



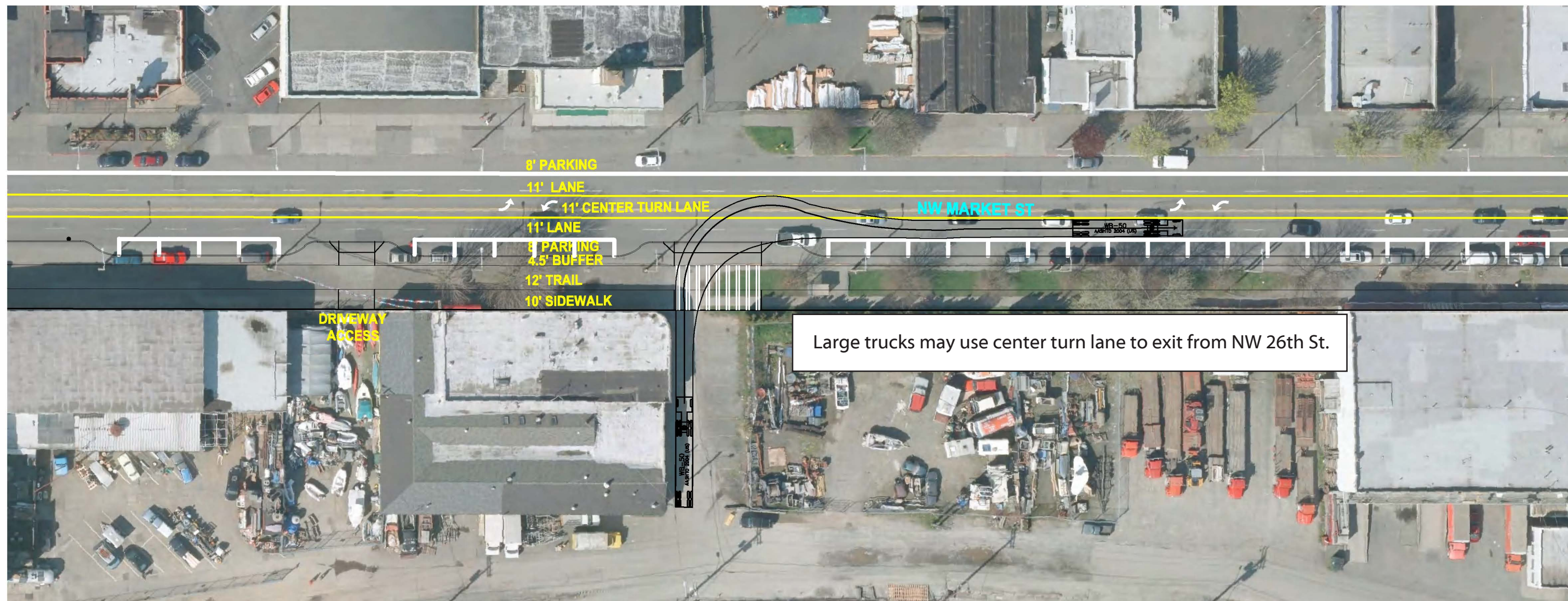
APPENDIX A
AutoTURN ANALYSIS

AutoTURN Description and Simulations

AutoTURN analyzes the swept path of vehicle maneuvers to determine the appropriate roadway design to accommodate turning vehicles. AutoTURN was used to simulate ingress and egress from driveways as well as maneuvers through intersections for large vehicles. During preliminary design of the trail, a WB-50 (a large semitrailer truck) and a single-unit truck (similar in length to a cement truck) were used to evaluate vehicle swept path. This allows trail designers to determine the appropriate width for driveways as well as the appropriate curb radii for intersections to accommodate large vehicle turning movements in the study area. AutoTURN was completed for a sample of driveways in the study area (see the following figures). During final design of the trail, AutoTURN would be completed for individual driveways, and SDOT would work with property owners to determine the most appropriate design vehicle for each individual driveway.



SCALE IN FEET



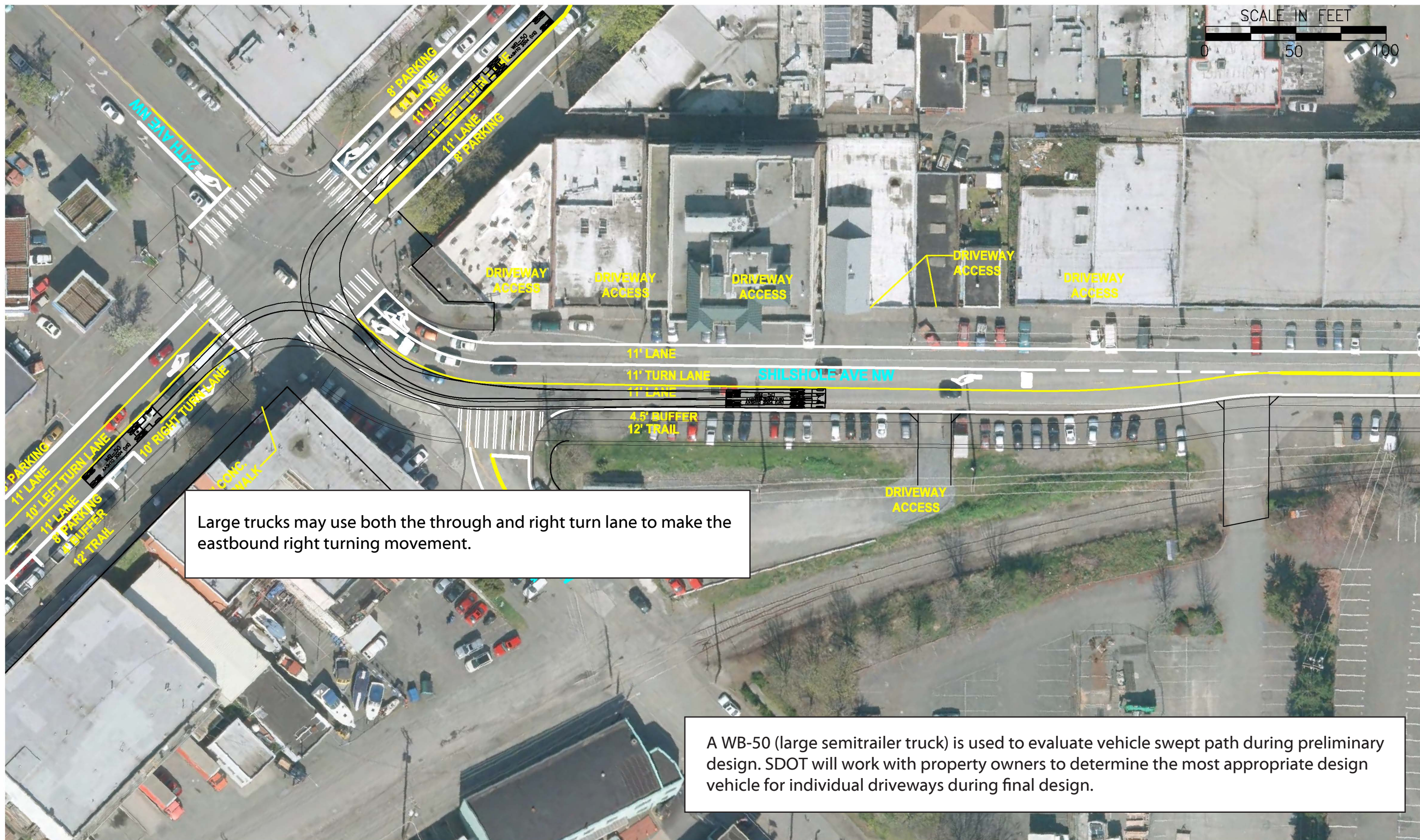
26TH—MARKET WB—50 TURNING MOTION

A WB-50 (large semitrailer truck) is used to evaluate vehicle swept path during preliminary design. SDOT will work with property owners to determine the most appropriate design vehicle for individual driveways during final design.

DATE: Monday, May 15, 2017 4:28:43 PM
PLOTTED BY: dmacdod
PATH: U:\PSO\Projects\Clients\7269-ESA\564-7269-001_Burke-Gilman Trail_EIS\955\res\CAD\FIGURES\Autobum Ex_LAYOUT_26TH - AUTOTURN - PREF ALT - FILE: XPS\7269\01\03\01-PREF ALT - AUTOTURN



SCALE IN FEET



Large trucks may use both the through and right turn lane to make the eastbound right turning movement.

A WB-50 (large semitrailer truck) is used to evaluate vehicle swept path during preliminary design. SDOT will work with property owners to determine the most appropriate design vehicle for individual driveways during final design.

MARKET-SHILSHOLE WB-50 TURNING MOTION

FILE: XPS7269001P031301-PREF ALT - AUTOURN LAYOUT: MKT-SH PATH: \\vourmetric.com\amx\PSO\Projects\Clients\7269-ESA\7269-001_Burke-Gilman_Troll_EIS\995\ca\CADD\FIGURES\Aurum Et. PLOTTED BY: thomasa DATE: Tuesday, March 21, 2017 2:05:18 PM



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Turning movements from northwest-bound Shilshole Ave NW to eastbound NW Market St by WB-50's are not accommodated by existing conditions or with the design.

A WB-50 (large semitrailer truck) is used to evaluate vehicle swept path during preliminary design. SDOT will work with property owners to determine the most appropriate design vehicle for individual driveways during final design.

SHILSHOLE-MARKET WB-50 TURNING MOTION

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Large trucks may use both lanes on 24th Ave NW when turning from northbound Shilshole Ave NW.

A WB-50 (large semitrailer truck) is used to evaluate vehicle swept path during preliminary design. SDOT will work with property owners to determine the most appropriate design vehicle for individual driveways during final design.

SHILSHOLE-24TH-54TH WB-50 TURNING MOTION

FILE: X:\572690\p031301-PREF ALT - AUTOTURN LAYOUT: SH-24TH-54TH DATE: Tuesday, March 21, 2017 2:25:54 PM PLOTTED BY: thomasa



SCALE IN FEET



Large trucks may use opposite direction lanes for exiting from 24th Ave NW to eastbound Shilshole Ave NW.

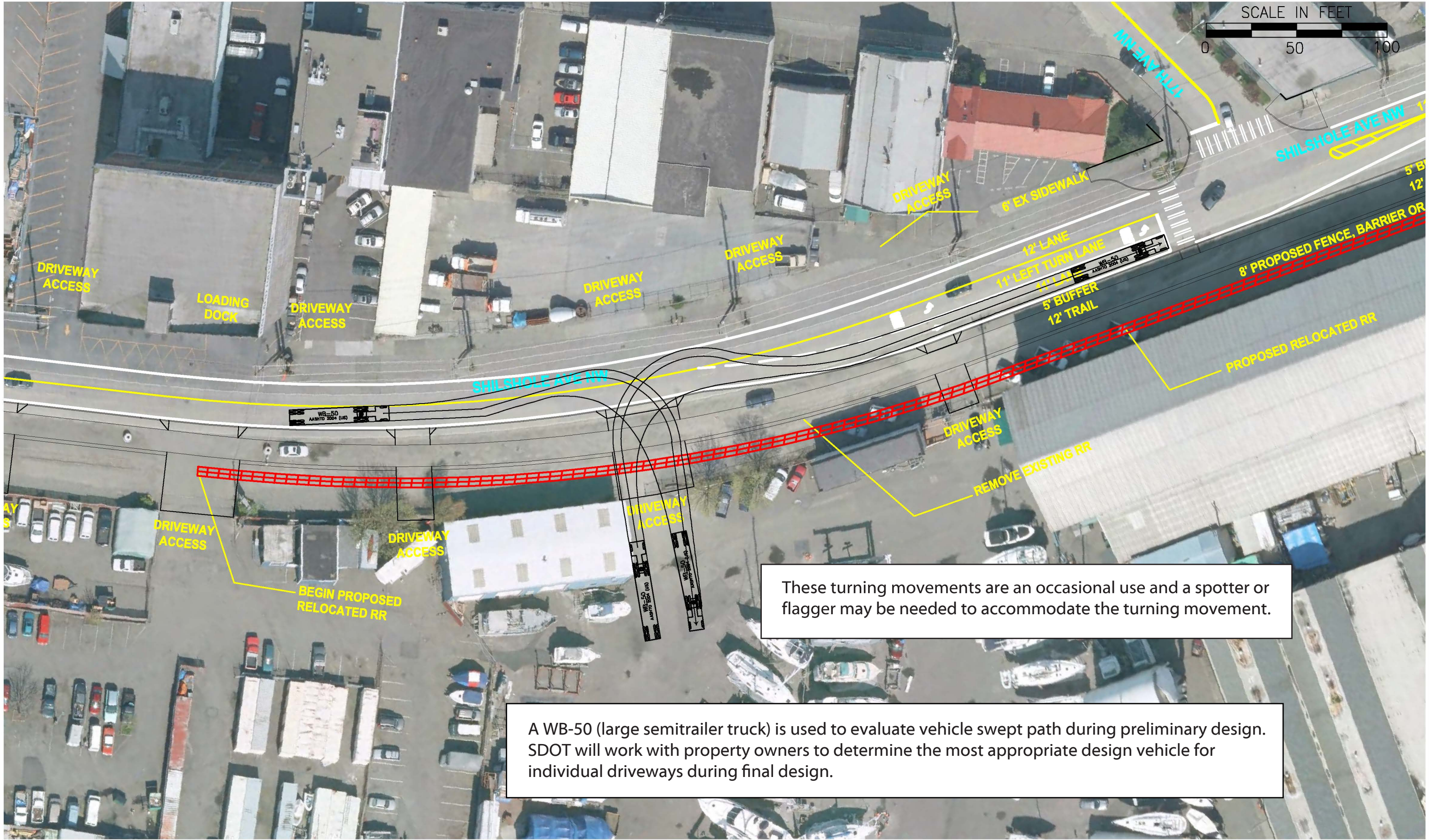
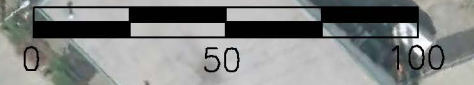
A WB-50 (large semitrailer truck) is used to evaluate vehicle swept path during preliminary design. SDOT will work with property owners to determine the most appropriate design vehicle for individual driveways during final design.

54TH-24TH-SHILSHOLE WB-50 TURNING MOTION

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SCALE IN FEET

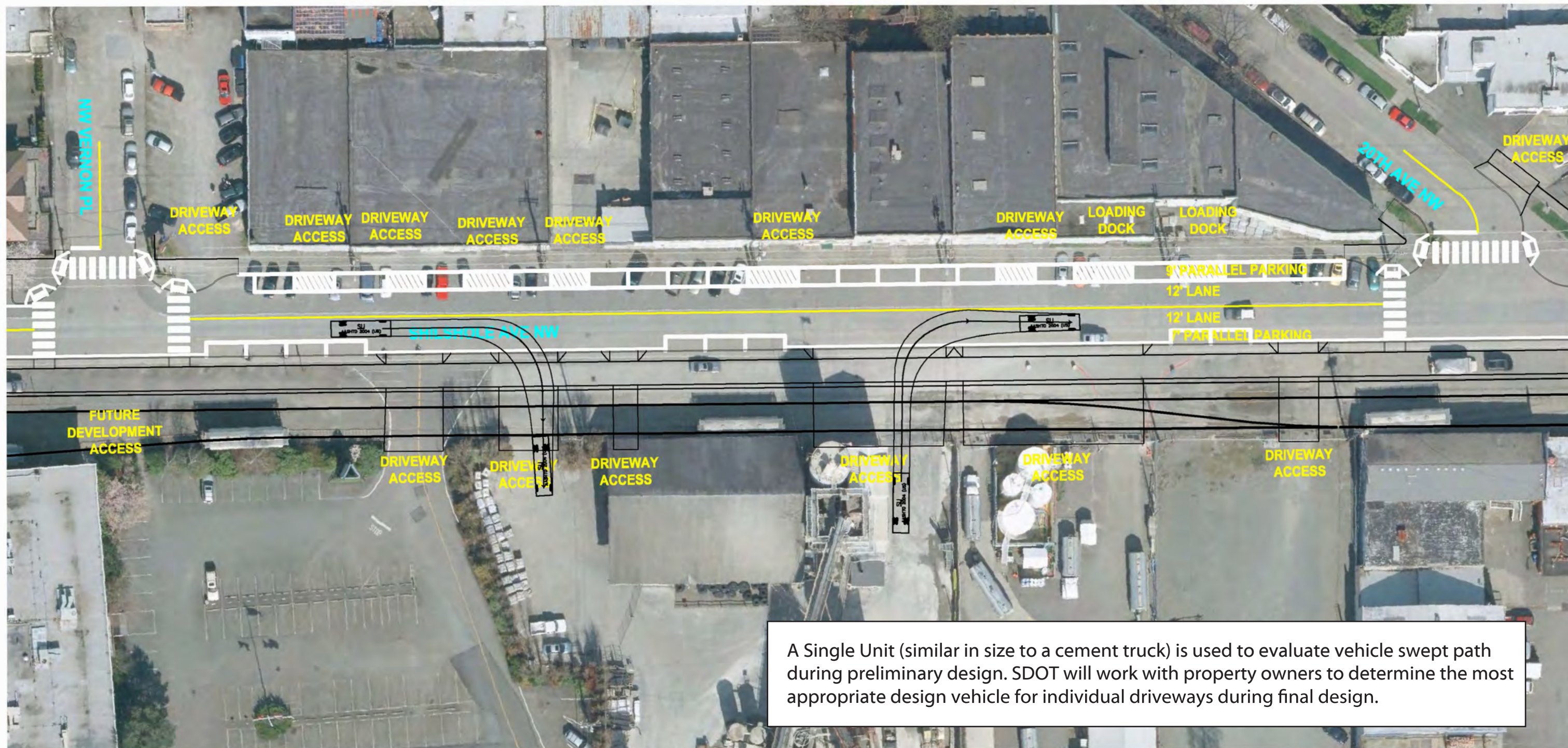


These turning movements are an occasional use and a spotter or flagger may be needed to accommodate the turning movement.

A WB-50 (large semitrailer truck) is used to evaluate vehicle swept path during preliminary design. SDOT will work with property owners to determine the most appropriate design vehicle for individual driveways during final design.

CSR MARINE—SHILSHOLE WB—50 TURNING MOTION

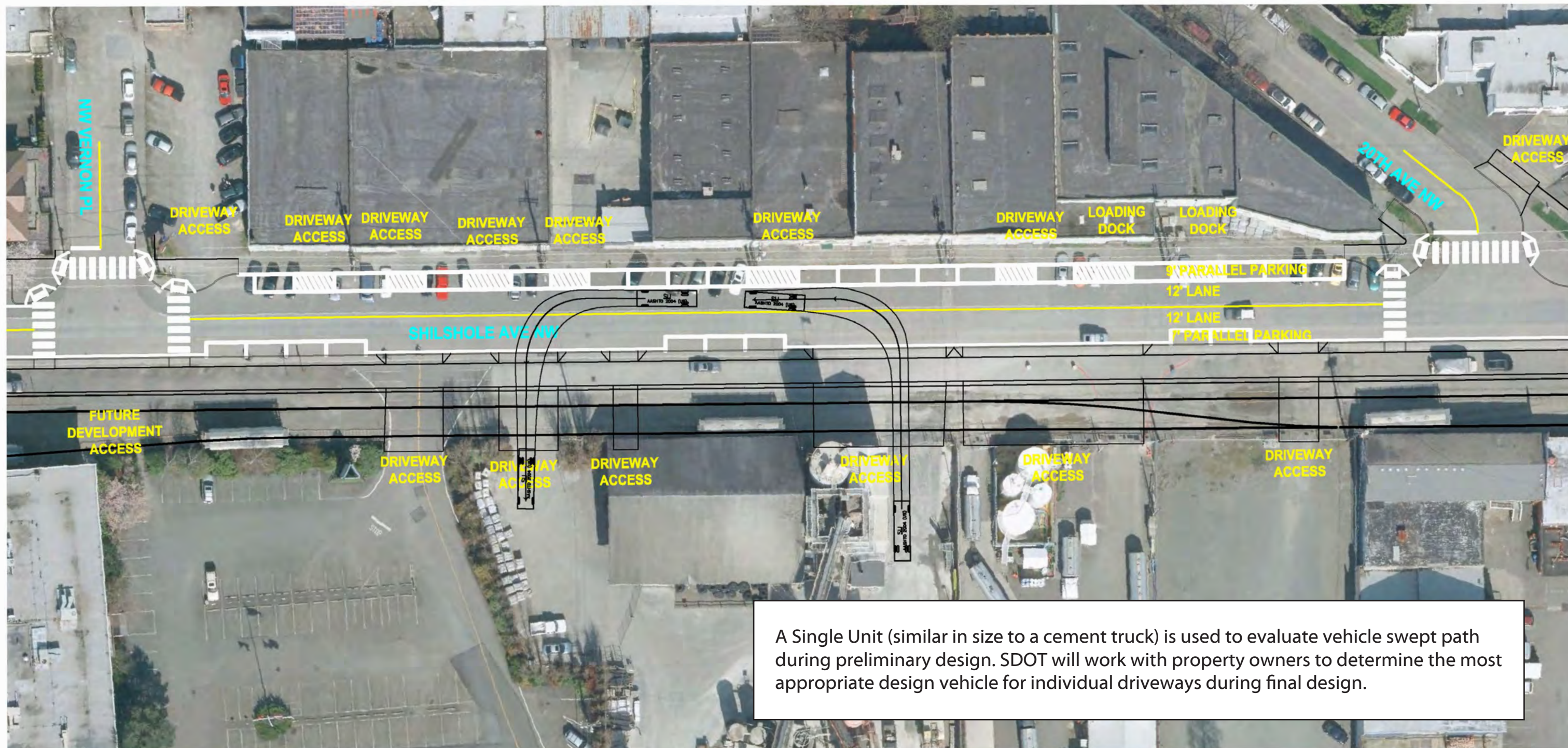
FILE: X:\5726900\030301-PREF ALT - AUTOTURN LAYOUT: CSI Marine PATH: U:\PSO\Projects\Clients\7269-ESA\554-7269-001 Burke-Gilman Trail EIS\955\res\CAD\FIGURES\Autoturn Ex. PLOTTED BY: dmacedal DATE: Monday, May 15, 2017 12:58:55 PM



A Single Unit (similar in size to a cement truck) is used to evaluate vehicle swept path during preliminary design. SDOT will work with property owners to determine the most appropriate design vehicle for individual driveways during final design.

PREFERRED ALTERNATIVE

FILE: X:\25\26900\103\103\AUTOURN\30 SCALE LAYOUT: FIGURE 27
LAYOUT: FIGURE 27
DATE: Wednesday, May 10, 2017 10:13:33 AM



A Single Unit (similar in size to a cement truck) is used to evaluate vehicle swept path during preliminary design. SDOT will work with property owners to determine the most appropriate design vehicle for individual driveways during final design.

PREFERRED ALTERNATIVE

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APPENDIX B
HAZARDOUS MATERIALS DATABASES REVIEWED

Table B-1. Database and Records Searched

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
WA	AIRS (EMI)	Washington Emissions Data System	Department of Ecology	12/31/2013	02/24/2015	03/13/2015
WA	ALLSITES	Facility/Site Identification System Listing	Department of Ecology	05/04/2015	05/06/2015	05/29/2015
WA	AST	Aboveground Storage Tank Locations	Department of Ecology	04/01/2014	05/06/2014	06/04/2014
WA	BROWNFIELDS	Brownfields Sites Listing	Department of Ecology	07/21/2015	07/22/2015	08/20/2015
WA	CDL	Clandestine Drug Lab Contaminated Site List	Department of Health	04/03/2015	05/14/2015	06/18/2015
WA	COAL ASH	Coal Ash Disposal Site Listing	Department of Ecology	09/10/2014	09/11/2014	10/15/2014
WA	CSCSL	Confirmed and Suspected Contaminated Sites List	Department of Ecology	07/21/2015	07/22/2015	08/20/2015
WA	CSCSL NFA	Confirmed and Contaminated Sites - No Further Action	Department of Ecology	07/21/2015	07/22/2015	08/20/2015
WA	DRYCLEANERS	Drycleaner List	Department of Ecology	12/31/2014	05/01/2015	05/22/2015
WA	Financial Assurance 1	Financial Assurance Information Listing	Department of Ecology	02/24/2012	02/24/2012	03/27/2012
WA	Financial Assurance 2	Financial Assurance Information Listing	Department of Ecology	05/18/2015	05/19/2015	06/18/2015
WA	Financial Assurance 3	Financial Assurance Information Listing	Department of Ecology	02/01/2001	03/06/2007	04/19/2007
WA	HIST CDL	List of Sites Contaminated by Clandestine Drug Labs	Department of Health	02/08/2007	06/26/2007	07/19/2007
WA	HSL	Hazardous Sites List	Department of Ecology	02/19/2015	03/13/2015	03/20/2015
WA	ICR	Independent Cleanup Reports	Department of Ecology	12/01/2002	01/03/2003	01/22/2003
WA	INACTIVE DRYCLEANERS	Inactive Drycleaners	Department of Ecology	12/31/2014	05/01/2015	05/29/2015
WA	INST CONTROL	Institutional Control Site List	Department of Ecology	07/21/2015	07/22/2015	08/20/2015
WA	LUST	Leaking Underground Storage Tanks Site List	Department of Ecology	05/19/2015	05/22/2015	06/18/2015
WA	NPDES	Water Quality Permit System Data	Department of Ecology	07/21/2015	07/22/2015	08/20/2015
WA	RGA HWS	Recovered Government Archive State Hazardous Waste Facilities	Department of Ecology		07/01/2013	12/24/2013
WA	RGA LF	Recovered Government Archive Solid Waste Facilities List	Department of Ecology		07/01/2013	01/10/2014
WA	RGA LUST	Recovered Government Archive Leaking Underground Storage Tan	Department of Ecology		07/01/2013	12/24/2013
WA	SPILLS	Reported Spills	Department of Ecology	06/08/2015	06/09/2015	07/13/2015
WA	SPILLS 90	SPILLS90 data from FirstSearch	FirstSearch	05/23/2006	01/03/2013	03/06/2013
WA	SWF/LF	Solid Waste Facility Database	Department of Ecology	03/12/2015	03/13/2015	03/20/2015
WA	SWRCY	Recycling Facility List	Department of Ecology	07/27/2015	07/28/2015	08/20/2015
WA	SWTIRE	Solid Waste Tire Facilities	Department of Ecology	11/01/2005	03/16/2006	04/13/2006
WA	UIC	Underground Injection Wells Listing	Department of Ecology	05/19/2015	05/22/2015	06/30/2015
WA	UST	Underground Storage Tank Database	Department of Ecology	05/27/2015	05/29/2015	06/19/2015
WA	VCP	Voluntary Cleanup Program Sites	Department of Ecology	07/21/2015	07/22/2015	08/20/2015
WA	WA MANIFEST	Hazardous Waste Manifest Data	Department of Ecology	12/31/2014	05/01/2015	05/29/2015

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
US	2020 COR ACTION	2020 Corrective Action Program List	Environmental Protection Agency	04/22/2013	03/03/2015	03/09/2015
US	BRS	Biennial Reporting System	EPA/NTIS	12/31/2011	02/26/2013	04/19/2013
US	CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System	EPA	10/25/2013	11/11/2013	02/13/2014
US	CERCLIS-NFRAP	CERCLIS No Further Remedial Action Planned	EPA	10/25/2013	11/11/2013	02/13/2014
US	COAL ASH DOE	Steam-Electric Plant Operation Data	Department of Energy	12/31/2005	08/07/2009	10/22/2009
US	COAL ASH EPA	Coal Combustion Residues Surface Impoundments List	Environmental Protection Agency	07/01/2014	09/10/2014	10/20/2014
US	CONSENT	Superfund (CERCLA) Consent Decrees	Department of Justice, Consent Decree Library	12/31/2014	04/17/2015	06/02/2015
US	CORRACTS	Corrective Action Report	EPA	03/10/2015	03/31/2015	06/11/2015
US	DEBRIS REGION 9	Torres Martinez Reservation Illegal Dump Site Locations	EPA, Region 9	01/12/2009	05/07/2009	09/21/2009
US	DOD	Department of Defense Sites	USGS	12/31/2005	11/10/2006	01/11/2007
US	DOT OPS	Incident and Accident Data	Department of Transportation, Office of Pipeline	07/31/2012	08/07/2012	09/18/2012
US	Delisted NPL	National Priority List Deletions	EPA	03/26/2015	04/08/2015	06/22/2015
US	EDR MGP	EDR Proprietary Manufactured Gas Plants	EDR, Inc.			
US	EDR US Hist Auto Stat	EDR Exclusive Historic Gas Stations	EDR, Inc.			
US	EDR US Hist Cleaners	EDR Exclusive Historic Dry Cleaners	EDR, Inc.			
US	EPA WATCH LIST	EPA WATCH LIST	Environmental Protection Agency	08/30/2013	03/21/2014	06/17/2014
US	ERNS	Emergency Response Notification System	National Response Center, United States Coast	03/30/2015	03/31/2015	06/02/2015
US	FEDERAL FACILITY	Federal Facility Site Information listing	Environmental Protection Agency	03/26/2015	04/08/2015	06/11/2015
US	FEDLAND	Federal and Indian Lands	U.S. Geological Survey	12/31/2005	02/06/2006	01/11/2007
US	FEMA UST	Underground Storage Tank Listing	FEMA	01/01/2010	02/16/2010	04/12/2010
US	FINDS	Facility Index System/Facility Registry System	EPA	01/18/2015	02/27/2015	03/25/2015
US	FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fu	EPA/Office of Prevention, Pesticides and Toxins	04/09/2009	04/16/2009	05/11/2009
US	FTTS INSP	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fu	EPA	04/09/2009	04/16/2009	05/11/2009
US	FUDS	Formerly Used Defense Sites	U.S. Army Corps of Engineers	06/06/2014	09/10/2014	09/18/2014
US	HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing	Environmental Protection Agency	10/19/2006	03/01/2007	04/10/2007
US	HIST FTTS INSP	FIFRA/TSCA Tracking System Inspection & Enforcement Case Lis	Environmental Protection Agency	10/19/2006	03/01/2007	04/10/2007
US	HMIRS	Hazardous Materials Information Reporting System	U.S. Department of Transportation	03/30/2015	03/31/2015	06/11/2015
US	ICIS	Integrated Compliance Information System	Environmental Protection Agency	01/23/2015	02/06/2015	03/09/2015
US	INDIAN LUST R1	Leaking Underground Storage Tanks on Indian Land	EPA Region 1	02/03/2015	04/30/2015	06/22/2015
US	INDIAN LUST R10	Leaking Underground Storage Tanks on Indian Land	EPA Region 10	02/03/2015	02/12/2015	03/13/2015

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
US	INDIAN LUST R4	Leaking Underground Storage Tanks on Indian Land	EPA Region 4	09/30/2014	03/03/2015	03/13/2015
US	INDIAN LUST R5	Leaking Underground Storage Tanks on Indian Land	EPA, Region 5	04/30/2015	05/29/2015	06/22/2015
US	INDIAN LUST R6	Leaking Underground Storage Tanks on Indian Land	EPA Region 6	03/17/2015	05/01/2015	06/22/2015
US	INDIAN LUST R7	Leaking Underground Storage Tanks on Indian Land	EPA Region 7	03/30/2015	04/28/2015	06/22/2015
US	INDIAN LUST R8	Leaking Underground Storage Tanks on Indian Land	EPA Region 8	04/30/2015	05/05/2015	06/22/2015
US	INDIAN LUST R9	Leaking Underground Storage Tanks on Indian Land	Environmental Protection Agency	01/08/2015	01/08/2015	02/09/2015
US	INDIAN ODI	Report on the Status of Open Dumps on Indian Lands	Environmental Protection Agency	12/31/1998	12/03/2007	01/24/2008
US	INDIAN RESERV	Indian Reservations	USGS	12/31/2005	12/08/2006	01/11/2007
US	INDIAN UST R1	Underground Storage Tanks on Indian Land	EPA, Region 1	02/03/2015	04/30/2015	06/22/2015
US	INDIAN UST R10	Underground Storage Tanks on Indian Land	EPA Region 10	05/06/2015	05/19/2015	06/22/2015
US	INDIAN UST R4	Underground Storage Tanks on Indian Land	EPA Region 4	09/30/2014	03/03/2015	03/13/2015
US	INDIAN UST R5	Underground Storage Tanks on Indian Land	EPA Region 5	04/30/2015	05/26/2015	06/22/2015
US	INDIAN UST R6	Underground Storage Tanks on Indian Land	EPA Region 6	03/17/2015	05/01/2015	06/22/2015
US	INDIAN UST R7	Underground Storage Tanks on Indian Land	EPA Region 7	09/23/2014	11/25/2014	01/29/2015
US	INDIAN UST R8	Underground Storage Tanks on Indian Land	EPA Region 8	04/30/2015	05/05/2015	06/22/2015
US	INDIAN UST R9	Underground Storage Tanks on Indian Land	EPA Region 9	12/14/2014	02/13/2015	03/13/2015
US	INDIAN VCP R1	Voluntary Cleanup Priority Listing	EPA, Region 1	09/29/2014	10/01/2014	11/06/2014
US	INDIAN VCP R7	Voluntary Cleanup Priority Listing	EPA, Region 7	03/20/2008	04/22/2008	05/19/2008
US	LEAD SMELTER 1	Lead Smelter Sites	Environmental Protection Agency	11/25/2014	11/26/2014	01/29/2015
US	LEAD SMELTER 2	Lead Smelter Sites	American Journal of Public Health	04/05/2001	10/27/2010	12/02/2010
US	LIENS 2	CERCLA Lien Information	Environmental Protection Agency	02/18/2014	03/18/2014	04/24/2014
US	LUCIS	Land Use Control Information System	Department of the Navy	05/28/2015	05/29/2015	06/11/2015
US	MLTS	Material Licensing Tracking System	Nuclear Regulatory Commission	03/31/2015	04/09/2015	06/11/2015
US	NPL	National Priority List	EPA	03/26/2015	04/08/2015	06/22/2015
US	NPL LIENS	Federal Superfund Liens	EPA	10/15/1991	02/02/1994	03/30/1994
US	ODI	Open Dump Inventory	Environmental Protection Agency	06/30/1985	08/09/2004	09/17/2004
US	PADS	PCB Activity Database System	EPA	07/01/2014	10/15/2014	11/17/2014
US	PCB TRANSFORMER	PCB Transformer Registration Database	Environmental Protection Agency	02/01/2011	10/19/2011	01/10/2012
US	PRP	Potentially Responsible Parties	EPA	10/25/2013	10/17/2014	10/20/2014
US	Proposed NPL	Proposed National Priority List Sites	EPA	03/26/2015	04/08/2015	06/22/2015
US	RAATS	RCRA Administrative Action Tracking System	EPA	04/17/1995	07/03/1995	08/07/1995
US	RADINFO	Radiation Information Database	Environmental Protection Agency	04/07/2015	04/09/2015	06/11/2015
US	RCRA NonGen / NLR	RCRA - Non Generators / No Longer Regulated	Environmental Protection Agency	03/10/2015	03/31/2015	06/11/2015

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
US	RCRA-CESQG	RCRA - Conditionally Exempt Small Quantity Generators	Environmental Protection Agency	03/10/2015	03/31/2015	06/11/2015
US	RCRA-LQG	RCRA - Large Quantity Generators	Environmental Protection Agency	03/10/2015	03/31/2015	06/11/2015
US	RCRA-SQG	RCRA - Small Quantity Generators	Environmental Protection Agency	03/10/2015	03/31/2015	06/11/2015
US	RCRA-TSDF	RCRA - Treatment, Storage and Disposal	Environmental Protection Agency	03/10/2015	03/31/2015	06/11/2015
US	RMP	Risk Management Plans	Environmental Protection Agency	02/01/2015	02/13/2015	03/25/2015
US	ROD	Records Of Decision	EPA	11/25/2013	12/12/2013	02/24/2014
US	SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing	Environmental Protection Agency	03/07/2011	03/09/2011	05/02/2011
US	SSTS	Section 7 Tracking Systems	EPA	12/31/2009	12/10/2010	02/25/2011
US	TRIS	Toxic Chemical Release Inventory System	EPA	12/31/2013	02/12/2015	06/02/2015
US	TSCA	Toxic Substances Control Act	EPA	12/31/2012	01/15/2015	01/29/2015
US	UMTRA	Uranium Mill Tailings Sites	Department of Energy	09/14/2010	10/07/2011	03/01/2012
US	US AIRS (AFS)	Aerometric Information Retrieval System Facility Subsystem (EPA	10/16/2014	10/31/2014	11/17/2014
US	US AIRS MINOR	Air Facility System Data	EPA	10/16/2014	10/31/2014	11/17/2014
US	US BROWNFIELDS	A Listing of Brownfields Sites	Environmental Protection Agency	03/23/2015	03/24/2015	06/02/2015
US	US CDL	Clandestine Drug Labs	Drug Enforcement Administration	02/25/2015	03/10/2015	03/25/2015
US	US ENG CONTROLS	Engineering Controls Sites List	Environmental Protection Agency	03/16/2015	03/17/2015	06/02/2015
US	US FIN ASSUR	Financial Assurance Information	Environmental Protection Agency	03/09/2015	03/10/2015	03/25/2015
US	US HIST CDL	National Clandestine Laboratory Register	Drug Enforcement Administration	02/25/2015	03/10/2015	03/25/2015
US	US INST CONTROL	Sites with Institutional Controls	Environmental Protection Agency	03/16/2015	03/17/2015	06/02/2015
US	US MINES	Mines Master Index File	Department of Labor, Mine Safety and Health	12/30/2014	12/31/2014	01/29/2015
US	US MINES 2	Ferrous and Nonferrous Metal Mines Database Listing	USGS	12/05/2005	02/29/2008	04/18/2008
US	US MINES 3	Active Mines & Mineral Plants Database Listing	USGS	04/14/2011	06/08/2011	09/13/2011
CT	CT MANIFEST	Hazardous Waste Manifest Data	Department of Energy & Environmental Protection	07/30/2013	08/19/2013	10/03/2013
NY	NY MANIFEST	Facility and Manifest Data	Department of Environmental Conservation	08/01/2015	08/06/2015	08/24/2015
PA	PA MANIFEST	Manifest Information	Department of Environmental Protection	12/31/2014	07/24/2015	08/18/2015
WI	WI MANIFEST	Manifest Information	Department of Natural Resources	12/31/2014	03/19/2015	04/07/2015

Oil/Gas Pipelines

Source:
 PennWell
 Corporation
 Telephone:
 281-546-1505

Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

**Electric Power
 Transmission
 Line Data**

Source:
 PennWell
 Corporation
 Telephone:
 800-823-6277

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US	AHA Hospitals	Sensitive Receptor: AHA Hospitals	American Hospital Association, Inc.
US	Medical Centers	Sensitive Receptor: Medical Centers	Centers for Medicare & Medicaid Services
US	Nursing Homes	Sensitive Receptor: Nursing Homes	National Institutes of Health
US	Public Schools	Sensitive Receptor: Public Schools	National Center for Education Statistics
US	Private Schools	Sensitive Receptor: Private Schools	National Center for Education Statistics
WA	Daycare Centers	Sensitive Receptor: Daycare Center Listing	Department of Social & Health Services

STREET AND ADDRESS INFORMATION

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APPENDIX C
EMISSIONS ESTIMATES TABULATIONS

Table C-1. Existing Vehicle Idling Emissions based on Vehicle Delay and Traffic Volumes along Analyzed Roadways

Roadway Segment	Daily CO Emissions (tons/year)	PM10 Emissions (tons/year)	CO2 Emissions (metric tons per year)
NW 54 th St west of NW Market St	0.827457	0.000962	54.83589
28 th Ave NW north of MW Market St	0.057002	7.36E-05	3.971354
NW Market St west of 24 th Ave NW	4.021325	0.004071	250.5763
NW 56 th St west of 24 th Ave NW	0.307128	0.000166	15.30761
NW 56 th St east of 24 th Ave NW	1.276639	0.000795	66.43823
NW Market St west of 24 th Ave NW	4.021325	0.004071	250.5763
Shilshole Ave NW southeast of 24 th Ave NW	1.174177	0.000886	65.18178
22 nd Ave NW south of NW 56 th St	1.658834	0.000961	84.41996
22 nd Ave NW south of NW Market St	0.898459	0.000636	48.77418
Leary Ave NW south of NW Market St	4.539198	0.005432	304.9285
Ballard Ave NW southeast of 22 nd Ave NW	0	0	0
NW Vernon Pl northwest of Shilshole Ave NW	0.184797	0.000172	11.1115
17 th Ave NW north of Shilshole Ave NW	1.206679	0.002624	112.1736
Shilshole Ave NW west of NW 46 th St	0.594262	0.000505	34.49605
NW Ballard Way east of 17 th Ave NW	0	0	0
NW 46 th St west of 15 th Ave NW	0.547299	0.000505	32.8231
NW Leary Way west of 15 th Ave NW	0.944013	0	33.62891
NW 45 th St west of 14 th Ave NW	0.212568	0.000153	11.61561
14 th Ave NW south of NW Ballard Way	0.297886	0.000353	19.92728
NW Leary Way east of 14 th Ave NW	1.015516	0.001266	69.55692
11 th Ave NW north of NW 46 th Ave NW	0.563838	0.000475	32.60362
Total Idling Emissions along Analyzed Roadways	24.3484	0.024106	1502.947

Table C-2. Tabulation of Annual Vehicle Idling Emissions for the No Build Alternative based on Forecasted Vehicle Delay and Traffic Volumes in 2040

Roadway Segment	CO Emissions (tons/year)	CO Increase over Existing	PM10 Emissions (tons/year)	PM10 Increase over Existing	CO ₂ Emissions (metric tons/year)	CO ₂ Increase over Existing
NW 54 th St west of NW Market St	1.32	0.49	0.0026	0.0016	114.43	59.59
28 th Ave NW north of MW Market St	0.07	0.01	0.0001	0.0001	6.19	2.22
NW Market St west of 24 th Ave NW	5.04	1.02	0.0086	0.0045	405.12	154.54
NW 56 th St west of 24 th Ave NW	1.92	1.61	0.0018	0.0016	114.59	99.28
NW 56 th St east of 24 th Ave NW	7.97	6.69	0.0084	0.0076	505.54	439.10
NW Market St west of 24 th Ave NW	5.04	1.02	0.0086	0.0045	405.12	154.54
Shilshole Ave NW southeast of 24 th Ave NW	2.04	0.87	0.0019	0.0010	123.67	58.49
22 nd Ave NW south of NW 56 th St	3.10	1.44	0.0030	0.0021	190.61	106.19
22 nd Ave NW south of NW Market St	1.75	0.85	0.0020	0.0014	115.28	66.51
Leary Ave NW south of NW Market St	8.58	4.04	0.0172	0.0117	758.35	453.43
Ballard Ave NW southeast of 22 nd Ave NW	0.00	0.00	0.0000	0.0000	0.00	0.00
NW Vernon Pl northwest of Shilshole Ave NW	0.27	0.08	0.0004	0.0002	20.72	9.61
17 th Ave NW north of Shilshole Ave NW	6.80	5.59	0.0244	0.0218	885.72	773.54
Shilshole Ave NW west of NW 46 th St	0.69	0.10	0.0010	0.0005	50.84	16.34
NW Ballard Way east of 17 th Ave NW	0.00	0.00	0.0000	0.0000	0.00	0.00
NW 46 th St west of 15 th Ave NW	0.64	0.09	0.0010	0.0005	48.92	16.09
NW Leary Way west of 15 th Ave NW	1.36	0.41	0.0000	0.0000	48.34	14.71
NW 45 th St west of 14 th Ave NW	0.27	0.06	0.0003	0.0002	18.42	6.81
14 th Ave NW south of NW Ballard Way	0.44	0.14	0.0009	0.0005	38.40	18.48
NW Leary Way east of 14 th Ave NW	1.49	0.47	0.0031	0.0018	134.96	65.40
11 th Ave NW north of NW 46 th Ave NW	0.80	0.24	0.0011	0.0007	58.65	26.04
Total Idling Emissions along Analyzed Roadways	49.57	25.23	0.0864	0.0623	4043.86	2540.91

Table C-3. Tabulation of Annual Vehicle Idling Emissions for the Preferred Alternative based on Forecasted Vehicle Delay and Traffic Volumes in 2040

Roadway Segment	CO Emissions (tons/year)	CO Increase over Existing	PM10 Emissions (tons/year)	PM10 Increase over Existing	CO ₂ Emissions (metric tons/year)	CO ₂ Increase over Existing
NW 54 th St west of NW Market St	1.80	0.48	0.0035	0.0009	156.58	42.16
28 th Ave NW north of MW Market St	0.20	0.13	0.0004	0.0003	18.57	12.38
NW Market St west of 24 th Ave NW	5.37	0.34	0.0091	0.0006	432.12	27.01
NW 56 th St west of 24 th Ave NW	0.78	-1.14	0.0007	-0.0010	46.46	-68.12
NW 56 th St east of 24 th Ave NW	3.23	-4.74	0.0034	-0.0050	205.00	-300.55
NW Market St west of 24 th Ave NW	5.37	0.34	0.0091	0.0006	432.12	27.01
Shilshole Ave NW southeast of 24 th Ave NW	2.48	0.44	0.0023	0.0004	150.18	26.50
22 nd Ave NW south of NW 56 th St	3.10	0.00	0.0030	0.0000	190.61	0.00
22 nd Ave NW south of NW Market St	1.75	0.00	0.0020	0.0000	115.28	0.00
Leary Ave NW south of NW Market St	8.58	0.00	0.0172	0.0000	758.35	0.00
Ballard Ave NW southeast of 22 nd Ave NW	0.00	0.00	0.0000	0.0000	0.00	0.00
NW Vernon Pl northwest of Shilshole Ave NW	0.38	0.11	0.0006	0.0002	29.00	8.29
17 th Ave NW north of Shilshole Ave NW	0.34	-6.46	0.0012	-0.0232	44.69	-841.02
Shilshole Ave NW west of NW 46 th St	3.03	2.34	0.0043	0.0033	222.42	171.58
NW Ballard Way east of 17 th Ave NW	0.00	0.00	0.0000	0.0000	0.00	0.00
NW 46 th St west of 15 th Ave NW	2.80	2.16	0.0043	0.0033	214.00	165.09
NW Leary Way west of 15 th Ave NW	1.36	0.00	0.0000	0.0000	48.34	0.00
NW 45 th St west of 14 th Ave NW	0.30	0.02	0.0004	0.0000	20.10	1.67
14 th Ave NW south of NW Ballard Way	0.44	0.00	0.0009	0.0000	38.40	0.00
NW Leary Way east of 14 th Ave NW	1.49	0.00	0.0031	0.0000	134.96	0.00
11 th Ave NW north of NW 46 th Ave NW	0.62	-0.18	0.0009	-0.0003	45.32	-13.33
Total Idling Emissions along Analyzed Roadways	43.41	-6.16	0.0666	-0.0198	3302.53	-741.33

Table C-4. Tabulation of Annual Vehicle Idling Emissions for the Shilshole South Alternative based on Forecasted Vehicle Delay and Traffic Volumes in 2040

Roadway Segment	CO Emissions (tons/year)	CO Increase over Existing	PM10 Emissions (tons/year)	PM10 Increase over Existing	CO ₂ Emissions (metric tons/year)	CO ₂ Increase over Existing
NW 54 th St west of NW Market St	1.66	0.35	0.0032	0.0007	144.54	30.11
28 th Ave NW north of MW Market St	0.08	0.01	0.0002	0.0000	7.22	1.03
NW Market St west of 24 th Ave NW	5.04	0.00	0.0086	0.0000	405.12	0.00
NW 56 th St west of 24 th Ave NW	0.78	-1.14	0.0007	-0.0010	46.46	-68.12
NW 56 th St east of 24 th Ave NW	3.23	-4.74	0.0034	-0.0050	205.00	-300.55
NW Market St west of 24 th Ave NW	5.04	0.00	0.0086	0.0000	405.12	0.00
Shilshole Ave NW southeast of 24 th Ave NW	2.48	0.44	0.0023	0.0004	150.18	26.50
22 nd Ave NW south of NW 56 th St	3.10	0.00	0.0030	0.0000	190.61	0.00
22 nd Ave NW south of NW Market St	1.75	0.00	0.0020	0.0000	115.28	0.00
Leary Ave NW south of NW Market St	8.58	0.00	0.0172	0.0000	758.35	0.00
Ballard Ave NW southeast of 22 nd Ave NW	0.00	0.00	0.0000	0.0000	0.00	0.00
NW Vernon Pl northwest of Shilshole Ave NW	0.33	0.06	0.0005	0.0001	25.69	4.97
17 th Ave NW north of Shilshole Ave NW	0.34	-6.46	0.0012	-0.0232	44.69	-841.02
Shilshole Ave NW west of NW 46 th St	3.03	2.34	0.0043	0.0033	222.42	171.58
NW Ballard Way east of 17 th Ave NW	0.00	0.00	0.0000	0.0000	0.00	0.00
NW 46 th St west of 15 th Ave NW	2.80	2.16	0.0043	0.0033	214.00	165.09
NW Leary Way west of 15 th Ave NW	1.36	0.00	0.0000	0.0000	48.34	0.00
NW 45 th St west of 14 th Ave NW	0.30	0.02	0.0004	0.0000	20.10	1.67
14 th Ave NW south of NW Ballard Way	0.44	0.00	0.0009	0.0000	38.40	0.00
NW Leary Way east of 14 th Ave NW	1.49	0.00	0.0031	0.0000	134.96	0.00
11 th Ave NW north of NW 46 th Ave NW	0.62	-0.18	0.0009	-0.0003	45.32	-13.33
Total Idling Emissions along Analyzed Roadways	42.44	-7.14	0.0649	-0.0215	3221.80	-822.06

Table C-5. Tabulation of Annual Vehicle Idling Emissions for the Shilshole North Alternative based on Forecasted Vehicle Delay and Traffic Volumes in 2040

Roadway Segment	CO Emissions (tons/year)	CO Increase over Existing	PM10 Emissions (tons/year)	PM10 Increase over Existing	CO ₂ Emissions (metric tons/year)	CO ₂ Increase over Existing
NW 54 th St west of NW Market St	1.66	0.35	0.0032	0.0007	144.54	30.11
28 th Ave NW north of MW Market St	0.20	0.13	0.0004	0.0003	18.57	12.38
NW Market St west of 24 th Ave NW	5.26	0.22	0.0089	0.0004	423.12	18.01
NW 56 th St west of 24 th Ave NW	0.78	-1.14	0.0007	-0.0010	46.46	-68.12
NW 56 th St east of 24 th Ave NW	3.23	-4.74	0.0034	-0.0050	205.00	-300.55
NW Market St west of 24 th Ave NW	5.26	0.22	0.0089	0.0004	423.12	18.01
Shilshole Ave NW southeast of 24 th Ave NW	1.68	-0.36	0.0016	-0.0003	101.59	-22.08
22 nd Ave NW south of NW 56 th St	3.10	0.00	0.0030	0.0000	190.61	0.00
22 nd Ave NW south of NW Market St	1.75	0.00	0.0020	0.0000	115.28	0.00
Leary Ave NW south of NW Market St	8.58	0.00	0.0172	0.0000	758.35	0.00
Ballard Ave NW southeast of 22 nd Ave NW	0.00	0.00	0.0000	0.0000	0.00	0.00
NW Vernon Pl northwest of Shilshole Ave NW	0.25	-0.02	0.0004	0.0000	19.06	-1.66
17 th Ave NW north of Shilshole Ave NW	0.34	-6.46	0.0012	-0.0232	44.69	-841.02
Shilshole Ave NW west of NW 46 th St	3.03	2.34	0.0043	0.0033	222.42	171.58
NW Ballard Way east of 17 th Ave NW	0.00	0.00	0.0000	0.0000	0.00	0.00
NW 46 th St west of 15 th Ave NW	2.80	2.16	0.0043	0.0033	214.00	165.09
NW Leary Way west of 15 th Ave NW	1.36	0.00	0.0000	0.0000	48.34	0.00
NW 45 th St west of 14 th Ave NW	0.30	0.02	0.0004	0.0000	20.10	1.67
14 th Ave NW south of NW Ballard Way	0.44	0.00	0.0009	0.0000	38.40	0.00
NW Leary Way east of 14 th Ave NW	1.49	0.00	0.0031	0.0000	134.96	0.00
11 th Ave NW north of NW 46 th Ave NW	0.58	-0.22	0.0008	-0.0003	42.65	-16.00
Totals	42.08	-7.49	0.0649	-0.0215	3211.28	-832.58

Table C-6. Tabulation of Annual Vehicle Idling Emissions for the Ballard Avenue Alternative based on Forecasted Vehicle Delay and Traffic Volumes in 2040

Roadway Segment	CO Emissions (tons/year)	CO Increase over Existing	PM10 Emissions (tons/year)	PM10 Increase over Existing	CO ₂ Emissions (metric tons/year)	CO ₂ Increase over Existing
NW 54 th St west of NW Market St	1.66	0.35	0.0032	0.0007	144.54	30.11
28 th Ave NW north of MW Market St	0.07	0.00	0.0001	0.0000	6.19	0.00
NW Market St west of 24 th Ave NW	5.49	0.45	0.0093	0.0008	441.13	36.01
NW 56 th St west of 24 th Ave NW	0.11	-1.81	0.0001	-0.0017	6.30	-108.29
NW 56 th St east of 24 th Ave NW	0.44	-7.53	0.0005	-0.0079	27.80	-477.75
NW Market St west of 24 th Ave NW	5.49	0.45	0.0093	0.0008	441.13	36.01
Shilshole Ave NW southeast of 24 th Ave NW	1.68	-0.36	0.0016	-0.0003	101.59	-22.08
22 nd Ave NW south of NW 56 th St	3.10	0.00	0.0030	0.0000	190.61	0.00
22 nd Ave NW south of NW Market St	1.75	0.00	0.0020	0.0000	115.28	0.00
Leary Ave NW south of NW Market St	8.58	0.00	0.0172	0.0000	758.35	0.00
Ballard Ave NW southeast of 22 nd Ave NW	0.00	0.00	0.0000	0.0000	0.00	0.00
NW Vernon Pl northwest of Shilshole Ave NW	0.22	-0.05	0.0003	-0.0001	16.57	-4.14
17 th Ave NW north of Shilshole Ave NW	1.93	-4.87	0.0069	-0.0175	251.90	-633.82
Shilshole Ave NW west of NW 46 th St	3.03	2.34	0.0043	0.0033	222.42	171.58
NW Ballard Way east of 17 th Ave NW	0.00	0.00	0.0000	0.0000	0.00	0.00
NW 46 th St west of 15 th Ave NW	2.80	2.16	0.0043	0.0033	214.00	165.09
NW Leary Way west of 15 th Ave NW	1.36	0.00	0.0000	0.0000	48.34	0.00
NW 45 th St west of 14 th Ave NW	0.30	0.02	0.0004	0.0000	20.10	1.67
14 th Ave NW south of NW Ballard Way	0.44	0.00	0.0009	0.0000	38.40	0.00
NW Leary Way east of 14 th Ave NW	1.49	0.00	0.0031	0.0000	134.96	0.00
11 th Ave NW north of NW 46 th Ave NW	0.62	-0.18	0.0009	-0.0003	45.32	-13.33
Total Idling Emissions along Analyzed Roadways	40.52	-9.05	0.0676	-0.0188	3224.93	-818.93

Table C-7. Tabulation of Daily Vehicle Idling Emissions for the Leary Alternative based on Forecasted Vehicle Delay and Traffic Volumes in 2040

Roadway Segment	CO Emissions (tons/year)	CO Increase over Existing	PM10 Emissions (tons/year)	PM10 Increase over Existing	CO ₂ Emissions (metric tons/year)	CO ₂ Increase over Existing
NW 54 th St west of NW Market St	1.66	0.35	0.0032	0.0007	144.54	30.11
28 th Ave NW north of MW Market St	0.20	0.13	0.0004	0.0003	18.57	12.38
NW Market St west of 24 th Ave NW	5.26	0.22	0.0089	0.0004	423.12	18.01
NW 56 th St west of 24 th Ave NW	0.78	-1.14	0.0007	-0.0010	46.46	-68.12
NW 56 th St east of 24 th Ave NW	3.23	-4.74	0.0034	-0.0050	205.00	-300.55
NW Market St west of 24 th Ave NW	5.26	0.22	0.0089	0.0004	423.12	18.01
Shilshole Ave NW southeast of 24 th Ave NW	1.68	-0.36	0.0016	-0.0003	101.59	-22.08
22 nd Ave NW south of NW 56 th St	3.10	0.00	0.0030	0.0000	190.61	0.00
22 nd Ave NW south of NW Market St	1.75	0.00	0.0020	0.0000	115.28	0.00
Leary Ave NW south of NW Market St	8.58	0.00	0.0172	0.0000	758.35	0.00
Ballard Ave NW southeast of 22 nd Ave NW	0.00	0.00	0.0000	0.0000	0.00	0.00
NW Vernon Pl northwest of Shilshole Ave NW	0.22	-0.05	0.0003	-0.0001	16.57	-4.14
17 th Ave NW north of Shilshole Ave NW	1.93	-4.87	0.0069	-0.0175	251.90	-633.82
Shilshole Ave NW west of NW 46 th St	3.03	2.34	0.0043	0.0033	222.42	171.58
NW Ballard Way east of 17 th Ave NW	0.00	0.00	0.0000	0.0000	0.00	0.00
NW 46 th St west of 15 th Ave NW	2.80	2.16	0.0043	0.0033	214.00	165.09
NW Leary Way west of 15 th Ave NW	4.75	3.39	0.0000	0.0000	169.20	120.85
NW 45 th St west of 14 th Ave NW	0.30	0.02	0.0004	0.0000	20.10	1.67
14 th Ave NW south of NW Ballard Way	1.53	1.09	0.0030	0.0022	134.42	96.01
NW Leary Way east of 14 th Ave NW	5.21	3.72	0.0109	0.0078	472.35	337.39
11 th Ave NW north of NW 46 th Ave NW	0.62	-0.18	0.0009	-0.0003	45.32	-13.33
Total Idling Emissions along Analyzed Roadways	51.88	2.31	0.0806	-0.0058	3972.93	-70.93

Table C-8. GHG and Air Quality Assumptions for Each Alternative

Alternative	Estimated Pavement Width (feet)	Trail Length (linear feet)	Pavement (square feet)	Project Life (years)
Preferred Alternative	30	7,100	213,000	30
Shilshole South Alternative	30	6,500	195,000	30
Shilshole North Alternative	30	6,650	199,500	30
Ballard Avenue Alternative	30	7,550	226,500	30
Leary Alternative	30	6,800	204,000	30