Windward environmental LLC

N

0 0.5 1 1.5 Miles

0 1 2 Kilometers

Figure 1-1. Location of the Slip 4 Early Action Area in Seattle, WA

DRAFT

Prepared by mikey, 10/30/2019; W:\Projects\City of Seattle Slip 4\Data\GIS\Maps and Analyses\Year 7 Data Report\Fig 1-1 6462 Slip 4 vicinity.mxd

Windward environmental LLC

N

0 25 50 Yards

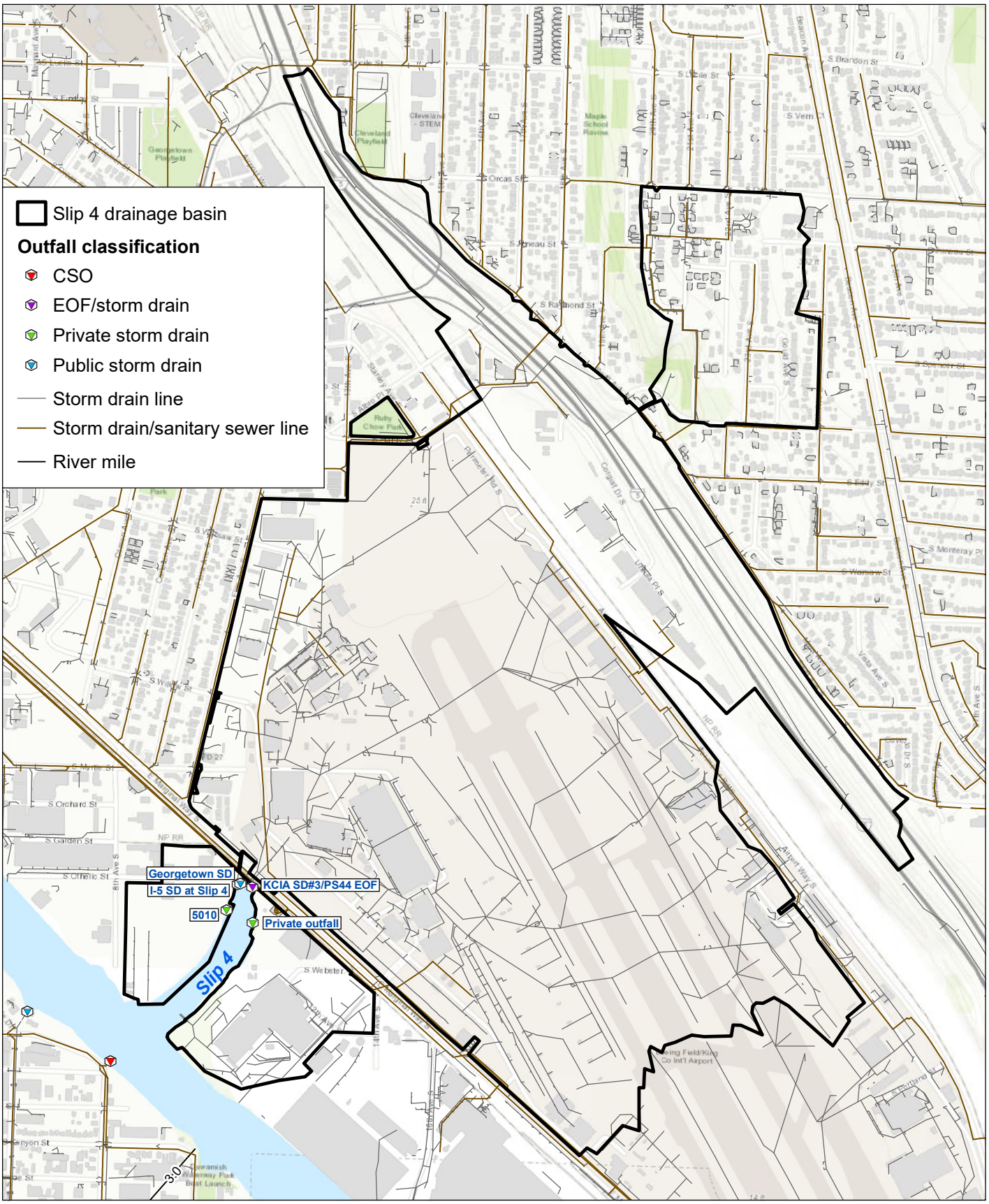
0 20 40 Meters

Figure 1-2. Slip 4 properties

DRAFT

Prepared by mikey, 11/20/2019; W:\Projects\City of Seattle Slip 4\Data\GIS\Maps and Analyses\Year 7 Data Report\Fig 1-2 6555 Slip 4 properties.mxd

Photo source: Foreground, sub 1-ft drone imagery provided by Catchment Solutions NW. Date: July 2017. Background photo: USGS, High Resolution Orthoimagery:2898306_RGB23260025, 3 in resolution, 0.31 ft accuracy. Date April 2012.



Windward environmental LLC

N

0 0.1 0.2 0.3 Miles

0 0.1 0.2 Kilometers

Figure 1-3. Slip 4 drainage basin

DRAFT

Prepared by mikey, 11/20/2019; W:\Projects\City of Seattle Slip 4\Data\GIS\Maps and Analyses\Year 7 Data Report\Fig 1-3 6553 Slip 4 source control area.mxd

Windward environmental LLC

N

0 50 100 Feet

0 10 20 Meters

Figure 2-1. Cap survey observation areas and photo station locations

DRAFT

Prepared by mikey, 11/20/2019; W:\Projects\City of Seattle Slip 4\Data\GIS\Maps and Analyses\Year 7 Data Report\Fig 2-1 6676 Visual monitoring survey obs areas.mxd

Photo source: Foreground, sub 1-ft drone imagery provided by Catchment Solutions NW. Photo date: July 2017. Background photo: USGS, High Resolution Orthoimagery:2898306_RGB23260025, 3 in resolution, 0.31 ft accuracy. Photo date April 2012.

Windward environmental LLC

N

0 20 40 Yards

0 20 40 Meters

Figure 2-2. Locations of photo stations in Slip 4 Early Action Area and orientation of photos

DRAFT

Prepared by mikey, 11/20/2019; W:\Projects\City of Seattle Slip 4\Data\GIS\Maps and Analyses\Year 7 Data Report\Fig 2-2 6464a Visual monitoring photo stations.mxd

Photo source: Foreground, sub 1-ft drone imagery provided by Catchment Solutions NW. Date: July 2017. Background photo: USGS, High Resolution Orthoimagery:2898306_RGB23260025, 3 in resolution, 0.31 ft accuracy. Date: April 2012.

Windward environmental LLC

N

0 20 40 Feet

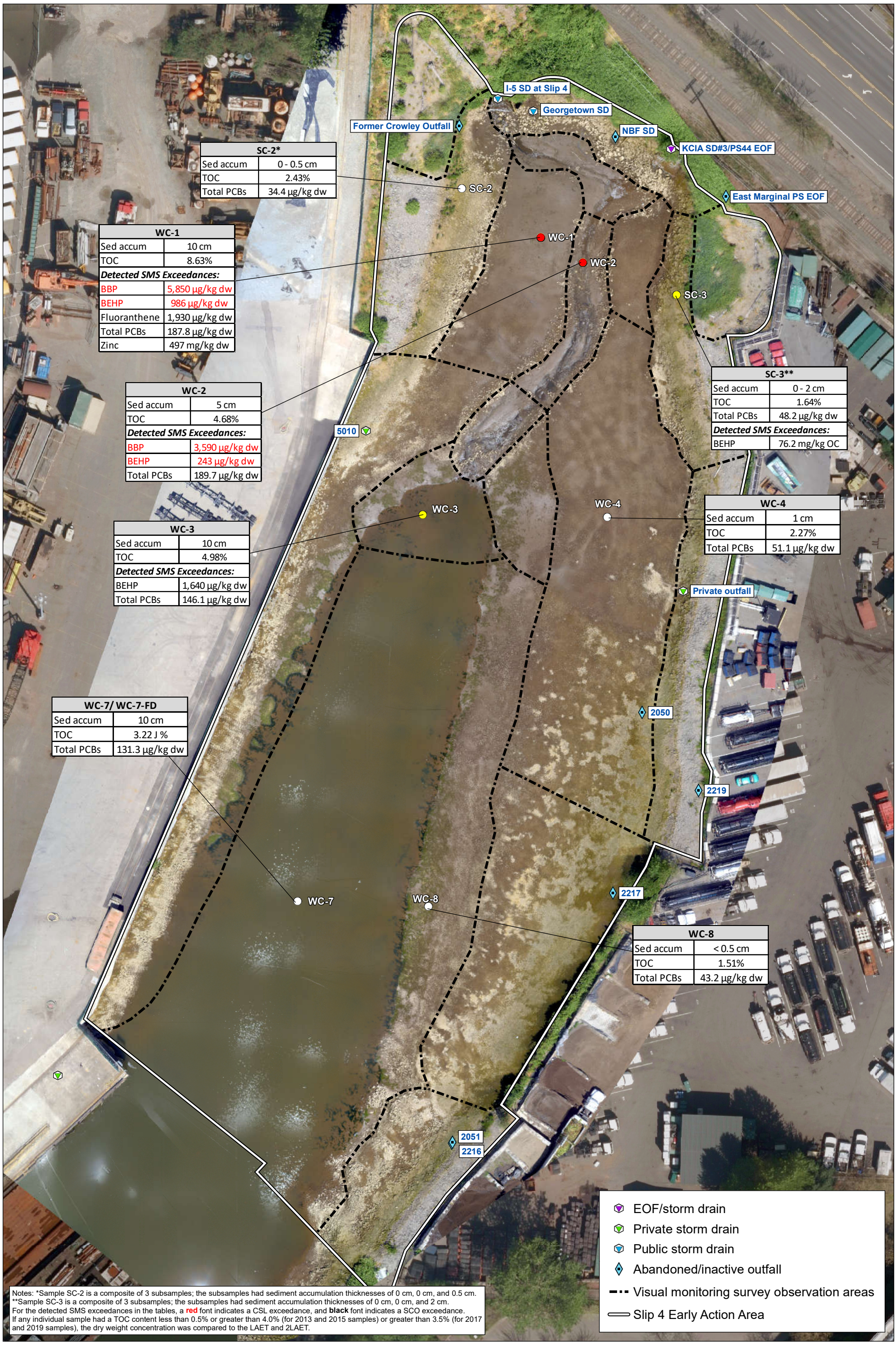
0 10 20 Meters

Figure 2-3. Target and actual surface sediment sampling locations in Year 7 (2019)

DRAFT

Prepared by mikey, 11/20/2019; W:\Projects\City of Seattle Slip 4\Data\GIS\Maps and Analyses\Year 7 Data Report\Fig 2-3 6664 Sediment sampling locations.mxd

Photo source: Foreground, sub 1-ft drone imagery provided by Catchment Solutions NW. Photo date: July 2017. Background photo: USGS, High Resolution Orthoimagery:2898306_RGB23260025, 3 in resolution, 0.31 ft accuracy. Photo date April 2012.



SC-2*	
Sed accum	0 - 0.5 cm
TOC	2.43%
Total PCBs	34.4 µg/kg dw

WC-1	
Sed accum	10 cm
TOC	8.63%
Detected SMS Exceedances:	
BBP	5,850 µg/kg dw
BEHP	986 µg/kg dw
Fluoranthene	1,930 µg/kg dw
Total PCBs	187.8 µg/kg dw
Zinc	497 mg/kg dw

WC-2	
Sed accum	5 cm
TOC	4.68%
Detected SMS Exceedances:	
BBP	3,590 µg/kg dw
BEHP	243 µg/kg dw
Total PCBs	189.7 µg/kg dw

WC-3	
Sed accum	10 cm
TOC	4.98%
Detected SMS Exceedances:	
BEHP	1,640 µg/kg dw
Total PCBs	146.1 µg/kg dw

SC-3**	
Sed accum	0 - 2 cm
TOC	1.64%
Total PCBs	48.2 µg/kg dw
Detected SMS Exceedances:	
BEHP	76.2 mg/kg OC

WC-4	
Sed accum	1 cm
TOC	2.27%
Total PCBs	51.1 µg/kg dw

WC-7/ WC-7-FD	
Sed accum	10 cm
TOC	3.22 J %
Total PCBs	131.3 µg/kg dw

WC-8	
Sed accum	< 0.5 cm
TOC	1.51%
Total PCBs	43.2 µg/kg dw

Notes: *Sample SC-2 is a composite of 3 subsamples; the subsamples had sediment accumulation thicknesses of 0 cm, 0 cm, and 0.5 cm.
**Sample SC-3 is a composite of 3 subsamples; the subsamples had sediment accumulation thicknesses of 0 cm, 0 cm, and 2 cm.
For the detected SMS exceedances in the tables, a **red** font indicates a CSL exceedance, and **black** font indicates a SCO exceedance.
If any individual sample had a TOC content less than 0.5% or greater than 4.0% (for 2013 and 2015 samples) or greater than 3.5% (for 2017 and 2019 samples), the dry weight concentration was compared to the LAET and 2LAET.

Windward environmental LLC

N

0 50 100 Feet

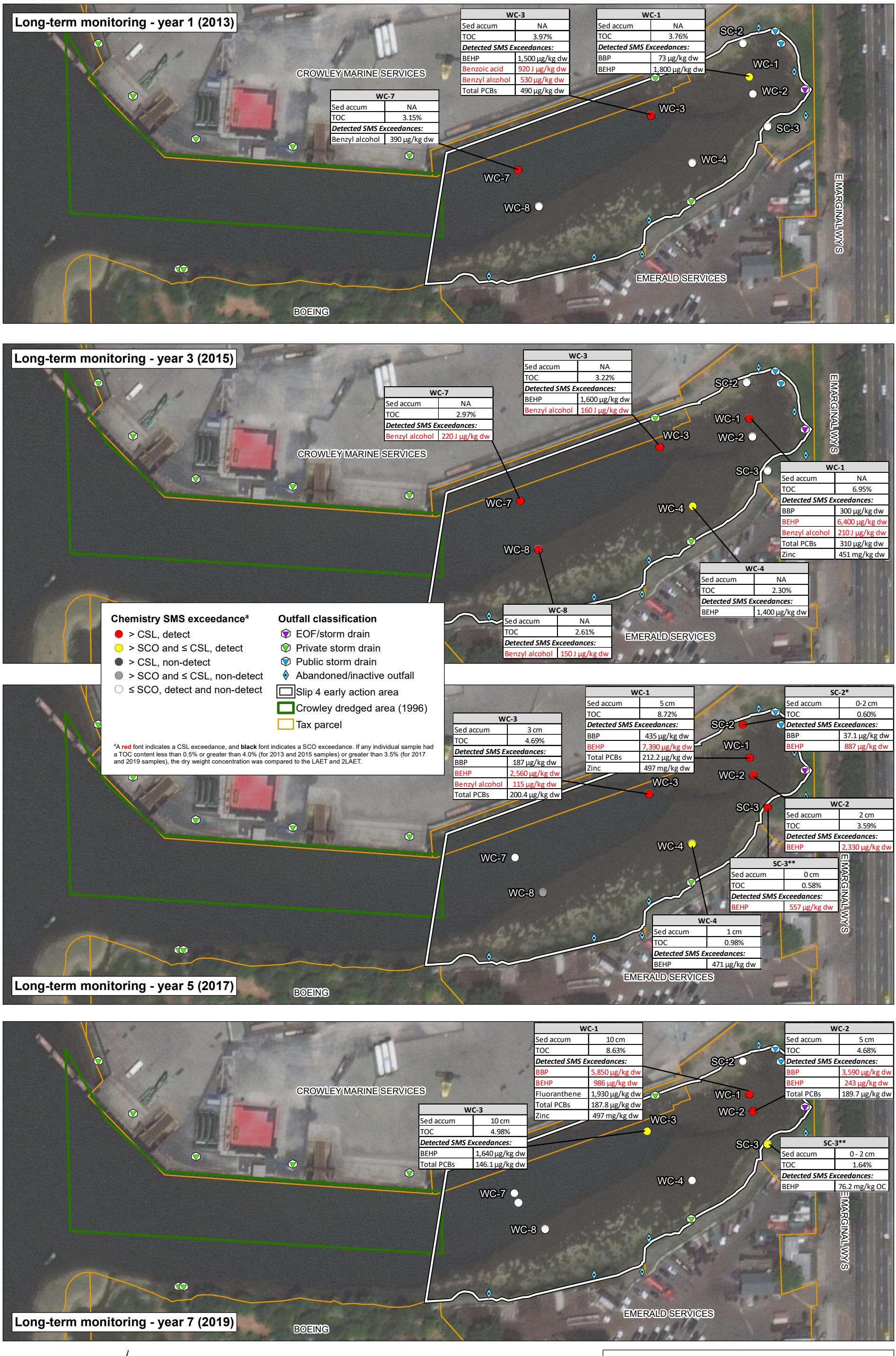
0 10 20 Meters

Figure 2-4. Sediment accumulation thicknesses and surface sediment (0 - 10 cm) concentrations for total PCBs and analytes detected above SMS

DRAFT

Prepared by mikey, 11/20/2019; W:\Projects\City of Seattle Slip 4\Data\GIS\Maps and Analyses\Year 7 Data Report\Fig 2-4 6675 Observation areas with surface sediment concentrations.mxd

Photo source: Foreground, sub 1-ft drone imagery provided by Catchment Solutions NW. Photo date: July 2017. Background photo: USGS, High Resolution Orthoimagery:2898306_RGB23260025, 3 in resolution, 0.31 ft accuracy. Photo date April 2012.



Windward environmental LLC

0 30 60 Yards

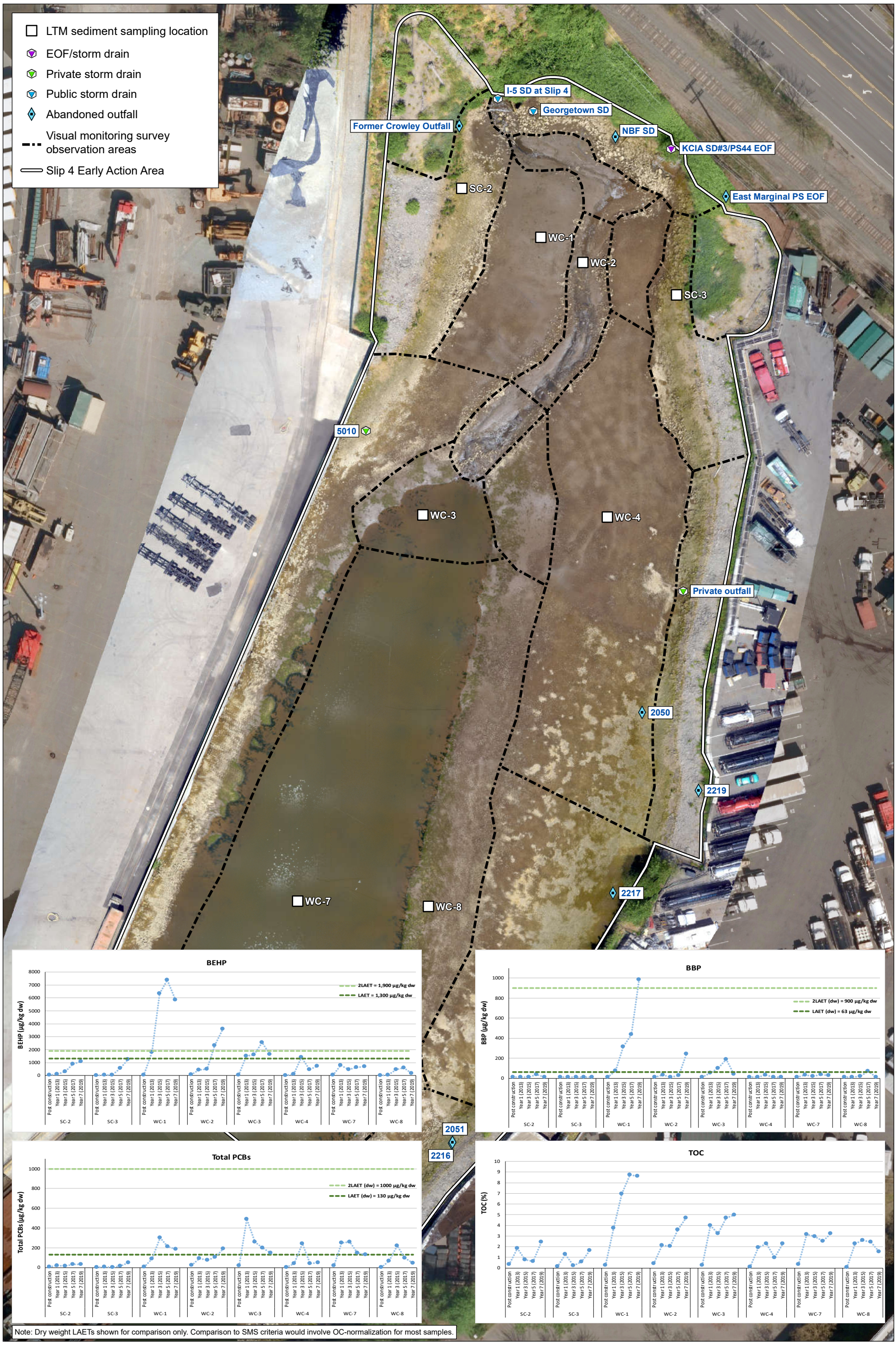
0 20 40 Meters

Figure 2-5. Slip 4 post-dredge surface sediment (0 - 10 cm) SMS exceedances over time

DRAFT

Imagery (2016 1-meter) provided by ESRI and USDA FSA

Prepared by mikey, 11/4/2019; W:\Projects\City of Seattle Slip 4\Data\GIS\Maps_and_Analyses\Year 7 Data Report\Fig 2-5 6674_Slip 4 surface sediment SMS trends-remed_Yr7.mxd



Windward environmental LLC

N

0 50 100 Feet

0 10 20 Meters

Figure 2-6. Total PCB, TOC, BBP, and BEHP concentrations over time

DRAFT

Prepared by mikey, 11/20/2019; W:\Projects\City of Seattle Slip 4\Data\GIS\Maps_and_Analyses\Year 7 Data Report\Fig 2-6 6681_Observation areas with surface sediment Total PCB_TOC_BBP_BEHP trends.mxd

Photo source: Foreground, sub 1-ft drone imagery provided by Catchment Solutions NW. Photo date: July 2017. Background photo: USGS, High Resolution Orthoimagery:2898306_RGB23260025, 3 in resolution, 0.31 ft accuracy. Photo date April 2012.

Windward environmental LLC

N

0 25 50 Yards

0 20 40 Meters

Figure 2-7. Locations of sediment samples collected by Boeing in 2017 and 2018

DRAFT

Prepared by mikey, 11/20/2019; W:\Projects\City of Seattle Slip 4\Data\GIS\Maps and Analyses\Year 7 Data Report\Fig 2-7 6684_Boeing locations.mxd

Photo source: Foreground, sub 1-ft drone imagery provided by Catchment Solutions NW. Date: July 2017. Background photo: USGS, High Resolution Orthoimagery:2898306_RGB23260025, 3 in resolution, 0.31 ft accuracy. Date: April 2012.