCHOOL DISTRICT		NORTH REDMOND NEW ELEMENTARY SCHOOL Redmond, Washington	DATE: JULY 2016 SCALE: 1" = 2,000'
Amec Foster Wheeler Environment & Infrastructure, Inc. 11810 North Creek Parkway North Bothell, WA 98011	amec foster wheeler	TOPOGRAPHY OF SITE & VICINITY	PROJECT NO.: 6-917-17668-B FIGURE: 3

DRAWN BY: JRS CHECKED BY: KM

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LEGEND

Freshwater Forested/Shrub Wetland

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

ACE NE

0 240 480

SCALE IN FEET

SOURCE: USFWS, NATIONAL WETLANDS INVENTORY, 2016

LAKE WASHINGTON SCHOOL DISTRICT		NORTH REDMOND NEW ELEMENTARY SCHOOL Redmond, Washington	DATE: JULY 2016 SCALE: 1" = 240'
Amec Foster Wheeler Environment & Infrastructure, Inc. 11810 North Creek Parkway North Bothell, WA 98011	amec foster wheeler	WETLANDS IN THE PROJECT AREA	PROJECT NO.: 6-917-17668-B FIGURE: 4

DRAWN BY: JRS CHECKED BY: KM

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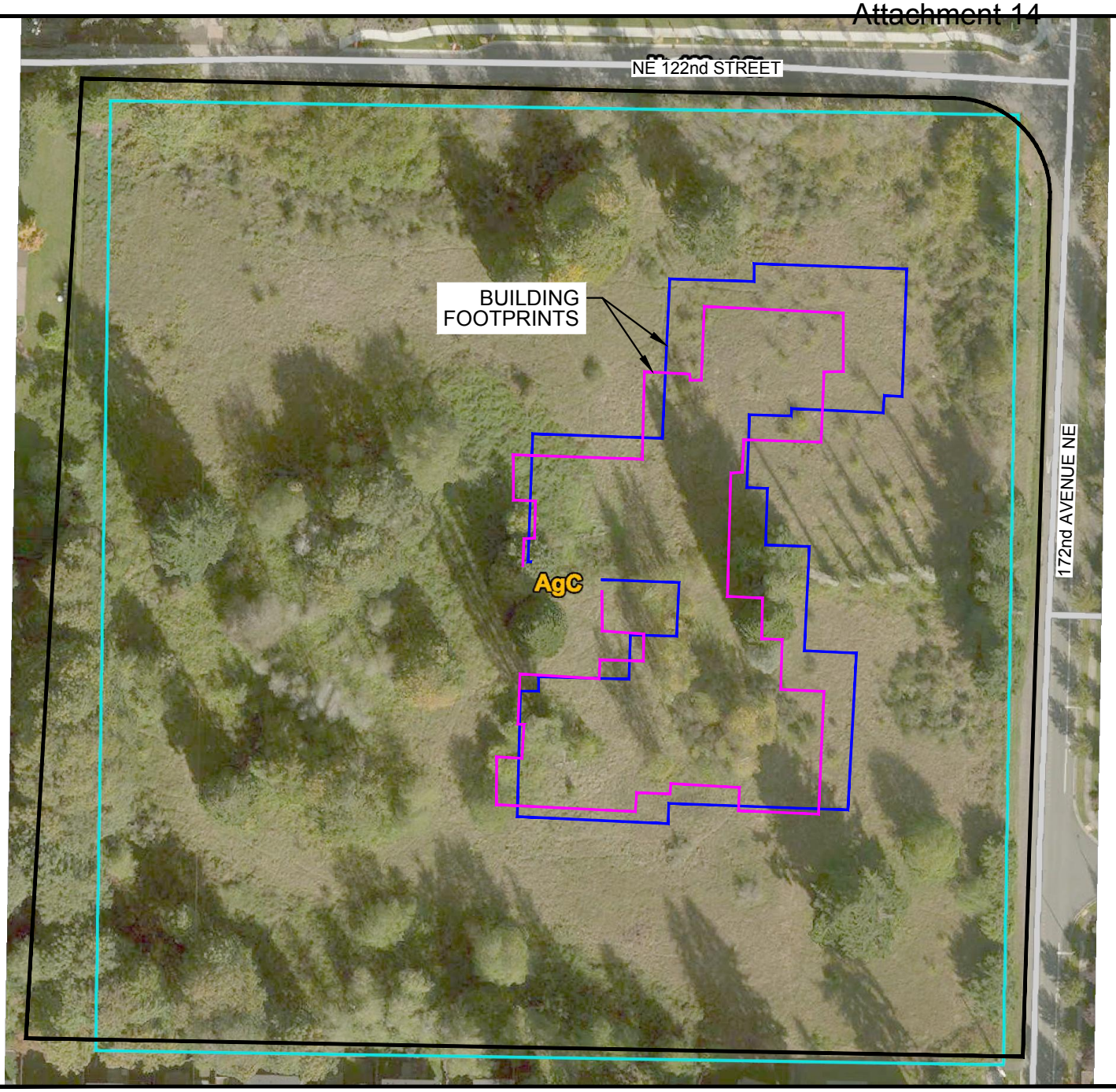

SOILS NOTES

AgC - ALDERWOOD GRAVELLY SANDY LOAM, 8 TO 15 PERCENT SLOPES

0 100 200

SCALE IN FEET

LAKE WASHINGTON SCHOOL DISTRICT		NORTH REDMOND NEW ELEMENTARY SCHOOL Redmond, Washington	DATE: JULY 2016 SCALE: 1" = 100'
Amec Foster Wheeler Environment & Infrastructure, Inc. 11810 North Creek Parkway North Bothell, WA 98011	amec foster wheeler	SOILS ON THE PROJECT SITE	PROJECT NO.: 6-917-17668-B FIGURE: 5

DRAWN BY: JRS CHECKED BY: KM

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2.8 Floodplains

FEMA floodplain maps identify flood hazard areas (defined as areas that will be inundated by a 100-year flood event). The 2013 floodplain map is preliminary and not yet approved by FEMA; however, the data is available through King County iMAP. The available data for the study area indicates that the site is outside both the 100-year and 500-year floodplains.

2.9 Other Critical Areas

In addition to wetlands and other aquatic systems and floodplains, the City of Redmond considers wellhead protection zones and geologically hazardous areas as critical areas. The City's Wellhead Protection Zone map (City of Redmond 2011e) that depicts the site as classified as Wellhead Zone 3, the interactive map on the City's website depicts the site as mostly Wellhead Zone 4 with only a portion of the southern part of the project site as Wellhead Protection Zone 3. Wellhead Protection Zone 3 is described as representing land area that overlies the five-year and ten-year time-of-travel zones of a public water source well owned by the City, excluding the land area contained within Wellhead Protection Zones 1 or 2. Wellhead Protection Zone 4 is described as representing all the remaining land area in the City not included in Wellhead Protection Zones 1, 2, or 3. A hydrogeologic report on the property was prepared addressing wellhead protection (Amec Foster Wheeler 2016).

Landslide Hazards Areas (City of Redmond 2016a), Erosions Hazards Areas (City of Redmond 2011f), and a Seismic Hazard Areas (City of Redmond 2011g) maps were published by the City as a part of the Critical Areas Regulations. The project site was not identified as a critical area for any of these conditions on these maps. Additionally in the Preliminary Geotechnical Report (AMEC 2013b), it was noted that the project site had gentle rolling topography with no steep slopes and were not within any geologically hazardous areas, as defined by the City of Redmond.

3.0 FIELD INVESTIGATION

3.1 Methods

Amec Foster Wheeler wetland scientists conducted a field investigation on June 2, 2016, to confirm the existing conditions documented reports and to identify any aquatic systems that might occur adjacent to the property. The NWI had mapped a wetland as occurring approximately 340 east of the project site.

3.2 Results of the Field Investigation

Vegetation in the area investigated was characterized by an overstory of black cottonwood (*Populus trichocarpa*), red alder (*Alnus rubra)*, Douglas fir (*Pseudotsuga menziesii*), and western red cedar (*Thuja plicata*). Understory shrubs included salal (*Gaultheria shallon*), Oregon grape (*Mahonia*

aquifolium), and common snowberry (*Symphoricarpos albus)*. Invasive Himalayan blackberries (*Rubus armeniacus*) are also prevalent in the area.

It was determined that there were no wetlands or other aquatic features adjacent within 300 feet of the property boundaries.

3.3 Direct and Indirect Effects on the Subject Habitat

3.3.1 Wildlife Habitat

The wildlife value of the proposed project site is relatively low (see Appendix A: Habitat Unit Assessment). The existing habitats provided by the current vegetation supports songbirds, small mammals, and deer. The project site is located in the middle of several residential developments. The current building proposal indicated that develoment would attempt to leave many of the existing trees in place. Where possible, the existing grassy area and evergreen deciduous forest would be retained on the site post-construction. Some songbirds that are tolerant of disturbance would likely continue to use the site.

3.3.2 Wetlands

No wetlands would be affected by the proposed project. Stormwater in the vicinity of the new elementary school structure would continue to flow northeast.

4.0 CONCLUSIONS

Critical Areas on the site are limited to wellhead protection area. No wetlands or other aquatic system or any high quality wildlife habitat are present on the property or adjacent within 200 feet of the property boundary. Limited area of low functioning suburban-tolerant wildlife habitat exists on the property and development will retain some of this limited wildlife function.

5.0 REFERENCES

AMEC Environment & Infrastructure, Inc. (AMEC), 2013, Environmental Site Reconnaissance, Pope Property, Redmond, Washington, November 26.

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USACE, 2010, Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region Version 2.0, May.

U.S. Fish and Wildlife Service, 2016, National Wetlands Inventory website. Located at: https://www.fws.gov/wetlands/.

U.S. Geologic Survey. 2014. Redmond, WA Quadrangle 7.5 minute, scale 1:24,000.

APPENDIX A

Habitat Unit Assessment Form

CITY OF REDMOND
HABITAT UNIT ASSESSMENT FORM

HABITAT UNIT: North Redmond
LOCATION: 172nd Ave NE and NE 124th St., Redmond
TOTAL SCORE: 9

Habitat Parameter	Scoring Criteria	Habitat Unit Score
Size	• >50 acres = 3 points • 10-50 acres = 2 points • 0-10 acres = 1 point	1
Vegetation Community Types	≥ 4 types = 3 points • 2-3 types = 2 points • 1 type = 1 point • None = 0 points	2
Community Interspersion	• High = 3 points • Medium = 2 points • Low = 1 point • None = 0 points	2
Priority Species Presence	• Threatened & Endangered Species = 3 points • Candidate Species = 2 points • Monitor Species = 1 point • None = 0 points	0
Priority Species Habitat Use	• Breeding = 3 points • Roosting = 2 points • Foraging = 1 point • None = 0 points	0
Habitat Continuity	• Links protected habitats = 3 points • Links unprotected habitats = 2 points • Extends habitat corridor = 1 point • None = 0 points	0
Forest Vegetation Layers	• 3 layers = 3 points • 2 layers = 2 points • 1 layers = 1 point • None = 0 points	1
Forest Age	• Mature = 3 points • Pole = 2 points • Seedling/Shrub = 1 point • None = 0 points	1
Invasive Species Presence	• 0-25% = 3 points • 26-50% = 2 points • 51-75% = 1 point • 75-100% = 0 points	2

CITY OF REDMOND
HABITAT UNIT ASSESSMENT FORM

VEGETATION COMMUNITY TYPES:

The vegetative community includes deciduous trees (black cottonwood, big leaf maple, bitter cherry, red alder), coniferous trees (Douglas Fir, Western red cedar), and shrubs (salal, Oregon grape, common snowberry and Himalayan blackberry).

INVASIVE PLANTS:

Himalayan blackberry is prevalent at the site.

HABITAT FEATURES (snags, perches, downed logs, etc):

During the field investigation, downled logs were encountered. No apparent snags or perches were encountered.

WILDLIFE OBSERVATIONS (direct or indirect):

Songbirds were observed at the site during the field investigation, as well as signs of deer, such as deer trails. Other urban mammals that may use the site include coyotes and raccoons but they were not observed during the site visit.

THREATS TO HABITAT INTEGRITY:

The proposed project would alter approximately 8-acres of abandoned pasture area, with sparse evergreen and deciduous trees, understory plants and blackberry hedges. Where possible, existing trees and other vegetation would be retained.

OTHER NOTES:

None.