

**Outfall classification<sup>a</sup>**

- Private storm drain
- Drinking water reservoir overflow
- Abandoned/inactive outfall
- Dock/pier

**Middle reach bathymetric survey (2021-2023)<sup>b</sup>**

- Intertidal
- Potential vessel scour

**Bathymetry (feet MLLW)<sup>b</sup>**

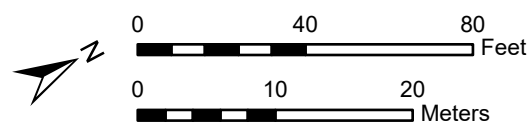
- 5 ft interval
- 1 ft interval

LDW Superfund Boundary (MHHW)<sup>c</sup>

River mile

<sup>a</sup> Outfalls are based on the Ecology 2020 survey, as updated by LDWG as of February 20, 2024; the revised outfall layer is pending approval by LDWG, EPA, and Ecology.  
<sup>b</sup> Source: 2021 and 2023 gap-fill middle reach bathymetric survey, supplemented within the inlet by the 2018 Dalton Olmsted & Fuglevand survey.  
<sup>c</sup> The 2010 MHHW boundary has been updated based on 2021 LIDAR data collected by King County.

Prepared by craigh, 6/21/2024, W:\Projects\Duwamish\_AOC\GIS\Maps and Analyses\Phase 2\RM2.2W\Inlet\Addendum\RM2.2 Inlet.aprx\Map 1-1 7-19 RM2.2W Overview





- 1 → Direction photo was taken
- 📍 Private storm drain<sup>a</sup>
- 📍 Drinking water reservoir overflow<sup>a</sup>
- 📏 LDW Superfund Boundary (MHHW)<sup>b</sup>
- 📏 King Co tax parcel
- Bathymetry (feet MLLW)<sup>c</sup>**
  - 5 ft interval
  - 1 ft interval

<sup>a</sup> Outfalls based on the Ecology 2020 survey as updated by LDWG as of September 19, 2022. Pending final approval by LDWG, EPA, and Ecology.  
<sup>b</sup> The 2010 MHHW boundary has been updated based on 2021 LIDAR data collected by King County.  
<sup>c</sup> Source: 2021 and 2023 gap-fill middle reach bathymetric survey, supplemented within the inlet by the 2018 Dalton Olmsted & Fuglevand survey.



Prepared by craigh, 8/21/2024, W:\Projects\Duwamish AOC\GIS\Maps and Analyses\Phase 2\RM2.2W Inlet Addendum\RM2.2 Inlet.aprx

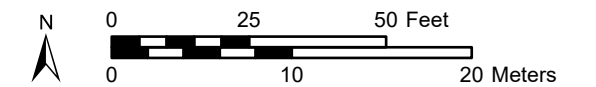


Prepared by craigh, 8/21/2024, W:\Projects\Duwamish ACOS\GIS\Maps and Analysis\Phase 2\RM2.2W Inlet Addendum\RM2.2 Inlet.aprx\Map 2-1b 7586 Photo overview - outer inlet



- 1** → Direction photo was taken
- ◆ Abandoned/inactive outfall<sup>a</sup>
- LDW Superfund Boundary (MHHW)<sup>b</sup>
- Federal Navigation Channel
- King Co tax parcel
- Bathymetry (feet MLLW)<sup>c</sup>**
- 5 ft interval
- 1 ft interval

<sup>a</sup> Outfalls based on the Ecology 2020 survey as updated by LDWG as of September 19, 2022. Pending final approval by LDWG, EPA, and Ecology.  
<sup>b</sup> The 2010 MHHW boundary has been updated based on 2021 LIDAR data collected by King County.  
<sup>c</sup> Source: 2021 and 2023 gap-fill middle reach bathymetric survey, supplemented within the inlet by the 2018 Dalton Olmsted & Fuglevand survey.



**Map 2-1b. Photo Overview of the Inlet at RM 2.2W, Outer Inlet**

PRE-DESIGN INVESTIGATION QAPP ADDENDUM No. 2  
 FOR THE LDW MIDDLE REACH – PHASE II SAMPLING  
 FOR THE INLET AT RM 2.2 WEST JUNE 21, 2024

Aerial photo sources: Anchor QEA (September 2023); EagleView Technologies, Inc.



- 1 RAL exceedance area boundary
- Surface (0-10 cm) sampling location**
  - Exceeds RAL
  - Does not exceed RAL
- Other sampling locations**
  - Core without appropriate RAL interval but with vertical intervals
  - ▲ Core without appropriate RAL interval but with one vertical interval
  - Core not vertically bounded
  - ⬡ Sample above MHHW<sup>a</sup>
  - ◆ Private storm drain<sup>b</sup>
  - ◇ Drinking water reservoir overflow<sup>b</sup>
  - ⊠ Dock/pier
  - ▨ Intertidal area
  - ▭ LDW Superfund Boundary (MHHW)<sup>c</sup>
  - King Co tax parcel
- Bathymetry (feet MLLW)<sup>d</sup>**
  - 5 ft interval
  - 1 ft interval
  - Channel path

Inner Inlet		FS2154-A-SE	FS2154-B-SE	FS2154-C-SE	HSA1	FS2154-D-SE	HSA2	HSA3	FS2154-F-SE	FS2154-G-SE	FS2154-H-SE	FS2154-I-SE	FS2154-J-SE
location ID:													
year:		2012	2012	2012	2020	2012	2020	2020	2012	2012	2012	2012	2012
recovery:		89%	92%	86%	na	75%	na	na	78%	85%	48%	58%	53%
mudline:		4.0	5.2	4.2	est. +5	3.7	est. +6	est. +7 †	2.9	5.9	2.4	1.7	2.5
+ 7 ft													
+ 6 ft													
+ 5 ft													
+ 4 ft			0.5-1.7 † PCBs (4.6)										
+ 3 ft		0.9-1.6 † PCBs (14)											
+ 2 ft			2.8-3.8 † PCBs (225), Hg (16)	2.2-5.5 † PCBs (4.9)		1.5-2.7 † PCBs (131), Pb (5)							
+ 1 ft		3.3-4.5 † PCBs (339), Hg (2)				2.9-4.6 † Hg (2.5)							
0 ft		4.6-5.5 † PCBs (0.7)		4.4-8 †									
- 1 ft		5.8-6.8 †		6.1-7.1 †		4.7-5.8 †							
- 2 ft		6.8-7.6 †				5.8-7.6 †							
- 3 ft													
- 4 ft													
- 5 ft													
- 6 ft													
- 7 ft													
- 8 ft													

WA DOT

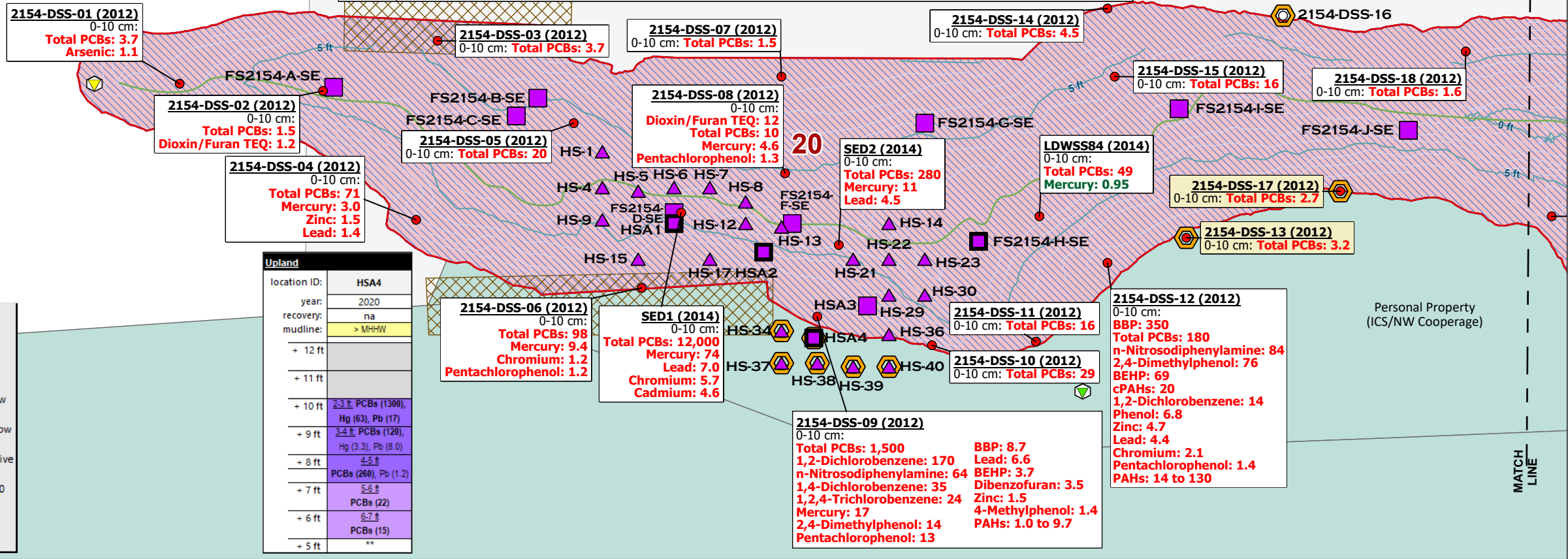
7100 1st Ave S  
Seattle L L (Douglas  
Management property)

<sup>a</sup> Samples collected above the MHHW boundary are not included in the design dataset. The exceedance boxes for these locations have been shaded brown to indicate that they are classified as soil samples, but are shown on these maps for informational purposes.

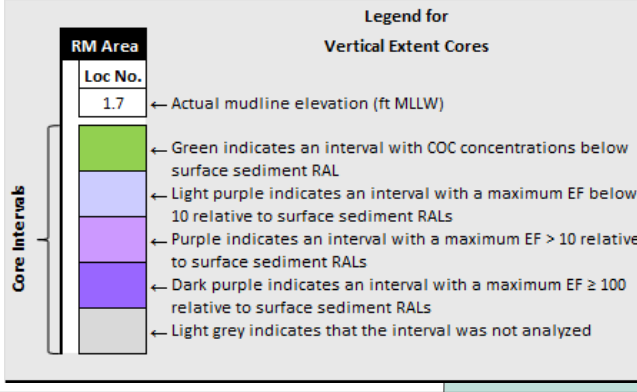
<sup>b</sup> Outfalls are based on the Ecology 2020 survey, as updated by LDWG as of February 20, 2024; the revised outfall layer is pending approval by LDWG, EPA, and Ecology.

<sup>c</sup> The 2010 MHHW boundary has been updated based on 2021 LIDAR data collected by King County.

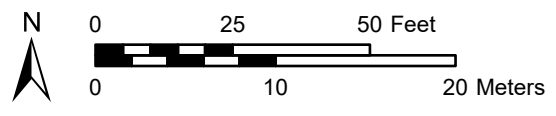
<sup>d</sup> Source: 2021 and 2023 gap-fill middle reach bathymetric survey, supplemented within the inlet by the 2018 Dalton Olmsted & Fuglevand survey.



location ID	year	RAL
LDW23-SS1003 (2023)		exceedance
0-10 cm: Phenol: 2.0		factor
depth interval	chemical	



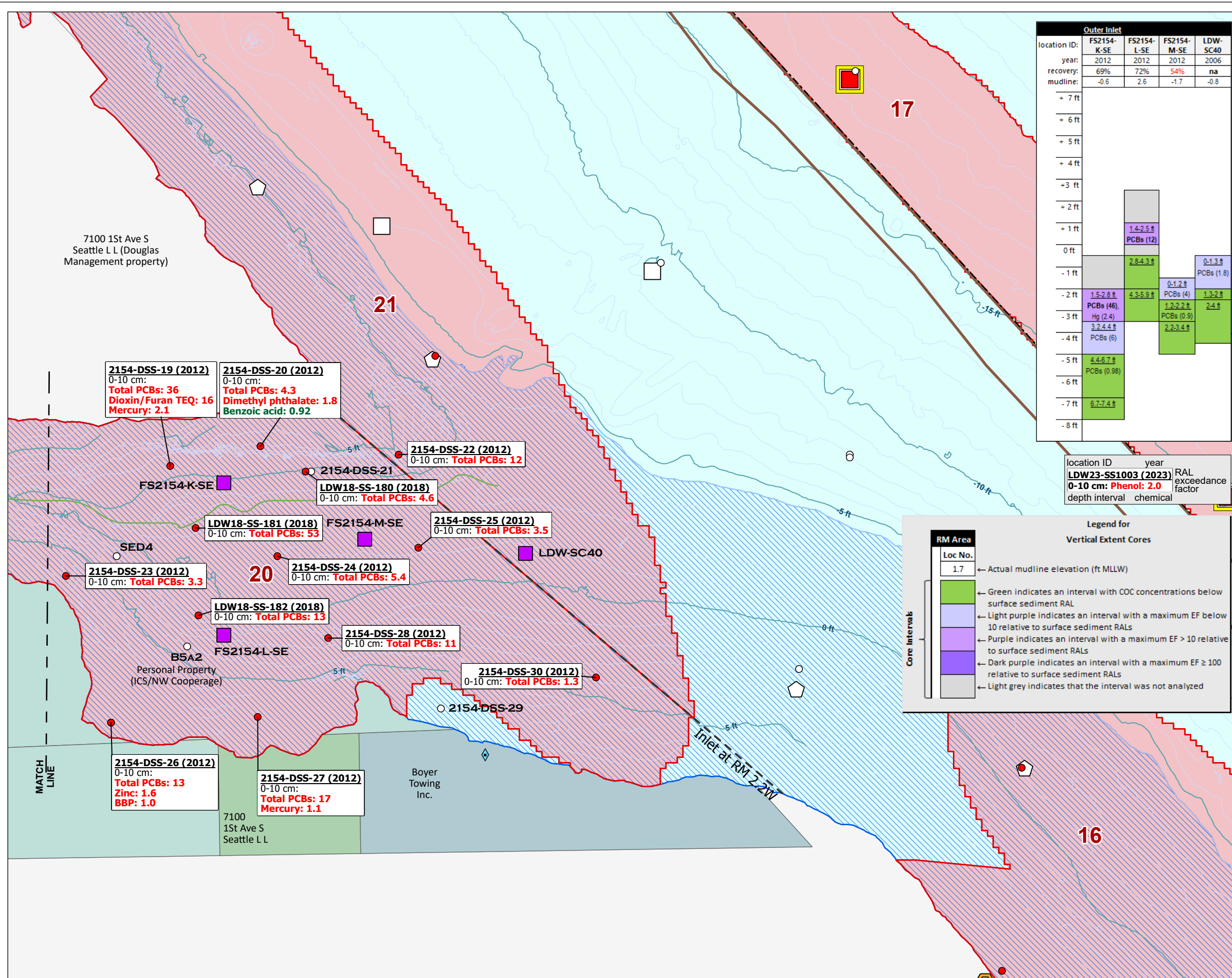
Upland	
location ID:	HSA4
year:	2020
recovery:	na
mudline:	> MHHW
+ 12 ft	
+ 11 ft	
+ 10 ft	2.3 † PCBs (1300), Hg (63), Pb (17)
+ 9 ft	3.4 † PCBs (120), Hg (3.3), Pb (8.0)
+ 8 ft	4.5 † PCBs (260), Pb (1.2)
+ 7 ft	5.6 † PCBs (22)
+ 6 ft	6.7 † PCBs (15)
+ 5 ft	**



Prepared by cnaigh, 6/21/2024, W:\Projects\Duwamish ACCS\GIS\Maps and Analyses\Phase 2\RM2.2W Inlet Addendum\RM2.2 Inlet.aprx

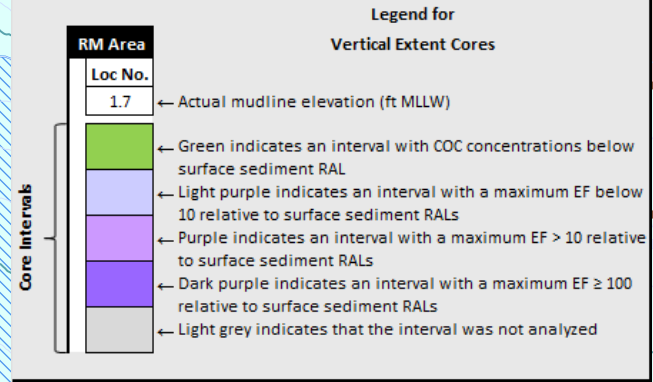


Prepared by craigh, 8/21/2024, W:\Projects\Duwamish AOC\GIS\Maps and Analyses\Phase 2\RM2\_2W Inlet Addendum\RM2\_2 Inlet\Map3-1b 7565 Design dataset - outer inlet



Outer Inlet				
location ID:	FS2154-K-SE	FS2154-L-SE	FS2154-M-SE	LDW-SC40
year:	2012	2012	2012	2006
recovery:	69%	72%	54%	na
mudline:	-0.6	2.6	-1.7	-0.8
+ 7 ft				
+ 6 ft				
+ 5 ft				
+ 4 ft				
+ 3 ft				
+ 2 ft				
+ 1 ft				
0 ft		1.4-2.5 †		0-1.3 †
- 1 ft		2.8-4.3 †		PCBs (1.8)
- 2 ft	1.5-2.8 †	4.3-5.9 †	0-1.2 †	1.3-2.2 †
- 3 ft	Hg (2.4)		PCBs (0.9)	2.4 †
- 4 ft	3.2-4.4 †		2.2-3.4 †	
- 5 ft	4.4-6.7 †			
- 6 ft	PCBs (0.98)			
- 7 ft	6.7-7.4 †			
- 8 ft				

location ID	year	RAL exceedance factor
LDW23-SS1003 (2023)		
0-10 cm:	Phenol: 2.0	
depth interval	chemical	



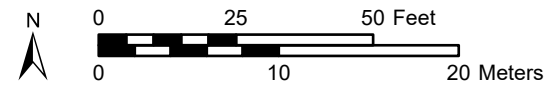
- 1 RAL exceedance area boundary
- Surface (0-10 cm) sampling location**
- Exceeds RAL
- Does not exceed RAL
- Intertidal (0-45 cm) core location**
- ◆ Exceeds RAL
- ◊ Does not exceed RAL
- Subtidal (0-60 cm) core location**
- Exceeds RAL
- Does not exceed RAL
- Other sampling locations**
- Core without appropriate RAL interval but with vertical intervals
- Shoaling core
- Sample above MHHW<sup>a</sup>
- ◆ Abandoned/inactive outfall<sup>b</sup>
- Historical USACE overdredge extent
- Intertidal area
- LDW Superfund Boundary (MHHW)<sup>c</sup>
- Federal Navigation Channel
- King Co tax parcel
- Bathymetry (feet MLLW)<sup>d</sup>**
- 5 ft interval
- 1 ft interval
- Channel path

<sup>a</sup> Samples collected above the MHHW boundary are not included in the design dataset. The exceedance boxes for these locations have been shaded brown to indicate that they are classified as soil samples, but are shown on these maps for informational purposes.

<sup>b</sup> Outfalls are based on the Ecology 2020 survey, as updated by LDWG as of February 20, 2024; the revised outfall layer is pending approval by LDWG, EPA, and Ecology.

<sup>c</sup> The 2010 MHHW boundary has been updated based on 2021 LIDAR data collected by King County.

<sup>d</sup> Source: 2021 and 2023 gap-fill middle reach bathymetric survey, supplemented within the inlet by the 2018 Dalton Olmsted & Fuglevand survey.



**Map 3-1b. Design Dataset in the Inlet at RM 2.2W, Outer Inlet**

PRE-DESIGN INVESTIGATION QAPP ADDENDUM No. 2  
FOR THE LDW MIDDLE REACH – PHASE II SAMPLING  
FOR THE INLET AT RM 2.2 WEST

JUNE 21, 2024



Prepared by craigh, 6/21/2024, W:\Projects\Duwamish\_AOC5\GIS\Maps and Analyses\Phase 2\RM2.2W\Inlet\Addendum\RM2.2 Inlet.aprx\Map 3-2a 7592 Total PCB concentration in surface sediment



**Surface (0-10 cm) total PCB concentration (ug/kg dw)**

- > 100,000
- > 50,000 and ≤ 100,000
- > 10,000 and ≤ 50,000
- > 1,000 and ≤ 10,000
- > 130 and ≤ 1,000
- ≤ 130

○ Sample above MHHW<sup>a</sup>

LDW Superfund Boundary (MHHW)<sup>b</sup>

King Co tax parcel

**Bathymetry (feet MLLW)<sup>c</sup>**

- 5 ft interval
- 1 ft interval

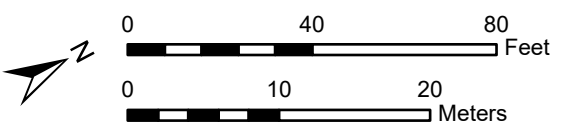
<sup>a</sup> Samples collected above the MHHW boundary are not included in the design dataset. They are shown on these maps only for informational purposes.  
<sup>b</sup> The 2010 MHHW boundary has been updated based on 2021 LIDAR data collected by King County.  
<sup>c</sup> Source: 2021 and 2023 gap-fill middle reach bathymetric survey, supplemented within the inlet by the 2018 Dalton Olmsted & Fuglevand survey.

Aerial photo sources: AnchorQEA (September 2023); EagleView Technologies, Inc.

**Windward** environmental LLC

**ANCHOR QEA**

**Lower Duwamish Waterway Group**  
 City of Seattle / King County / The Boeing Company



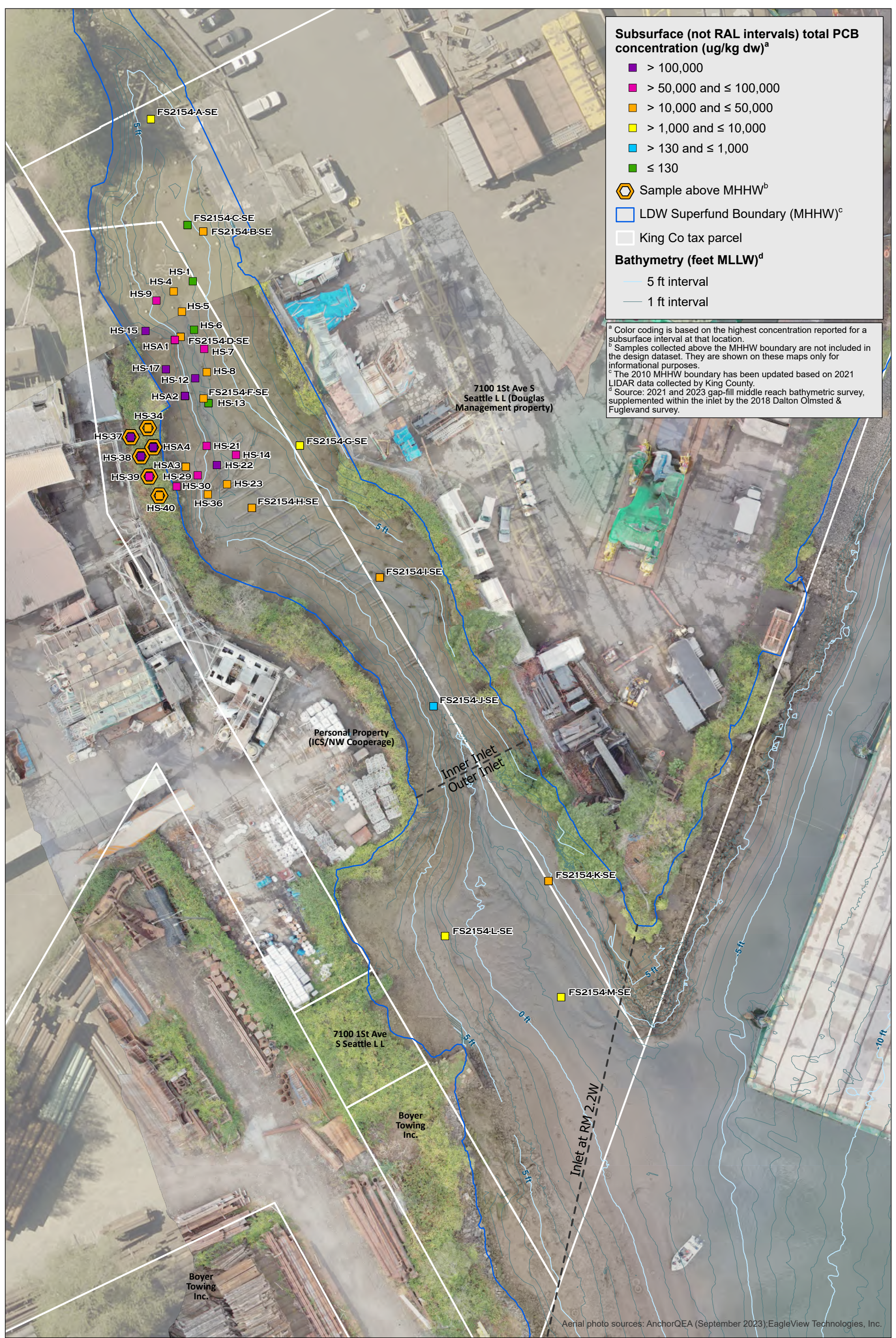
**Map 3-2a Total PCB Concentrations in Surface Sediment, Inlet at RM 2.2W**

PRE-DESIGN INVESTIGATION QAPP ADDENDUM NO. 2 FOR THE LDW MIDDLE REACH – PHASE II SAMPLING FOR THE INLET AT RM 2.2 WEST

JUNE 21, 2024



Prepared by craigh, 6/21/2024, W:\Projects\Duwamish\_AOC5\GIS\Maps and Analyses\Phase 2\RM2.2W\Inlet\Addendum\RM2.2 Inlet.pptx\Map 3-2b 7592 Total PCB concentration in subsurface sediment



**Subsurface (not RAL intervals) total PCB concentration (ug/kg dw)<sup>a</sup>**

- > 100,000
- > 50,000 and ≤ 100,000
- > 10,000 and ≤ 50,000
- > 1,000 and ≤ 10,000
- > 130 and ≤ 1,000
- ≤ 130

○ Sample above MHHW<sup>b</sup>

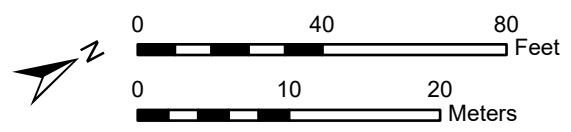
LDW Superfund Boundary (MHHW)<sup>c</sup>

King Co tax parcel

**Bathymetry (feet MLLW)<sup>d</sup>**

- 5 ft interval
- 1 ft interval

<sup>a</sup> Color coding is based on the highest concentration reported for a subsurface interval at that location.  
<sup>b</sup> Samples collected above the MHHW boundary are not included in the design dataset. They are shown on these maps only for informational purposes.  
<sup>c</sup> The 2010 MHHW boundary has been updated based on 2021 LIDAR data collected by King County.  
<sup>d</sup> Source: 2021 and 2023 gap-fill middle reach bathymetric survey, supplemented within the inlet by the 2018 Dalton Olmsted & Fuglevand survey.



Aerial photo sources: AnchorQEA (September 2023); EagleView Technologies, Inc.



Prepared by craigh, 6/21/2024, W:\Projects\Duwamish\_AOC5\GIS\Maps and Analyses\Phase 2\RM2.2W\Inlet\Addendum\RM2.2 Inlet.aprx\Map 3-3a 7592 Mercury concentration in surface sediment



**Surface (0-10 cm) mercury concentration (mg/kg dw)**

- > 20
- > 4.0 and ≤ 20
- > 1.2 and ≤ 4.0
- ≤ 1.2

○ Sample above MHHW<sup>a</sup>

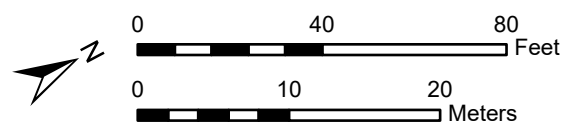
LDW Superfund Boundary (MHHW)<sup>b</sup>

King Co tax parcel

**Bathymetry (feet MLLW)<sup>c</sup>**

- 5 ft interval
- 1 ft interval

<sup>a</sup> Samples collected above the MHHW boundary are not included in the design dataset. They are shown on these maps only for informational purposes.  
<sup>b</sup> The 2010 MHHW boundary has been updated based on 2021 LIDAR data collected by King County.  
<sup>c</sup> Source: 2021 and 2023 gap-fill middle reach bathymetric survey, supplemented within the inlet by the 2018 Dalton Olmsted & Fuglevand survey.



Aerial photo sources: AnchorQEA (September 2023); EagleView Technologies, Inc.



Prepared by craigh, 6/21/2024, W:\Projects\Duwamish\_AOC5\GIS\Maps and Analyses\Phase 2\RM2.2W\Inlet\Addendum\RM2.2 Inlet.aprx\Map 3-3b 7562 Mercury concentration in subsurface sediment



**Subsurface (not RAL intervals) mercury concentration (mg/kg dw)<sup>a</sup>**

- >20
- >1.2 and ≤ 4.0
- > 4.0 and ≤ 20
- ≤ 1.2

○ Sample above MHHW<sup>b</sup>

LDW Superfund Boundary (MHHW)<sup>c</sup>

King Co tax parcel

**Bathymetry (feet MLLW)<sup>d</sup>**

- 5 ft interval
- 1 ft interval

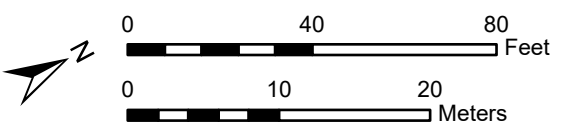
<sup>a</sup> Color coding is based on the highest concentration reported for a subsurface interval at that location.  
<sup>b</sup> Samples collected above the MHHW boundary are not included in the design dataset. They are shown on these maps only for informational purposes.  
<sup>c</sup> The 2010 MHHW boundary has been updated based on 2021 LIDAR data collected by King County.  
<sup>d</sup> Source: 2021 and 2023 gap-fill middle reach bathymetric survey, supplemented within the inlet by the 2018 Dalton Olmsted & Fuglevand survey.

Aerial photo sources: AnchorQEA (September 2023); EagleView Technologies, Inc.

**Windward** environmental LLC

**ANCHOR QEA**

**Lower Duwamish Waterway Group**  
 City of Seattle / King County / The Boeing Company



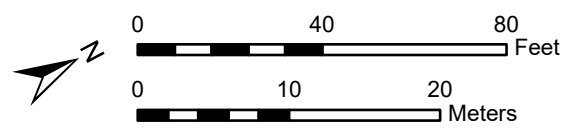
**Map 3-3b. Mercury Concentrations in Subsurface Sediment, Inlet at RM 2.2W**

PRE-DESIGN INVESTIGATION QAPP ADDENDUM NO. 2 FOR THE LDW MIDDLE REACH – PHASE II SAMPLING FOR THE INLET AT RM 2.2 WEST

JUNE 21, 2024



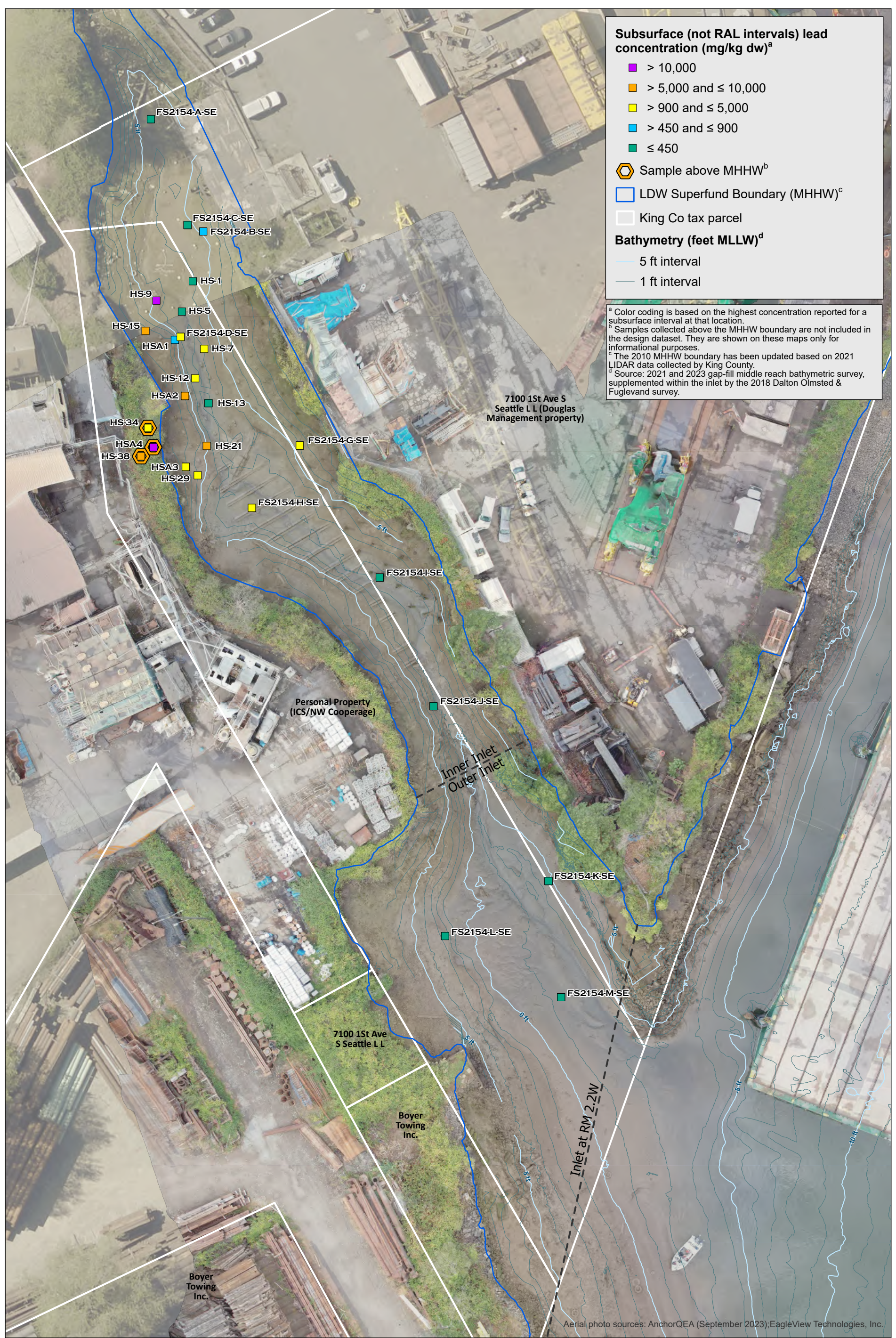
Prepared by craigh, 6/21/2024, W:\Projects\Duwamish\_AOC5\GIS\Maps and Analyses\Phase 2\RM2.2W\Inlet\Addendum\RM2.2 Inlet.aprx\Map 3-4a 7592 Lead concentration in surface sediment



Aerial photo sources: AnchorQEA (September 2023); EagleView Technologies, Inc.



Prepared by craigh, 6/21/2024, W:\Projects\Duwamish\_AOC5\GIS\Maps and Analyses\Phase 2\RM2.2W\Inlet\Addendum\RM2.2 Inlet\prpt\Map 3-4b 7592 Lead concentration in subsurface sediment



**Subsurface (not RAL intervals) lead concentration (mg/kg dw)<sup>a</sup>**

- > 10,000
- > 5,000 and ≤ 10,000
- > 900 and ≤ 5,000
- > 450 and ≤ 900
- ≤ 450

⬡ Sample above MHHW<sup>b</sup>

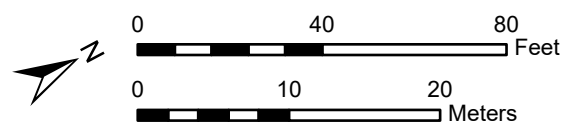
LDW Superfund Boundary (MHHW)<sup>c</sup>

King Co tax parcel

**Bathymetry (feet MLLW)<sup>d</sup>**

- 5 ft interval
- 1 ft interval

<sup>a</sup> Color coding is based on the highest concentration reported for a subsurface interval at that location.  
<sup>b</sup> Samples collected above the MHHW boundary are not included in the design dataset. They are shown on these maps only for informational purposes.  
<sup>c</sup> The 2010 MHHW boundary has been updated based on 2021 LIDAR data collected by King County.  
<sup>d</sup> Source: 2021 and 2023 gap-fill middle reach bathymetric survey, supplemented within the inlet by the 2018 Dalton Olmsted & Fuglevand survey.



Aerial photo sources: AnchorQEA (September 2023); EagleView Technologies, Inc.



**1** RAL exceedance area boundary

**Phase II Targets**

- Surface (0-10 cm)
- Vertical extent (non-RAL interval)

**Surface (0-10 cm) sampling location**

- Exceeds RAL
- Does not exceed RAL

**Other sampling locations**

- Core without appropriate RAL interval but with vertical intervals
- Core without appropriate RAL interval but with one vertical interval
- Core not vertically bounded
- Sample above MHHW<sup>a</sup>
- Existing soil sample
- Private storm drain<sup>b</sup>
- Drinking water reservoir overflow<sup>b</sup>
- LDW Superfund Boundary (MHHW)<sup>c</sup>
- King Co tax parcel

**Bathymetry (feet MLLW)<sup>d</sup>**

- 5 ft interval
- 1 ft interval

Location ID:	1609	FS2154-A-SE	1606	1607	1608	FS2154-C-SE	FS2154-B-SE	1605	1603	HSA1	FS2154-D-SE	1604	1610	HSA2	F-SE	1602	HSA3	1600	H-SE	G-SE	1601	1598	I-SE	1599	1596	J-SE	1597
Year:	2024	2012	2024	2024	2024	2012	2012	2024	2024	2020	2012	2024	2024	2020	2012	2024	2020	2024	2012	2012	2024	2024	2012	2024	2024	2012	2024
Mudline:	6.3	4.0	6.8	4.0	4.6	4.2	5.2	4.5	7.7	est. +5	3.7	6.9	7.4	est. +6	2.9	5.1	est. +7	5.6	2.4	5.9	6.9	7.5	1.7	6.2	6.9	2.5	6.7
Recovery:	-	88%	-	-	-	86%	92%	-	-	na	75%	-	-	na	78%	-	na	-	48%	85%	-	-	58%	-	-	53%	-
Core Target:	-3 ft	-	-3 ft	-3 ft	-3 ft	-	-	-3 ft	-3 ft	-	-3 ft	-	-3 ft	-	-	-3 ft	-	-	-5 ft	-	-5 ft	-	-5 ft	-	-5 ft	-	-5 ft

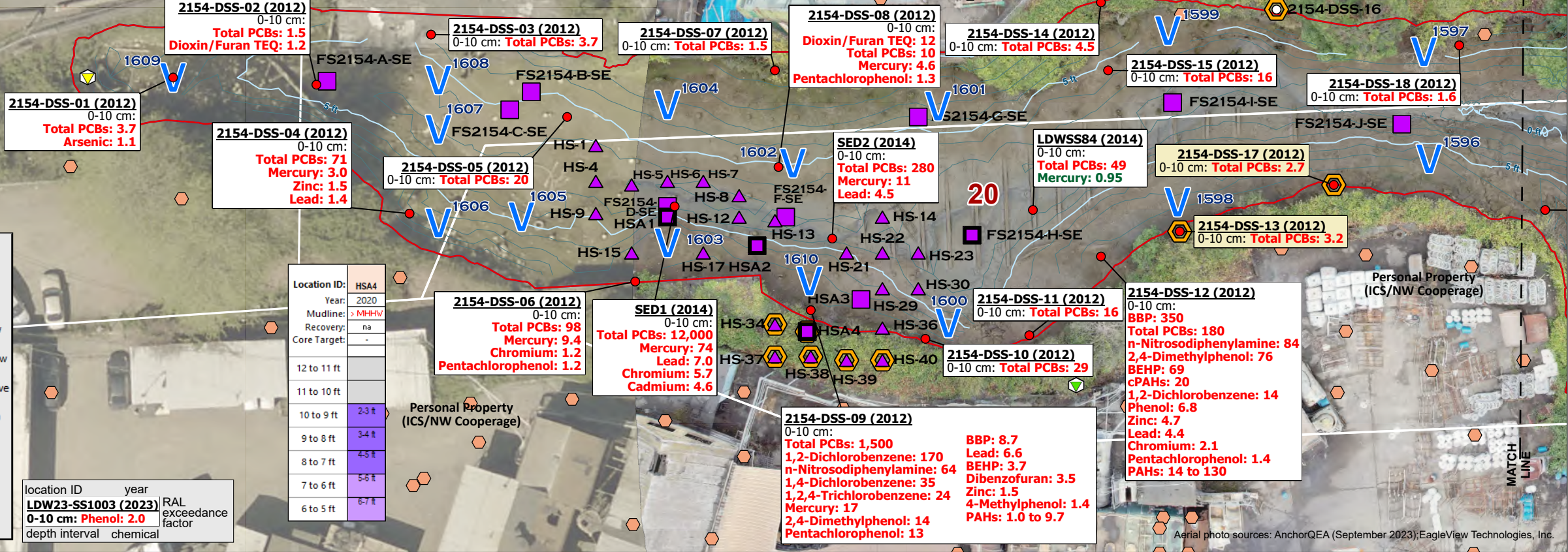


<sup>a</sup> Samples collected above the MHHW boundary are not included in the design dataset. The exceedance boxes for these locations have been shaded brown to indicate that they are classified as soil samples, but are shown on these maps for informational purposes.

<sup>b</sup> Outfalls based on the Ecology 2020 survey as updated by LDWG as of September 19, 2022. Pending final approval by LDWG, EPA, and Ecology.

<sup>c</sup> The 2010 MHHW boundary has been updated based on 2021 LIDAR data collected by King County.

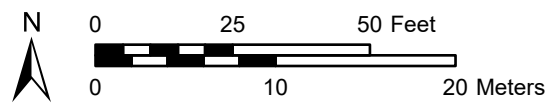
<sup>d</sup> Source: 2021 and 2023 gap-fill middle reach bathymetric survey, supplemented within the inlet by the 2018 Dalton Olmsted & Fuglevand survey.



**Legend for Vertical Extent Cores**

RM Area	Loc No.	1.7
Green	← Actual mudline elevation (ft MLLW)	
Light green	← Green indicates an interval with COC concentrations below surface sediment RAL	
Light purple	← Light purple indicates an interval with a maximum EF below 10 relative to surface sediment RALs	
Purple	← Purple indicates an interval with a maximum EF > 10 relative to surface sediment RALs	
Dark purple	← Dark purple indicates an interval with a maximum EF ≥ 100 relative to surface sediment RALs	
Light grey	← Light grey indicates that the interval was not analyzed	
Orange	← Orange indicates an analyze interval	
Light yellow	← Light yellow indicates an archive interval	

**location ID year**  
**LDW23-SS1003 (2023)** RAL exceedance factor  
**0-10 cm: Phenol: 2.0**  
**depth interval chemical**



**Map 4-1a. Phase II Sampling Locations in the Inlet at RM 2.2W, Inner Inlet**

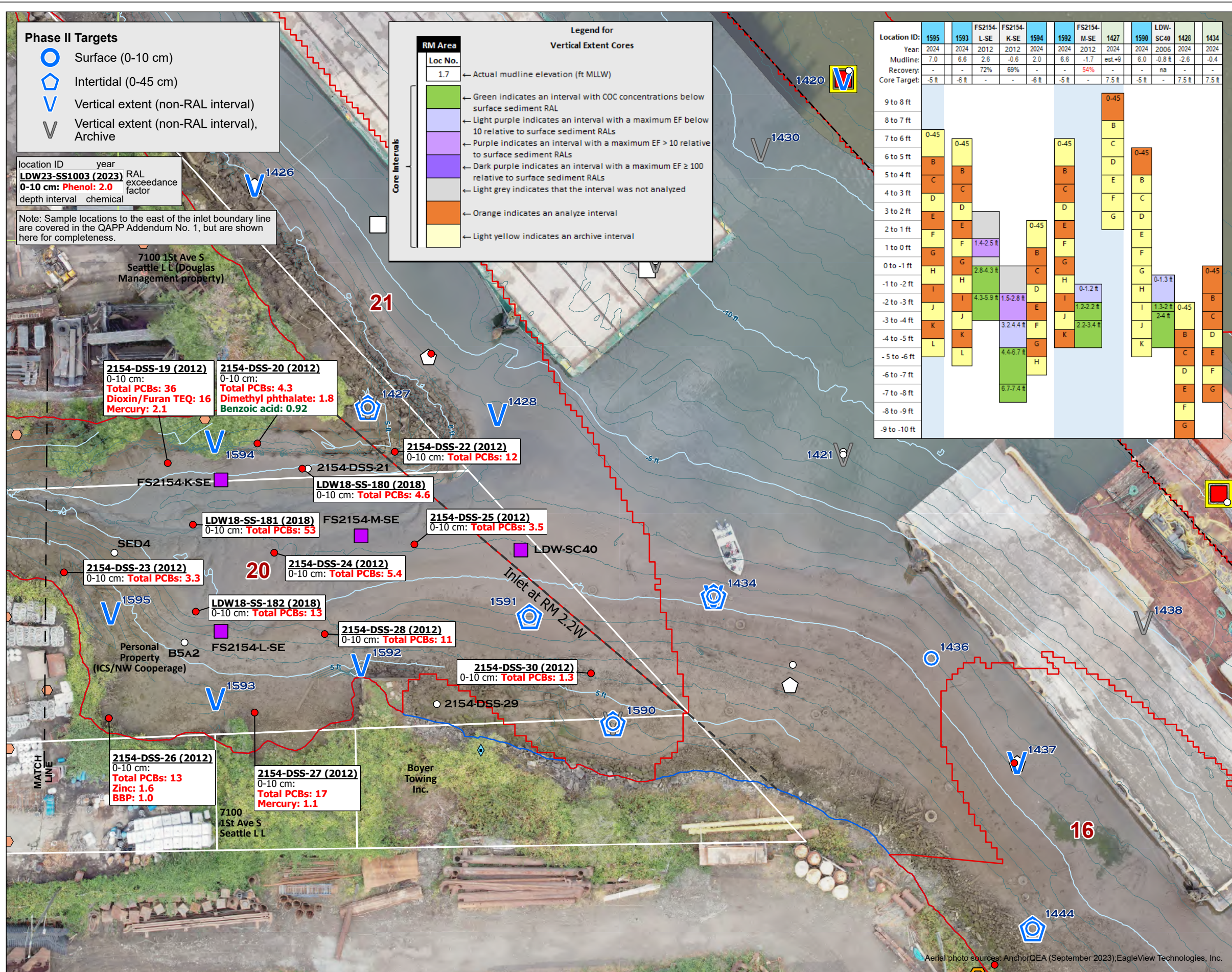
PRE-DESIGN INVESTIGATION QAPP ADDENDUM No. 2 FOR THE LDW MIDDLE REACH – PHASE II SAMPLING FOR THE INLET AT RM 2.2 WEST

JUNE 21, 2024

Prepared by cnaigh, 6/21/2024, W:\Projects\Duwamish ACCS\GIS\Maps and Analyses\Phase 2\RM2.2W Inlet Addendum\RM2.2 Inlet.aprx



Prepared by craigh, 8/21/2024, W:\Projects\Duwamish AOC\GIS\Maps and Analyses\Phase 2\RM2.2W Inlet Addendum\RM2.2 Inlet\Map4-1b-7565 Design dataset with Phase II locations - outer inlet



**Phase II Targets**

- Surface (0-10 cm)
- Intertidal (0-45 cm)
- Vertical extent (non-RAL interval)
- Vertical extent (non-RAL interval), Archive

**Legend for Vertical Extent Cores**

- Green indicates an interval with COC concentrations below surface sediment RAL
- Light purple indicates an interval with a maximum EF below 10 relative to surface sediment RALs
- Purple indicates an interval with a maximum EF > 10 relative to surface sediment RALs
- Dark purple indicates an interval with a maximum EF ≥ 100 relative to surface sediment RALs
- Light grey indicates that the interval was not analyzed
- Orange indicates an analyze interval
- Light yellow indicates an archive interval

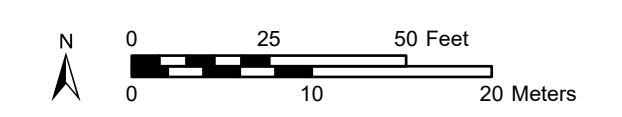
**Other sampling locations**

- Core without appropriate RAL interval but with vertical intervals
- Shoaling core
- Sample above MHHW<sup>a</sup>
- Existing soil sample
- Abandoned/inactive outfall<sup>b</sup>
- LDW Superfund Boundary (MHHW)<sup>c</sup>
- Federal Navigation Channel
- King Co tax parcel
- Bathymetry (feet MLLW)<sup>d</sup>
  - 5 ft interval
  - 1 ft interval

**Map 4-1b. Phase II Sampling Locations in the Inlet at RM 2.2W, Outer Inlet**

PRE-DESIGN INVESTIGATION QAPP ADDENDUM No. 2 FOR THE LDW MIDDLE REACH – PHASE II SAMPLING FOR THE INLET AT RM 2.2 WEST JUNE 21, 2024

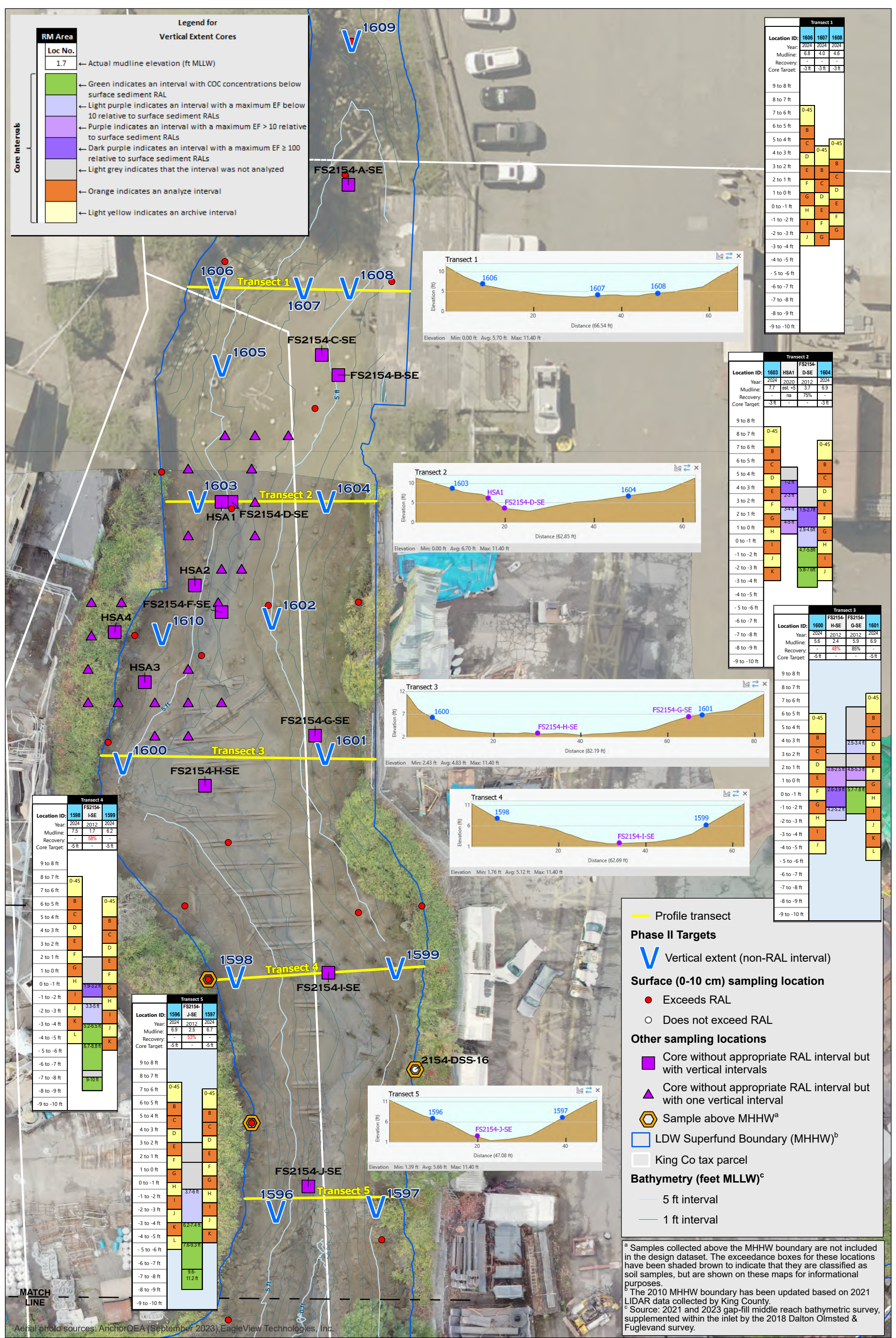
Windward environmental LLC ANCHOR QEA Lower Duwamish Waterway Group City of Seattle / King County / The Boeing Company



<sup>a</sup> Samples collected above the MHHW boundary are not included in the design dataset. The exceedance boxes for these locations have been shaded brown to indicate that they are classified as soil samples, but are shown on these maps for informational purposes.  
<sup>b</sup> Outfalls based on the Ecology 2020 survey as updated by LDWG as of September 19, 2022. Pending final approval by LDWG, EPA, and Ecology.  
<sup>c</sup> The 2010 MHHW boundary has been updated based on 2021 LIDAR data collected by King County.  
<sup>d</sup> Source: 2021 and 2023 gap-fill middle reach bathymetric survey, supplemented within the inlet by the 2018 Dalton Olmsted & Fuglevand survey.



Prepared by craigh, 6/21/2024, W:\Projects\Duwamish\ACOS\GIS\Maps and Analyses\Phase 2\RM2.2W\Inlet\Addendum\RM2.2 Inlet\prp\Map 4-2a 7593 Transect cross-sections - inner inlet



**Legend for Vertical Extent Cores**

**RM Area**  
**Loc No.**  
 1.7 ← Actual mudline elevation (ft MLLW)

**Core Intervals**

- Green indicates an interval with COC concentrations below surface sediment RAL
- Light purple indicates an interval with a maximum EF below 10 relative to surface sediment RALs
- Purple indicates an interval with a maximum EF > 10 relative to surface sediment RALs
- Dark purple indicates an interval with a maximum EF ≥ 100 relative to surface sediment RALs
- Light grey indicates that the interval was not analyzed
- Orange indicates an analyze interval
- Light yellow indicates an archive interval

		Transect 1		
Location ID:	1606	1607	1608	
Year:	2024	2024	2024	
Mudline:	6.8	4.0	4.6	
Recovery:	-	-	-	
Core Target:	-3 ft	-3 ft	-3 ft	
9 to 8 ft				
8 to 7 ft				
7 to 6 ft	0-45			
6 to 5 ft				
5 to 4 ft	B			0-45
4 to 3 ft	C	0-45		
3 to 2 ft	D			
2 to 1 ft	E	B	B	
1 to 0 ft	F	C	C	
0 to -1 ft	G	D	D	
-1 to -2 ft	H	E	E	
-2 to -3 ft	I	F	F	
-3 to -4 ft	J	G	G	
-4 to -5 ft				
-5 to -6 ft				
-6 to -7 ft				
-7 to -8 ft				
-8 to -9 ft				
-9 to -10 ft				

		Transect 2			
Location ID:	1603	HSA1	D-SE	1604	
Year:	2024	2020	2012	2024	
Mudline:	7.7	est. 5	3.7	6.9	
Recovery:	-	na	75%	-	
Core Target:	-3 ft	-	-	-3 ft	
9 to 8 ft					
8 to 7 ft	0-45				
7 to 6 ft					
6 to 5 ft	B				
5 to 4 ft	C				
4 to 3 ft	D				
3 to 2 ft	E	23 ft			
2 to 1 ft	F	34 ft	1.5-2.7 ft		
1 to 0 ft	G	43 ft			
0 to -1 ft	H				
-1 to -2 ft	I	4.7-5.8 ft			
-2 to -3 ft	J				
-3 to -4 ft	K	5.3-7.8 ft			
-4 to -5 ft					
-5 to -6 ft					
-6 to -7 ft					
-7 to -8 ft					
-8 to -9 ft					
-9 to -10 ft					

		Transect 3			
Location ID:	1600	H-SE	G-SE	1601	
Year:	2024	2012	2012	2024	
Mudline:	5.6	2.4	5.9	6.9	
Recovery:	-	48%	85%	-	
Core Target:	-5 ft	-	-	-5 ft	
9 to 8 ft					
8 to 7 ft					
7 to 6 ft					
6 to 5 ft	0-45				
5 to 4 ft					
4 to 3 ft	B				
3 to 2 ft	C				
2 to 1 ft	D	11.2-2.5 ft	4.5-5.3 ft		
1 to 0 ft	E	2.6-3.9 ft	5.7-7.8 ft		
0 to -1 ft	F				
-1 to -2 ft	G	4.2-5.2 ft			
-2 to -3 ft	H				
-3 to -4 ft	I				
-4 to -5 ft	J				
-5 to -6 ft					
-6 to -7 ft					
-7 to -8 ft					
-8 to -9 ft					
-9 to -10 ft					

		Transect 4		
Location ID:	1598	I-SE	1599	
Year:	2024	2012	2024	
Mudline:	7.5	1.7	8.2	
Recovery:	-	58%	-	
Core Target:	-5 ft	-	-5 ft	
9 to 8 ft				
8 to 7 ft	0-45			
7 to 6 ft				
6 to 5 ft	B			
5 to 4 ft	C			
4 to 3 ft	D			
3 to 2 ft	E			
2 to 1 ft	F			
1 to 0 ft	G			
0 to -1 ft	H	1.9-3.2 ft		
-1 to -2 ft	I			
-2 to -3 ft	J	3.3-5 ft		
-3 to -4 ft	K	5.2-6.5 ft		
-4 to -5 ft	L	6.7-8.8 ft		
-5 to -6 ft				
-6 to -7 ft				
-7 to -8 ft				
-8 to -9 ft				
-9 to -10 ft				

		Transect 5		
Location ID:	1596	J-SE	1597	
Year:	2024	2012	2024	
Mudline:	6.9	2.5	6.7	
Recovery:	-	53%	-	
Core Target:	-5 ft	-	-5 ft	
9 to 8 ft				
8 to 7 ft				
7 to 6 ft	0-45			
6 to 5 ft				
5 to 4 ft	B			
4 to 3 ft	C			
3 to 2 ft	D			
2 to 1 ft	E			
1 to 0 ft	F			
0 to -1 ft	G			
-1 to -2 ft	H	3.7-6 ft		
-2 to -3 ft	I			
-3 to -4 ft	J	6.2-7.4 ft		
-4 to -5 ft	K	7.6-9.3 ft		
-5 to -6 ft	L	9.6-11.2 ft		
-6 to -7 ft				
-7 to -8 ft				
-8 to -9 ft				
-9 to -10 ft				

— Profile transect

**Phase II Targets**

V Vertical extent (non-RAL interval)

**Surface (0-10 cm) sampling location**

- Exceeds RAL
- Does not exceed RAL

**Other sampling locations**

- Core without appropriate RAL interval but with vertical intervals
- ▲ Core without appropriate RAL interval but with one vertical interval
- ⬡ Sample above MHHW<sup>a</sup>
- LDW Superfund Boundary (MHHW)<sup>b</sup>
- ▭ King Co tax parcel

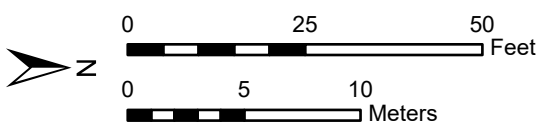
**Bathymetry (feet MLLW)<sup>c</sup>**

- 5 ft interval
- 1 ft interval

<sup>a</sup> Samples collected above the MHHW boundary are not included in the design dataset. The exceedance boxes for these locations have been shaded brown to indicate that they are classified as soil samples, but are shown on these maps for informational purposes.

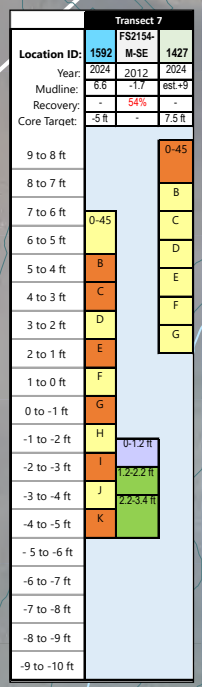
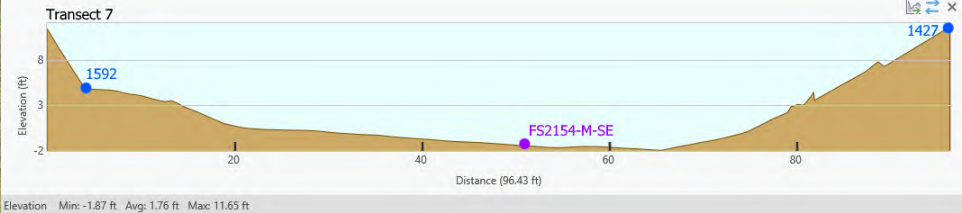
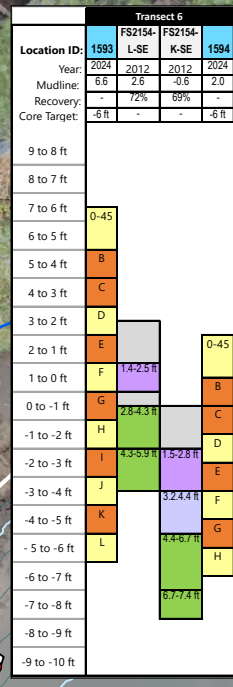
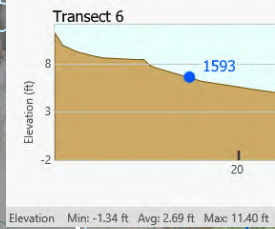
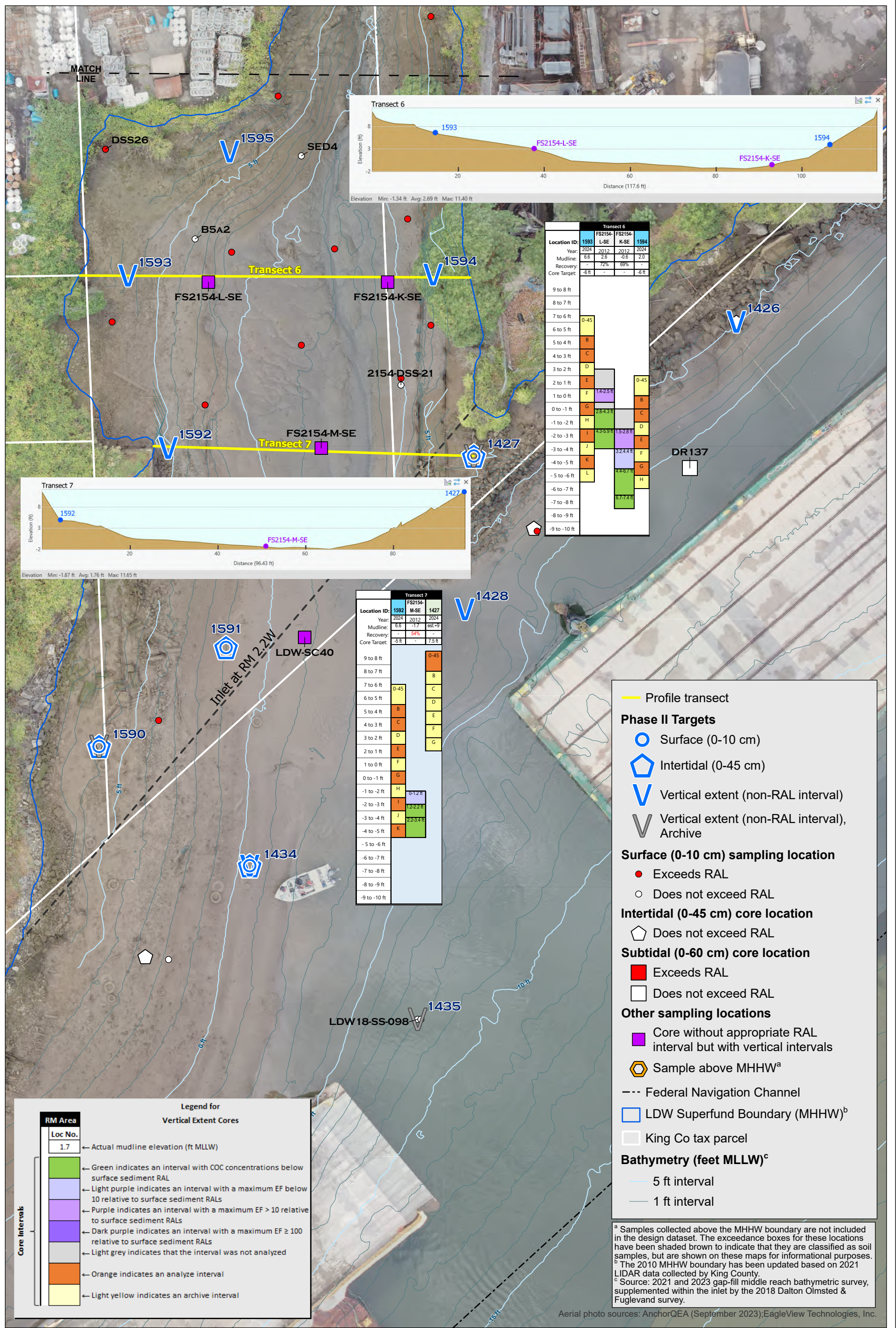
<sup>b</sup> The 2010 MHHW boundary has been updated based on 2021 LIDAR data collected by King County.

<sup>c</sup> Source: 2021 and 2023 gap-fill middle reach bathymetric survey, supplemented within the inlet by the 2018 Dalton Olmsted & Fuglevand survey.





Prepared by craigh. 6/21/2024. W:\Projects\Duwamish\_AOC5\GIS\Maps and Analyses\Phase 2\RM2.2W\Inlet\Addendum\RM2.2 Inlet.aprx\Map 4-2b 7583 Transect cross-sections - outer inlet



**Legend**

- Profile transect
- Phase II Targets**
  - Surface (0-10 cm)
  - Intertidal (0-45 cm)
  - Vertical extent (non-RAL interval)
  - Vertical extent (non-RAL interval), Archive
- Surface (0-10 cm) sampling location**
  - Exceeds RAL
  - Does not exceed RAL
- Intertidal (0-45 cm) core location**
  - Does not exceed RAL
- Subtidal (0-60 cm) core location**
  - Exceeds RAL
  - Does not exceed RAL
- Other sampling locations**
  - Core without appropriate RAL interval but with vertical intervals
  - Sample above MHHW<sup>a</sup>
- Federal Navigation Channel
- LDW Superfund Boundary (MHHW)<sup>b</sup>
- King Co tax parcel
- Bathymetry (feet MLLW)<sup>c</sup>**
  - 5 ft interval
  - 1 ft interval

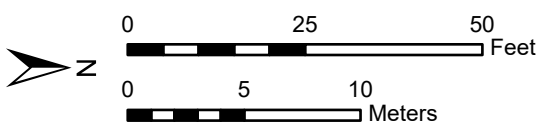
**Legend for Vertical Extent Cores**

RM Area	Loc No.	Actual mudline elevation (ft MLLW)
	1.7	

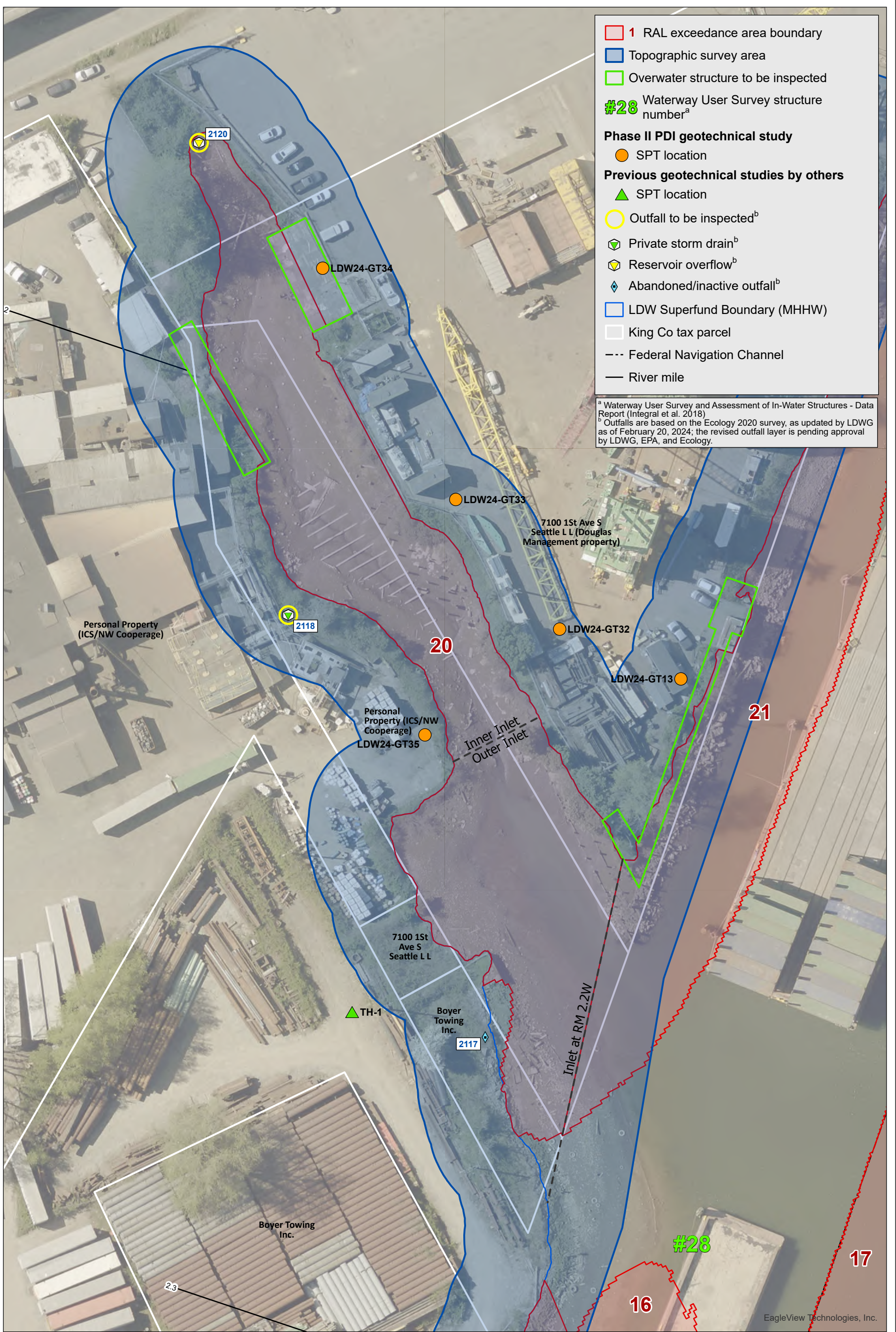
- Green indicates an interval with COC concentrations below surface sediment RAL
- Light purple indicates an interval with a maximum EF below 10 relative to surface sediment RALs
- Purple indicates an interval with a maximum EF > 10 relative to surface sediment RALs
- Dark purple indicates an interval with a maximum EF ≥ 100 relative to surface sediment RALs
- Light grey indicates that the interval was not analyzed
- Orange indicates an analyze interval
- Light yellow indicates an archive interval

<sup>a</sup> Samples collected above the MHHW boundary are not included in the design dataset. The exceedance boxes for these locations have been shaded brown to indicate that they are classified as soil samples, but are shown on these maps for informational purposes.  
<sup>b</sup> The 2010 MHHW boundary has been updated based on 2021 LIDAR data collected by King County.  
<sup>c</sup> Source: 2021 and 2023 gap-fill middle reach bathymetric survey, supplemented within the inlet by the 2018 Dalton Olmsted & Fuglevand survey.

Aerial photo sources: AnchorQEA (September 2023); EagleView Technologies, Inc.







Prepared by crugh, 6/21/2024, W:\Projects\Duwamish\_AOC5\GIS\Maps and Analyses\Phase 2\RM2\_2W\InletAddendum\RM2\_2 Inlet.pptx\Map 4-3 7568 Shoreline survey areas

