Operations and Maintenance Facility South

Draft Environmental Impact Statement

Appendix G4: Historic and Archaeological Resources Technical Report

SoundTransit

March 2021

Appendix G4 prepared by:
Aqua Terra Cultural Resource Consultants
Historical Research Associates, Inc.

Summary

Sound Transit proposes to construct and operate an operations and maintenance facility in its South Corridor (OMF South) to meet agency needs for an expanded fleet of light rail vehicles (LRVs). The need to expand LRV maintenance capacity was identified in Sound Transit 3: The Regional Transit System Plan for Central Puget Sound (Sound Transit 3). OMF South would be used to store, maintain, and deploy about 144 LRVs for daily service. It would provide facilities for vehicle storage, inspections, maintenance and repair, interior vehicle cleaning, and exterior vehicle washing. Additionally, the facility would receive, test, and commission new LRVs for the entire light rail system.

OMF South would also be used to accommodate administrative and operational functions, such as serving as a report base for LRV operators. Included is a Maintenance of Way (MOW) building for maintenance and storage of spare parts for tracks, vehicle propulsion equipment, train signals, and other infrastructure, in addition to storage facilities for the entire Link system. Other facility elements would include employee and visitor parking, operations staff offices, maintenance staff offices, dispatcher work stations, an employee report room, and areas with lockers, showers, and restrooms for both operators and maintenance personnel.

OMF South would need to have tracks connecting to a light rail line that will be operating when the facility is planned to open, which in southern King County is the Federal Way Link Extension (FWLE). The length and location of these connecting tracks varies by alternative. Three site alternatives for the proposed project are evaluated in the Draft Environmental Impact Statement: one in Kent and two in Federal Way. These alternatives are named the Midway Landfill Alternative, South 336th Street Alternative, and South 344th Street Alternative, respectively.

The project is being reviewed under the State Environmental Policy Act (SEPA). Sound Transit is the lead agency under SEPA. Sound Transit commissioned a cultural resources study for the project within the three areas of impact (AIs). Project tasks included the preparation of a methods memorandum and Cultural Resources Survey Plan, which were provided to the Washington State Department of Archaeology and Historic Preservation and coordinating tribes for review. These tribes consist of the Puyallup Tribe of the Puyallup Reservation, the Muckleshoot Indian Tribe, the Nisqually Tribe, and the Confederated Tribes and Bands of the Yakama Nation. This report includes results of the cultural resources survey conducted for the project and recommendations.

The three OMF South site alternatives were surveyed for archaeological resources over multiple field sessions. No archaeological resources within the areas of impacts have previously been determined eligible for or listed in the National Register of Historic Places, Washington Heritage Register, or King County Register of Historic Places. Additionally, these surveys did not identify any archaeological resources that meet the necessary eligibility criteria for those registers. Sound Transit has developed an Inadvertent Discovery Plan to guide procedures for identifying and addressing inadvertent discovery of archaeological resources prior to construction. Further investigations of the mainline sections of the South 336th Street and South 344th Street alternatives that overlap the Tacoma Dome Link Extension (TDLE) study area are forthcoming. Results of the further investigations will be included in the Final Environmental Impact Statement.

A total of 86 historic-period, built-environment resources were surveyed within the combined areas of impact for the three proposed OMF South site alternatives. No historic-period, built-environment resources within the areas of impact have previously been determined eligible or listed in the National Register of Historic Places, Washington Heritage Register, or King County Register of Historic Places. Additionally, the surveys did not identify any historic-period, built-environment resources that met criteria necessary for being eligible for those registers.

Table of Contents

Figures

Tables

Attachments

Acronyms and Abbreviations

AI	Area of Impact
ATCRC	Aqua Terra Cultural Resource Consultants
BP	before present
CFR	Code of Federal Regulations
DAHP	Washington State Department of Archaeology and Historic Preservation
Ecology	Washington State Department of Ecology
EIS	environmental impact statement
GIS	geographic information system
GLO	General Lands Office
GPS	global positioning system
HBC	Hudson's Bay Company
HOV	high occupancy vehicle
HPI	Historic Property Inventory
HRA	Historical Research Associates, Inc.
I-5	Interstate 5
N/A	not applicable
NCRS	Natural Resource Conservation Service
NEPA	National Environmental Policy Act
N/A	not applicable
NHPA	National Historic Preservation Act
NPL	National Priorities List
NRHP	National Register of Historic Places
OMF	operations and maintenance facility
OMF South	Operations and Maintenance Facility South
OSHA	Occupational Safety and Health Administration
RCW	Revised Code of Washington
SEPA	Washington State Environmental Policy Act
SHPO	State Historic Preservation Officer
Sound Transit	Central Puget Sound Regional Transit Authority
SR	State Route
ST3	Sound Transit 3
STP	shovel probe unit
THPO	Tribal Historic Preservation Officer
USGS	United States Geological Survey
WaDGER	Washington Division of Geology and Earth Resources
WISAARD	Washington Information System for Architectural and Archaeological Records Data
WSDOT	Washington State Department of Transportation

1 INTRODUCTION

The Central Puget Sound Regional Transit Authority (Sound Transit) proposes to expand light rail into southern King County and northern Pierce County. Sound Transit proposes to build an Operations and Maintenance Facility (OMF South) to support the light rail fleet necessary to extend light rail into Sound Transit's South Corridor, which will serve future growth in ridership systemwide.

The project is being reviewed under the State Environmental Policy Act (SEPA). Sound Transit is the lead agency under SEPA. The Environmental Impact Statement will evaluate three alternatives, in addition to a No-Build Alternative, covering three potential construction sites, known as the Midway Landfill Alternative, the South 336th Street Alternative, and South 344th Street Alternative. All alternatives are located in King County, Washington.

In support of the project, Parametrix and HDR Engineering, Inc., under contract to the Central Puget Sound Regional Transit Authority (Sound Transit), have contracted with Aqua Terra Cultural Resource Consultants (ATCRC) and Historic Research Associates, Inc. (HRA), who have jointly provided cultural resources services for the project. Project tasks included the preparation of a methods memo and a Cultural Resources Survey Plan, which were reviewed by the Washington State Department of Archaeology and Historic Preservation (DAHP) and coordinating tribes. These tribes consist of the Puyallup Tribe of Puyallup Reservation (Puyallup Tribe of Indians), the Muckleshoot Indian Tribe, the Nisqually Tribe, and the Confederated Tribes and Bands of the Yakama Nation. This report includes the results of background review, field investigation, and the evaluation of identified archaeological and historic-period, built-environment resources within the areas of impact for each alternative.

1.1 Project Description

Sound Transit proposes to construct and operate an operations and maintenance facility in its South Corridor (OMF South) to meet agency needs for an expanded fleet of light rail vehicles (LRVs). The need to expand LRV maintenance capacity was identified in Sound Transit 3: The Regional Transit System Plan for Central Puget Sound (Sound Transit 3). OMF South would be used to store, maintain, and deploy about 144 LRVs for daily service. It would provide facilities for vehicle storage, inspections, maintenance and repair, interior vehicle cleaning, and exterior vehicle washing. Additionally, the facility would receive, test, and commission new LRVs for the entire light rail system.

OMF South would also be used to accommodate administrative and operational functions, such as serving as a report base for LRV operators. Included is a Maintenance of Way (MOW) building for maintenance and storage of spare parts for tracks, vehicle propulsion equipment, train signals, and other infrastructure, in addition to storage facilities for the entire Link system. Other facility elements would include employee and visitor parking, operations staff offices, maintenance staff offices, dispatcher work stations, an employee report room, and areas with lockers, showers, and restrooms for both operators and maintenance personnel.

OMF South would need to have tracks connecting to a light rail line that will be operating when the facility is planned to open, which in southern King County is the Federal Way Link Extension (FWLE). The length and location of these connecting tracks varies by alternative (Figure G4.1-1).

Three site alternatives for the proposed project are evaluated in the Draft Environmental Impact Statement: one in Kent and two in Federal Way. These alternatives are named the Midway Landfill Alternative (Figures G4.1-2 and G4.1-3), South 336th Street Alternative (Figure G4.1-4 and G4.1-5), and South 344th Street Alternative (Figures G4.1-6 and G4.1-7), respectively. Figure G4.1-8 shows the mainline track options.

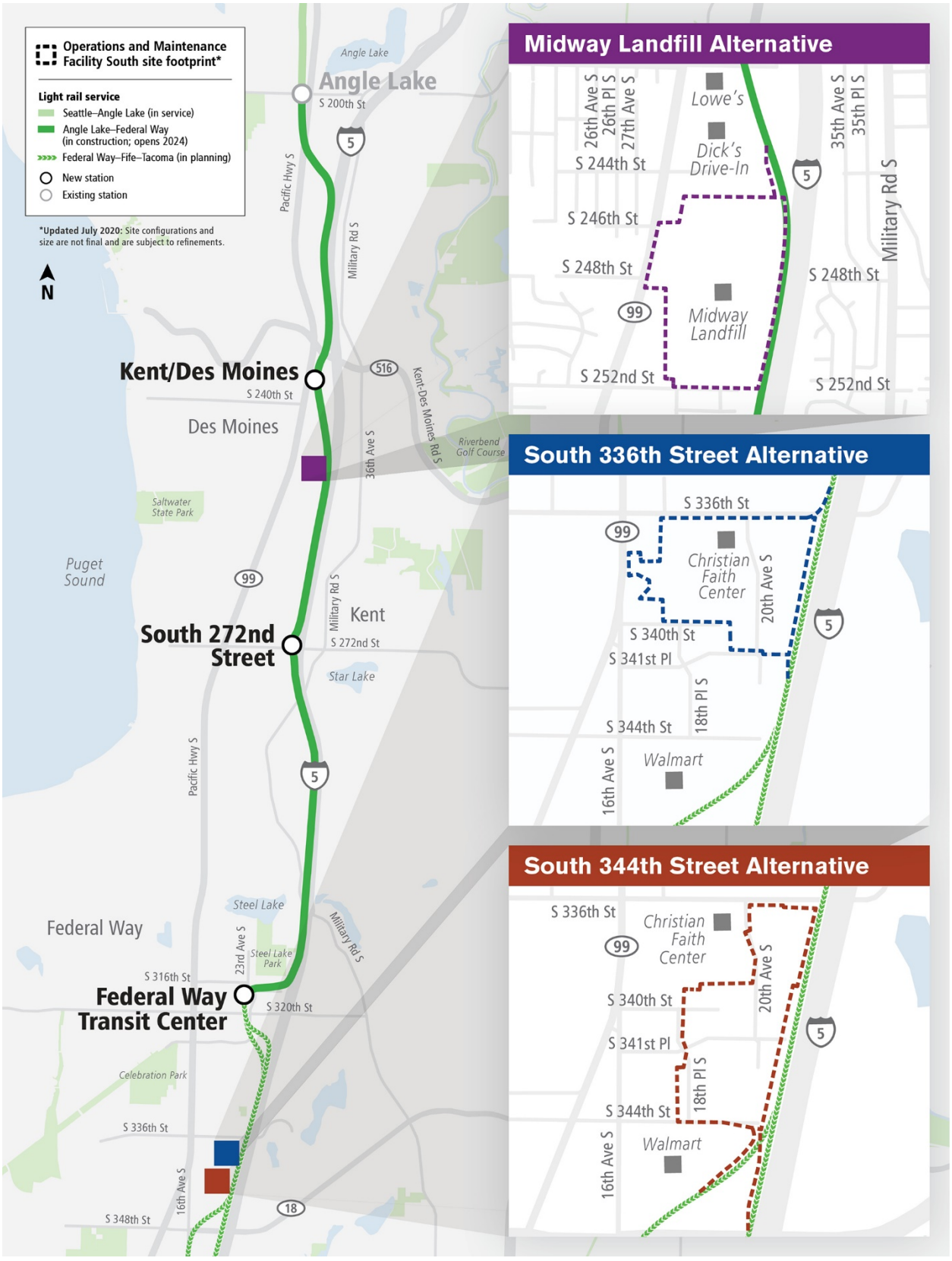
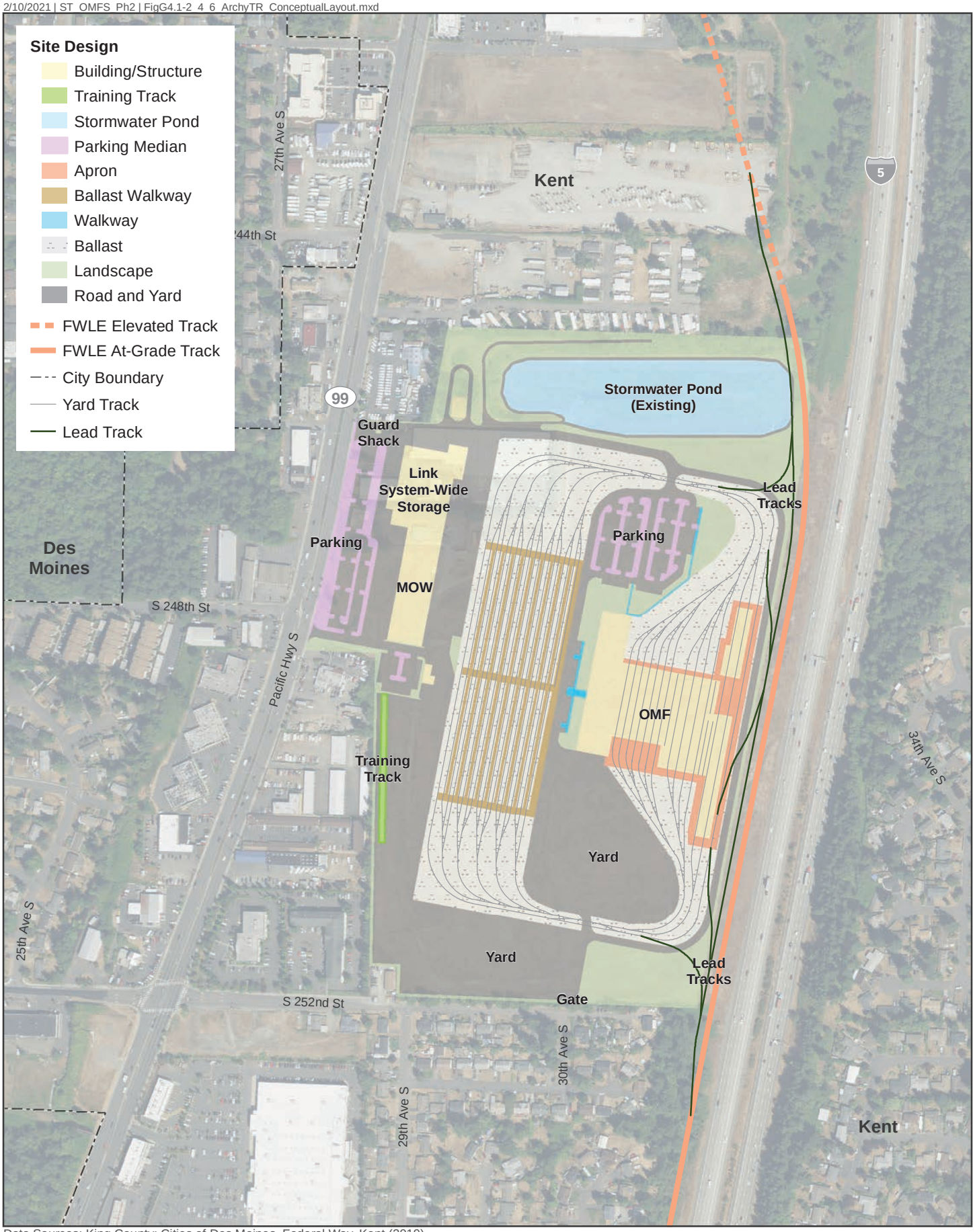


Figure G4.1-1 Project Vicinity: OMF South Alternatives



Data Sources: King County; Cities of Des Moines, Federal Way, Kent (2019).

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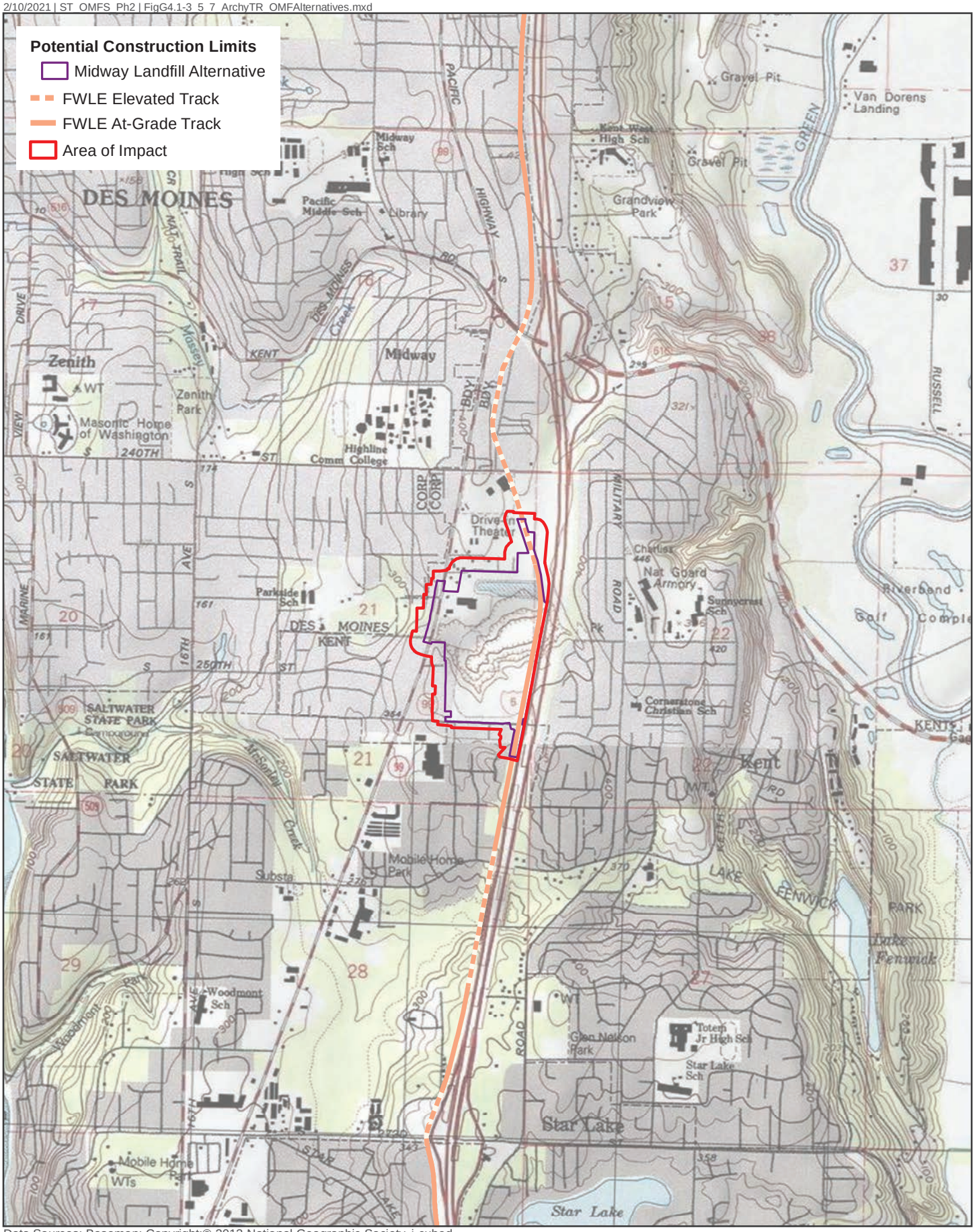
FIGURE G4.1-2
Conceptual Layout
Midway Landfill Alternative

OMF South



Data Sources: Basemap: Copyright:© 2013 National Geographic Society, i-cubed

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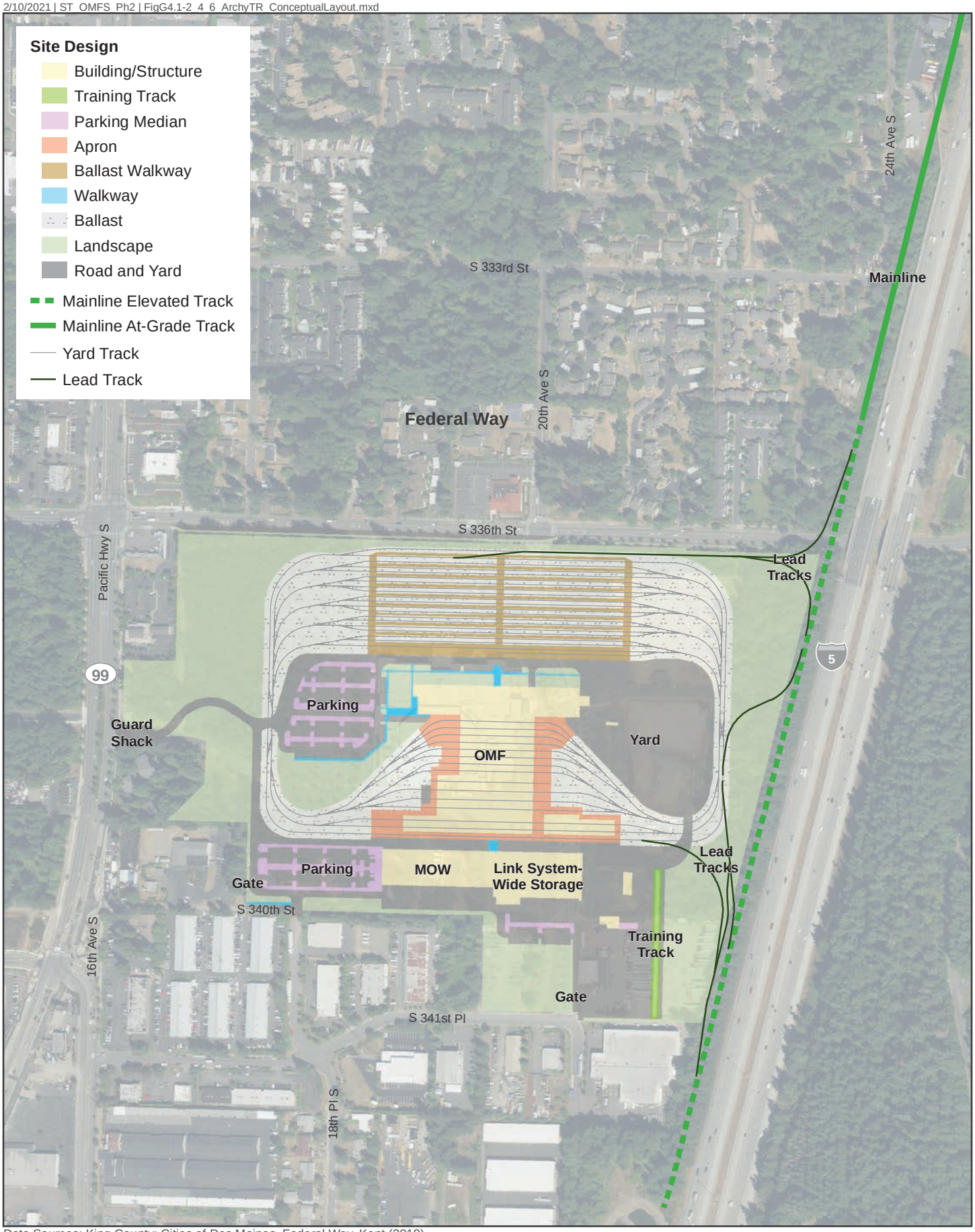
FIGURE G4.1-3
OMF South Alternatives
Midway Landfill Alternative

OMF South



Data Sources: King County; Cities of Des Moines, Federal Way, Kent (2019).

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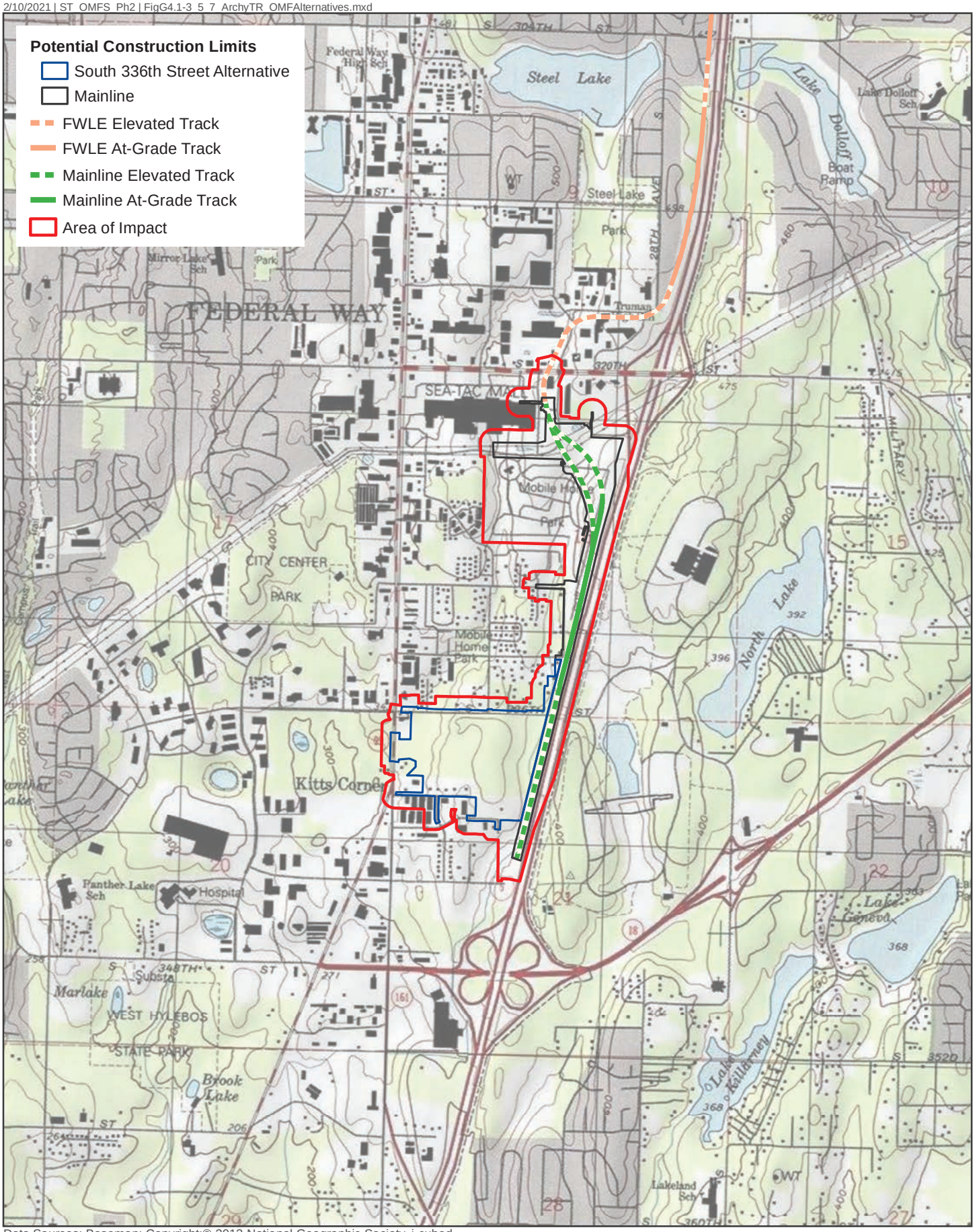
FIGURE G4.1-4
Conceptual Layout
South 336th Street Alternative

OMF South



Data Sources: Basemap: Copyright:© 2013 National Geographic Society, i-cubed

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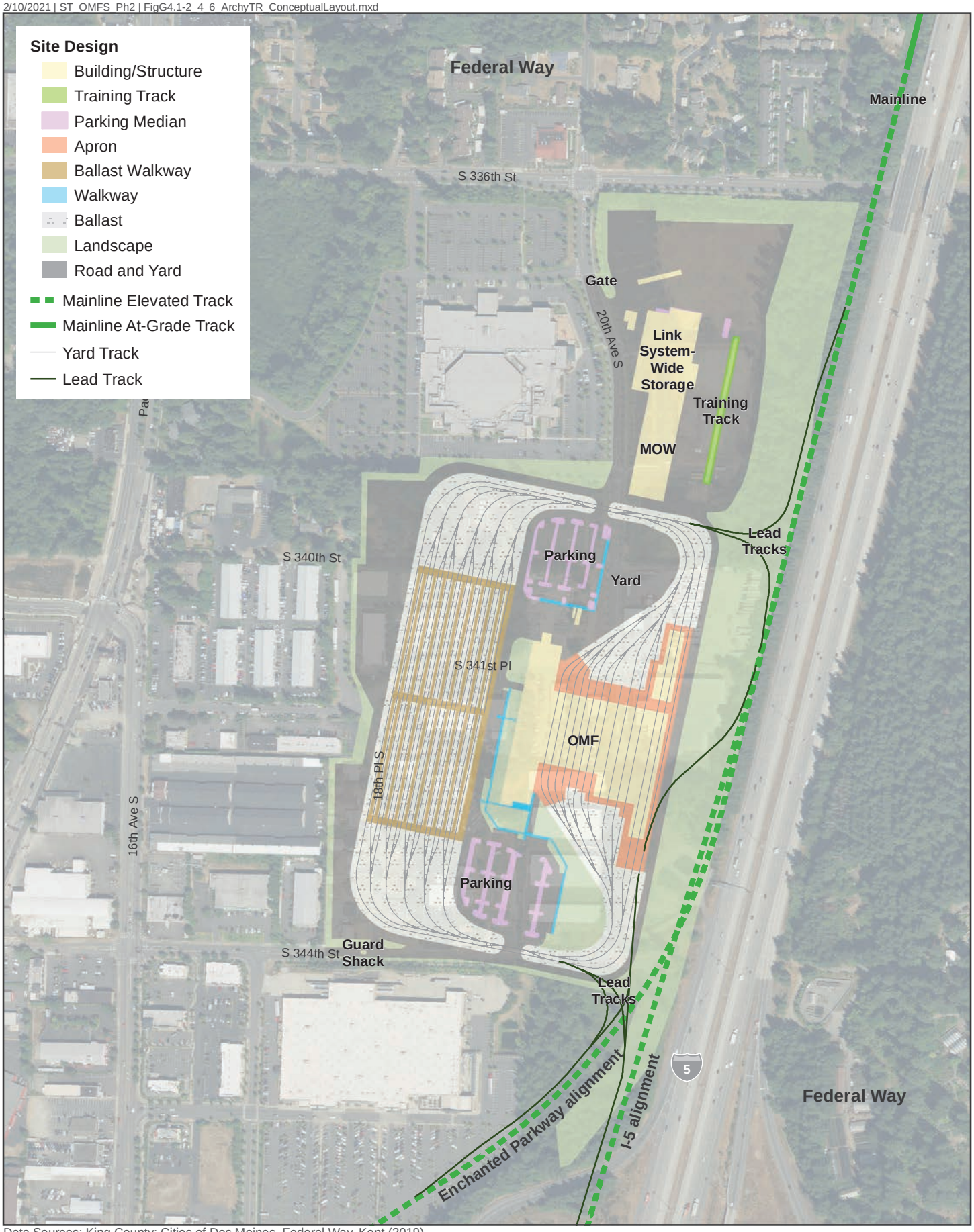
FIGURE G4.1-5
OMF South Alternatives
South 336th Street Alternative

OMF South



Data Sources: King County; Cities of Des Moines, Federal Way, Kent (2019).

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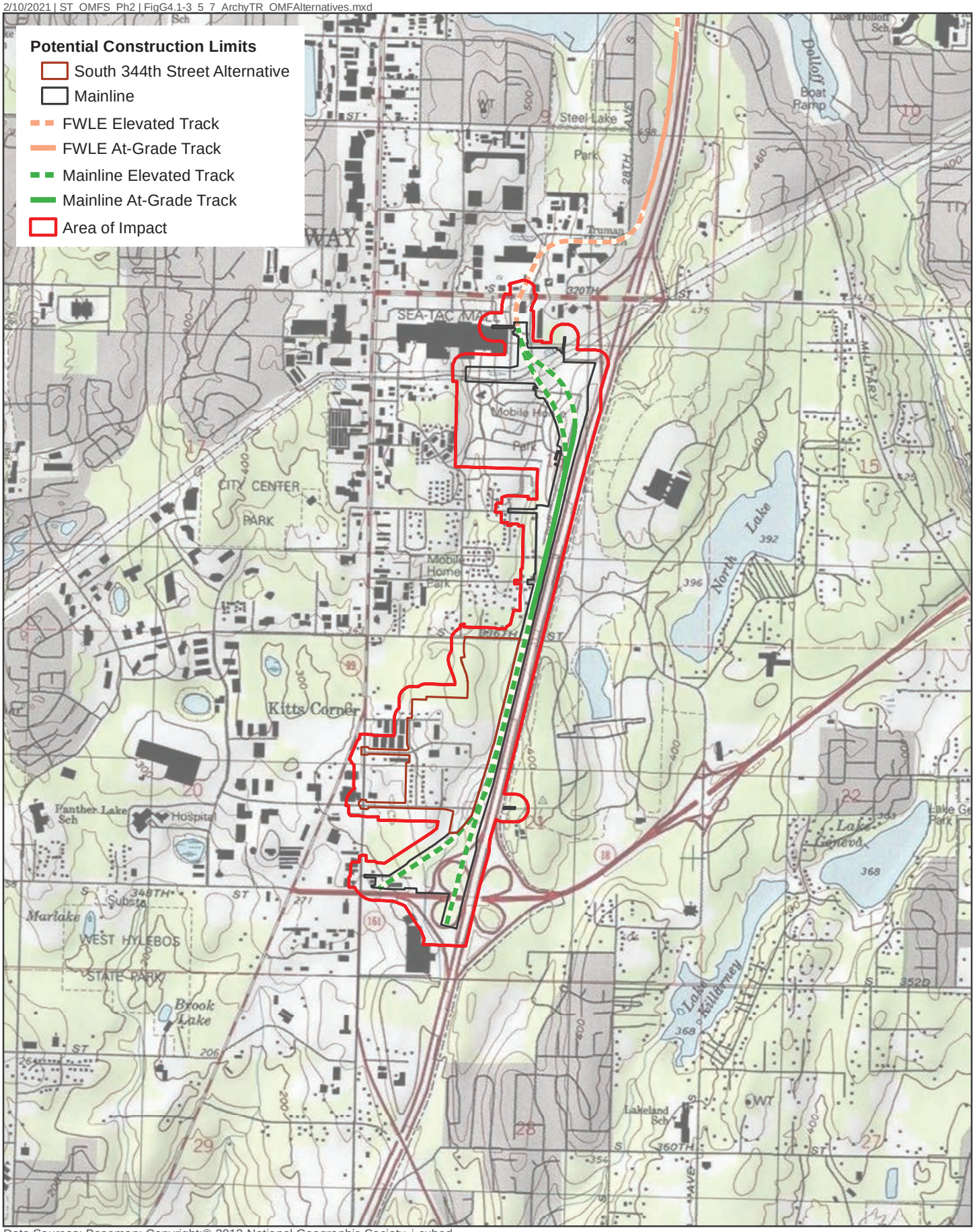
FIGURE G4.1-6
Conceptual Layout
South 344th Street Alternative

OMF South



Data Sources: Basemap: Copyright:© 2013 National Geographic Society, i-cubed

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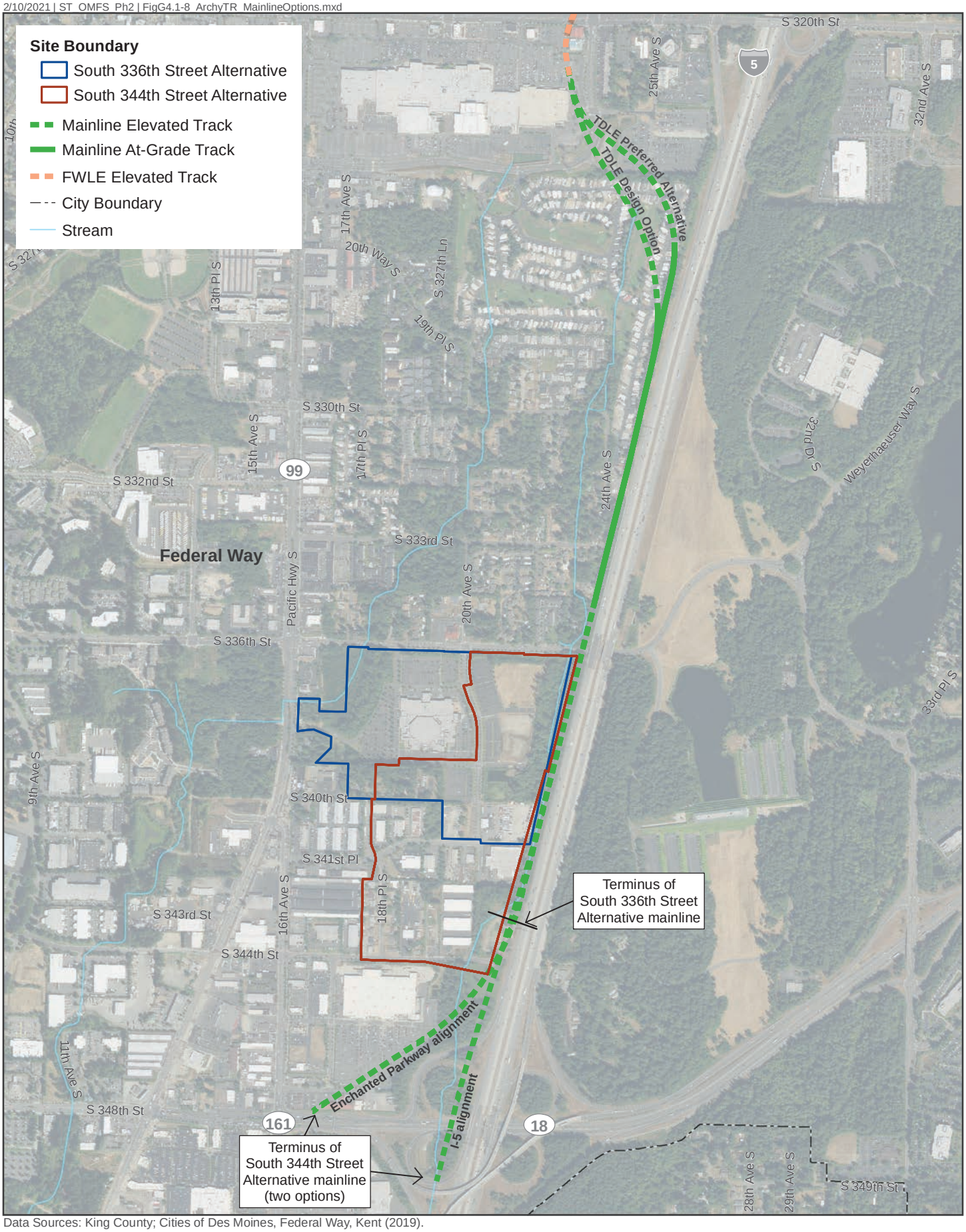
FIGURE G4.1-7
OMF South Alternatives
South 344th Street Alternative

OMF South



Data Sources: King County; Cities of Des Moines, Federal Way, Kent (2019).

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FIGURE G4.1-8
Mainline Track Options
South 336th and South 344th Street Alternatives

OMF South

1.2 Regulatory Context

Sound Transit is reviewing this project under SEPA in its capacity as lead agency. SEPA requires that project proponents consider environmental impacts, including cultural resources. Cultural resources include historic built-environment resources (buildings, structures, objects) and archaeological sites that qualify for or are listed in local city or county, state, and/or national registers of historic places.

In addition to SEPA, the State of Washington requires compliance with the cultural resources laws and regulations under the Revised Code of Washington (RCW) 27.53 Archaeological Sites and Resources, RCW 27.44 Indian Graves and Records, and RCW 68.50.645 Skeletal Human Remains—Duty to Notify.

Archaeological resources and historic-period, built-environment resources were evaluated for their eligibility on federal, state, and local historic registers, including the National Register of Historic Places (NRHP), the Washington Heritage Register (WHR), and the King County Register of Historic Places (KCRHP). A historic-period, built-environment resource may be designated as a King County Landmark if it is more than 40 years old or, in the case of a landmark district, contains resources that are more than 40 years old. This differs from NRHP, which requires that a property be at least 50 years old unless it is exceptionally important. The King County Landmark eligibility recommendations here are based on review of the King County Landmarks Commission ordinance (King County Code Chapter 20.62; King County Policy LUD 16-1 [AEP]). The cities of Kent and Federal Way have both adopted this section of the King County Code concerning the protection and preservation of landmarks.

Certified local governments are considered the experts on whether resources meet the criteria for local listing in city or county registers of historic places. Consulting parties, including DAHP, provide expert opinions on whether a proposed project has the potential to adversely impact cultural resources.

Other local regulations that were reviewed during the assessment included the following:

- City of Kent Code Chapter 14.12, Landmark Designation and Preservation, which adopts King County Code Chapter 20.26, under Ordinance No. 3809.
- City of Federal Way Code Chapter 19.285, Protection and Preservation of Landmarks, which adopts King County Code Chapter 20.26.

1.3 Agency and Tribal Coordination

Coordination with agencies and tribes is ongoing. Both the Puyallup Tribe of Indians and the Muckleshoot Indian Tribe have representatives on Sound Transit's OMF South Interagency Group. The Cultural Resources Survey Plan was provided to the Puyallup Tribe of Indians, Muckleshoot Indian Tribe, Nisqually Tribe, and Confederated Tribes and Bands of the Yakama Nation as well as DAHP for review on January 13, 2020. No comments were received on the Cultural Resources Survey Plan.

1.4 Areas of Impact

The area of impact for a project defines the boundary within which the project has the potential to impact cultural resources. As there are three alternative locations for OMF South under consideration, the project is assumed to have three potential areas of impact. The areas of impact include all project elements and areas extending from the project elements, such as

connecting tracks and construction staging areas, to the nearest tax parcel or a maximum of 200 feet, where large tax parcels are adjacent to project elements (Figures G4.1-5 through G4.1-7).

The Midway Landfill Alternative is located in Sections 21 and 22 of Township 22 North, Range 4 East (Figure G4.1-9), while both the South 336th Street and South 344th Street alternatives are located in Sections 16 and 21 of Township 21 North, Range 4 East (Figure G4.1-10, and Figure G4.1-11, respectively).

Both the South 336th Street and South 344th Street alternatives have extensive areas of overlap with each other, independent of (Figure G4.1-12) and including approximately 1.2 miles of connecting mainline tracks that could serve as the future guideway for the TDLE (Figure G4.1-13).

The vertical impacts of the project are varied across the proposed alternatives and the alternative designs. All details have not been finalized; however, basic aspects of the design have been completed for most alternatives to provide estimated height ranges for project elements. The expected depths of effect vary greatly throughout the area of impact due to area-specific soil and geological conditions.

The estimated depths of impact for the Midway Landfill alternative include partially excavated cut platforms to a depth of 10 feet below ground surface (fbgs) with drilled column supports to a depth of 120 to 180 fbgs, or complete excavation of the landfill. The general estimated depths of impact for construction at the South 336th Street and South 344th Street alternatives is a minimum of 2 fbgs to remove top soil before fill is added to the sites for stabilization, with maximum cuts of approximately 8 fbgs for the South 336th Street Alternative and approximately 18 fbgs for the South 344th Street Alternative anticipated during site levelling activities

The depths of impact for the columns supporting the elevated elements of the mainline tracks between the Federal Way Transit Center and the South 336th Street and South 344th Street alternatives range from 60 to 90 fbgs.

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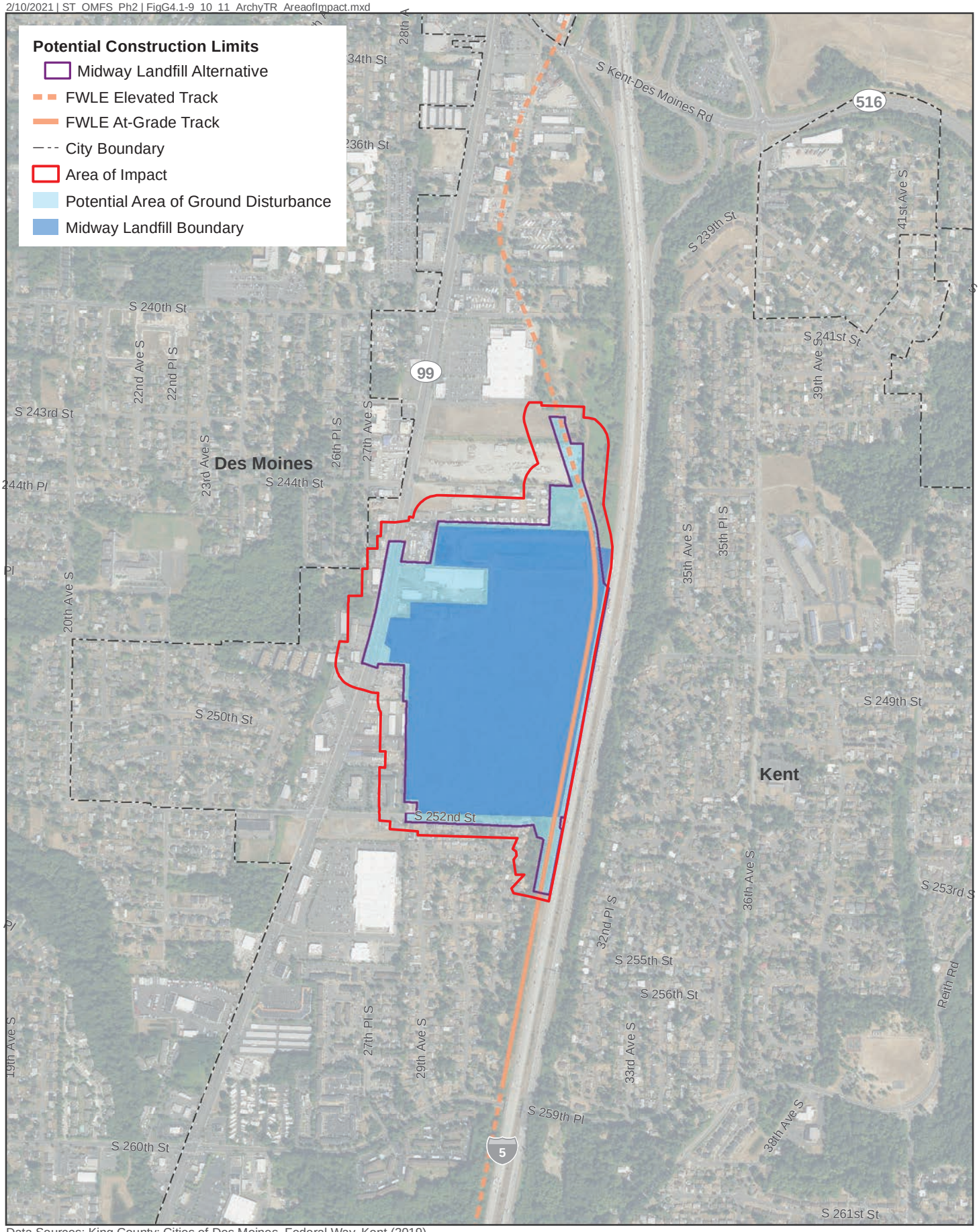

Data Sources: King County; Cities of Des Moines, Federal Way, Kent (2019).

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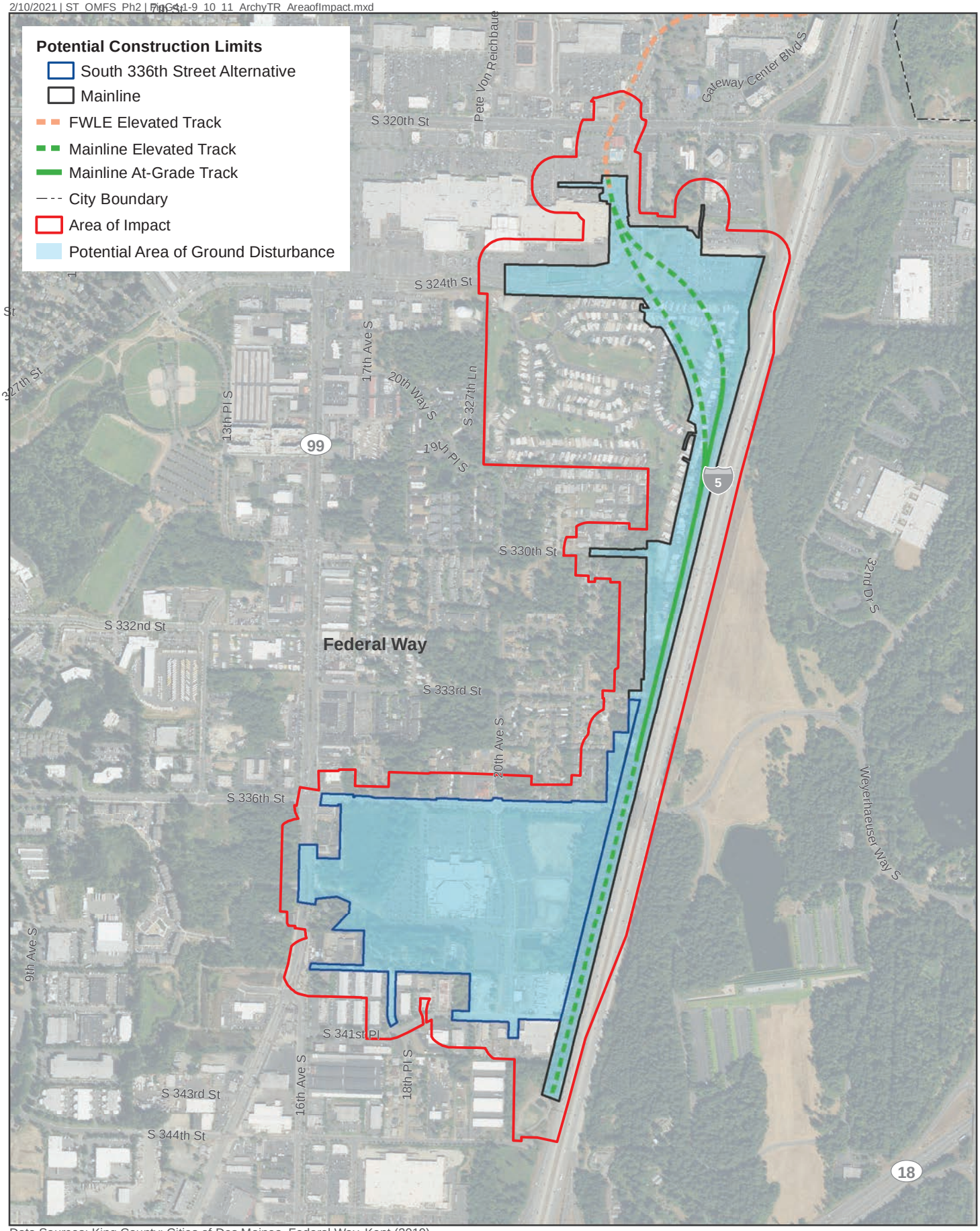
FIGURE G4.1-9
Area of Impact
Midway Landfill Alternative

OMF South



Data Sources: King County; Cities of Des Moines, Federal Way, Kent (2019).

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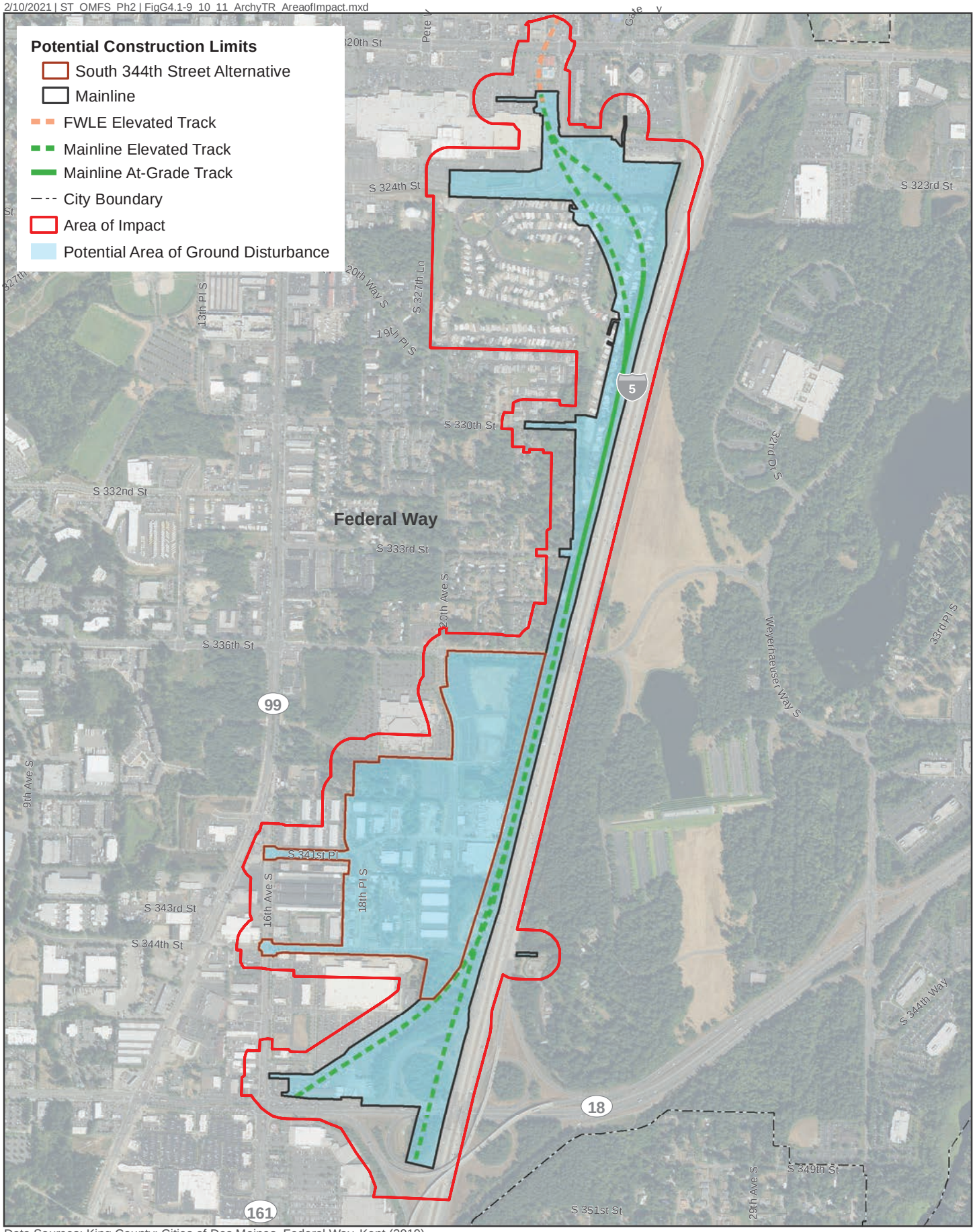
FIGURE G4.1-10
Area of Impact
South 336th Street Alternative

OMF South



Data Sources: King County; Cities of Des Moines, Federal Way, Kent (2019).

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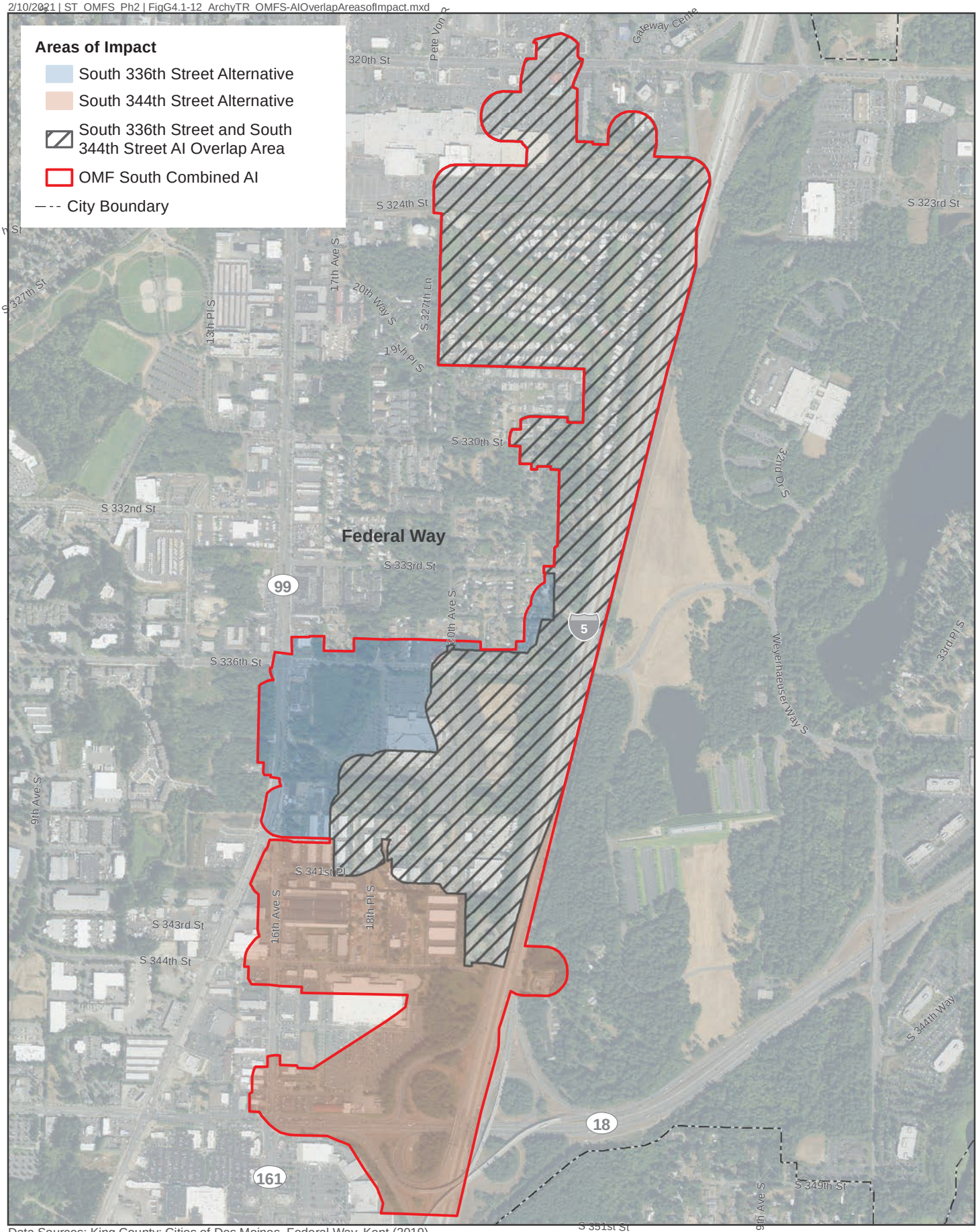
FIGURE G4.1-11
Area of Impact
South 344th Street Alternative

OMF South



Data Sources: King County; Cities of Des Moines, Federal Way, Kent (2019).

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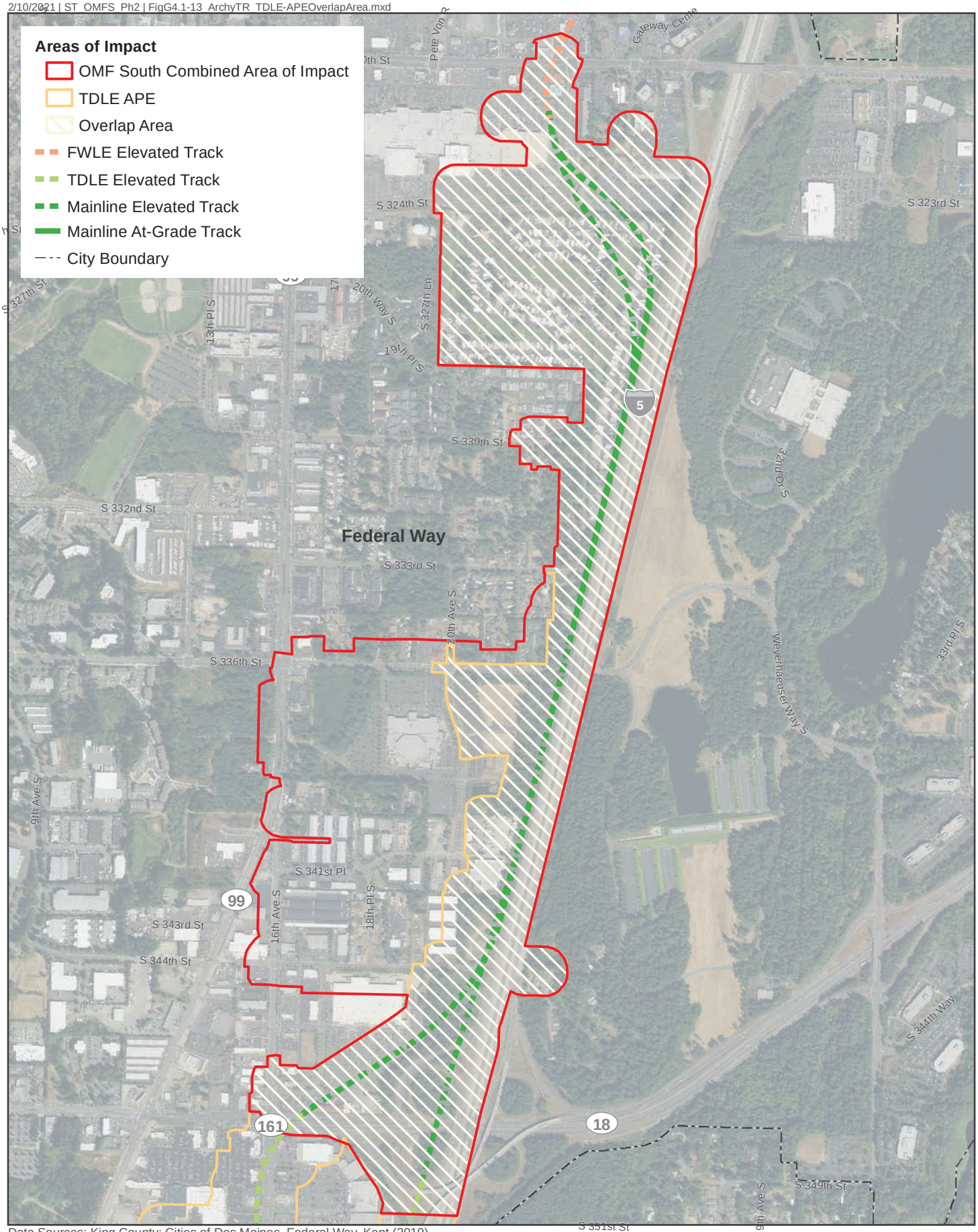
FIGURE G4.1-12
OMF South Combined Area of Impact
South 336th Street and South 344th Street Alternatives



Data Sources: King County; Cities of Des Moines, Federal Way, Kent (2019).

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FIGURE G4.1-13
TDLE APE Overlap Area
South 336th Street and South 344th Street Alternatives

OMF South

2 PREVIOUS CULTURAL RESOURCE STUDIES AND RESULTS

The initial electronic record search for the areas of impact was limited to records housed in DAHP's Washington Information System for Architectural and Archaeological Records Data (WISAARD). WISAARD includes archaeological site and isolate records, cultural resource assessments, NRHP nomination forms, historic property inventory (HPI) forms, and other publicly restricted cultural resources data. ATCRC searched the WISAARD database for the location of any cultural resources within 1 mile of the area of impact for each alternative. Additionally, ATCRC and HRA reviewed the King County Register of Historic Places to identify any locally listed resources within 1 mile of the area of impact for each alternative.

In October 2019, ATCRC and HRA supplemented the information obtained from the DAHP database with publicly accessible data, such as tax parcel records, historic area maps, Sanborn Fire Insurance Maps, the King County Map Vault, and General Lands Office (GLO) maps in order to develop a better understanding of the land-use patterns of the area. This initial background assessment was updated in June 2020. These record reviews were undertaken to ascertain the presence or absence of any previously documented archaeological, traditional cultural places, and historic-period cultural resources that may reside within the areas of impact.

The DAHP Statewide Predictive Model indicates that the areas of impact intersect areas that are at varying risk for encountering precontact cultural resources ranging from very low to moderate, with the highest risk areas for precontact and historic-period archaeological sites found within the section of the South 336th Street and South 344th Street alternatives where the mainline track is proposed.

The results of these record searches are presented for each of the areas of impact below.

2.1 Midway Landfill Alternative

The Midway Landfill Alternative is located in the Kent, south of S 246th Street, west of I-5, and is situated on the capped Midway Landfill at 24808 Pacific Highway S (Figures G4.1-2 and G4.1-5).

2.1.1 Cultural Resources Surveys

There have been 13 previous cultural resources surveys conducted within 1 mile of the area of impact for the Midway Landfill (Table G4.2-1). One ineligible cultural resource, 45KI1476, was documented within the area of direct impact.

Table G4.2-1 Cultural Resource Surveys Conducted within a 1-Mile Radius of the Midway Landfill Alternative

Source	Title	Proximity to Midway Landfill AI and Direction	Cultural Resources Identified within AI
Larson Anthropological Archaeological Services Limited (2000b)	Regional Express/ Federal Way and Star Lake Project Cultural Resource Assessment Star Lake Alternative	1 mile South	None
Iversen et al. (2001)	Pacific Highway South HOV Lanes Cultural Resources Assessment	Adjacent	None
Rooke (2002)	Letter Report: Procedures and Results of a Cultural Resources Survey of Cingular Wireless Tower Site WA-645 (Lake Fenwick)	0.65 mile SE	None
Scott (2008)	Historic Resources Survey and Inventory, Kent	Within	None
Mishkar et al. (2009)	North Twin Bridge Assessment, Des Moines	0.8 mile West	None
Goodwin (2014)	Archaeological Survey for the Proposed SC1996 Midway South Telecommunications Facility	0.3 mile East	None
Chambers and Amell (2014)	Cultural Resources Assessment for the Saltwater State Park Bridge Rehabilitation Project, Des Moines	1 mile West	None
Mather and Arthur (2015)	Archaeological Survey and Assessment of the Proposed Lakeridge Highline View Estates Subdivision (TPN 6929603575), Des Moines	0.55 mile NW	None
HDR Engineering, Inc. and CH2M Hill (2016)	Federal Way Link Extension: Historical and Archaeological Technical Report	Overlaps	None
Artifacts Consulting, Inc. (2016)	Highline College, Cultural Resources Survey	0.8 mile NW	None
Ives (2017)	Cultural Resources Survey for the WSDOT SR 509 SeaTac to I-5 Freeway Extension Project	Within	None
Hannum (2018)	Cultural Resources Assessment for the Zenith Park Site, King County, Washington	1 mile NW	None
Elliott, Chidley, and Sterner (2020)	Draft: Federal Way Link Extension, Additional Cultural Resources Inventory, King County Washington	Overlaps	45KI1476 (Not Eligible for NRHP)

HOV = high occupancy vehicle; SR = State Route

2.1.2 Ethnographic Places

There are no ethnographic tribal villages within 1 mile of the area of impact. However, there are several places within 1 mile of the Midway Landfill Alternative area of impact that have historic and mythical links to Native American populations (Hilbert et al. 2001) (Table G4.2-2).

Table G4.2-2 Recorded Ethnographic Places within a 1-Mile Radius of the Midway Landfill Alternative Area of Impact

Location	Ethnographer's Orthography	Ethnographer's Translation/Description	Source
McSorley Creek	*Tca'xgwEs*	A small creek halfway between Des Moines and Stone's Landing (Redondo).	Hilbert et al. 2001
Bank of the Green River	*Ctcagkq s*	Where a trail comes down a beach, a place on the west bank of the river, where a trail from Des Moines came over the ridge and down to the river.	Hilbert et al. 2001
Bank of the Green River	*t3ka'xwEts*	Crabapple trees / a flat in a bend in the river.	Hilbert et al. 2001
Bank of the Green River	*CugtLa'lgw1L*	Resembling a pathway; canoe trails / a side channel of the river above Henry McCabe's place.	Hilbert et al. 2001
Bank of the Green River	*bsskwEd*	Where there is a waterfall / a place formerly known as Langston's Ferry, there is also a fossil bed at this location	Hilbert et al. 2001

Note: Table is generally arranged from north to south.

2.1.3 Archaeological Sites

There is one archaeological site within this area of impact, the Midway Landfill (45KI1476), a landfill that was in use from 1966 to 1983. Site 45KI1476, the location of the Midway Landfill Alternative, has been determined not eligible for the NRHP by the FTA, with the State Historic Preservation Officer SHPO concurrence (DAHP 2020c).

The closest other recorded historic archaeological site (45KI208) is located approximately 1.05 miles east of the area of impact. The site is in the Green River Valley and consists of a broadly defined historical debris scatter and barn complex. The nearest precontact archaeological site (45KI436) is an inland shell midden located 1.35 miles west of the area of impact.

2.1.4 NRHP-Listed or Eligible Historic, Built-Environment Properties

There are no NRHP-listed resources within 1 mile of the Midway Landfill Alternative area of impact.

According to the WISAARD database, there are 24 historic, built-environment properties associated with the Highline College at 2400 S 240th Street in Des Moines, Washington, that were determined NRHP-eligible by the Federal Aviation Administration (FAA) in 2013 (DAHP 2020b). Three other properties, two bridges, the North and South Twin Bridges and the State Park Log House are located within 1.0 mile of the area of impact and have formally been determined eligible for listing in the NRHP (DAHP 2020b). None of these resources are located within this area of impact.

2.1.5 King County Landmarks

There are no King County Landmarks within 1 mile of the area of impact for the Midway Landfill.

2.1.6 Historic Maps and Aerial Photographs

The Midway Alternative was extensively disturbed from the beginning of Euro-American habitation of the area when it was logged and possibly farmed. Initial large-scale landscape

disturbance around the area of impact occurred between 1863 (GLO 1863) and 1897 (USGS 1897a, 1897b). The 1863 GLO maps indicate that the northwest quadrant of Section 21, Township 22 North, Range 4 East, was a prairie at that point in time (GLO 1863). It is unclear how densely forested the remainder of the section was prior to the land clearance identified in 1897 (USGS 1897a); however, all of the lands held by the Northern Pacific Railroad Company (NPRC) seem to have been managed in a similar manner.[1] The 1897 maps indicate that the area of impact is located within an area that was forested, then cleared by burning (whether before or after a harvest is unclear), and was in the process of being replanted (restocked) for timber harvesting at the time of the map preparation (USGS 1897a, 1897b).

The 1863 GLO maps do not identify any Native American or Euro-American features within the area of impact. The closest two features are both approximately 0.25 mile from the area of impact. The first is the state's Military Road from Seattle to Steilacoom to the east, and the second is a system of trails located north of the area of impact that trends east–west from the coast to the state's Military Road (GLO 1863).

The historic development of the area in and around the area of impact generally coincides with the further development of the transportation networks in the area. In 1897 (USGS 1897a), several homesteads are identified south and southeast of the area of impact, the closest being approximately 0.33 mile southeast on the intersection of the state's Military Road and what would become Reith Road South. Most development in the area was restricted to these travel corridors in the areas around the area of impact, until after the expansion and improvement of a dirt road across the western plateau (Kroll Map Company 1912, 1926). These expansions and improvements culminated with the completion of the White River Bypass (now SR 99) in 1928 (Seattle Times 1928).

Developments in the northwest, northeast, and southwest quadrants were subdivided and were undergoing annexation by the City of Des Moines by 1936 (Metsker 1936). The area of impact, in the southeast quadrant, was still owned by the Weyerhaeuser Timber Company. The developments surrounding the area of impact did not immediately manifest themselves as seen in 1936/1937 section aerial photographs published by King County (King County Map Vault 1936/1937b; Attachment G4-1). However, by 1957, substantial landscape changes are evident, with residential, commercial, and agricultural developments surrounding the Meade Sand and Gravel Company mine (Attachment G4-1; EarthExplorer 1957b).

2.2 South 336th Street Alternative

The South 336th Street Alternative is located in Federal Way. The alternative begins with a mainline track leading from the Federal Way Transit Center south along the western boundary of I-5 to the proposed OMF South location at the present Christian Faith Center, which extends south into an area of residential and light industry properties (Figures G4. 1-3 and G4.1-6). Note that the location overlaps with the South 344th Street area of impact, leading to similar background research results (Figure G4.1-8).

2.2.1 Cultural Resources Surveys

There have been 14 previous cultural resource assessments conducted within 1 mile of the South 336th Street area of impact, five of which were conducted in response to infrastructure

[1] The NPRC held the patent for forested areas within Section 21 (Doc. 32, WAORAA 004720). This patent included the E ½, S ½ of the SW ¼, and the NE ¼ of the SW ¼, of Section 21, Township 22 North, Range 4 East.

improvement projects (Table G4.2-3). None of these surveys identified any cultural resources within the area of impact.

Table G4.2-3 Cultural Resource Surveys Conducted within a 1-Mile Radius of the South 336th Street Alternative

Source	Title	Proximity to South 336th St AI and Direction	Cultural Resources identified within AI
Larson Anthropological Archaeological Services Limited (2000a)	Regional Express/Federal Way and Star Lake Project Cultural Resource Assessment Federal Way Alternative	Within	None
Luttrell (2003)	Cultural Resources Investigations for Washington Department of Transportation's SR 161: Milton Way to South 360th Street Project	0.80 mile south	None
Earley (2005)	Cultural Resources Assessment of the Thompson Park Project, Federal Way	Adjacent	None
Luttrell (2005)	Letter to Kimberly Farley Regarding I-5: Pierce County Line to Tukwila Stage 4 HOV Project	Within	None
Luttrell (2006)	Cultural Resources Investigations for the Washington Department of Fish and Wildlife's Lake Dolloff Access Redevelopment Project	1 mile northeast	None
Bard (2006)	Final Report: Cultural Resources discipline Report for I-5 SR 161/SR 18 Triangle Improvements	0.65 mile south	None
Tingwall (2008)	Cultural Resources Report, Pacific Highway South (SR 99) Phase IV Improvements Project, Federal Way.	0.70 mile north	None
Chambers (2009)	Cultural Resources Assessment for the City of Edgewood, Meridian Avenue Sewer LID No. 1 Improvement Project	0.85 mile south	None
Baldwin (2014)	Cultural Resources Assessment for the Pacific Highway South HOV Lanes Phase V (S 340th Street to S 359th Street) Project, Federal Way	Within	None
Stripe (2016)	Weyerhaeuser Property Cultural Resource Investigation	0.45 mile west	None
HDR Engineering, Inc. and CH2M Hill (2016)	Federal Way Link Extension: Historical and Archaeological Technical Report	Overlaps	None
Stripe (2017)	Talasaea Consultants Project No. TAL-1572F, Federal Way Development Project	0.50 mile west	None
Willamette Cultural Resources Associates (2019)	Creekside Commons Development (In Progress)	0.1 mile north	None
Elliott, Chidley, and Sterner (2020)	Draft: Federal Way Link Extension, Additional Cultural Resources Inventory, King County Washington	0.50 mile north	None

2.2.2 Ethnographic Places

There are no tribal villages within 1 mile of any of the project alternatives. However, there are several places within 1 mile that have historic and mythical links to Native American populations. Both "Biskwa'd1s" (Steele's Lake) and "B1skwa'dis" (Lake Doloff) are approximately 0.95 to 1

mile north of the area of impact. One additional ethnographic place, Tso'Lkob1d, is linked to Steel Lake by mythology (Table G4.2-4).

Table G4.2-4 Recorded Ethnographic Places within a 1-Mile Radius of the South 336th Street Alternative Area of Impact

Location	Ethnographer's Orthography	Ethnographer's Translation/Description	Source
Steel Lake	*Biskwa'd1s*	Where there are whales, the name refers to the story recounted regarding *Tso'Lkab1d*.	Hilbert et al. 2001
Lake Doloff	*B1skwa'dis*	Where there are whales, source of Mill Creek.	Hilbert et al. 2001

2.2.3 Archaeological Sites

Two historical archaeological sites (45KI719 and 45KI148) are located within a 1-mile radius of the area of impact. Site 45KI719 was a historical building foundation located approximately 400 feet (180 meters) south of the South 336th Street area of impact. The site was determined not eligible for listing in the NRHP and subsequently removed by WSDOT during construction associated with I-5 improvements (DAHP 2005; Bartoy 2013). Site 45KI1481 consists of a series of historical roads related to residential development, built between 1935 and the 1950s, that was later partially demolished. It has been determined potentially eligible for listing in the NRHP (Colon 2020).

2.2.4 NRHP-Listed or Eligible Historic, Built-Environment Properties

There are no NRHP-listed resources within 1 mile of the South 336th Street area of impact.

According to DAHP's WISAARD database, there are two historic, built-environment properties determined to be eligible for the NRHP within 1-mile of the area of impact: the Calvary Lutheran Church and the Weyerhaeuser Headquarters (DAHP 2020b). Neither of these resources are located within this area of impact.

2.2.5 King County Landmarks

There are no King County Landmarks within 1 mile of the South 336th Street area of impact.

2.2.6 Historic Maps and Aerial Photographs

The South 336th Street area of impact has been extensively disturbed from the beginning of Euro-American habitation of the area when it was logged and possibly farmed.[2] This initial disturbance likely occurred following the land sales from the NPRC, which was granted the land patents to most of Section 21, Township 21 North, Range 4 East (WA004720 [1895] and WA 060199 [GLO 1894]). The lands were then sold by the NPRC in a variety of lot sizes that would promptly change hands as individual fortunes rose and fell. Over 90 percent of the area of impact for this alternative is located within the northwest quadrant of Section 21. The landscape history following initial land sales indicates a general dereliction of the lands within the area of impact,

[2] Due to the extensive overlap between the South 336th Street and South 344th Street alternatives, portions of the Historic Maps and Aerial Photograph Sections are repetitive.

likely in favor of forestry-related endeavors given the substandard soil conditions. Initial settlements within the area began to the west and north of the area of impact (USGS 1897a, USGS 1897b, USGS 1900).

Development within the area of impact was relatively minimal prior to World War II (Attachment G4-1; King County Map Vault 1936/1937a and 1936/1937c; United States War Department 1944). Development began to intensify in the area of impact by 1949 with the installation of the Bonneville Power Administration (BPA) powerline between 1935 and 1949, and residential development along the northern boundary (South 320th Street), the western boundary along SR 99, the central boundary of the OMF alternative at South 336th Street, and the southern edge of the area of impact along South 336th Place (Attachment G4-1; USGS 1949,1957,1961).

Residential and commercial development slowly expanded along these corridors through the 1950s and early 1960s (Attachment G4-1; USGS 1957 and 1961). Residential, commercial, and light industrial development within the area of impact accelerated following the completion of I-5 through the area in 1963, which shifted historic development patterns from SR 99 to locations with easy access to I-5 (Attachment G4-1; King County Map Vault 1965a and 1965b; USGS 1962–1968 and 1969–1972). The extensive modern land clearance and development currently in evidence within the area of impact did not occur until 2005 with the construction of the Christian Faith Center (Google Earth 2019).

2.3 South 344th Street Alternative

The South 344th Street Alternative is located in Federal Way. The alternative begins with a mainline track leading from the Federal Way Transit Center south along the western boundary of I-5 to each alternative location (Figures G4. 1-4 and G4.1-7). The South 344th Street Alternative would be located at the east of the present Christian Faith Center, overlapping the South 336th Street Alternative and extending south into an area of residential and light industry properties (Figure G4.1-8). Note that the location overlaps with the South 336th Street area of impact, leading to similar background research results.

2.3.1 Cultural Resources Surveys

There have been 15 previous cultural resource assessments conducted within 1 mile of the South 344th Street area of impact, 11 of which were conducted in response to infrastructure improvement projects (Table G4.2-5). One of these surveys identified a cultural resource, 45KI1719, within the area of impact.

Table G4.2-5 Cultural Resource Surveys Conducted within a 1-Mile Radius of the South 344th Street Alternative

Source	Title	Proximity to South 344th St AI and direction	Cultural Resources identified within AI
Larson Anthropological Archaeological Services Limited (2000a)	Regional Express/Federal Way and Star Lake Project Cultural Resource Assessment Federal Way Alternative	Within	None
Luttrell (2003)	Cultural Resources Investigations for Washington Department of Transportation's SR 161: Milton Way to South 360th Street Project	0.65 mile south	None
Earley (2005)	Cultural Resources Assessment of the Thompson Park Project, Federal Way	Adjacent	None
Luttrell (2005)	Letter to Kimberly Farley Regarding I-5: Pierce County Line to Tukwila Stage 4 HOV Project	Within	45KI719: No longer extant
Luttrell (2006)	Cultural Resources Investigations for the Washington Department of Fish and Wildlife's Lake Dolloff Access Redevelopment Project	1 mile northeast	None
Bard (2006)	Final Report: Cultural Resources discipline Report for I-5 SR 161/SR 18 Triangle Improvements	0.50 mile south	None
Tingwall (2008)	Cultural Resources Report, Pacific Highway South (SR 99) Phase IV Improvements Project, Federal Way	0.70 mile north	None
Chambers (2009)	Cultural Resources Assessment for the City of Edgewood, Meridian Avenue Sewer LID No. 1 Improvement Project	0.70 mile south	None
Baldwin (2014)	Cultural Resources Assessment for the Pacific Highway South HOV Lanes Phase V (S 340th Street to S 359th Street) Project, Federal Way	Within	None
Baldwin (2015)	Cultural Resources Assessment for the South 356th Street Roadway Improvements Project, Federal Way	0.80 mile south	None
Stripe (2016)	Weyerhaeuser Property Cultural Resource Investigation	0.45 mile west	None
HDR Engineering, Inc. and CH2M Hill (2016)	Federal Way Link Extension: Historical and Archaeological Technical Report	Overlaps	None
Stripe (2017)	Talasaea Consultants Project No. TAL-1572F, Federal Way Development Project	0.50 mile west	None
Willamette Cultural Resources Associates (2019)	Creekside Commons Development (In Progress)	0.1 mile north	None
Elliott, Chidley, and Sterner (2020)	Draft: Federal Way Link Extension, Additional Cultural Resources Inventory, King County Washington	0.50 mile north	None

2.3.2 Ethnographic Places

There are no tribal villages within 1 mile of any of the project alternatives. However, there are several places that have historic and mythical links to Native American populations. Both "Biskwa'd1s" (Steele's Lake) and "B1skwa'dis" (Lake Doloff) are approximately 0.95 to 1 mile away north of the area of impact. One additional ethnographic place, *Tso'Lkob1d*, is linked to Steel Lake by mythology (Table G4.2-6).

Table G4.2-6 Recorded Ethnographic Places within a 1-Mile Radius of the South 344th Street Alternative Area of Impact

Location	Ethnographer's Orthography	Ethnographer's Translation/Description	Source
Steel Lake	*Biskwa'd1s*	Where there are whales, the name refers to the story recounted regarding *Tso'Lkab1d*.	Hilbert et al. 2001
Lake Doloff	*B1skwa'dis*	Where there are whales, source of Mill Creek.	Hilbert et al. 2001

2.3.3 Archaeological Sites

Archaeological site 45KI719 is located within the southern section of the area of impact within the southern mainline section. The site consisted of a historic building foundation that has been determined not eligible for listing in the NRHP and was subsequently removed by WSDOT during construction associated with I-5 improvements (DAHP 2005; Bartoy 2013). Site 45KI1481 consists of a series of historical roads related to residential development, built between 1935 and the 1950s, that was later partially demolished. Site 45KI1481 has been determined potentially eligible for listing in the NRHP (Colon 2020). Site 45KI719 is located within this area of direct impacts but is no longer extant. Site 45KI1481 is not located within this area of direct impacts.

2.3.4 NRHP-Eligible or Listed Historic, Built-Environment Properties

There are no NRHP-listed resources within 1 mile of the South 344th Street Alternative area of impact.

According to DAHP's WISAARD database, there are three historic, built-environment properties within 1 mile of the area of impact that have been determined eligible for the NRHP. The People's National Bank, Calvary Lutheran Church, and the Weyerhaeuser Headquarters building (DAHP 2020b). None of these are located within the South 344th Street area of impact.

2.3.5 King County Landmarks

There are no King County Landmarks within 1 mile of the areas of impact for the South 344th Street area of impact.

2.3.6 Historic Maps and Aerial Photographs

The South 344th Street area of impact has been extensively disturbed from the beginning of Euro-American habitation of the area when it was logged and possibly farmed.[3] This initial disturbance likely occurred following the land sales from the NPRC, which was granted the land patents to most of Section 21, Township 21 North, Range 4 East (WA004720 [1895] and WA 060199 [1894]). The lands were then sold in a variety of lot sizes that promptly changed hands as individual fortunes rose and fell. Over 90 percent of the area of impact is located within the northwest quadrant of Section 21. The landscape history following initial land sales indicates a general dereliction of the lands within the area of impact, likely in favor of forestry-related

[3] Due to the extensive overlap between the South 336th Street and South 344th Street alternatives, portions of the Historic Maps and Aerial Photograph Sections are repetitive.

endeavors given substandard soil conditions. Initial settlements within the area began to the west and north of the area of impact (USGS 1897a, USGS 1897b, USGS 1900).

Development within the area of impact was relatively minimal prior to World War II (Attachment G4-1; United States War Department 1944). Development began to intensify in the area of impact by 1949 with the installation of the BPA powerline between 1935 and 1949 (Attachment G4-1), and residential development along the northern boundary (South 320th Street), the western boundary along SR 99, South 341st Place, and South 344th Street (Attachment G4-1; USGS 1949,1957,1961).

Residential and commercial development slowly expanded along these roadways through the 1950s and early 1960s (Attachment G4-1; USGS 1957 and 1961). Residential, commercial, and light industrial development accelerated within the area of impact following the completion of I-5 through the area in 1963, although the development shifted from historic development patterns around SR 99 and South 344th Street to locations with easy access to I-5, particularly South 320th Street and South 348th Street (Attachment G4-1; King County Map Vault 1965a and 1965b; USGS 1962–1968 and 1969–1972). The extensive modern land clearance and development currently in evidence within the area of impact did not occur until the 1980s (Attachment G4-1; USGS 1981–1991).

3 NATURAL AND CULTURAL CONTEXT

As described in Section 2, ATCRC supplemented information obtained from DAHP's database with publicly accessible data. This background review assisted with identification of areas where context was necessary for the evaluation of the significance and NRHP-eligibility of cultural resources identified with the areas of impact per SEPA and 36 CFR 60.4 (NHPA 1966 as amended), Criteria for Evaluation, and in guidance provided in National Register Bulletin 15 (NPS 1995).

The following sections summarize the environmental, precontact, ethnographic, and historical contexts relevant to the Puget Sound region and provide the general project area setting. Following this section is a more specific history for each of the project areas of impact.

3.1 Environmental Context

The areas of impact are located at the southern end of the Puget Lowland. The Puget Lowland is a physiographic province that was shaped by several periods of extensive glaciation during the late Pleistocene (Lasmanis 1991). The Vashon Stade of the Fraser Glaciation began around 18,000 years before present (BP) with an advance of the Cordilleran ice sheet into the lowlands (Porter and Swanson 1998). The Puget Lobe of the ice sheet flowed down into the Puget Lowland and reached its terminus just south of Olympia between 14,500 and 14,000 BP.

The Puget Lobe began to retreat shortly after reaching its terminus. Marine waters entered the lowlands that had been carved out by the glacier and filled Puget Sound. The remaining ice was floated and wasted away rapidly. Glaciomarine drift deposits were released from the melting glacial ice and deposited on the sea floor across the northern and central Puget Lowland, causing the land to rebound and relative sea levels to fall and expose glacial outwash deposits (Clague and James 2002). About 11,600 to 10,000 BP, the Cordilleran ice sheet advanced once again, leaving glacial till and outwash deposits in much of northwestern Washington (Easterbrook 2003). Sediments were deposited and often reworked as glaciers advanced and retreated, and glacial till and outwash deposits were left across much of the region at the end of the last glacial period (Snyder et al. 1973).

During the last Ice Age (the Pleistocene Epoch), the Puget Sound was covered by the thick Cordilleran ice sheet. In the last interval, known as the Fraser Glaciation, the Puget Lobe covered Puget Sound with up to 1,250 meters of ice (Thorson 1980). The Puget Lobe blocked north-flowing streams and created a system of proglacial lakes that were fed by ice-marginal and sub-glacial meltwater systems.

About 15,000 years ago, the Puget Lobe started to retreat northward toward Port Townsend, later retreating from what is now the Strait of Juan de Fuca. Remains of the glacial outwash plain, glacial moraines, kettle ponds, and old river terraces are still visible today and represent ground surfaces as old as 11,000 to 15,000 years. Lowlands formed as glacial outwash channels to both the east and south of the areas of impact (Forsman et al. 1998; Thorson 1980). The geological foundation for each area of impact is continental glacial till-drift, predominantly under gravelly sandy loams with urban land and minor elements of sandy loam (NRCS 2019; WaDGER 2016).

Precontact Period

The cultural history of the Pacific Northwest and Puget Sound region has great temporal depth and encompasses the earliest periods of human settlement of North America

(e.g., Kopperl et al. 2015; Kopperl et al. 2016). Given the geologic information presented above and the age of the landforms within the areas of impact, it is possible that archaeological sites dating throughout the period of known human occupation in the region could be encountered within the areas of impact. In order to frame an understanding of the types of sites that may be anticipated (as discussed in Section 6 below), a generalized cultural chronology adapted from that of Matson and Coupland (2009) is presented below.

Earliest Cultures (14,000+ to 10,000 BP)

The earliest documented settlement in the Puget Sound region begins about 14,000 BP (Matson and Coupland 2009). During this period, humans were continually adapting to the region, which includes a dynamic landscape of glacial retreat as well as climatic and environmental change (Matson and Coupland 2009). Between about 14,000 and 10,000 BP, it has been hypothesized that there was a general continuity in settlement, subsistence, and technologies. Archaeological evidence from this period indicates that human social groups were probably small, highly mobile, and reliant on seasonally available resources across the landscape (Ames and Maschner 1999; Matson and Coupland 2009).

Traditionally, the earliest occupation recognized in North America and the Pacific Northwest has been the Clovis culture (12,000 to 11,000 BP) with its distinctive fluted projectile points (Matson and Coupland 2009). Clovis projectile points are widely distributed in the Puget Sound region, all of them surface finds (Croes et al. 2008). There is also growing evidence of an earlier, pre-Clovis occupation in the Northwest (e.g., Paisley caves in southeastern Oregon at 14,400 BP [Gilbert et al. 2008; Beck and Jones 2010, 2012]).

Several archaeological sites provide information about the earliest period of occupation in Washington. Remains found at the Manis mastodon site near Sequim, Washington, suggests humans hunted mastodon as early as 13,800 BP (Waters et al. 2011). The Ayer Pond bison remains from Orcas Island date to approximately 14,000 BP and include evidence of human butchering (Kenady et al. 2011). The Richey-Roberts site in Wenatchee, Washington, contained a large cache of Clovis points and bone rods dated to ca 13,000 to 12,000 BP (Kirk and Daugherty 2007). Within the Puget Sound lowlands, the Bear Creek site (45KI839) in Redmond, Washington, is the only example of a stratified site dating to this earliest period of human occupation. The site contains a large flaked stone assemblage and includes both stemmed and concave base projectile points (Kopperl et al. 2015).

The Archaic (10,000 to 5,000 BP)

The Archaic period in the Puget Sound region is one with a few distinct types of archaeological sites. These distinct site types have led archaeologists to hypothesize that occupants of the region during this period continued to follow a highly mobile settlement pattern focused on terrestrial game supplemented by plant processing and use of aquatic environments to a lesser extent (Ames and Maschner 1999). Archaeological features and faunal remains from archaic period sites are rare but when they are found they seem to indicate a well-developed land-use strategy (Chatters et al. 2011).

Archaeological sites from this period are often characterized by the presence of larger laurel-leaf shaped blades/projectile points and are part of a tradition that goes by many regional names. In the Puget Sound region, this time period is often called the Cascade Phase (Matson and Coupland 2009), and localized material culture complex names like Olcott (Kidd 1964) fall into this phase. In addition to laurel-leaf-shaped bifaces, other flaked stone tools (e.g., cobble tools), blade

cores, and flaking debris are commonly found in association at Cascade sites (Carlson 1990; Miss and Campbell 1991; Matson 1985; Morgan 1999). Most commonly, sites dating to this period, especially Olcott sites, are generally found in upland settings and on higher river terraces. The sites are likely resource procurement and processing camps focused on exploitation of upland game and wild plant foods, but subsistence adaptations for this period are poorly understood. Although faunal remains for sites dating to this period are rare, mammalian and fish remains have been reported (Chatters et al. 2011). What is known about subsistence and settlement patterns from this period comes from sites like Glenrose Cannery (DgRr6) site in British Columbia, the Dalles Roadcut site (35WS8) on the Columbia River, and the Granite Falls site (45SN303) in western Washington, among others (Chatters et al. 2011; Kopperl et al. 2016). In the Puget Sound, Olcott-style points have been reported in private collections throughout the region as well as inland areas of islands in the Puget Sound (Deppen et al. 2014; Taylor et al. 2009 and 2011). Lowland sites dating to this period include the Marymoor site (45KI9), and the DuPont Southwest site (45PI172), dating ca 6,000 BP and containing the earliest shell lenses in the Puget lowlands along with other tools and evidence of shellfish processing (Kopperl et al. 2016). These sites have components into the following phase that are discussed in the following section.

Development of Coastal Lifeways (5,000 to 3,500 BP)

After about 5,000 BP, archaeological evidence suggests that distinctive regional cultures developed with settlement and subsistence patterns that differ from those of the earlier adaptations in western Washington (Kopperl et al. 2016). Throughout this period, subsistence among Puget Sound groups becomes increasingly focused on marine resources, particularly shellfish and salmon, along with exploitation of a broad spectrum of other intertidal and upland subsistence resources. Shell middens become more common during this period, and these sites provide some of the best insights into shifting subsistence regimes. During this period, settlement patterns appear to become more intensive in localized areas, indicating reduced residential mobility (*sensu* Binford 1980) through time. New technologies are also present, among them ground stone tools and bone tools (Larson and Lewarch 1995; Ames and Maschner 1999; Matson and Coupland 2009). Western red cedar becomes a dominant tree in the region during this period, and wood-working adzes appear as early as 5,000 years ago, with evidence of canoe technology and construction of large plank houses by at least 2,000 to 3,000 years ago (Hebda and Matthews 1984; Donald 2003; Matson and Coupland 2009). With the rise in sea level during this period, earlier sites in coastal settings are likely to be submerged or have eroded away (Larson and Lewarch 1995; Kopperl et al. 2016).

Several previously excavated archaeological sites dating to this time period provide information relevant to the general history of the Puget Sound lowlands. The Marymoor site (45KI9), located near the juncture of the Sammamish River and Bear Creek in King County, has cultural deposits dating from approximately 6,000 to 1,500 BP. The artifact assemblage contains flaked stone tools, stone tool manufacture, and evidence of food processing dating to both this and the preceding period (Greengo 1966; Lockwood 2016). The DuPont Southwest site (45PI72) is on a bluff overlooking the Nisqually Reach in the south Puget Sound (Wessen 1969). The site was tested and contains flaked stone artifacts along with lenses of shell and other food remains, with the oldest calibrated radiocarbon date ranging from 6,180 to 5,930 BP and the most recent at 3,000 BP. The West Point sites, 45KI428 and 45KI29, in West Seattle are shell middens that have cultural deposits dating to this period. The cultural deposits at the site contain at least five distinct camping and food processing loci dating from 4,200 to 200 BP. Material remains included faunal bone, ground stone, and flaked stone tools, and subsistence remains include sea and terrestrial mammal remains, birds, fish, and shellfish (Larson and Lewarch 1995).The Bray site (45PI1276) located on a terrace above the White River near Sumner, Washington (Jolivette and Huber 2016) dates to approximately 3,800 to 2,500 BP and includes several earth ovens, an

array of dart points, microblades, ground stone, and steatite beads. The earth ovens at the Bray site appear to be similar those used to process camas bulbs in sites in eastern Washington; however, no evidence to support such use was found.

The Northwest Coast Cultural Pattern (3,500 to 1,500 BP)

Development of the Northwest Coast cultural pattern in the Puget lowlands (ca 3,500 to 1,500 BP) is marked by continued decrease in residential mobility and is accompanied by evidence of increased social complexity (e.g., Larson and Lewarch 1995). The majority of shell midden sites in the Puget Sound region date to this and, in part, to the preceding period (Taylor et al 2011). Residential stability and logistic settlement patterns are in evidence during this period and seen by increases in lowland and upland limited activity procurement sites associated with spring and summer fishing and root-gathering areas as well as specialized base camps and permanent or semi-permanent winter villages (Kopperl et al. 2016). The latter are associated with distinct longer-term community groupings, especially in the form of large multifamily plank houses. Social stratification is seen in the archaeological record of the region, through differentiation in burial practices and wealth item distribution (Ames and Maschner 1999; Lewarch and Larson 1995).

Also distinctive from the previous period is the marked degree of subsistence intensification as shown by the presence of large-scale fish harvesting technologies (nets and weirs), large-scale storage of salmon, and winter storage of shellfish. Village sites are widely distributed in all coastal areas of Puget Sound (Nelson 1990; Ames and Maschner 1999; Matson and Coupland 2009). Fish weirs and other constructed features are often found in association with large village sites. Common artifact assemblages consist of a range of hunting, fishing, and food processing tools; bone and shell implements; and dense midden deposits. By the end of the period, wide similarities to ethnographically described contact-period cultures in the Puget Sound lowlands are evident (Ames and Maschner 1999; Matson and Coupland 2009). The Marymoor site (45KI9) has cultural deposits dated at 2,500 BP. The long-term occupations at West Point (45KI428 and 45KI29) in King County and the Bray site in Pierce County (45PI1276) contain cultural deposits that extend into this period and provide settlement and subsistence information. Dated coastal sites from this and the preceding time period appear to be relatively rare in the southern King and Pierce counties, perhaps due in part to destruction from development, or burial beneath historic-period land fill deposits.

Late Northwest Coast Culture (1,500 BP to ca 200 BP)

The period (1,500 to 200 BP), when European and American explorers arrived in the region, is characterized by continued enhancement of material culture and social complexity from that noted in the previous period (Nelson 1990; Ames and Maschner 1999; Matson and Coupland 2009). These include widespread occupation of permanent and semi-permanent coastal villages, continued intensive procurement and storage of salmon and shellfish resources, and hereditary inequality throughout the coastal cultures of the Pacific Northwest, including the Puget Sound region. Village sites have been identified in the Puget Sound lowlands, typically located adjacent to, or near, river or marine transportation routes (Larson and Lewarch 1995; Ames and Maschner 1999).

Common artifact assemblages consist of a range of hunting, fishing and food processing tools, bone and shell implements, and midden deposits. This period is dominated by settlement along the coastlines and along streams and rivers, with far greater specialization of technology than the preceding period. Trade goods become relatively abundant, indicating extensive trade networks up and down the coast as well as with inland plateau neighbors (Wessen 1985). As in the preceding period, salmon was among the primary food sources in this time period. Fish weirs

and preserved netting dating to this period have been found at Wapato Creek in Tacoma (45PI47) and along the Green River (Ballard 1957; Munsell nd).

Three archaeological sites dating to the Late Northwest Coast Culture period are 3 to 7 miles south of the Federal Way Alternatives. All three were discovered during deep coring or excavation along the Puyallup River and tributaries. The *Xaxtl'abish* site (45PI974) is a midden deposit near the bank of Hylebos Creek north of the I-5 corridor and has been radiocarbon dated to ca 1,100 BP. Site deposits were found at a depth of 6 feet below the surface and were composed of shell, faunal remains, and fire-cracked rock (Shantry et al. 2010). Site 45PI930 is located east of I-5 on the south side of the Puyallup River. The site dates to ca 1,040 to 1,240 BP and is reported as a precontact village containing lithic, faunal, and botanical remains. Cultural deposits were found from 12 to 22 feet below ground surface on the west side of the Puyallup River (Sharpe et al. 2009). Site 45PI967, a shell midden on the south bank of the Puyallup River near Clear Creek, was found during backhoe testing approximately 8 feet below ground surface and dates to approximately 400 to 200 BP. The artifact assemblage consisted of burned and unburned fish bones, botanical remains, flaked and ground stone artifacts, and fire-cracked rock (Shufelt 2009).

This final precontact period of Northwest Coast Culture and its lifeways is characterized by dramatic changes to its cultures, lifeways, and communal organization with the influx of Euro-American material goods, diseases, and technologies throughout the Puget Sound and the Pacific Northwest (Boyd 1998; Suttles and Lane 1990). Ethnographically known villages, camps, and limited activity sites that were the loci of habitation, food processing, acquisition of riverine and upland plant and animal foods, along with other biotic and abiotic resources, have been documented throughout the Puget Sound region by Hilbert et al. (2001) and others. The ethnographic Northwest Coast cultures and traditional use areas around the APE are summarized in the following sections.

3.2 Ethnohistoric Period

The areas of impact are located in the traditional territory of the contemporary Puyallup Tribe of Indians and the Muckleshoot Indian Tribe (Haeberlin and Gunther 1930; Ruby and Brown 1986; Smith 1940; Spier 1936; Hilbert et al. 2001). The Muckleshoot Tribe is a historic conglomerate of traditional Upper Puyallup, Upper Duwamish, and other "Inland" groups, such as the Sitkamish and the Smulkamish of the Upper White River reaches and the Yilalkoamish and the Skopamish of the Upper Green River reaches (Hodge 1910; Spier 1936; Smith 1940; Suttles and Lane 1990). This merging of tribes is a direct result of the Medicine Creek Treaty (1854), the Point Elliot Treaty (1855), and the Fox Island Counsel following the 1855 to 1856 conflicts.

Precontact peoples, whose descendants are now part of the Puyallup Tribe of Indians and the Muckleshoot Indian Tribe, often had settlements located along major waterways and at the heads of bays or inlets, where abundant resources of coastal, riverine, and also inland environments supported a relatively rich, diverse, and reliable subsistence base. During the winter months, they lived in large villages of cedar plank houses, while the spring and summer months were spent at seasonal encampments often constructed of reed mats while fishing, hunting, and plant and berry collecting. Salmon was a principal resource (Ruby and Brown 1986). Early economies were also supported by inland resources, such as mountain goats, deer, and elk (Haeberlin and Gunther 1930).

The Puyallup Tribe of Indians lived in villages between the Puyallup River delta and Mount Rainier; along the Carbon and Stuck Rivers; and on the shorelines of Commencement Bay, the Gig Harbor Peninsula, and Vashon Island (Smith 1940; Hilbert et al. 2001).

The Puyallup Tribe of Indians followed a seasonal settlement pattern directly tied to resource availability. Their winter villages typically consisted of one to three houses, about 9 meters wide and up to 30.5 meters long with pitched roofs. The cedar plank walls were split from standing trees, using antler wedges and then smoothed with adzes (Smith 1940; Carpenter 1986). Cedar logs were also floated downriver to desired locations to process them on shore, generally near villages located on the banks of the creeks and rivers. Many of the villages constructed of cedar involved years of labor and were relatively permanent, often used for generations. Villages were located near river mouths or where a creek joined the main river channel (Hartwich 1972) or above the tidal flats along the margins of "two streams or at the mouth of a stream where it entered the Sound" (Smith 1940). Cedar houses were generally located on high ground away from the river or stream high-water mark. The house faced the water, with the length paralleling the river or stream (Hartwich 1972).

Winter subsistence was composed of freshwater and marine fish, shellfish, game, and preserved food collected during the other seasons. In the spring months, the Puyallup Tribe of Indians moved to temporary shelters made of reed mats and spent their time searching for fish, game, roots, berries, and bulbs. The most important fish resource was the salmon, which were caught at the mouths and along the banks of fish-bearing rivers as the salmon migrated from Puget Sound to native spawning streams. Salmon were smoked or dried for the winter and provided the bulk of food consumed and exchanged in that season (Suttles and Lane 1990).

3.3 Historic Period

Historic-period Euro-American exploration and settlement in the Puget Sound region begins in the AD 1600s with Spanish exploration along the western coast of North America, including the Puget Sound. In response to Spanish exploration in the region's western waters, English explorer Captain George Vancouver and his crew investigated Puget Sound in 1792. Vancouver sent Lieutenant Peter Puget and Master Joseph Whidbey on a six-day tour of the Sound in May. The pair named various landmarks, including Whidbey Island and Puget Sound itself, as well as Mount Rainier and Hood Canal. The team then returned to Britain, where Vancouver began preparing a report of his findings. He died before it could be completed (Crowley 2003a). This was followed by the Lewis and Clark expedition in 1804 to 1806 that traveled to the mouth of the Columbia River to explore the lands purchased by the United States from France and the people who lived in them (Tate 2003).

The Hudson's Bay Company (HBC) was an 1821 partnership between the Bay Company and the North West Company, two rival fur trading operations in Canada and the United States. HBC established its first foothold in today's Washington state in 1825, when Chief Factor John McLoughlin moved his operation at Fort George north of the Columbia River to Fort Vancouver. From there, Captain Vancouver oversaw expansion into the Puget Sound region, where his staff traveled, trapping and trading with local tribes until they returned south to Fort Vancouver in the fall. There, the company accepted supplies from a London supply ship each fall and loaded up the empty hold with timber bound for Hawaii. When the ship returned from Hawaii, Captain Vancouver's staff filled the hold with pelts bound for Great Britain (Nisbet and Nisbet 2011).

Competition from American fur traders increased during the 1830s. In 1833, McLoughlin sent Archibald McDonald to Puget Sound to establish a new trading post and stockade, Fort Nisqually, at today's DuPont, Washington. In 1840, Captain Vancouver established the Puget Sound Agricultural Company at Nisqually to provide crops and livestock to an increasing number of Russian-American fur traders from Alaska (Crowley 2003b; Nisbet and Nisbet 2011). While farming at Fort Vancouver and Fort Nisqually, among other locations, HBC cultivated cattle,

hogs, goats, apple trees, grape vines, potato patches, and other crop gardens. Fort Vancouver's wheat harvest alone supplied the company throughout the northwest (Rowe 2018).

HBC's Fort Nisqually was the first non-Native settlement in the Pacific Northwest, and it acted as a local hub, attracting traders, providing goods, and welcoming the first waves of Euro-American settlers. As early as 1841, Congress had passed the Distribution-Preemption Act, which recognized squatter's rights and allowed settlers to buy up to 160 acres for $1.25 an acre after 14 months' residence. In 1843, the provisional government in Oregon was offering 640-acre claims to new settlers, partly to assist the United States in establishing control of the region, which it shared with Great Britain. The United States and Great Britain settled their dispute over where to draw a boundary between the United States and Canada in 1846, settling on the 49th parallel and leaving Fort Nisqually and other HBC properties on lands owned by the U.S. government. The United States continued to encourage Euro-American settlement in the region, and waves of migrating Americans arrived. Soon, relationships between Euro-American settlers and native tribes deteriorated and the fur trade worsened. Fort Vancouver closed in 1860 and Fort Nisqually in 1870 (Nisbet and Nisbet 2011).

While the depletion of pelts, increased settlement, and worsening tribal relations spelled the end of HBC in the Northwest, other broad trends in development began to shape the Puget Sound region. In 1849, gold was discovered in California and settlers flowed west, either to hunt for gold or to supply those who did. Concurrently, in a succession of donation land acts, the U.S. government offered free or inexpensive land in Oregon Territory (which included today's Washington state) to settlers who moved to the region and homesteaded. To protect newly arrived settlers in the wake of an attack on Fort Nisqually, the U.S. Army established Fort Steilacoom in today's Pierce County in 1849, which provided medical care and protection but also supported a local road-building program (Denfeld 2012). In 1850, Congress passed the Donation Land Claim Act, which offered 320 acres of federal land to white male adults who established residence on the property by December 1, 1851. If married, the couple could claim an additional 320 acres (Riddle 2010).

In 1853, Washington Territory was carved from the Oregon Territory. While the Donation Land Claim Act was still in effect, the rules changed in 1854, and settlers in the Northwest had to purchase land for $1.25 an acre, which remained the law until the Homestead Act was passed in 1862. The first land patents in Washington Territory were granted in Thurston and Clark counties in 1857 (Riddle 2010).

While settlement increased, the new arrivals brought with them agricultural and ranching practices that introduced new species, suppressed native species, introduced new weeds and new crop diseases, and led to the suppression of traditional life ways, including the late-summer controlled burns that Native tribes used to prepare the land for new crops of camas and berries (Rowe 2018). While non-Native settlement grew, and tensions rose, Territorial Governor Isaac Stevenson negotiated a series of treaties with Native inhabitants, confining them to reservations away from their native homelands and further increasing tensions that eventually led to war (Rowe 2018).

The Medicine Creek Treaty (1854) and the Point Elliott Treaty (1855) were both attempts by the U.S. government to buy territory and fishing rights from the tribes in exchange for permanent reservation lands (Ruby and Brown 1986). In late December 1854, Stevens, General George Gibbs, and local officials met with 600 Native American tribal members, including members of the Nisqually, Puyallup, and Squaxin tribes near She-na-nam, or Medicine Creek (now known as McAllister Creek), approximately 20 miles southwest of Tacoma, in Nisqually (Gibbs 1877). The Medicine Creek Treaty (1854) removed Native Americans from about 2.2 million acres of their

traditional lands and granted three reservations for them to share. The treaty provided rights to fish, hunt, gather roots and berries, and pasture horses; provided rules of conduct; and appropriated $32,500 to be paid to the tribes over a 20-year period. The treaties forced Native Americans to relocate to one of several reservations designated in the treaties (Ruby and Brown 1986). Of the three initial reservations defined in the Medicine Creek and Point Elliott treaties, the largest was the Puyallup, with 1,280 acres. The Puyallup Reservation was home to people who identified with the Nisqually, Cowlitz, Muckleshoot, and other local area tribal groups (Kirk and Alexander 1990; Smith 1940; Suttles and Lane 1990).

Between 1855 and 1858, what was then called the “Indian Wars” broke out and unsettled Native American and Euro-American relations across Washington Territory, leading many homesteaders to retreat to secure locations like Fort Steilacoom and briefly limiting settlement in some locations, including Pierce County (Rowe 2018). However, with the end of hostilities, settlement soon increased again. With the success of local agriculture, the availability of timber, and access to the rivers of Puget Sound, settlers spread across the region. New advancements in transportation, including the coming of the nation’s second transcontinental railroad, further spurred development. After the Puget Sound Indian War of 1855–1858, the Nisqually, Puyallup, and White and Green River tribes met with an American delegation led by Governor Stevens on Fox Island. Two of the resulting agreements were the enlargement of the Puyallup Reservation to 18,062 acres by executive order (Ruby and Brown 1992) and recognition of the need for a reservation in a more appropriate location for those groups culturally linked to inland areas. The reservation was to be placed between the White and Green Rivers at Muckleshoot, where a U.S. Army fort was located on the prairie of the same name.

The passage of the 1862 Homestead Act granted 160 acres to individual U.S. citizens in an effort to further encourage non-Native settlement. Eventually, commercial and residential development expanded, and citizens began to request that restrictions on reservation lands be removed to accommodate urban and industrial growth. Many tribal landowners would eventually lose their properties through sale, auction, or approval by the government for automatic inclusion in land grants. In 1864, a land grant was provided for the construction of the Northern Pacific Railroad (NP), and a line was planned that would extend from the Great Lakes to Tacoma.

In 1873, as Northern Pacific Railroad executives toured Washington in search of a terminus for their new railroad line, cities up and down Puget Sound competed for the honor, offering perks and financial advantages, knowing that with the railroad would come industry, a growing population, and wealth. In July 1873, Northern Pacific executives announced that Tacoma’s Commencement Bay would be the railroad’s new terminus. It was undeveloped and closer to the rail line’s route along the Columbia River than Seattle. The decision set off a bitter rivalry between the two cities and kicked off decades of rail expansion in the area, thrilling entrepreneurs like Tacoma’s first promoter, Matthew McCarver, who had located the city on Commencement Bay hoping to attract the railroad to its deep-water port (MacIntosh and Wilma 1999).

3.4 Additional Alternative-Specific, Historic-Period Context

This section of the report focuses on a more detailed context for historic developments within and near the areas of impact for the OMF South alternatives that will be constructed in King County. Because there are differences in the developmental histories between the areas of impact, this section discusses the historical context for the Midway Landfill Alternative and the South 336th Street and South 344th Street alternatives.

3.4.1 Midway Landfill Alternative

The Midway Landfill Alternative would be constructed in Midway, a small community in the City of Kent, located in southern King County.

As with surrounding King and Pierce counties, the community of Kent began as an agricultural community established on the cleared lands of Washington's river valleys at the end of hostilities between Euro-American settlers and Native American tribes (Stein 2001).

Early settlers cut timber and founded farms, providing crops including hops to an expanding market. Wildly successful for a decade, the hop market collapsed in 1891 after aphids decimated local crops, which never recovered. While hops failed, the valley's agricultural tradition was strong, and dairying, farming, egg production, and vegetable farming grew in the region while the City of Kent established the schools, churches, and commercial developments needed to support the growing city center. Much of what the valley produced was sent to market in urban centers like Seattle and Tacoma. By 1920, the region's successful Japanese farmers, generally first-generation Issei, were supplying half the fresh milk and more than 70 percent of the vegetables and fruits consumed in Seattle. The strength of the agricultural community helped sustain Kent through the Great Depression. However, with the beginning of World War II, the valley was forever changed. Japanese families, only some of whom were allowed to sell or otherwise negotiate the care of their lands, were interned under Executive Order 9066. The government took 1,600 acres of land and distributed it to other farmers. With the war's end, few Japanese farmers returned to the area (Stein 2001).

It was also during the 1930s and 1940s that the area known as Midway developed. This development was prompted by the expanding transportation network between Tacoma and Seattle, particularly the White River bypass (now SR 99) in 1928 (Seattle Times 1928). Located along SR 99 and named for its location midway between Tacoma and Seattle, the area provided motels and diners for highway drivers. Beginning in 1931, however, Midway became known as an entertainment hotspot for the roadside spectacle known as the Highline Spanish Castle, a live music venue that drew people from around Puget Sound to dance to the big bands (Blecha 2002; City of Kent 2001; Seattle Times 1964).

In 1945, the Meade Sand and Gravel Company based out of Auburn, Washington, began using the alternative site as a sand and gravel mine. Originally, the mine was adjacent to a natural drainage basin that was often used as a settling pond. The drainage, located on the northeast section of the present landfill, was drained near the end of the mine's operations; as a result, most of the landfill floor is covered in a layer of fine silts and clays. The City of Seattle leased the site in 1966 for use as a landfill. The site was primarily used as a landfill for demolition debris; however, some hazardous and industrial wastes were buried there. The placement of hazardous waste on-site was halted in 1980, and the landfill was closed in 1983 (EPA 2000).

In 1984, the landfill was nominated for inclusion on the federal National Priorities List (NPL) and then listed in 1986. This designation is commonly referred to as a "Superfund" designation. In 1990, the City of Seattle and the Washington State Department of Ecology (Ecology) entered into a Consent Decree for environmental remediation of the site. This decree required that the landfill surface be filled, graded, and capped; a stormwater detention pond be constructed with associated dewatering and discharge systems; the Linda Heights Park stormwater system be diverted; and a landfill gas control system installed (EPA 2000).

Regional growth in the area was partly due to the control of the valley's rivers, which traditionally led to intense flooding. In 1965, the U.S. Army Corps of Engineers completed a dam for the Green River, thereby limiting flooding in Kent. Boeing was one of many industrial developers to

come to Kent. I-5 was completed through Kent in 1966, and decades of growth followed. Warehouse and manufacturing plants sprung up, to be followed by a wave of high-tech development (Stein 2001).

3.4.2 South 336th Street Alternative

The South 344th Street Alternative would be constructed in southern King County in the City of Federal Way.

While urban centers like Tacoma and Seattle were quick to grow, today's Federal Way was slow to develop. In the 1850s, under supervision of the U.S. Army, surveyors began to prepare a road between Fort Steilacoom in Pierce County and Fort Bellingham in King County (Meador 2014).

While the military road was designed to ease the movement of troops, the transportation corridor allowed for increased exploration in the area. By 1880, a school was established at Star Lake, approximately 6 miles north of the area of impact, near where the town's first post office would be established in 1891. In 1890, Arthur Steele settled at what is now known as Steele Lake, approximately 1 mile north of the area of impact, which would become the site of one of the area's first sawmills in 1890. While settlement picked up slowly, timber was plentiful. Homesteaders constructed log cabins, logged the surrounding area, and constructed skid roads to move their logs to the Sound for distribution and corduroy roads for overland travel (Historical Society of Federal Way 2015).

Not until the turn of the century did Federal Way attract much commercial development. In 1904, Charles Betts opened the first store in this rural community, which was generally limited to small farmsteads. While the area remained sparsely developed, as early as 1910, the Pacific Highway Association was meeting in Seattle to discuss how to construct a highway between Mexico and Canada. In 1915, the U.S. Army Corps of Engineers began constructing a dirt road while headquartered at Camp Lewis. In 1925, the U.S. government designated the original dirt road an interstate highway, US 99 (also called the Pacific Highway), thereby freeing up federal funds for paving the section between Tacoma and Seattle, which ran alongside the Military Road in many places and was sometimes known as the "federal way" (Givens 2017). Completed in 1930, the highway connected today's Federal Way to the rest of the west by way of a smooth, generally straight, concrete thoroughfare, but the Great Depression, which descended in the 1930s, stalled roadside development in the area. The Depression was followed by World War II, which centered resources on the war effort, further curtailing growth in small rural hubs and concentrating new growth in Seattle and Tacoma, where ship and airplane builders were most active.

With the end of World War II, development again picked up in the area, and those traveling US 99 soon found restaurants, diners, and hotels in today's Federal Way, along with roadside attractions and shopping centers, including the Federal Way Shopping Mall at the southwest corner of US 99 and S 312th Street, just northwest of the area of impact (Givens 2017; Historical Society of Federal Way 2015; Stein 2003).

Like many small communities in Washington, Federal Way saw expansion in the late twentieth century due to the construction of I-5 just 1 mile east of US 99. Soon, construction teams were building new housing developments, some of which were built to accommodate employees of a nearby Boeing plant and their families. In 1968, Weyerhaeuser began to build its corporate headquarters in Federal Way. It opened officially in 1971. In 1979, a 798-car, 5.62-acre park-and-ride lot opened off I-5 at S 320th Street. At the time, it was the largest such lot in Washington. Other large developments, including the Wild Waves Pool at Enchanted Village, which remains

visible east of I-5 today; St. Francis Community Hospital and a Federal Way Costco store were constructed in the 1980s (Historical Society of Federal Way 2015; Stein 2003).

Federal Way attempted to incorporate first in 1971, then again in 1981 and 1985, but failed. In 1989, voters finally approved incorporation, and the City of Federal Way was officially incorporated in 1990 (Stein 2003).

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4 ARCHAEOLOGICAL EXPECTATIONS

4.1 Alternative-Specific Cultural Sensitivity Summaries

The following section provides summaries of data presented above, as well as expectations for discovery of precontact and historic-period archaeological sites. The discussions below are specific to each of the alternatives: Midway Landfill, South 336th Street, and South 344th Street. In general, based on information presented above, the Midway Landfill Alternative has a lower likelihood of including archaeological resources than the South 336th Street and South 344th Street alternatives.

Within each of the areas of impact, potential culture-bearing sediments are anticipated to be located near the surface due to the geologic setting of the OMF South project area (see Section 3).

4.1.1 Midway Landfill Alternative

Based on DAHP's predictive model data and assessment of the background data, the area of impact for this alternative have a very low probability for precontact archaeological materials. The location's use as first a gravel mine and then a landfill has very likely destroyed any precontact archaeological materials that may have been present. The potential for precontact archaeological materials in the immediate vicinity of the Midway Landfill is likely low based on this history of development and the glacial landform the area of impact is primarily situated on. Historic land use, including agriculture and urban development, has modified the landscape and near-surface archaeological potential. The construction of US 99 and I-5 have also dramatically affected the landforms in the area of impact.

US 99 is a historic transportation corridor, completed in 1928, which provided ease of access to the area. Extensive development did not occur until the 1950s with the expansion of commercial, industrial, and residential areas. Historic-period archaeological potential within the area of impact for this alternative is relatively low, in large part because the landfill dominates this area of impact.

Given the scale of ground disturbances with initial construction of US 99 and I-5 and subsequent expansions, the historic limits of the Meade Sand and Gravel Mine, and modern filling, capping and remediation of the Midway Landfill, it is probable that, if precontact and historic-period cultural resources existed, they are disturbed and/or intermixed with historic/recent fill deposits.

4.1.2 South 336th Street Alternative

Based on DAHP's predictive model data and assessment of the background data, the area of impact for this alternative have a very low to low probability for precontact archaeological materials. The location's use as timberland and farmland as well as commercial, residential, and light industrial development has very likely destroyed any precontact archaeological materials that may have been present. The potential for precontact archaeological materials in the immediate vicinity of the South 336th Street Alternative is likely low based on this history of development and the glacial landform on which the area of impact is primarily situated. Historic land usehas modified the landscape and near-surface archaeological potential. The construction of SR 99 and I-5 have also dramatically affected the landforms in the area of impact.

US 99 is a historic transportation corridor, completed in 1928, which provided ease of access to the area. Extensive development did not occur until the 1950s with the expansion of commercial, industrial, and residential areas. Historic-period archaeological potential within the area of impact for this alternative is moderate.

Given the scale of ground disturbances with original construction and subsequent expansions of US 99 and I-5, the Christian Faith Center, and other large landscape alternation projects, it is probable that, if precontact and historic-period cultural resources existed, they are disturbed and/or intermixed with historic/recent fill deposits.

4.1.3 South 344th Street Alternative

Based on DAHP's predictive model data and assessment of the background data, the area of impact for this alternative have a very low to low probability for precontact archaeological materials. The location's use as timberland and farmland as well as commercial, residential, and light industrial development has very likely destroyed any precontact archaeological materials that may have been present. The potential for precontact archaeological materials in the immediate vicinity of the South 344th Street Alternative is likely low based on this history of development and the glacial landform on which the area of impact is primarily situated. Historic land use has modified the landscape and near-surface archaeological potential. The construction of US 99 and I-5 have also dramatically affected the landforms in the area of impact.

US 99 is a historic transportation corridor, completed in 1928, which provided ease of access to the area. Extensive development did not occur until the 1950s with the expansion of commercial, industrial, and residential areas. Historic-period archaeological potential within the area of impact for this alternative is moderate.

Given the scale of ground disturbances with original construction and subsequent expansions of US 99 and I-5, and other large landscape alternation projects, it is probable that, if precontact and historic-period cultural resources existed, they are disturbed and/or intermixed with historic/recent fill deposits.

4.2 Expectations

From an archaeological perspective, precontact and ethnographic site types that could be encountered within the area of impact include short-term field camps and seasonally utilized resource-procurement and processing loci. Resource procurement and processing loci represent a wide variety of activities that vary according to resource types present and environmental setting. Site functions likely varied from short-term occupation sites to task-specific processing or resource-extraction sites. Activities at these kinds of site would include shellfish or salmonid procurement, game hunting sites, plant gathering areas, felling trees for planks, and localities where flaked and groundstone material sources exist. In addition, other site types or features would have been present in the precontact and early contact period cultural landscapes associated with occupation of upland settings. These include trails linking villages or accessing resource procurement loci, rock art, culturally modified trees, and burials among others; however, it is unlikely that the latter set of site types are extant because of modern and historic-period development and logging.

From the information developed in Sections 2 and 3 of this document, there is evidence of known historic-period archaeological sites that range from assumed remains of an array of commercial, governmental, and residential structures, historic trash deposits and dumps, and road beds that

have been abandoned and covered by later developments, and a large array of associated features. These may include privies, storage dugouts, outbuildings, cemeteries, agricultural buildings, fields, and orchards, among others.

The risk of encountering near-surface ethnohistoric and historic-period archaeological materials in the area of impact is reduced by historic land alterations related to industrialization, development, and urban growth at all three alternative locations – in particular, the Midway Landfill Alternative. Within the South 336th Street and South 344th Street area of impact, the historic landscape alterations include historic logging and agriculture, extensive land reclamation, and development intensifying in the mid-20th century.

5 METHODS

5.1 Archaeological Investigations

All archaeological survey coverage was restricted to those parcels where a right of entry had been procured by Sound Transit and municipal and state rights-of-way (Figures G4.6-1, 6-3, and 6-5). Within these constraints the archaeological field investigations began with a pre-field identification of locations within the direct impact areas, as defined by the conceptual design for the project, that would be accessible for investigation. This review resulted in the identification of locations for subsequent subsurface investigation (Figures G4.6-2, 6-4, and 6-6). A pedestrian survey within the anticipated area of ground disturbance was undertaken using adjacent transects spaced at 10-meter intervals (maximum). All areas not subject to pedestrian reconnaissance due to artificial surface coverage (pavement or imported fill) were identified and documented.

Shovel probes and hand augering were used to investigate areas where ground disturbance is anticipated.

Shovel probes were spaced between 20 meters apart in areas of high archaeological probability and 30 meters apart in areas where the probability of encountering archaeological resources is generally low. Areas of apparent previous disturbance were identified and classified as low sensitivity areas; however, the depths of proposed impacts were considered when determining the appropriate survey method for a given landform. Prior to subsurface survey, all proposed excavation locations were cleared by utility locates.

Each shovel probe was a minimum of 30 centimeters in diameter and was excavated to approximately 20 centimeters into intact glacially deposited sediment up to 1 meter below surface where possible. In some locations, where deeper fill was anticipated or encountered, shovel probes were replaced with auger cores, which can more efficiently be used to investigate soils underlying fill. When glacially derived parent material (e.g., intact glacial till or outwash) was identified, the excavation was terminated.

All sediments/soils excavated during archaeological survey were screened through 0.25-inch wire mesh hardware cloth. Global positioning system coordinates were collected for each shovel probe and auger core and incorporated into a map layer included in Figures G4.6-1 through G4.6-4 and G4.6-8. Soil types and colors were documented using the Munsell Soil Color Chart for each shovel probe and auger core. When sediment change was observed during excavations, the depth of transition and information on whether the transition is abrupt or gradual was documented. A brief statement of stratigraphic interpretation was compiled for all geographical areas where general stratigraphic trends were identified. Each shove probe and auger core were photographed. The shovel probe log is provided in Attachment G4-3.

Archaeological survey occurred over several field sessions. The first took place in February 2020 and included a systematic 10-meter transect interval pedestrian survey of the Midway Landfill, South 336th Street, and South 344th Street alternatives to document existing conditions within the areas of impact. This survey excluded the mainline segment areas of the South 336th Street and South 344th Street areas of impact where they overlapped with the TDLE area of potential effects. Subsurface shovel probe surveys were limited to accessible undeveloped areas of the South 336th Street and South 344th Street alternatives. Field staff documented survey areas, surface conditions, and any archaeological resources that were present (Figure G4.6-1 through G4.6-6). The second field session occurred in June 2020 and consisted of assessments of the

previously identified resources (see Sections 6.1.1.4 and 6.1.1.5). The third field session for the mainline segment within the OMF South and TDLE overlap area is pending. The results will be included in the Final Environmental Impact Statement.

Areas Contaminated by Biohazards

In addition to standard safety protocols and pre-fieldwork discussion of the hazards and safety methods briefing, the potential hazards presented to field crew in settings where hazardous waste was identified were mitigated by wearing eye protection, face masks, leather gloves, and using sanitizers. Site-specific fieldwork methods to mitigate the hazardous conditions, particularly from human excrement and drug-related paraphernalia, were devised. The methods employed included 1) scraping off the loose surface layer containing the majority of the hazardous material prior to excavation; 2) excavating, but not screening, the first 10-centimeter (6-inch) layer of sediment; 3) screening excavated sediments to minimize shaking with careful removal of non-modern historic-period artifacts, and; 4) avoiding contact with items perceived as potentially hazardous.

COVID-19 Protocols

Following the outbreak of COVID-19, the safety protocols observed during field investigations were amended to be consistent with the Governor's Office "Stay Home, Stay Healthy" proclamation; Governor Inslee's March 25, 2020, memorandum; Governor Inslee's Construction Working Group Recommendations (April 23, 2020); and the Center for Disease Control and Occupational Safety & Health Act of 1970 guidance. These amendments were detailed in Governor Inslee's recommendations in 30 detailed points, which included specialized safety training, contact tracing documentation, social distancing, amendments to standard personal protective equipment (PPE), standards of sanitation and cleanliness, and an overview of employee health and COVID-19 symptoms.

5.1.1 Site-Specific Investigation Methods

Two historic-period archaeological sites, 45KI1542 and 45KI1543, were discovered during surveys of the South 336th Street and South 344th Street areas of impact. The first, 45KI1542, is in the South 336th Street area of impact and consists of the remnants of a concrete foundation and stub walls of a historic-period building dating to the 1930s. The second, 45KI1543, is within both the South 336th Street and South 344th Street areas of impact. This site consists of a sparse scatter of modern and temporally non-diagnostic construction debris. The results of the archaeological investigations at these sites are further described in Section 9.1 (9.1.2.4 and 9.2.2.5).

Around 45KI1542, a pedestrian survey was conducted, maintaining a constant 1-meter interval spacing across the site to identify the full extent of the foundation and any associated historical debris on the surface. Where access was possible, shovel probes were excavated at distances of five and ten meters around the perimeter of the foundation (see Figure G4.6-7).The location of shovel probes was restricted due to existing ground conditions. All shovel probes were excavated using the methodology described above.

Around 45KI1543, a pedestrian survey was conducted, maintaining a constant 2-meter-interval safety spacing across the entire landform to identify any historic debris on the surface and the presence of utilities. Excavations began in the northeast corner of the landform and progressed at 3-meter intervals in cardinal directions from the initial positive shovel probes until two negative probes had been excavated, or the landform conditions restricted further testing. All shovel probes were excavated using the methodology described above.

ATCRC evaluated all surveyed resources for eligibility to the NRHP, WHR, and KCRHP (see detailed discussion of these registers and criteria below in Section 5.3). Although criteria for listing vary between national, state, and local jurisdictions, all listing criteria are based on those established for the NRHP. Therefore, ATCRC completed evaluations under all NRHP criteria and drew its conclusions regarding state and local listing from these evaluations. DAHP does not provide determinations of eligibility for local jurisdictions (Section 5.3).

5.2 Architectural Survey and Inventory

From August to November 2019, HRA conducted archival research on the history of the areas of impact. Archival research consisted of background research using King County Assessor's records, historic-period maps and aerials, and previously prepared records located in DAHP's WISAARD database. To complete historic contexts on development within the areas of impact, HRA reviewed local histories, historic maps, newspaper archives, resources in HRA's own library, and additional online sources, as needed.

In December 2019 and January and May 2020, HRA conducted a survey and inventory of all resources within the areas of impact that would be 40 years old or older at the beginning of project construction, estimated to be the year 2025. By 2025, historic-period, built-environment resources built in 1985 or earlier will be 40 years old, meeting age criteria for listing as King County Landmarks but not the WHR or NRHP. Historic-period, built-environment resources that are 50 years old or older by 2025 will have reached the age at which they can qualify for listing in the WHR and NRHP. Survey and inventory were conducted to meet DAHP's updated Standards for Cultural Resources Reporting (DAHP 2020a).

The only historic-period, built-environment resources built in 1985 or earlier that were exempted from survey were BPA transmission system elements. As the lead federal agency under NEPA, BPA is conducting its own consultation under Section 106 with DAHP regarding the relocation of towers and transmission lines in association with OMF South. Results will be summarized in the Environmental Impact Statement when the consultation is complete. Additional exemptions included all other built-environment resources already documented in DAHP's WISAARD database and having an HPI that had received a formal determination of eligibility within the last ten years. Documentation for those resources was considered up to date, and no further documentation was required, as per DAHP's guidelines (DAHP 2020a).

King County Assessor's records provided dates of construction for most resources within the area of impact. In cases where no dates of construction were available but a review of maps or aerial photographs suggested that historic-period, built-environment resources may be present, dates of construction could not be determined by desktop research. In those instances, HRA conducted a field visit to the locations, and when historic-period, built-environment resources were present, they were added to the survey and documented and evaluated.

5.2.1 Field Survey

HRA conducted field survey between December 2019 and May 2020. HRA Architectural Historian Chrisanne Beckner, MS, completed the field survey. Following field survey, Principal Architectural Historian Natalie K. Perrin, MS, completed physical descriptions, integrity assessments, and evaluations of individual resources for listing in the NRHP, WHR, and/or King County Register of Historic Places (KCRHP), as appropriate. Both Beckner and Perrin meet the Secretary of the Interior's Professional Qualification Standards in architectural history.

Field documentation included photographing all visible exterior elevations of each historic-period resource and collecting field notes on an electronic tablet, noting character-defining features, characteristics of style, materials, and evidence of alteration, as per the Washington State Standards for Cultural Resources Reporting (DAHP 2020a). All resources were surveyed from the public right-of-way, unless otherwise noted. Results from HRA's study were recorded in HPIs in WISAARD's database for all resources old enough to qualify for listing in the NRHP (Attachment G4-5). No HPIs were completed for those resources not old enough to qualify for the NRHP or those for which DAHP or a lead agency has already made a determination of eligibility.

5.3 Evaluation

ATCRC and HRA evaluated all discovered or surveyed resources for eligibility to the NRHP, WHR, and KCRHP. Although criteria for listing vary between national, state, and local jurisdictions, all listing criteria are based on those established for the NRHP. Therefore, ATCRC and HRA completed evaluations under all NRHP criteria and drew their conclusions regarding state and local listing from these evaluations. As DAHP does not provide determinations of eligibility for local jurisdictions, HPIs were only prepared by HRA for those resources old enough to qualify for listing in the WHR and NRHP.

5.3.1 National Register of Historic Places

ATCRC and HRA evaluated resources using the following guidelines established by the National Park Service (NPS). To be individually eligible for listing in the NRHP, a property must be significant under one of four criteria:

- Criterion A: Under Criterion A, properties can be determined eligible for listing in the NRHP if they are associated with events that have made a significant contribution to the broad patterns of our history.
- Criterion B: Under Criterion B, properties can be determined eligible for listing in the NRHP if they are associated with the lives of persons significant in our past (i.e., persons whose activities are demonstrably important within a local, state, or national context).
- Criterion C: Under Criterion C, properties can be determined eligible for listing in the NRHP if they embody the distinctive characteristics of a type, period, or method of construction, represent the works of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction (i.e., are part of a district). Discrete features, a particular building for example, may best be documented under this Criterion, though collections of resources may also have significance under Criterion C for architecture or engineering association.
- Criterion D: Under Criterion D, properties may be eligible for the NRHP if they have yielded, or may be likely to yield, information important in history. To be eligible under Criterion D, the property must have, or have had, information to contribute to our understanding of human history and that information must be considered "important" (NPS 1997). Most commonly applied to archaeological sites, buildings, structures, and objects may be eligible under Criterion D if they are the principal source of information.

Along with being significant under at least one of the criteria above, a resource must also retain integrity. Integrity is understood as the property's ability to convey its significance. The evaluation of integrity is grounded in an understanding of a property's physical features and how they relate to its significance. Historic properties either retain integrity (that is, convey their significance) or

they do not. To retain integrity, a property will always possess several, and usually most, of the seven aspects of integrity, which are:

- Location. Location is the place where the historic property was constructed or the place where the historic event occurred.
- Design. Design is the combination of elements that create the form, plan, space, structure, and style of a property.
- Setting. Setting is the physical environment of a historic property.
- Materials. Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.
- Workmanship. Workmanship is the physical evidence of crafts of a particular culture or people during any given period in history or prehistory.
- Feeling. Feeling is the property's expression of the aesthetic or historic sense of a particular period of time.
- Association. Association is the direct link between an important historic event or person and a historic property (NPS 1997).

5.3.2 Washington Heritage Register and King County Register of Historic Places Criteria for Listing

Under SEPA, the project proponent is required to consider any adverse impacts a project might have on cultural resources, including not only those listed in or eligible for listing in the NRHP but also those listed or eligible for listing in local and state registers of historic places. Therefore, ATCRC and HRA have provided recommendations regarding each surveyed resource's eligibility for listing in state (WHR) and local (KCRHP) registers of historic places.

5.3.2.1 Washington Heritage Register

To be individually eligible for listing in the WHR, a property must be significant within a historic context. Sites that are listed in the NRHP are automatically added to the WHR (25-12 Washington Administrative Code [WAC]); as such, a separate nomination is not needed and, for the purposes of this report, the same four criteria used for the NRHP (A through D, above) are used herein to evaluate for eligibility for listing in the WHR (DAHP 2020a).

5.3.2.2 King County Register of Historic Places

To be eligible for listing in the KCRHP, a resource must be over 40 years old or contain resources that are more than 40 years old that possess integrity of location, design, setting, materials, workmanship, feeling, or association, and meet one or more of the following criteria, which are based on NRHP eligibility criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of local, state, or national history; or
2. Is associated with the lives of persons significant in local, state, or national history; or
3. Embodies the distinctive characteristics of a type, period, style or method of design or construction, or that represents a significant and distinguishable entity whose components may lack individual distinction; or
4. Has yielded, or may be likely to yield, information important to prehistory or history; or
5. Is an outstanding work of a designer or builder who has made a substantial contribution to the art (KC 20.62.040).

6 RESULTS

6.1 Archaeological Survey and Results

This section details the archaeological survey sessions and their results for the three build alternatives.

6.1.1 Field Survey

The first archaeological survey session occurred over five days across all three areas of impact. Pedestrian survey with photographic recordation of surface condition, utilities, and areas of interest occurred on February 13, 14, and 19, 2020. Sub-surface survey occurred on February 24 and 25, 2020, using the methods described above (Section 5.1). During this field session, ATCRC identified two previously unrecorded historic-period archaeological sites (Figures G4.6-1 through G4.6-3). Additional investigations were performed at each site during the second archaeological survey session.

From June 10–12, 2020, a second archaeological survey session occurred at the historic-period archaeological sites identified within the South 336th Street and South 344th Street Alternatives areas of impact. The goals of the additional targeted efforts at the site of the historic-period foundation were to identify subsurface features related to the 1930s- to 1950s-era historic use of the structure, and assess the extent, content, and depositional context of any historic-period deposits. The goals for the artifact scatter were to excavate radials at cardinal directions around previously excavated shovel probes that contained artifacts, thereby determining extent, content, and depositional context of the scatter subsurface cultural resources.

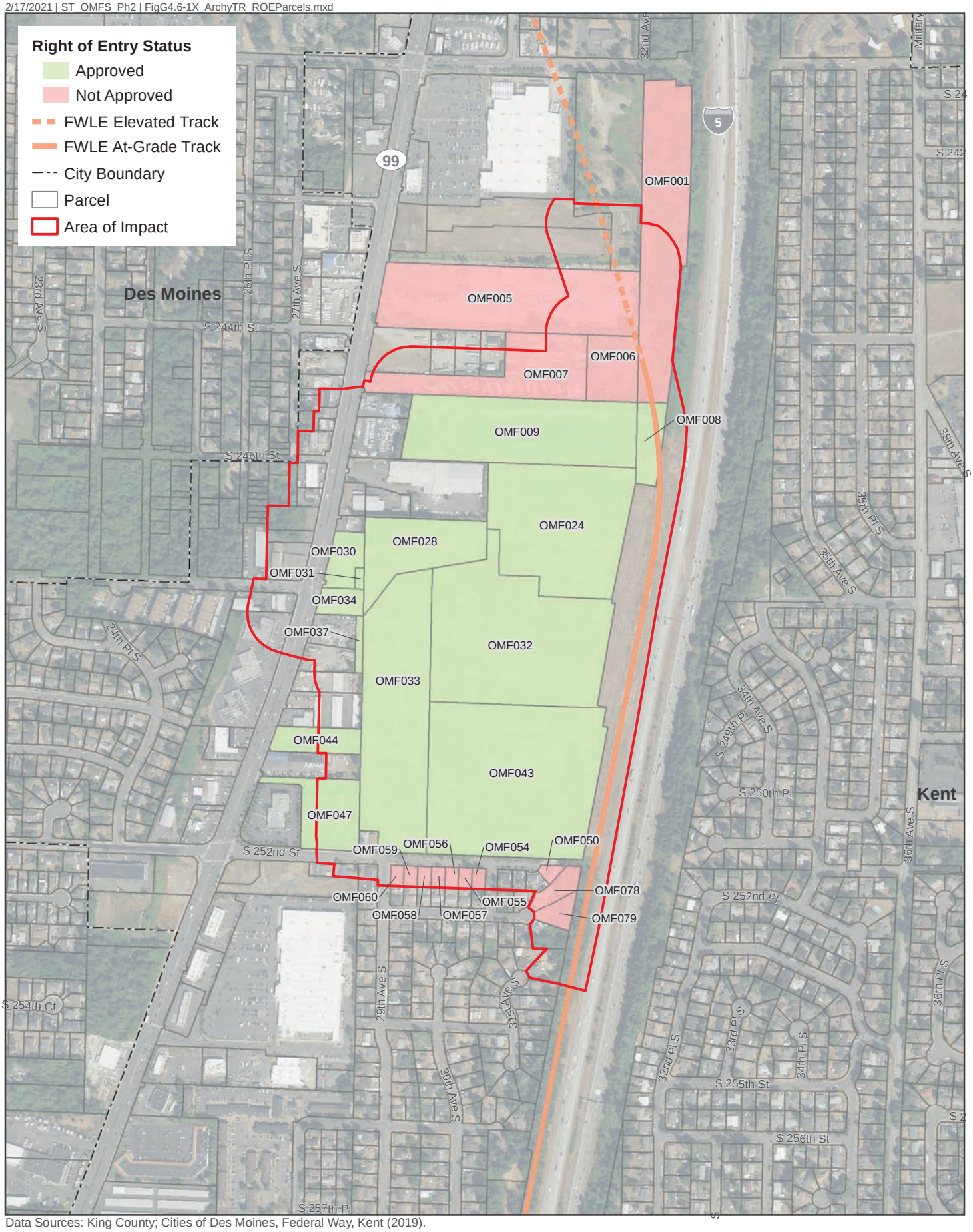
Each survey consisted of additional pedestrian transects with photographic documentation of surface conditions, utilities, etc., and a subsurface survey of each location. The survey methods for these locations vary from the standard methodology described in Section 5.1.

6.1.1.1 Midway Landfill Alternative

Within the Midway Landfill Alternative area of impact, rights of entry were only acquired for those municipal parcels associated with the Midway Landfill (OMF 8, 9, 24, 28, 30-34, and 43), parcels OMF 44 and OMF 47, and all municipal and state rights-of-way, including the WSDOT right-of-way along I-5 (Figure G4.6-1).

Archaeological survey of the Midway Landfill (parcels OMF 8, 9, 24, 28, 30-34, and 43) was limited to a photographic pedestrian survey of OMF 8 and OMF 9 (Figure G4.6-1). The remainder of the Midway Landfill was previously assessed under the FWLE project (Elliott et al. 2020).

All municipal rights-of-way were examined for suitability for subsurface testing during the pedestrian survey. Each potential location was discounted due to the presence of utilities.



Data Sources: King County; Cities of Des Moines, Federal Way, Kent (2019).

N

0 500 1,000 Feet

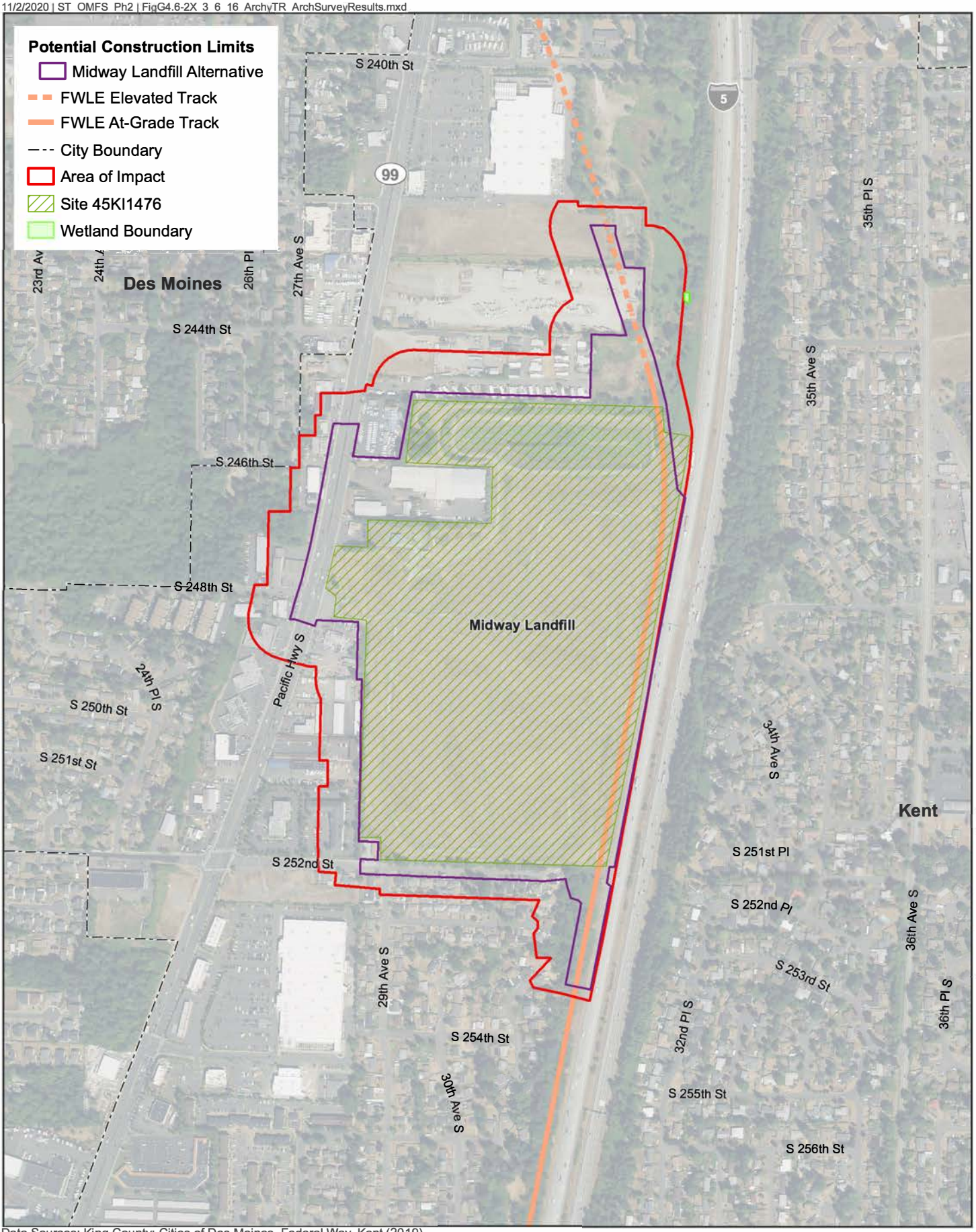
FIGURE G4.6-1
Archaeological Rights of Entry
Midway Landfill Alternative
OMF South

The WSDOT right-of-way along parcels OMF 50, OMF 78, OMF 79, OMF 80, and OMF 90 seemed to be accessible from S 252nd Street (Figure G4.6-1). However, during pedestrian survey, the area proved to be a 30-degree slope covered in thick blackberry thickets, garbage, and thick shrubs (Figure G4.6-2). Due to an inability to safely excavate on a slope of this degree no subsurface testing was undertaken.

A small portion of the WSDOT right-of-way adjacent to parcels OMF 1 and OMF 8 has been previously surveyed by WSDOT (Ives et al. 2017), which identified Pleistocene sediments immediately below the sod in two shovel probes. No cultural resources were identified during this portion of the Ives et al. (2017) survey.

No surface archaeological deposits were identified during the pedestrian survey, and no locations suitable for subsurface archaeological investigations were identified within this area of impact (Figure G4. 6-3).

Figure G4.6-2 Surface conditions of the WSDOT right-of-way adjacent to the Midway Landfill.



Data Sources: King County; Cities of Des Moines, Federal Way, Kent (2019).

N

0 500 1,000 Feet

FIGURE G4.6-3
Archaeological Survey Results
Midway Landfill Alternative

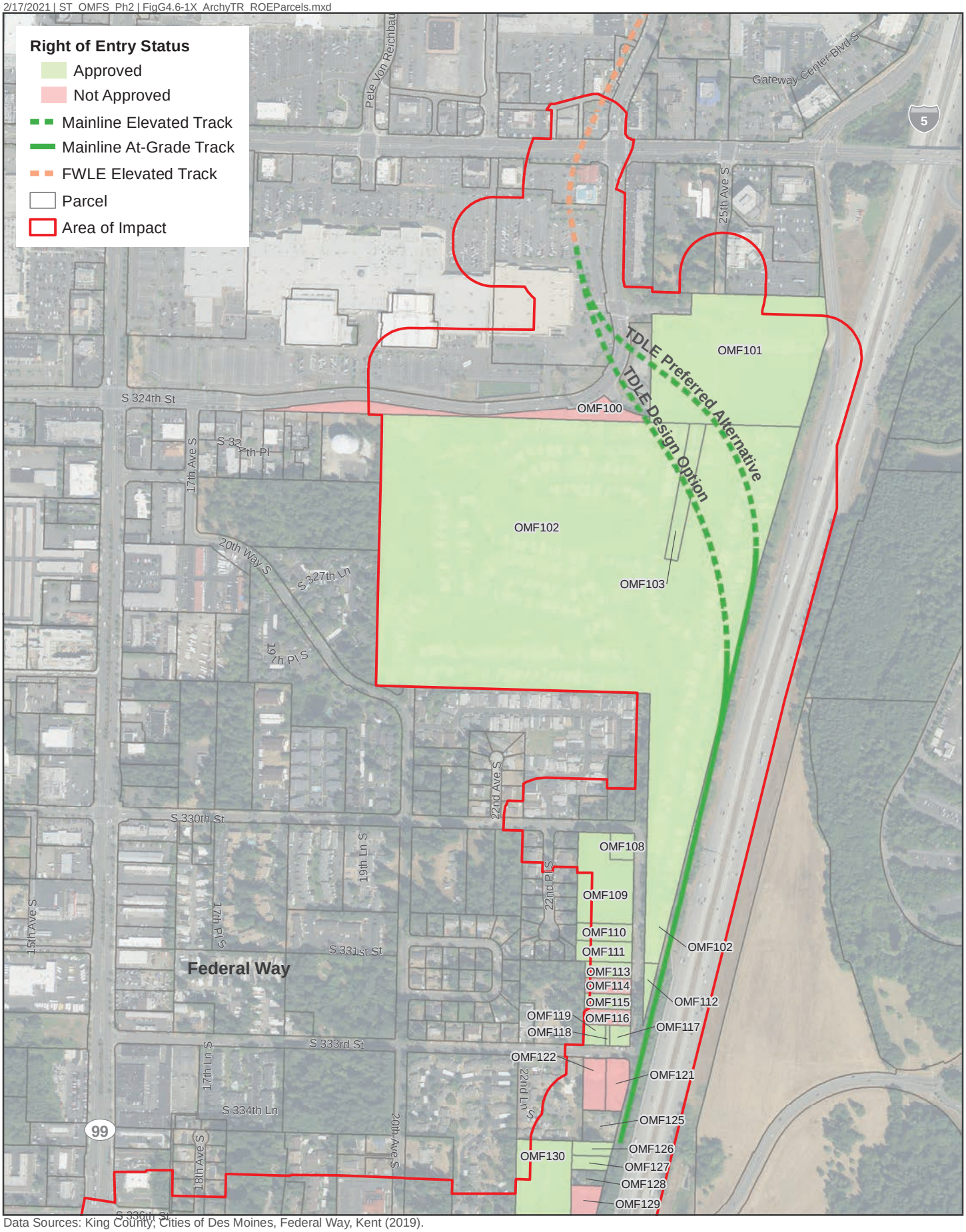
OMF South

6.1.1.2 South 336th Street Alternative

Within the South 336th Street Alternative area of impact, rights of entry were acquired that centered around two large properties, the Belmor Mobile Home Park and Country Club and the Christian Faith Center, and all municipal and state rights-of-way, including the WSDOT right-of-way along I-5. Those parcels within the defined direct impact areas that were not evaluated as potential subsurface survey areas because rights of entry had not been obtained are identified in (Figures G4.6-4 and G4.6-5).

The survey proceeded with a pedestrian assessment and photo documentation of all accessible areas within the area of impact. For those parcels where a right of entry had not been obtained, the survey was conducted from the nearest public right-of-way. The survey also included a limited pedestrian survey of the wetlands located within parcel OMF 152 (Figures G4.6-7 and G4.6-8). Subsurface investigations within the area of impact began in OMF 151 (Figures G4.6-5 and G4.6-7). Much of the parcel has been developed with extensive paved parking lots surrounding the Christian Faith Center. These paved areas are partially surrounded by ornamental green space that were sampled where utilities were not present (Figure G4.6-9). The excavations along the northwest corner of OMF 151, adjacent to OMF 152, were along a slope composed of multiple soil types (Figure G4.6-7). These soil strata are modern fill events mixed with expected soil horizons per Natural Resource Conservation Service (NRCS) data (stratified muck) resulting from flood events within the wetlands (OMF 152) overlaying glacial till. Elsewhere on the property, fill of varying thickness was found immediately overlaying noncultural glacial deposits (Figures G4.6-7 and G4.6-10).

The far southern portion of parcel OMF 151, near OMF 180, is a large, mounded platform that has been substantially modified during and after the 1970s. The subsurface investigations on this landform identified soil containing modern bricks, glass fragments, and tile mixed with charcoal at depths ranging from 15 to 30 centimeters below surface in SPs 47A, 47B, and 51 (Figure G4.6-7 and Attachments G4-3 and G4-4). These excavations and additional adjacent excavations indicate that the platform was apparently created through multiple episodes of deposition of modern fill over glacial till deposits that were identified at depths between 35 to 45 centimeters below surface. These artifact-bearing sediments represent an archaeological deposit defined as site 45KI1543. Following discussions with Sound Transit, further investigations at site 45KI1543 were determined necessary to assess the content, subsurface extent, and context of this historic-period deposit (see Section 6.1.1.5 and 6.1.2.2 below; Attachment G4-4).



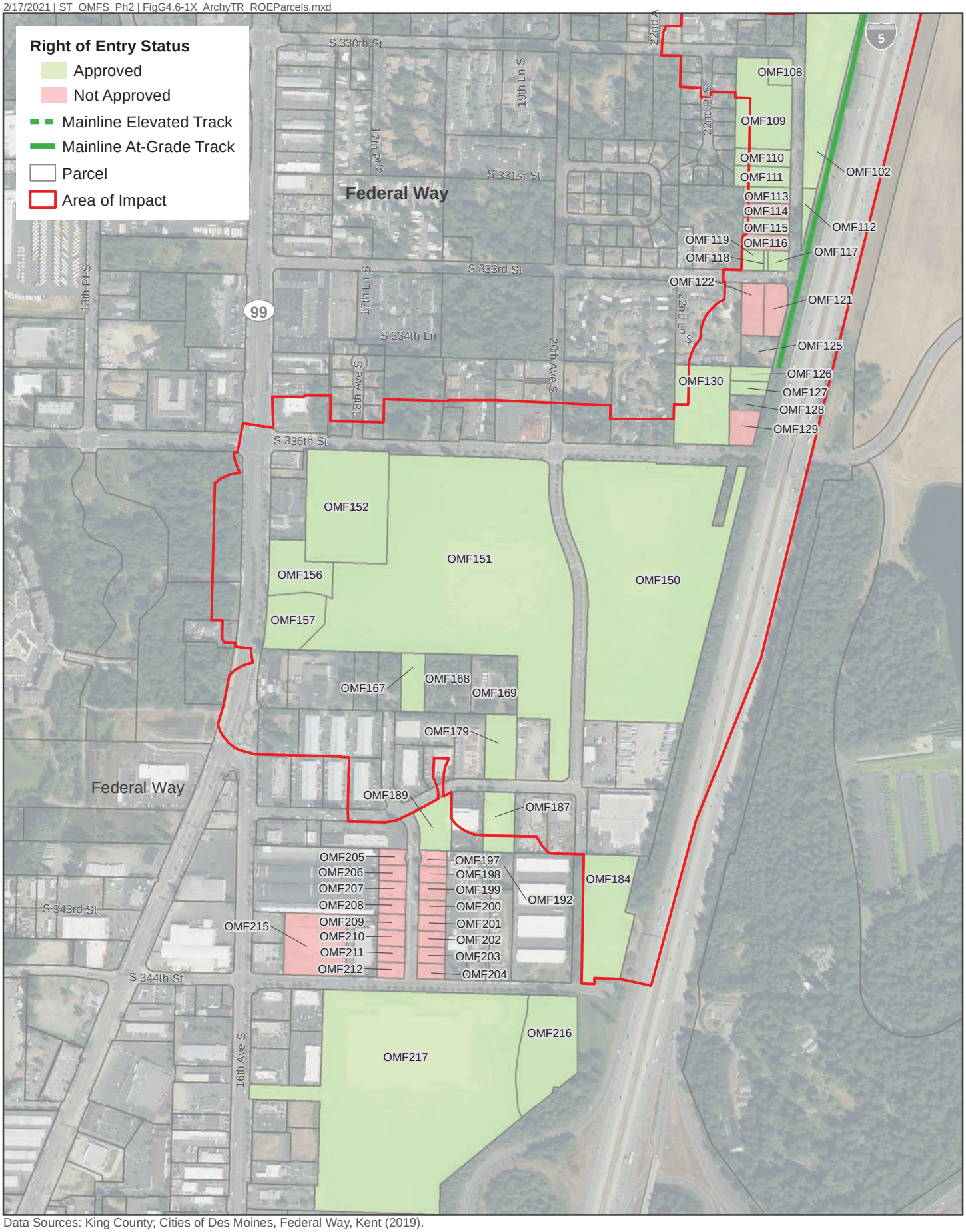
Data Sources: King County, Cities of Des Moines, Federal Way, Kent (2019).

N

0 500 1,000 Feet

FIGURE G4.6-4
Archaeological Rights of Entry
South 336th Street Alternative Mainline

OMF South



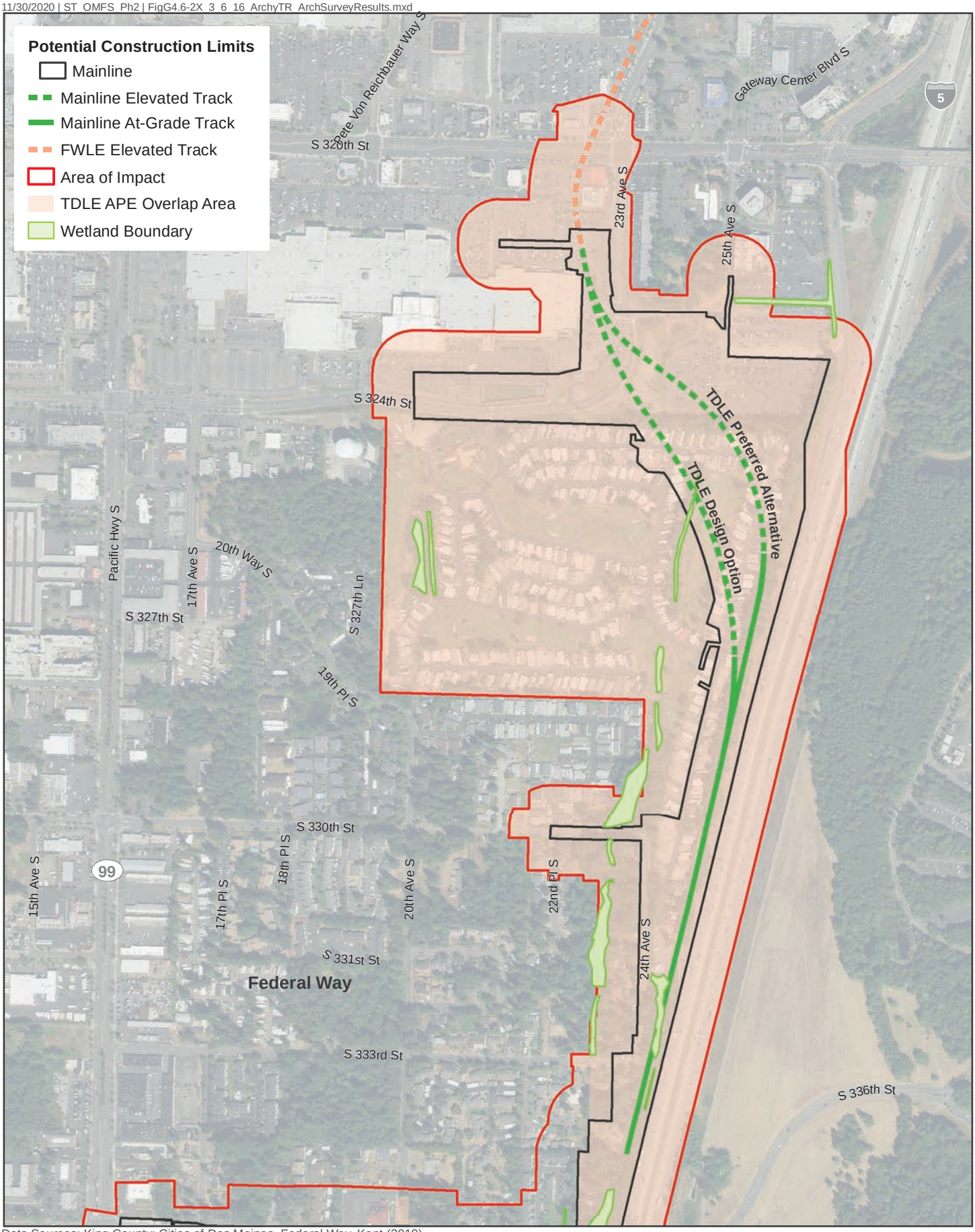
Data Sources: King County; Cities of Des Moines, Federal Way, Kent (2019).

N

0 500 1,000 Feet

FIGURE G4.6-5
Archaeological Rights of Entry
South 336th Street Alternative

OMF South



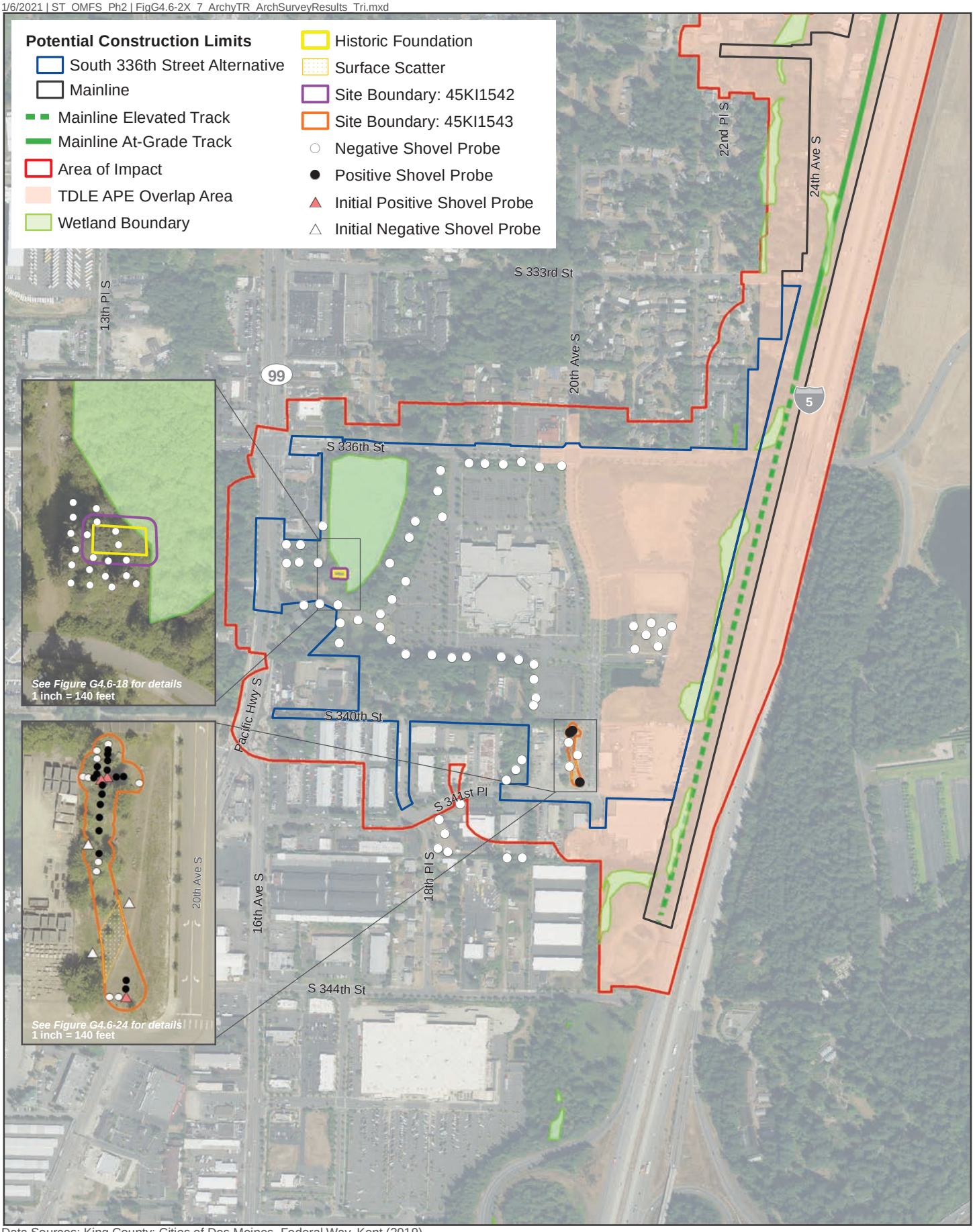
Data Sources: King County; Cities of Des Moines, Federal Way, Kent (2019).

N

0 500 1,000 Feet

FIGURE G4.6-6
Archaeological Survey Results
South 336th Street Alternative Mainline

OMF South



Data Sources: King County; Cities of Des Moines, Federal Way, Kent (2019).

N

0 500 1,000 Feet

FIGURE G4.6-7
Archaeological Survey Results
South 336th Street Alternative

OMF South

Figure G4.6-8 View of the wetlands catch basin from S 336th Street, OMF 152, view south.

Figure G4.6-9 Paved areas partially surrounded by ornamental green space, OMF 151, view west.

Figure G4.6-10 Drainage pond with restricted access, OMF 151, view east.

Figure G4.6-11 View of the levee along the western boundary of OMF 152, view north.

Sub-surface investigations within parcel OMF 152 were predominantly restricted to the western edge and the southeast corner (Figure G4.6-7). The property is a wetland catch basin protected by Federal Way (Figure G4.6-8). The western boundary of the parcel is an overgrown raised linear earthen platform with floodgates and pumps that run north and south along the edge of the parcel (Figure G4.6-11). The wetland catch basin is composed of thick trees with standing water throughout.

Most shovel probes planned for excavation within parcel OMF 152 were cancelled due to standing water and the presence of medical waste (e.g. used and uncovered hypodermic needles). The excavation of SP12 revealed soils consistent with NRCS data (stratified diatomaceous earth to muck) to a depth of 1 meter, and the excavations of SP17 and SP16 had loose brown sandy loam fill over glacial till at a depth of 60 centimeters (Figure G4.6-7 and Attachment G4-2).

In parcel OMF 156, six shovel probes were excavated identifying variably compact brown sandy loam fill overlaying glacial till (Figure G4.6-7 and Attachment G4-2). The concrete footings of a demolished structure (45KI1542) were observed at the edge of the wetlands at the northeastern extent of the parcel adjacent to OMF 152. The footings were found to surround a concrete pad in

two levels. The entire superstructure has been demolished. The entire area had been used by transient populations for camping and remains covered in garbage, including medical waste. Following discussions with Sound Transit, further investigations at this site were determined necessary to assess the potential for subsurface features related to the 1930s- to 1950s-era historic use and or occupation of the structure and to assess the extent, content, and depositional context of any historic-period deposits, if any were identified (see Section 6.1.1.4 and 6.1.2.1 below, and Attachment G4-2).

Excavations on the boundary of parcels OMF 157 and OMF 151 identified a thin topsoil overlaying glacial till (Figure G4.6-7).

ATCRC attempted to complete subsurface testing of OMF 167 (Figure G4.6-7). However, despite an approved right of entry, the property had been gated, locked, and no residents were present for surveyors to request admittance pursuant to the approved right of entry.

Parcel OMF 179 (Figure G4.6-7) is heavily overgrown with blackberry vines and other tall shrubbery to a height of 8 to 12 feet interspersed with trees (Figure G4.6-12). ATCRC used a machete to access the property and was able to excavate three shovel probes on a diagonal transect across the property (Figure G4.6-7). Extensive dumping of car parts and other modern debris (Figure G4.6-13) have been deposited on the property and shovel probes identified modern fill material to a depth of 70 centimeters before refusal due to concrete debris. Further investigations on the property were stymied due to the extensive overgrowth and modern debris.

Figure G4.6-12 Surface conditions with extensive vegetation within OMF 179, view north.

Figure G4.6-13 Easily accessible portion of OMF 179 with a surface scatter of modern debris, view northeast.

6.1.1.3 South 344th Street Alternative

Within the South 344th Street Alternative, those rights of entry that were acquired centered around the Belmor Mobile Home Park and County Club and the Christian Faith Center and all municipal and state rights-of-way, including the WSDOT right-of-way along I-5. Most of the properties within this area of impact are heavily developed with limited surface access areas, and few rights of entry were acquired for the OMF site itself (Figure G4.6-14 and G4.6-15).

The survey proceeded with a pedestrian assessment and photo documentation of all accessible areas within the area of impact. For those parcels where a right of entry had not been obtained, the survey was conducted from the nearest public right-of-way (Figures G4.6-16 and G4.6-17).

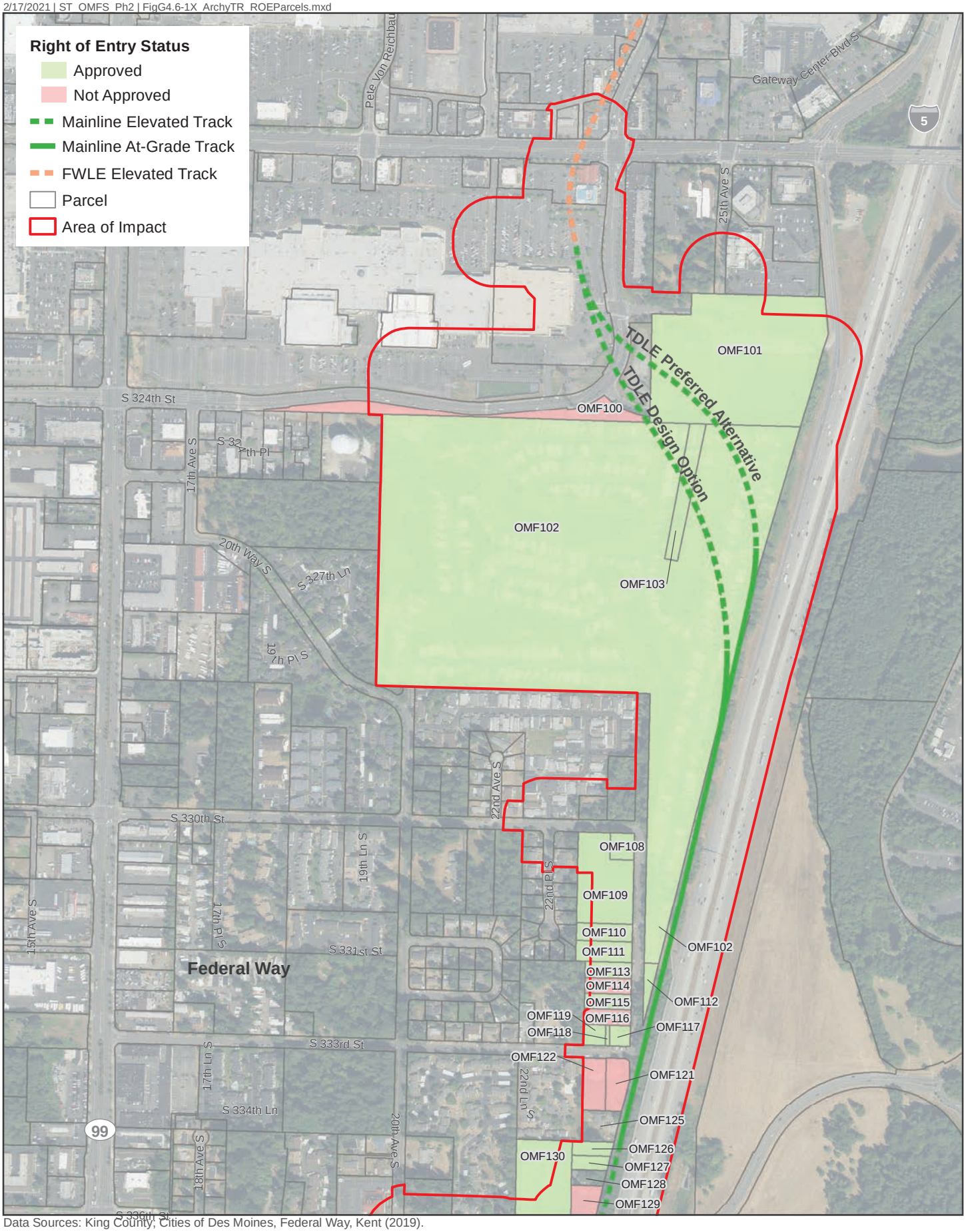
The area within parcel OMF 150 that does not overlap with the TDLE area of potential effects consists of a large, landscaped hill. Subsurface testing of the hill revealed that it is composed entirely of modern fill overlaying glacial till, which corresponds to aerial imagery from 2005 (Google Earth 2020).

Subsurface investigations within the area of impact began in parcel OMF 151 (Figures G4.6-15 and G4.6-17). Much of the parcel has been developed with extensive paved parking lots surrounding the Christian Faith Center. These paved areas are partially surrounded by ornamental green space that were sampled when utilities were not present (Figures G4.6-17 and G4.6-9). The excavations along the northwest corner of OMF 151, adjacent to OMF 152 (Figure G4.6-17), were along a slope composed of multiple different soil types. These soil strata are modern fill events mixed with expected soil horizons per NRCS data (stratified muck) resulting from flood events within the wetlands (OMF 152) overlaying glacial till. Elsewhere on the property, fill of varying thickness was found immediately overlaying sterile glacial sediment (Figures G4.6-17 and G4.6-10).

The far southern aspect of parcel OMF 151, near OMF 180, is a large, mounded platform that has been substantially modified during and after the 1970s. The subsurface investigations on this landform identified soil strata with modern bricks, glass fragments, and tile mixed with charcoal at a depth of 15 to 30 centimeters in SPs 47A, 47B, and 51 (Figures G4.6-15 and G4.6-17 and Attachments G4-3 and G4-4). These excavations and adjacent excavations indicate that the platform was created through multiple modern fill events over glacial till identified at depths between 35 to 45 centimeters. These deposits represent an archaeological deposit. Following discussions with Sound Transit, further investigations at this site (45KI1543) were determined necessary to assess the extent, content, and context of the historic-period deposit (see Section 6.1.1.5 and 6.1.2.2 below; Attachment G4-4).

Other probes within parcel OMF 151 showed expected soils per NRCS data (gravelly-very gravelly sandy loam) and modern fill above glacial till.

ATCRC attempted to complete subsurface testing of parcel OMF 167 (Figure G4.6-17). However, despite an approved right of entry, the property had been gated, locked, and no residents were present for surveyors to request admittance.



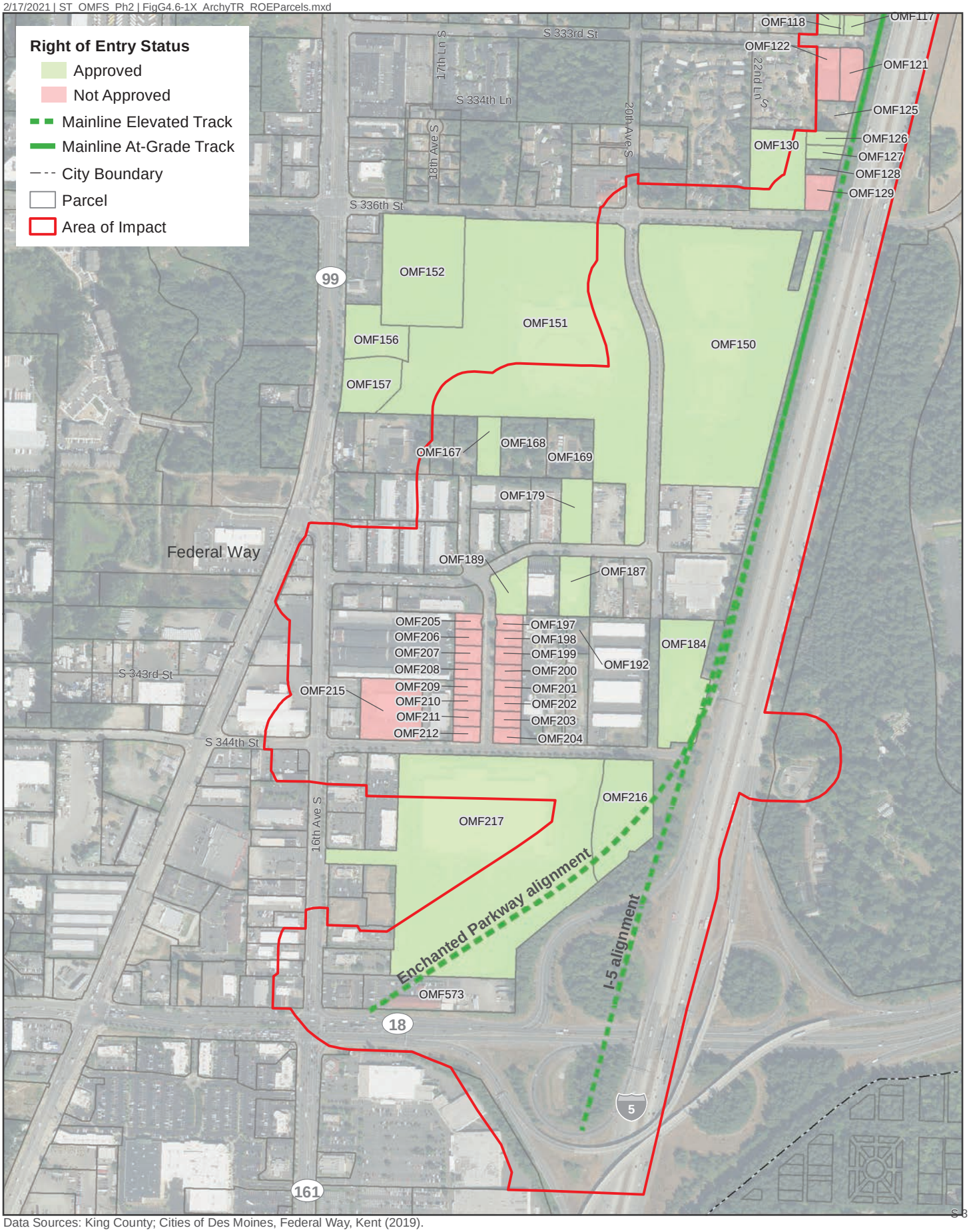
Data Sources: King County, Cities of Des Moines, Federal Way, Kent (2019).

N

0 500 1,000 Feet

FIGURE G4.6-14
Archaeological Rights of Entry
South 344th Street Alternative Mainline

OMF South



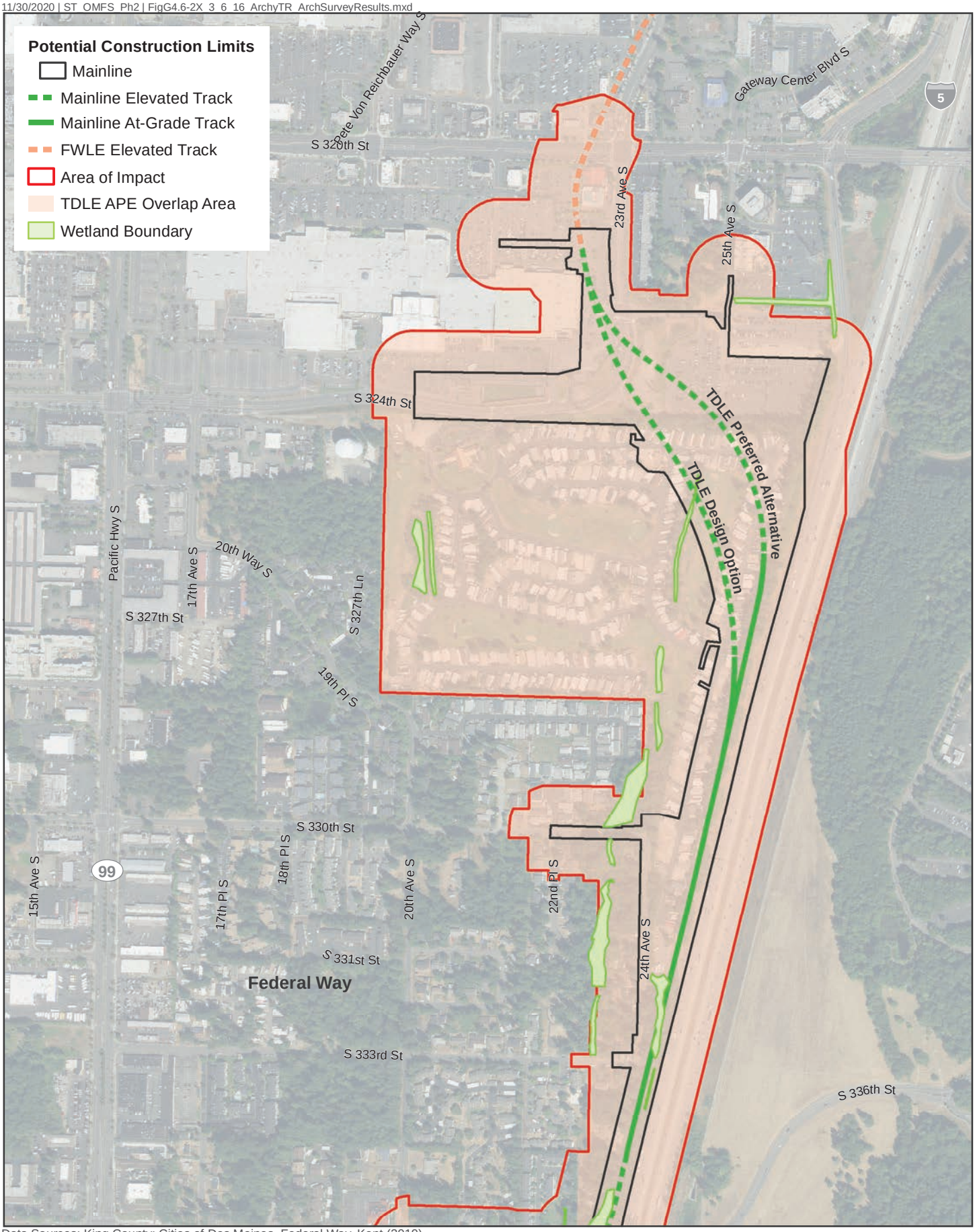
Data Sources: King County; Cities of Des Moines, Federal Way, Kent (2019).

N

0 500 1,000 Feet

FIGURE G4.6-15
Archaeological Rights of Entry
South 344th Street Alternative

OMF South



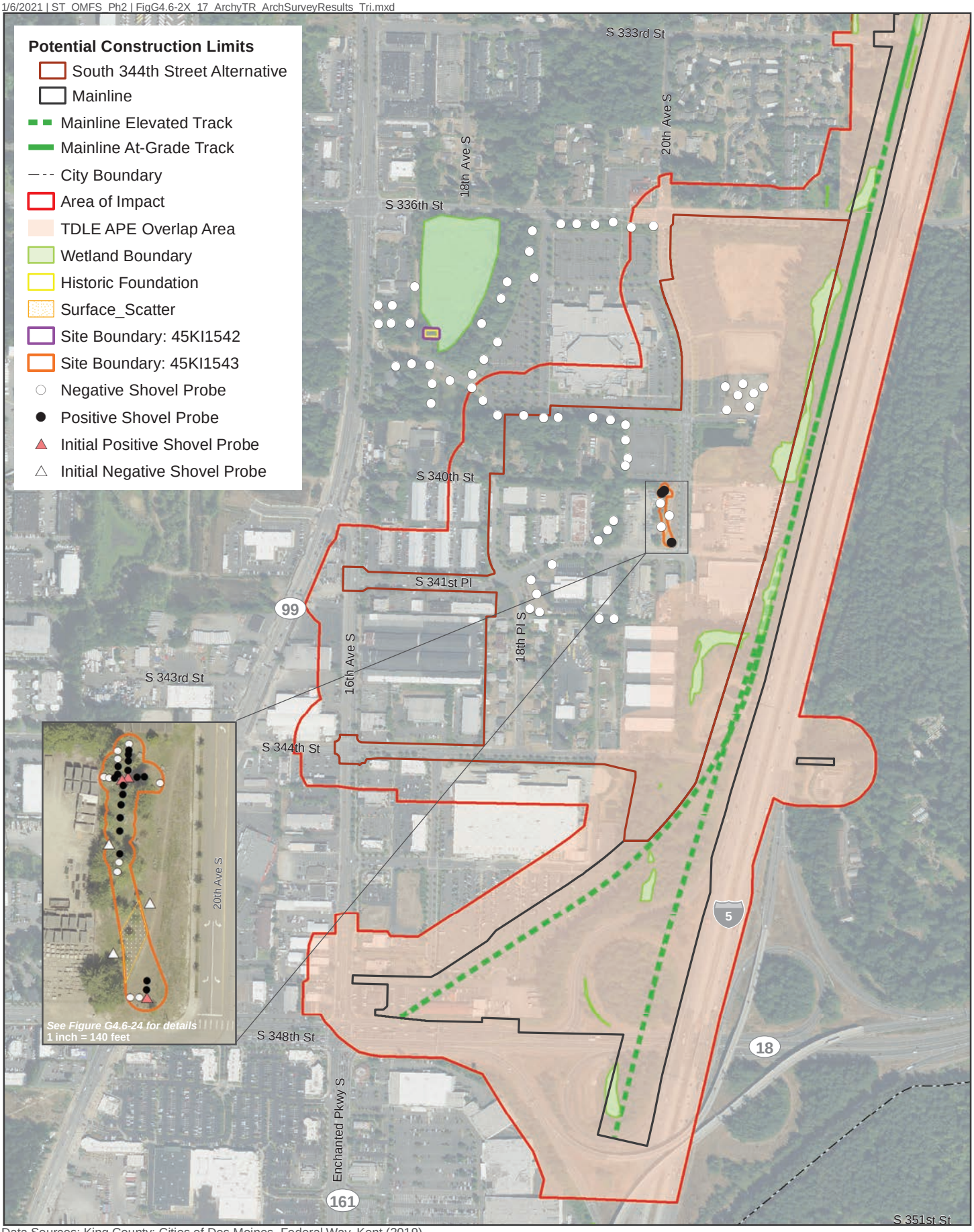
Data Sources: King County; Cities of Des Moines, Federal Way, Kent (2019).

N

0 500 1,000 Feet

FIGURE G4.6-16
Archaeological Survey Results
South 344th Street Alternative Mainline

OMF South



Data Sources: King County; Cities of Des Moines, Federal Way, Kent (2019).

N

0 500 1,000 Feet

FIGURE G4.6-17
Archaeological Survey Results
South 344th Street Alternative

OMF South

Parcel OMF 179 (Figure G4.6-17) is heavily overgrown with blackberry vines and other tall shrubbery to a height of 8 to 12 feet, interspersed with trees (Figure G4.6-10). Three shovel probes revealed modern fill to a depth of 70 centimeters. Modern dumping was noted where portions of this parcel were accessible.

Shovel probes excavated at parcels OMF 187 and OMF 189 revealed a thin modern soil immediately overlaying glacial till (Figure G4.6-17 and Attachment G4-2).

6.1.1.4 OMF South and TDLE Overlap Area

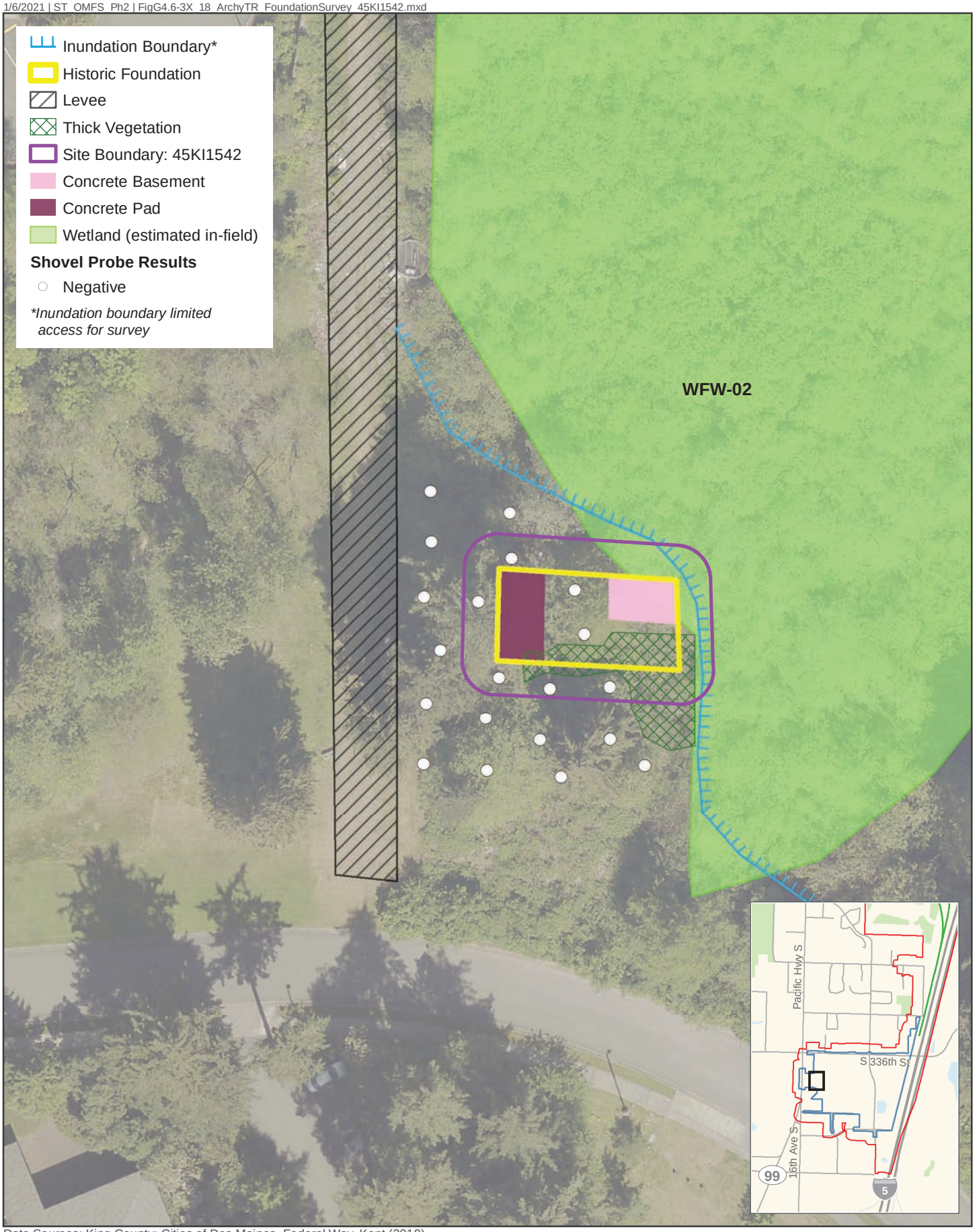
Archaeological investigation of the OMF South and TDLE overlap area awaits approval of the TDLE Cultural Resources Survey Plan. A description of the fieldwork in the OMF South and TDLE overlap area and its results will be included in the Final Environmental Impact Statement.

6.1.1.5 Site 45KI1542

Site 45KI1542 is a historic-period concrete slab and perimeter wall foundation located within parcel OMF 152, immediately south of the waterline within the City of Federal Way Stormwater Pond No. 159 (Figures G4.6-7, G4.6-17, and G4.6-18). The foundation is located at a slightly higher elevation than the average water level of the pond, which is regulated by a stormwater filtration system approximately 20 meters north of the foundation. At the time of this survey, the waterline was approximately 1 meter east of the foundation (Figure G4.6-18). The vegetation surrounding and over the foundation consisted of dense thickets of nettles, Himalayan blackberry, salmonberry, partially collapsed and sprawling white oak, Douglas-fir, and Western hemlock (Figures G4.6-19 through G4.6-21). Substantial modern debris, including biohazard materials, are regularly cleared from this area (Rafael 2020 personal communication).

Before additional subsurface survey was conducted near this foundation, historic aerial photographs were reviewed in detail for this area. The earliest aerial imagery of this location is from 1936 and illustrates a building in the location of the identified foundation at the southwestern corner of a prairie (King County Map Vault 1936/1937a; Figure G4.6-22). The structure is no longer visible in aerial photographs by 1957 (EarthExplorer 1957a, Figure G4.6-22). The tax assessment records for this area were accessed through the Puget Sound Regional Archives, who hold the historic King County Tax Assessors Records. Of the seven structures listed for the historic tax parcel, one matched the general description and location of the identified foundation (Figure G4.6-23). The likely structure was a 30-foot by 60-foot two-story barn with a concrete foundation, dirt and concrete floors, and a 10-foot by 12-foot concrete single room basement. The barn was built in 1932 and likely demolished between 1940 and 1950, given that it was assessed in 1940 by King County and noted as “gone” during the 1950 assessment.

The concrete perimeter foundation is oriented east-west with a total length of 61 feet, 6 inches (east-west) and a width of 30 feet, 6 inches (north-south). The foundation is a 6-inch footing with an inner lip that defines the outer perimeter of the foundation. The eastern section of the foundation has a 6-inch thick concrete pad that is 10 feet long by 30 feet, 6 inches wide (Figure G4.6-18). The northeastern corner of the foundation was originally a basement and measured 22 feet long by 8 feet, 4 inches wide (Figures G4.6-18 through G4.6-20). Two 8-inch square posts that would have supported a subfloor or interior wall were identified offset from the southern basement wall by 3 feet. These structural details match the general details of the potential structure identified during archival research (Figure G4.6-23).



Data Sources: King County; Cities of Des Moines, Federal Way, Kent (2019).

N

0 50 100 Feet

FIGURE G4.6-18
Site 45KI1542
Investigation Results
South 336th Street Alternative
OMF South

Much of the existing foundation elements show evidence of demolition, with sections having been pushed out of alignment or removed from their original positions (Figures G4.6-19 and G4.6-20). In addition, large concrete slabs have been deposited into the basement area. Some of these slabs have been deposited on top of furniture and cover graffiti (Figure G4.6-20).

A total of 20 shovel probes were excavated on the western and southern sides of the foundation (Figure G4.6-18). Generally, historical fill ranged from 20 to 70 centimeters thick and it was deposited directly on intact glacially deposited parent material (glacial till) (Attachment G4-2). Contacts between fill and glacial till were sharp and clearly defined, suggesting that the site had undergone substantial land alterations with heavy machinery before the structure was constructed and at least once since the structure was abandoned.

No subsurface precontact or historic-period artifacts, features, or other cultural deposits were identified during this shove probe survey.

Figure G4.6-19 Concrete pad with disturbed perimeter foundation, view southeast

Figure G4.6-20 View of concrete basement with demolition debris, view east

Figure G4.6-21 Cleared vegetation for excavation (SP01-17), view northeast

1936/1937 Aerial Photograph of Site 45KI1542

1957 Aerial Photograph of Site 45KI1542

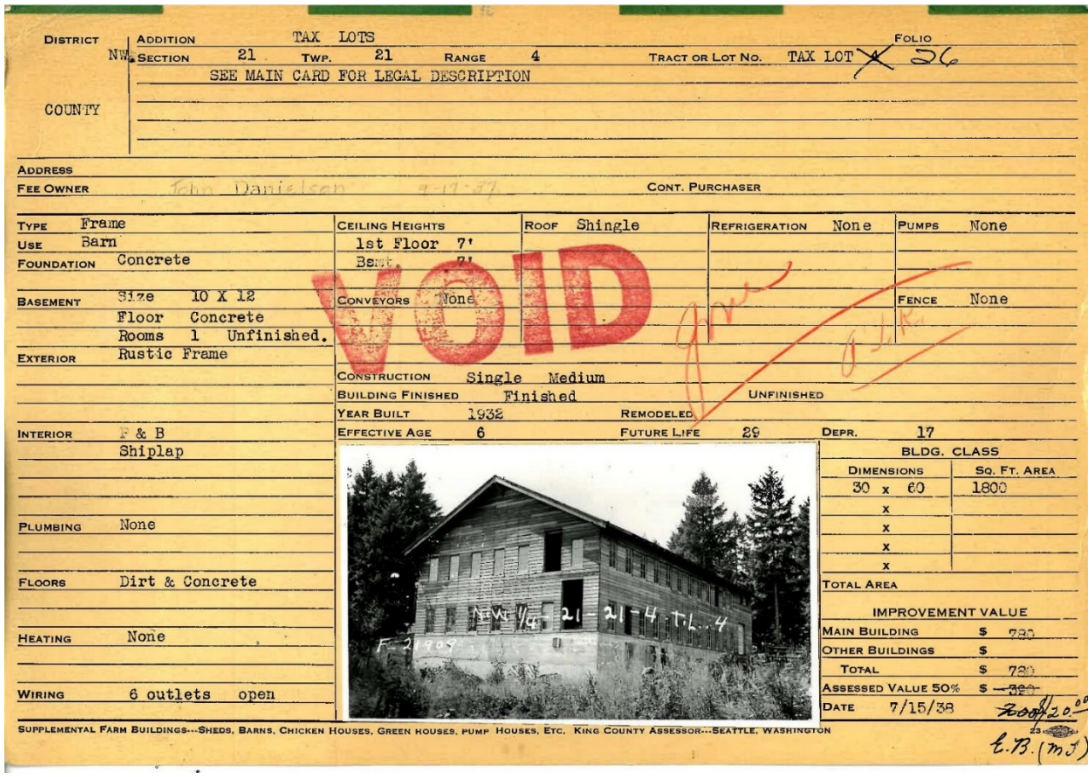
Data Sources: King County Map Vault (1937 S-T-R Records), USGS 1957 Aerial Photographs (EarthExplorer), ATCRC (2020).

N

0 200 400 Feet

FIGURE G4.6-22
1936/1937 and 1957 Historic Aerials of Site 45KI1542

OMF South



Source: Courtesy of the Puget Sound Regional Archive

Figure G4.6-23 King County Tax Assessors Record, 1938

6.1.1.6 Site 45KI1543

Site 45KI1543 is a historic-period debris scatter in the southern portion of parcel OMF 151, on a highly modified landform situated on the northwest corner of 20th Ave South and South 341st Place intersection. The debris scatter was initially identified in two locations in the northwest and southeast corners of the landform (Figure G4.6-24). The site is located in both the South 336th Street and South 344th Street alternatives.

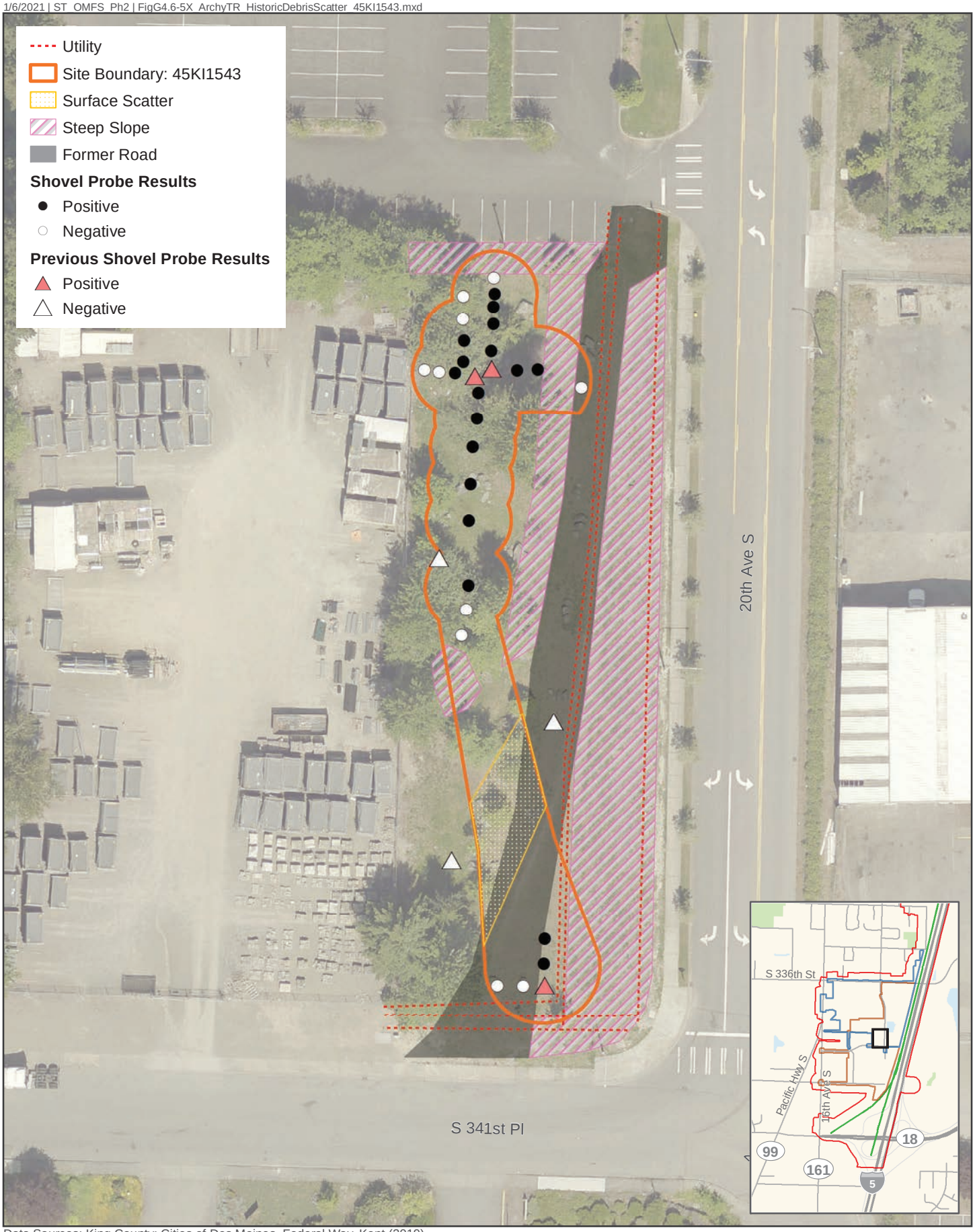
Before additional subsurface survey was conducted on the landform, historic aerial photographs were reviewed in detail for this area. The earliest aerial imagery of this location dated to 1936/1937 and illustrates a landscape with partial forest regrowth with winding paths following a clear-cut event. The closest structure at this time was located approximately 200 meters southwest as part of a small farmstead off South 344th Street (Figure G4.6-25) (King County Map Vault 1936/1937a). In the next available imagery from 1957, the site location is completely forested and the closest structures at that time are approximately 200 meters directly south (Figure G4.6-25) (EarthExplorer 1957a). There does not seem to be any access to this site from the developed areas off South 344th Street. There is no visible change in the landscape immediately surrounding the site until the development of the eastern half of South 341st Place in the 1980s. These developments slowly progressed eastward along the roadway, beginning with the clearcutting of parcels adjacent to the road between 1985 to 1987, followed by progressive grading and construction that occurred from 1987 to the early 1990s. Aerial imagery from 1990 shows the landform completely graded, with few clusters of vegetation. The landscape seems to have been completely graded to glacial soils during this time (Figure G4.6-25) (Google Earth 2020).

By 2002, the site had largely become overgrown, with evidence of dumping in aerial imagery. The evidence of dumping becomes more widespread between 2002 and 2005 (Google Earth 2020). In 2005, the site was once again mostly cleared during the preparation for the construction of 20th Ave South and the Christian Faith Center. It is at this time that the roadway shown on the surveyed landform is constructed, and a large pile of boulders appeared in the center of the landform (Google Earth 2020).

The boulders were spread across the landform by 2007, as shown in satellite imagery (Google Earth 2020), likely in conjunction with vegetation clearance. The final visible landscape alteration occurred in the summer of 2016, when a vegetation-removal effort occurred across the western half of the landform (Google Earth 2020).

A very sparse scatter of historical and recent artifacts was observed on the surface during the pedestrian survey of the landform between the two concentrations identified during the subsurface investigations (Figure G4.6-24 and Attachment G4-2). However, surface visibility was approximately 2 percent, with vegetation across the landform consisting of thick grasses, a thicket of Himalayan blackberry, Douglas-fir, Western hemlock, and several non-native decorative species (Figures G4.6-26 and G4.6-27). The landform also has three steep slopes, boulder piles, extensive utility corridors, and a prepared gravel road, which limited excavation locations (Figures G4.6-26 and G4.6-27).

Twenty-eight shovel probes were excavated across the landform. Of these, 24 were excavated across the northwestern quarter of the landform, and the remaining four were excavated in the southeastern corner. A total of 17 shovel probes contained modern or temporally non-diagnostic demolition debris (Figure G4.6-24 and Attachment G4-2). The soils across the site were identified as layers of fill over intact glacially deposited patent material. Glacial till was typically identified at depths between 20 to 30 centimeters below the surface (Figure G4.6-28 and Attachment G4-2).



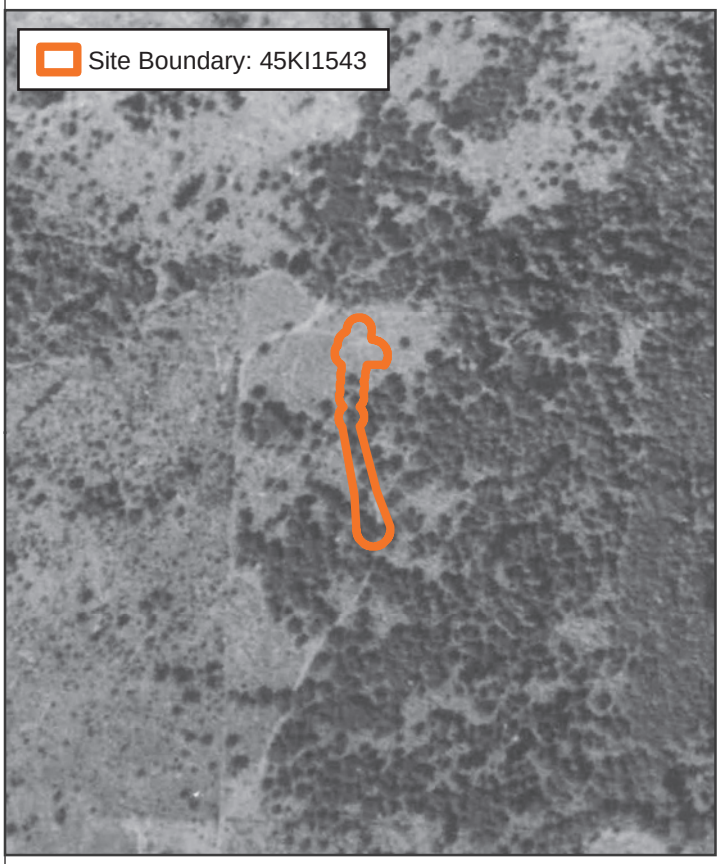
Data Sources: King County; Cities of Des Moines, Federal Way, Kent (2019).

N

0 50 100 Feet

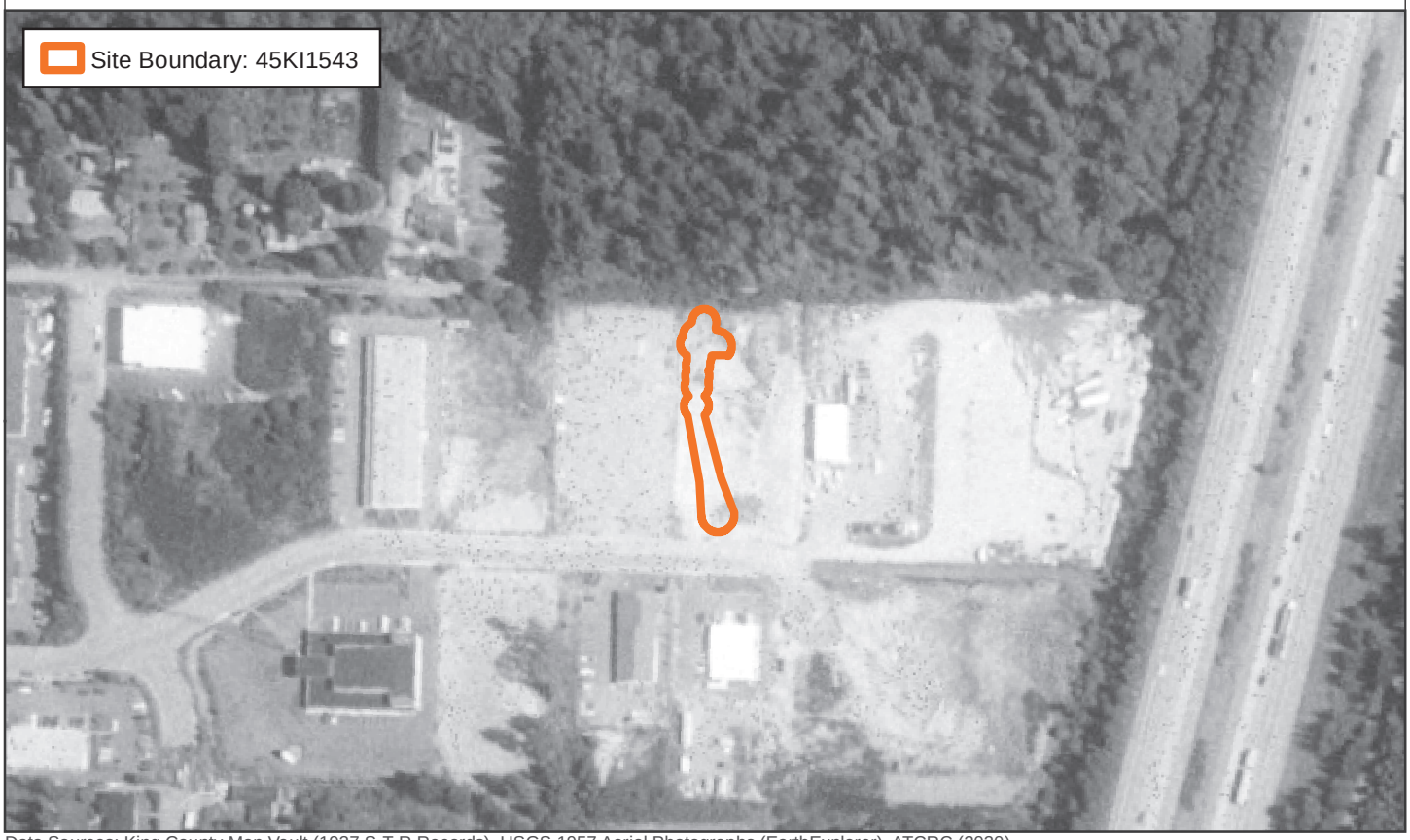
FIGURE G4.6-24
Site 45KI1543
Investigation Results
South 336th Street and South 344th Street Alternatives
OMF South

1936/1937 Aerial Photograph of Site 45KI1543



1957 Aerial Photograph of Site 45KI1543

1991 Aerial Photograph of Site 45KI1543



Data Sources: King County Map Vault (1937 S-T-R Records), USGS 1957 Aerial Photographs (EarthExplorer), ATCRC (2020).

N

0 200 400 Feet

FIGURE G4.6-25
1936/1937, 1957, and 1991 Historic Aerials of Site 45KI1543

OMF South

Figure G4.6-26 Overview of Site 45KI1543 landform, northeast corner, view south-southwest

Figure G4.6-27 Overview of Site 45KI1543 landform with utilities and the gravel road, SP02-27, southeast corner, view north-northwest

Figure G4.6-28 Typical soil strata, brown fill over orangish-brown glacial till, SP02-06

The artifacts identified include nondiagnostic clear, green, and brown glass fragments; leather scraps, plastics (both hard fragments and films), numerous, machine-made brick fragments, a ceramic tile fragment, culinary ware, ceramic fragments, and cut stone block fragments. Only two metal artifacts were identified: a wire nail and an unidentified metal. None of the artifacts were distinctive or bore any markings that might have provided temporally significant information (Figures G4.6-29 to G4.6-32**)**. All of these artifact types are mixed in the same general soil strata (brown sandy loam with pebbles and cobbles) (Figure G4.6-28, G4.6-33, and G4.6-34, and Attachment G4-2). In most cases (14 of 17), the artifact-bearing layer was present immediately on top of intact, undisturbed glacially deposited parent material with sharp, clearly defined boundaries (Figure G4.6-23 and Attachment G4-2). The other three positive shovel probes had multiple strata of modern fill with various artifact concentrations (Figure G4.6-24 and Attachment G4-2). All identified strata had sharply defined boundaries and contained moderate to high levels of pebbles and cobbles.

Figure G4.6-29 Metal and glass debris Strata 1, SP02-28

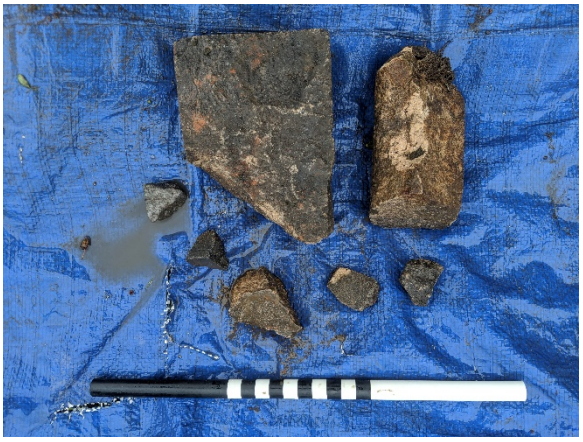


Figure G4.6-30 Cut stone fragments identified Strata 1, SP02-28

Figure G4.6-31 Mixed gravel and brick fragments Strata 1, SP02-28

Figure G4.6-32 Glass and brick debris Strata 2, SP02-01

Figure G4.6-33 Typical debris concentration encountered in shovel probes across the site, SP02-28

Figure G4.6-34 Detail of typical debris scatter strata with a low, sharply defined stratum boundary, SP02-28

The origin of this debris scatter is unknown. There is no evidence of historic structures near the site from the 1930s through the 1980s that could have been the source. This implies that the debris may have been imported as fill, or the site was used for dumping, following the modern clearance of the site for development. No diagnostic marks were identified on any of the artifacts encountered during the survey of this site. All of the brick fragments identified are hard, evenly fired, and of very fine industrial standard clay. All of them have edges that range from sub-round to very angular, and most are less than five centimeters in size. The cut stone fragments are finished on one face. Some have a finished edge. None have perforations, and the unfinished edges are subangular to angular. All of the glass fragments are less than 2 square centimeters in size and have subangular to angular edges.

6.1.2 NRHP Eligibility Recommendation

6.1.2.1 Site 45KI1542

Integrity

The site's structural remnants are still in the original construction location, thereby retaining the integrity of geographic location. However, due to the removal and demolition of the building's superstructure, the resource lacks integrity of design. The setting, feeling, and association no longer retain integrity as the setting has been substantially altered from its period use. The original rural landscape setting is now heavily urbanized, thereby removing all aspects of the structure's former setting. The associated pasture, once and integral portion of the structure's setting and feeling has been substantially altered and its current use is as a wooded water catchment basin. In sum, the site no longer retains significance or integrity in the majority of its aspects.

Eligibility

Located off of SR 99, the foundation is the remains of a barn associated with John Danielson, who owned the barn. It was constructed in 1932, at the beginning of the Great Depression (Figure G4.6-13). It appears that the barn's demolition occurred between 1940 and 1950. The former structure was likely a west-facing gable. The two-story building has a dirt and concrete floor. The foundation was associated with the important economic collapse of the 1930s and the agricultural development of the area from the 1920s through the early 1960s.

The site does not contribute to the broad patterns of local, state, or national history and is recommended as not eligible for listing in the NRHP under Criterion A. Although multiple individuals have owned the land where the site is located, the foundation is closely linked with ownership by John Danielson. Research has not demonstrated that the resource is associated with individuals who are significant in local, state, or national events and is recommended as not eligible for listing in the NRHP under Criterion B. The foundation is not considered significant in terms of engineering, architecture, or artistic distinction nor does it embody distinctive characteristics of a type, period, or method of construction. It is not the work of a master and is not eligible for listing in the NRHP under Criterion C. The foundation itself has minimal data content and is common to concrete construction methods of the 1930s. Subsurface investigations (shovel probes) around the foundation failed to identify any subsurface cultural materials or features associated with the site. The site lacks the potential to contribute significant information that might contribute to our understanding of rural farming and its social and economic context in this area of Washington in the 1930s. It is not eligible for listing in the NRHP under Criterion D.

In summary, site 45KI1542 lacks integrity and does not meet criteria to be considered significant under Criteria A through D of the NRHP and does not meet criteria necessary for listing in the WHR or local registers.

6.1.2.2 Site 45KI1543

Integrity

Although no definitive evidence for the origin of this deposit of historic-period artifacts was obtained, the characteristics and content of the sites artifact assemblage — predominately construction materials along with their evident fragmentation and disturbed context — indicates that the artifacts are in a secondary depositional context and incorporated in an imported fill matrix. All of the debris shows evidence of having been tumbled and worn. The lack of metals in the debris identified also suggests that a concerted effort was made to remove it before the debris was deposited in its current location. Lastly, the sharp clear boundaries between multiple soil strata is a typical indication of modern landscape modification strategies, where soils are layered and compacted with heavy machinery. The act of removing, sorting, and redepositing the historic debris from its place of origin has severed its link to a specific location and setting.

Eligibility

The site and its historical artifacts appear to be structural remnants; however, they are in secondary depositional context and site materials deposited as fill. The site does not appear to be associated with events significant to local, state, or national history (Criterion A); nor is it associated with the lives of individuals significant in local, regional or national history past (Criterion B); nor is it significant for its engineering or architectural qualities (Criterion C); and the site lacks the potential to contain significant scientific information (Criterion D).

In summary, site 45KI1543 lacks integrity and does not meet criteria to be considered significant under Criteria A-D of the NRHP and does not meet criteria necessary for listing in the WHR or local registers.

6.2 Historic-Period, Built-Environment Survey Results

Using the methods described above (Section 5.2), HRA identified a total of 86 historic-period, built-environment resources that could qualify for listing in the KCRHP, WHP, and NRHP within the area of impact requiring survey and inventory. A map of surveyed resources is found in Attachment G4-4. As noted above, resources surveyed and inventoried for the OMF South project included historic-period, built-environment resources that will be 40 years old or older at the time of project construction (i.e., 2025) or those built in or before 1985, minus those meeting clearly defined exemptions (Section 5.2). HRA found that 58 of the 86 historic-period resources are old enough to qualify for listing in the NRHP; survey results were recorded in HPIs and are included as Attachment G4-5.

Below, HRA provided an initial recommendation regarding each resource's eligibility for the NRHP under Criteria A through D. These recommendations are advisory and can inform the lead agency's determinations of eligibility for surveyed resources (Table G4.6-1). Additionally, HRA provided initial recommendations regarding each resource's eligibility for local and state registers of historic places (Table G4.6-1).

Table G4.6-1 Surveyed Resources in the OMF South Areas of Impact

#	Address	Parcel	OMFPIN	Existing Use	Year Built	OMF South Alternative Area of Impact	HRA's NRHP Eligibility Recommendation
1	2859 S 244th Street	2122049069	OMF240	Residence	1948	Midway Landfill Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
2	2907 S 244th Street	2122049111	OMF238	Residence	1952	Midway Landfill Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
3	24805 Pacific Highway S	2122049156	OMF035	Commercial	1977	Midway Landfill Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
4	24811 Pacific Highway S	2122049152	OMF036	Commercial	1979	Midway Landfill Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
5	24852 Pacific Highway S	2122049078	OMF041	Commercial	1974	Midway Landfill Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
6	25036 Pacific Highway S	2122049154	OMF045	Not in Use	1966	Midway Landfill Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
7	25205 29th Avenue S	1950900005	OMF061	Residence	1958	Midway Landfill Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
8	2905 S 252nd Street	1950900055	OMF060	Residence	1957	Midway Landfill Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
9	2911 S 252nd Street	1950900060	OMF059	Residence	1957	Midway Landfill Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
10	2919 S 252nd Street	1950900065	OMF058	Residence	1957	Midway Landfill Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
11	2925 S 252nd Street	1950900070	OMF057	Residence	1957	Midway Landfill Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
12	2933 S 252nd Street	1950900075	OMF056	Residence	1957	Midway Landfill Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
13	2939 S 252nd Street	1950900080	OMF055	Residence	1957	Midway Landfill Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
14	3018 S 253rd Street	1951500015	OMF078	Residence	1959	Midway Landfill Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
15	25318 31st Avenue S	1951500070	OMF090	Residence	1977	Midway Landfill Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
16	1706 S Commons	7622400010	OMF097	Commercial	1975	S 336th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
17	2101 S 324th Street	1621049037	OMF102	Residence	1966	S 336th Street and South 344th Street Alternatives	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
18	33003 24th Avenue S	7978800682	OMF108	Residence	1951	S 336th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
19	33035 24th Avenue S	7978800679	OMF110	Residence	1957	S 336th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
20	33049 24th Avenue S	7978800681	OMF111	Residence	1948	S 336th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
21	33111 24th Avenue S	7978200164	OMF113	Residence	1968	S 336th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
22	33211 24th Avenue S	7978200165	OMF114	Residence	1975	S 336th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
23	33217 24th Avenue S	7978200167	OMF115	Residence	1969	S 336th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
24	2244 S 333rd Street	7978200160	OMF117	Residence	1967	S 336th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
25	2221 S 333rd Street	7978200182	OMF123	Residence	1980	S 336th Street and S 344th Street Alternatives	Recommended Not Eligible for NRHP, WHR, or KCRHP listing

Table G4.6-1 Surveyed Resources in the OMF South Areas of Impact (continued)

#	Address	Parcel	OMFPIN	Existing Use	Year Built	OMF South Alternative Area of Impact	HRA's NRHP Eligibility Recommendation
26	2237 S 333rd Street	7978200184	OMF122	Residence	1985	S 336th Street and S 344th Street Alternatives	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
27	2245 S 333rd Street	7978200180	OMF121	Residence	1948	S 336th Street and S 344th Street Alternatives	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
28	2253 S 333rd Street	7978200186	OMF125	Residence	1985	S 336th Street and S 344th Street Alternatives	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
29	2230 S 336th Street	7978200210	OMF126	Residence	1962	S 336th Street and S 344th Street Alternatives	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
30	2234 S 336th Street	7978200215	OMF127	Residence	1959	S 336th Street and S 344th Street Alternatives	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
31	33366 20th Avenue S	7978200106	OMF132	Residence	1967	S 336th Street and S 344th Street Alternatives	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
32	1820 S 336th Street	7978200096	OMF137	Residence	1950	S 336th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
33	1812 S 336th Street	7978200070	OMF138	Residence	1947	S 336th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
34	33532 18th Avenue S	4129400050	OMF142	Residence	1954	S 336th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
35	33531 18th Avenue S	4129400005	OMF146	Residence	1954	S 336th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
36	33606 Pacific Highway S	2121049025	OMF153	Commercial	1951	S 336th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
37	33903 Pacific Highway S	2021049086	OMF160	Commercial	1947	S 336th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
38	33838 Pacific Highway S	2121049068	OMF157	Commercial	1980	S 336th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
39	34020 Pacific Highway S	2121049050	OMF163	Commercial	1985	S 336th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
40	1700 S 340th Street: Residence	2121049024	OMF164	Residence	1946	S 336th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
41	1700 S 340th Street: Masonic	2121049024	OMF164	Meeting Hall	1946	S 336th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
42	1724 S 340th Street	2121049041	OMF165	Residence	1966	S 336th Street and S 344th Street Alternatives	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
43	1800 S 340th Street	2121049042	OMF166	Residence	1966	S 336th Street and S 344th Street Alternatives	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
44	1816 S 340th Street	2121049040	OMF167	Residence	1949	S 336th Street and S 344th Street Alternatives	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
45	1828 S 340th Street	2121049039	OMF168	Residence	1946	S 336th Street and S 344th Street Alternatives	Recommended Not Eligible for NRHP, WHR, or KCRHP listing

Table G4.6-1 Surveyed Resources in the OMF South Areas of Impact (continued)

#	Address	Parcel	OMFPIN	Existing Use	Year Built	OMF South Alternative Area of Impact	HRA's NRHP Eligibility Recommendation
46	1920 S 340th Street	2121049047	OMF169	Residence	1953	S 336th Street and S 344th Street Alternatives	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
47	1908 S 341st Place	3903800070	OMF178	Commercial	1985	S 336th Street and S 344th Street Alternatives	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
48	2102 S 341st Place	2121049061	OMF181	Commercial	1983	S 336th Street and S 344th Street Alternatives	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
49	34008 18th Place S	3903800100	OMF175	Commercial	1985	S 336th Street and S 344th Street Alternatives	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
50	1626 S 341st Place	3903800110	OMF171	Commercial	1978	S 336th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
51	34004 16th Avenue S	3903800160	OMF170	Commercial	1981	S 336th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
52	34110 Pacific Highway S	2021049119	OMF566	Commercial	1977	S 336th Street and S 344th Street Alternatives	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
53	1610 S 341st Place	3903800150	OMF608	Commercial	1978	S 336th Street and S 344th Street Alternatives	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
54	1620 S 341st Place	3903800140	OMF172	Commercial	1978	S 336th Street and S 344th Street Alternatives	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
55	1710 S 341st Place	3903800130	OMF173	Commercial	1978	S 336th Street and S 344th Street Alternatives	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
56	1720 S 341st Place	3903800120	OMF174	Commercial	1978	S 336th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
57	34222 Pacific Highway S	2021049137	OMF568	Skating Rink	1979	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
58	1607 S 341st Place	3903800010	OMF606	Commercial	1976	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
59	1625 S 341st Place	3903800015	OMF607	Commercial	1980	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
60	1707 S 341st Place	3903800020	OMF190	Commercial	1980	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
61	1909 S 341st Place	3903800030	OMF189	Religious Facility	1985	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
62	34205 18th Place S	4129600080	OMF205	Residence	1959	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
63	34204 18th Place S	4129600005	OMF197	Residence	1962	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
64	34213 18th Place S	4129600075	OMF206	Residence	1961	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
65	34212 18th Place S	4129600010	OMF198	Residence	1959	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
66	34221 18th Place S	4129600070	OMF207	Residence	1958	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
67	34220 18th Place S	4129600015	OMF199	Residence	1958	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing

Table G4.6-1 Surveyed Resources in the OMF South Areas of Impact (continued)

#	Address	Parcel	OMFPIN	Existing Use	Year Built	OMF South Alternative Area of Impact	HRA's NRHP Eligibility Recommendation
68	34229 18th Place S	4129600065	OMF208	Residence	1955	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
69	34228 18th Place S	4129600020	OMF200	Residence	1958	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
70	34320 Pacific Highway S	2021049093	OMF564	Industry	1954	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
71	34235 18th Place S	4129600060	OMF209	Residence	1955	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
72	34234 18th Place S	4129600025	OMF201	Residence	1957	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
73	34243 18th Place S	4129600055	OMF210	Residence	1960	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
74	34242 18th Place S	4129600030	OMF202	Residence	1955	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
75	1610 S 344th Street	2121049073	OMF571	Commercial	1985	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
76	34251 18th Place S	4129600050	OMF211	Residence	1955	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
77	34250 18th Place S	4129600035	OMF203	Residence	1955	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
78	34259 18th Place S	4129600045	OMF212	Not in Use	1966	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
79	1824 S 344th Street	4129600040	OMF204	Residence	1959	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
80	1916 S 344th Street	2121049056	OMF196	Residence	1947	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
81	1928 S 344th Street	2121049045	OMF194	Commercial	1948	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
82	1515 S 344th Street	8897000030	OMF648	Commercial	1977	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
83	34703 16th Avenue S	8897000090	OMF657	Commercial	1974	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
84	1610 S 347th Place	2121049012	OMF569	Commercial	1985	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
85	34726 16th Avenue S	2121049077	OMF572	Commercial	1978	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing
86	1688 S 348th Street	2121049078	OMF573	Hotel	1982	S 344th Street Alternative	Recommended Not Eligible for NRHP, WHR, or KCRHP listing

7 CONCLUSIONS AND RECOMMENDATIONS

7.1 Midway Landfill Alternative

7.1.1 Archaeological Recommendations

Archival research has not identified any archaeological resources within the Midway Landfill area of impact that are listed in or eligible for listing in the NRHP, WHR, or KCRHP. Additionally, ATCRC did not identify any archaeological resources within the area surveyed for the Midway Landfill area of impact. As such, archaeological resources will not be impacted by this alternative. ATCRC recommends the adoption of an IDP prior to ground disturbance activities in the event that previously unidentified archaeological resources or human remains are discovered during construction. Should the project be modified from that described in Section 1, additional archaeological analysis may be necessary.

7.1.2 Historic, Built-Environment Properties Recommendations

Archival research indicated that there are no previously identified historic built-environment properties listed in or eligible for listing in the NRHP, WHR, or KCRHP located in the area of impact for the Midway Landfill Alternative. Additionally, based on survey results, HRA recommends that no historic-period, built-environment resources surveyed for the OMF South project are eligible for listing in the NRHP, WHR, or KCRHP as historic properties. Should the project be modified from that described in Section 1, additional historic-period, built-environment analysis may be necessary.

7.2 South 336th Street Alternative

7.2.1 Mainline Recommendations

ATCRC recommends that subsurface archaeological investigation be completed in the OMF South and TDLE overlap area once the TDLE Cultural Resources Survey Plan is approved. A description of the fieldwork and its results should be included in the Final Environmental Impact Statement.

7.2.2 Archaeological Recommendation

Archival research has not identified any archaeological resources within the South 336th Street area of impact that are listed in or eligible for listing in the NRHP, WHR, or KCRHP. ATCRC identified two historic-period archaeological resources within the area surveyed (45KI1542 and 45KI1543). ATCRC is recommending both of these sites lack integrity and are not eligible for listing in the NRHP, WHR, and KCRHP. ATCRC recommends adoption of an IDP prior to ground disturbance activities in the event that previously unidentified archaeological resources or human remains are discovered during construction. Should the project be modified from that described in Section 1, additional archaeological analysis may be necessary.

7.2.3 Historic, Built-Environment Properties Recommendations

Archival research indicated that there are no previously identified historic properties listed in or eligible for listing in the NRHP, WHR, or KCRHP located in the area of impact for the South 336th Street Alternative. Additionally, based on survey results, HRA recommends that no historic-period, built-environment resources surveyed for the OMF South project are eligible listing in the NRHP, WHR, or KCRHP as historic properties. Should the project be modified from that described in Section 1, additional historic-period built-environment analysis may be necessary.

7.3 South 344th Street Alternative

7.3.1 Mainline Recommendations

ATCRC recommends that subsurface archaeological investigation be completed in the OMF South and TDLE overlap area once the TDLE Cultural Resources Survey Plan is approved. A description of the fieldwork and its results should be included in the Final Environmental Impact Statement.

7.3.2 Archaeological Recommendations

Archival research has not identified any archaeological resources within the South 344th Street area of impact that are listed in or eligible for listing in the NRHP, WHR, or KCRHP. ATCRC identified one historic-period archaeological resource (45KI1543) within the area surveyed. However, ATCRC is recommending that this site lacks integrity and is not eligible for listing in the NRHP, WHR, and KCRHP. ATCRC recommends adoption of an IDP prior to ground disturbance activities in the event that previously unidentified archaeological resources or human remains are discovered during construction. Should the project be modified from that described in Section 1 additional archaeological analysis may be necessary.

7.3.3 Historic, Built-Environment Properties Recommendations

Archival research indicated that there are no previously identified historic properties listed in or eligible for listing in the NRHP, WHR, or KCRHP located in the area of impact for the South 344th Street Alternative. Additionally, based on survey results, HRA recommends that no historic-period, built-environment resources surveyed for the OMF South project are eligible for listing in the NRHP, WHR, or KCRHP as historic properties. Should the project be modified from that described in Section 1, additional historic-period, built-environment analysis may be necessary.

7.4 Summary of Impacts

No impacts to cultural resources are anticipated based on the current understanding of the project.

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