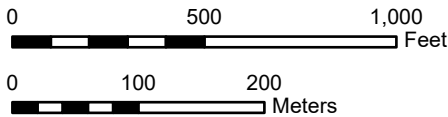
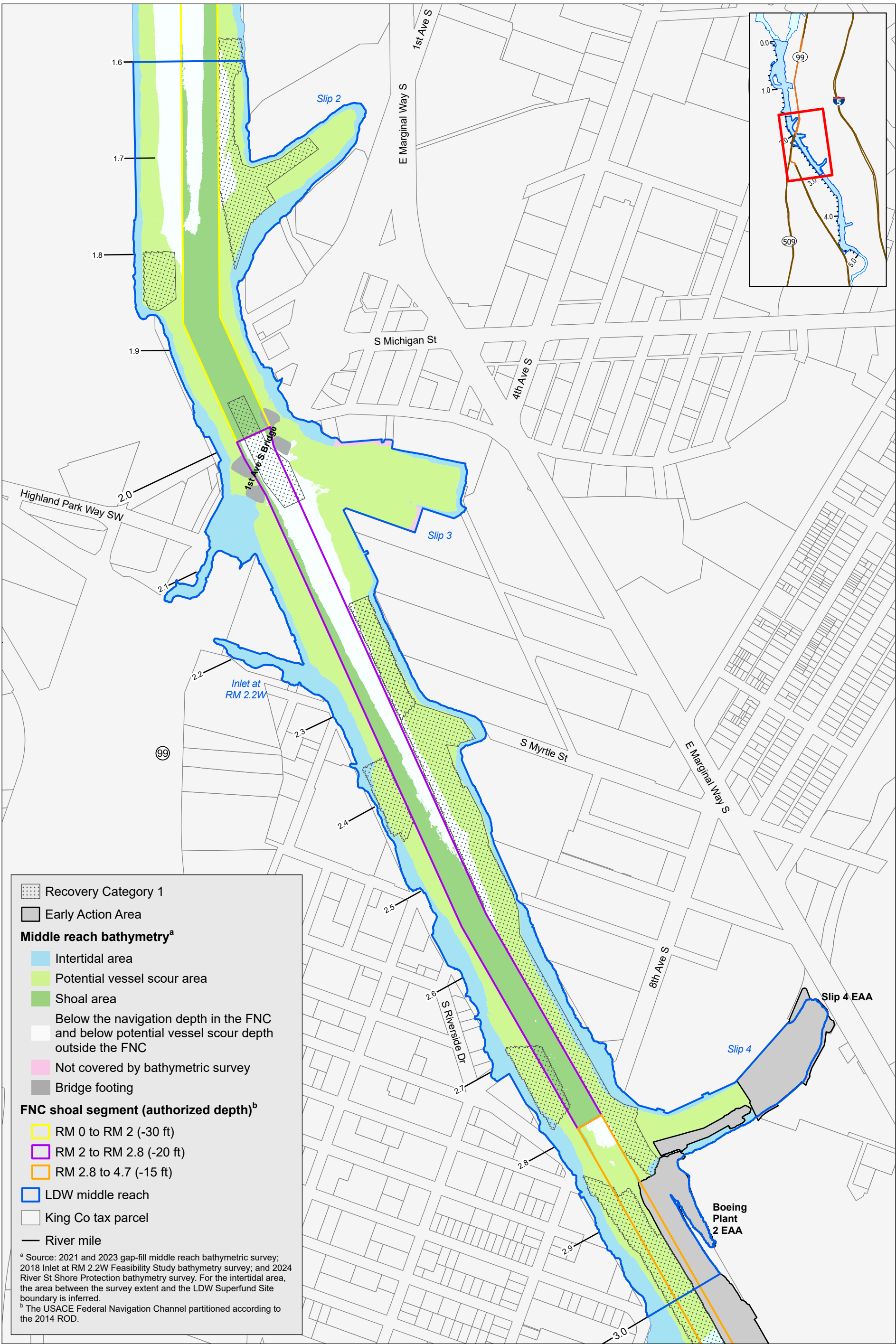


Prepared by CEH 7/1/2026; I:\Client\LDWG\Work_Orders\AOC5 Middle Reach Design\Maps and Analyses\Phase 3 QAPP Addendum\Phase 3 QAPP Addendum.aprx Map 1-1 7419 Middle reach vicinity



Map 1-1. Overview of the Middle Reach

Proposed Phase III QAPP locations

- Surface (0-10 cm)
- Surface (0-10 cm) archive
- Surface (0-10 cm) bioassay
- Intertidal (0-45 cm)
- Subtidal (0-60 cm)
- Vertical extent (non-RAL interval)
- Vertical extent (non-RAL interval) archive
- Precipitate layer core

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
- Vertical extent (non-RAL interval)
- Surface (0-10 cm), archive
- Intertidal (0-45 cm) archive
- Subtidal (0-60 cm) archive
- Vertical extent (non-RAL interval) archive
- Vertical extent (non-RAL interval) not collected because of core refusal
- Surface (0-10cm) bioassay passed
- Subtidal (0-60cm) bioassay passed
- Shoaling core
- Archive PDI sediment samples analyzed (Tier 2c)
- Archive PDI sediment samples analyzed (Tier 2b)
- Sample above MHHW not included in the interpolation dataset
- Upland soil sample
- 30% RD RAA daylight boundary
- 30% RD RAA placement area
- 30% RD RAA toe of cut
- 1 RAL exceedance area boundary
- Combined surface and subsurface sediment PCB indicator kriging RAL exceedance area
- Additional Thiessen polygon RAL exceedance area for other COCs
- Upper reach SMA Boundary

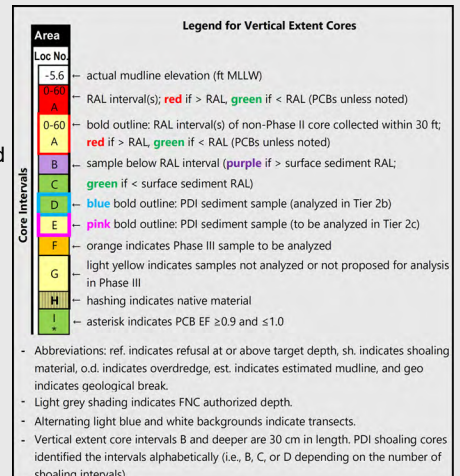
Outfall classification^a

- CSO
- CSO/storm drain
- CSO/EOF
- EOF/storm drain
- WWTS outfall
- Private storm drain
- Public storm drain
- Reservoir overflow
- Stream, channel, or ditch
- Abandoned/inactive outfall
- Removed outfall
- Pipe of unresolved origin and/or use
- Not an outfall
- Georgetown WWTS diffuser pipe
- Utility corridor
- Recovery Category 1
- Historical USACE overdrudge extent
- Beach play area
- Bridge
- Dock/pier
- Marina
- Sand cover placement
- Boundary area thin-layer placement
- Talon Shoreline Stabilization Project
- Boyer maintenance dredging (2012)
- Intertidal area
- Potential vessel scour area
- Shoal area
- Below the navigation depth in the FNC and below potential vessel scour depth outside the FNC
- Not covered by bathymetric survey
- Bridge footing
- LDW Superfund Boundary (MHHW)^b
- LDW middle reach
- Early Action Area
- King Co tax parcel
- Federal Navigation Channel authorized depth boundary
- Federal Navigation Channel
- River mile

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

Exceedance boxes include RAL exceedances and near exceedances for all COCs and intervals collected at that location.

^a 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.
^b The 2010 MHHW boundary has been updated based on 2021 LIDAR data collected by King County.

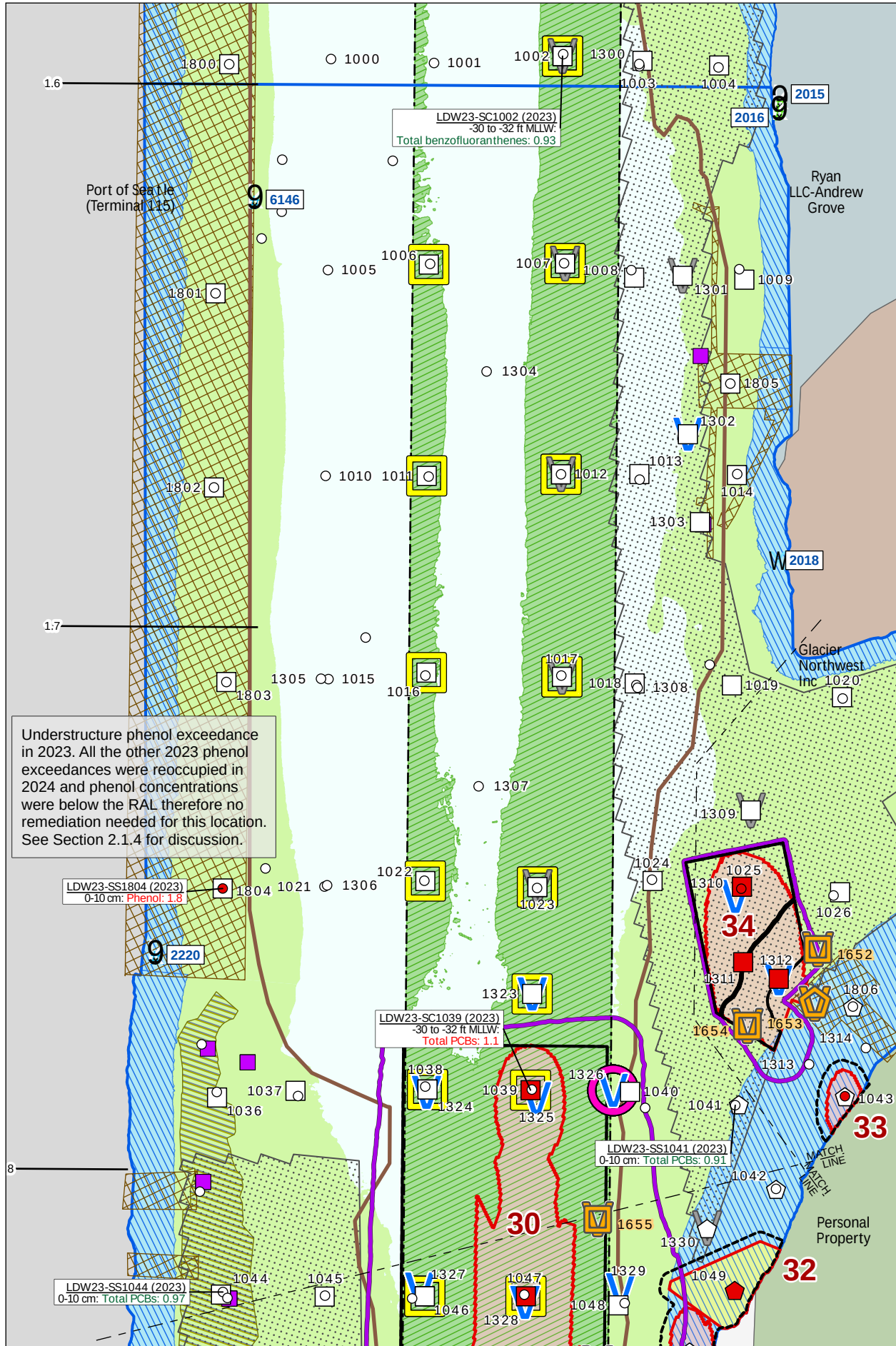


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Map 4-1. Phase III Sample Locations, RAL Exceedances, and RAL Exceedance Areas Based on the Design Dataset, series legend

QAPP ADDENDUM FOR PHASE III OF THE PRE-DESIGN INVESTIGATION OF THE LDW MIDDLE REACH

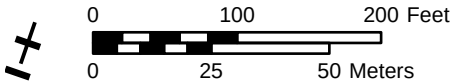
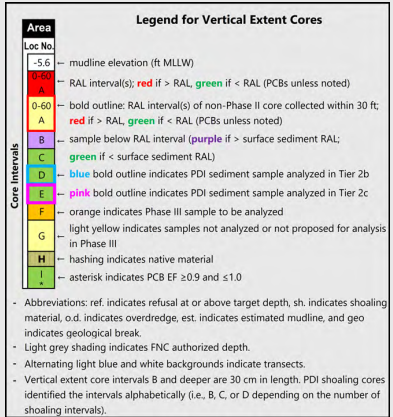
JULY 8, 2026



RM 1.6 to RM 1.75 - FNC												
Location	1002	1006	1007	1011	1012	1016	1017	1022	1023			
Mudline	-26.9	-29.3	-27.8	-29.3	-28.3	-29.8	-28.5	-29.4	-28.8			
Core Target:	-34 ft	-34 ft	-34 ft	-34 ft	-34 ft	-34 ft	-34 ft	-34 ft	-34 ft			
-27 to -28 ft	sh. A											
-28 to -29 ft	sh. B		sh. A		sh. A		sh. A		sh. A			
-29 to -30 ft		sh.		sh.								
-30 to -31 ft	o.d.	o.d.	o.d.	o.d.	o.d.	o.d.	o.d.	o.d.	o.d.			
-31 to -32 ft	C	A	B	A	B	A	B	A	B			
-32 to -33 ft	C	B	C	B	C	B	C	B	C			
-33 to -34 ft												

RM 1.6 E		Area 30 N - FNC					
Location	1301	1302	1323	1324	1325	1326	
Mudline	-23.2	-23.0	-29.2	-29.3	-26.0	-23.2	
Core Target	-40 ft	-40 ft	-41 ft	-41 ft	-41 ft	20 ft	
Older Loc.	-	-	-	1038	1039	1040	
-23 to -24 ft	0-60 A	0-60 A				0-60 A	
-24 to -25 ft	B	B				B	
-25 to -26 ft	C	C			sh. A	C	
-26 to -27 ft	D	D			sh. B	D	
-27 to -28 ft	E	E			sh. B	E	
-28 to -29 ft	F	F	sh. o.d.	sh. o.d.	sh. o.d.	F	
-29 to -30 ft	G	G	A	A	C	G	
-30 to -31 ft	H	H	B	B	D	H	
-31 to -32 ft	I	I	C	C	E	I	
-32 to -33 ft	J	J	D	D	F	J	
-33 to -34 ft	K	K	E	E	G	K	
-34 to -35 ft	L	L	F	F	H	L	
-35 to -36 ft	ref.	M	G	G	I	M	
-36 to -37 ft		N	H	H	J	N	
-37 to -38 ft		O	I	I	K	O	
-38 to -39 ft		ref.	J	J	L	P	
-39 to -40 ft			K	K	M	R	
-40 to -41 ft							
-41 to -42 ft							
-42 to -43 ft							

- Proposed Phase III QAPP locations**
- Intertidal (0-45 cm)
 - Subtidal (0-60 cm)
 - Vertical extent (non-RAL interval)
 - Vertical extent (non-RAL interval) archive
 - Shoaling core
 - RAL exceedance area boundary
 - Combined surface and subsurface sediment PCB indicator kriging RAL exceedance area
 - Additional Thiessen polygon RAL exceedance area for other COCs
 - 30% RD RAA daylight boundary
 - 30% RD RAA placement area
 - 30% RD RAA toe of cut
- 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
 - Archive PDI sediment samples analyzed (Tier 2c)



Map 4-1a. Phase III Sample Locations, RAL Exceedances, and RAL Exceedance Areas Based on the Design Dataset, RM 1.6 to RM 1.8

QAPP ADDENDUM FOR PHASE III OF THE PRE-DESIGN INVESTIGATION OF THE LDW MIDDLE REACH JULY 8, 2026

Proposed Phase III QAPP locations

- Surface (0-10 cm)
- Surface (0-10 cm) bioassay
- Subtidal (0-60 cm)
- Vertical extent (non-RAL interval)

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
- Archive PDI sediment samples analyzed (Tier 2b)
- Archive PDI sediment samples analyzed (Tier 2c)
- Combined surface and subsurface sediment PCB indicator kriging RAL exceedance area
- Additional Thiessen polygon RAL exceedance area for other COCs
- 30% RD RAA daylight boundary
- 30% RD RAA placement area
- 30% RD RAA toe of cut

Vertical extent (non-RAL interval)

- Surface (0-10 cm), archive
- Vertical extent (non-RAL interval) archive
- Vertical extent (non-RAL interval) not collected because of core refusal
- Shoaling core
- Sample above MHHW not included in the interpolation dataset
- Utility corridor
- Georgetown WWTS diffuser pipe
- 1 RAL exceedance area boundary

Legend for Vertical Extent Cores

Area	Loc No.	Description
-5.6		tideline elevation (ft MLLW)
A		RAL interval(s); red if > RAL, green if < RAL (PCBs unless noted)
B		bold outline: RAL interval(s) of non-Phase II core collected within 30 ft
C		red if > RAL, green if < RAL (PCBs unless noted)
D		sample below RAL interval (purple if > surface sediment RAL;
E		green if < surface sediment RAL)
F		blue bold outline indicates PDI sediment sample analyzed in Tier 2b
G		pink bold outline indicates PDI sediment sample analyzed in Tier 2c
H		orange indicates Phase III sample to be analyzed
I		light yellow indicates samples not analyzed or not proposed for analysis
J		hashing indicates native material
K		asterisk indicates PCB EF ≥ 0.9 and ≤ 1.0

Abbreviations: ref. indicates refusal at or above target depth, sh. indicates shoaling material, o.d. indicates over dredge, est. indicates estimated midline, and geo indicates geological break.

Light grey shading indicates FNC authorized depth.

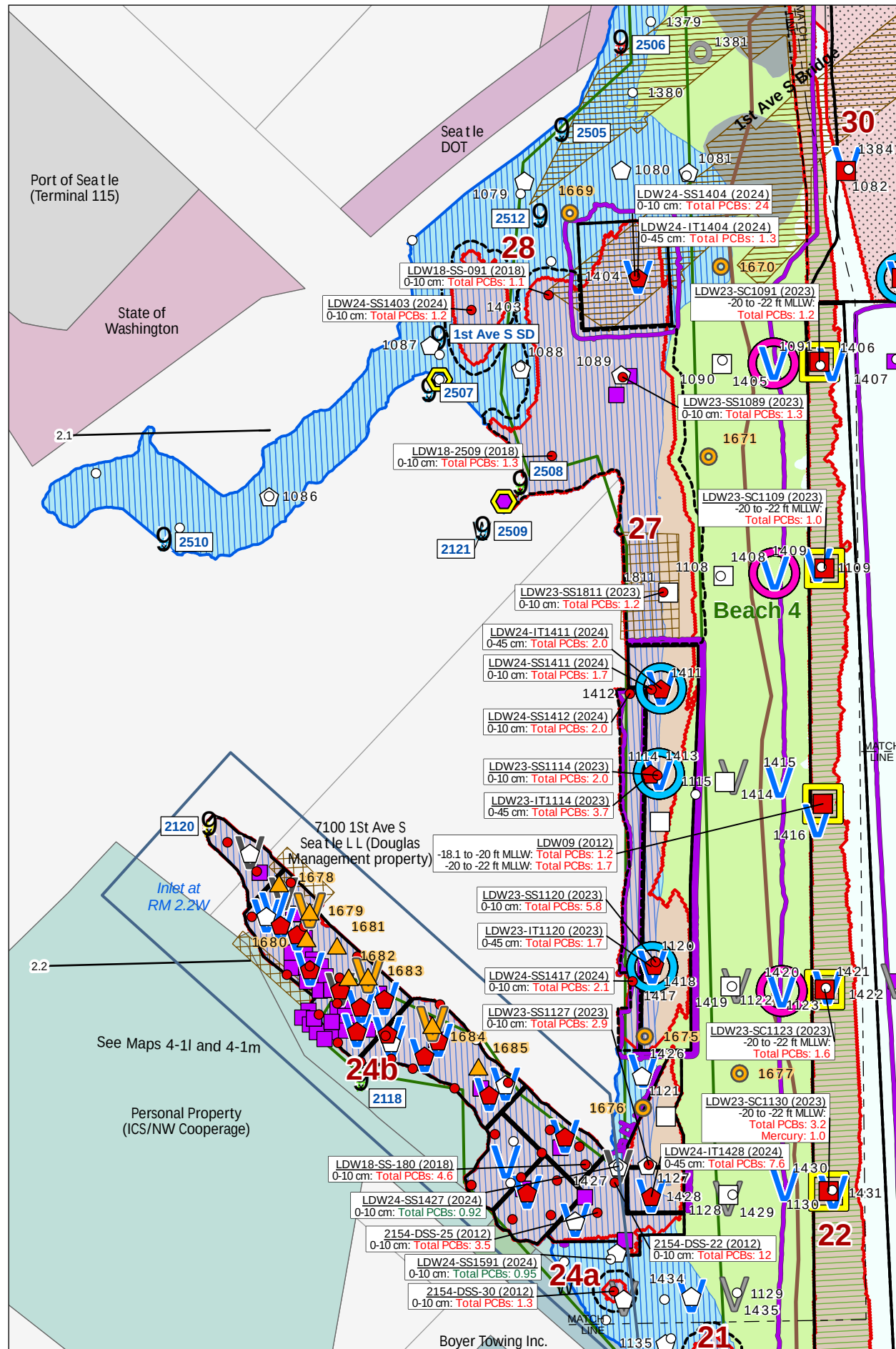
Alternating light blue and white backgrounds indicate transects.

Vertical extent core intervals B and deeper are 30 cm in length. RAL shoaling cores identified the intervals alphabetically (i.e., B, C, or D depending on the number of shoaling intervals).

 **ANCHOR**
QEA 

 **BARR®**

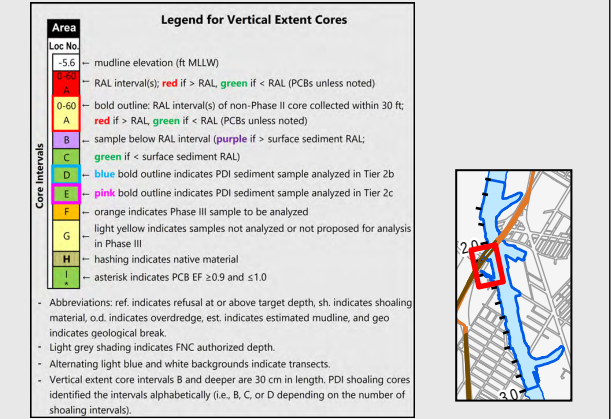
Lower Duwamish Waterway Group
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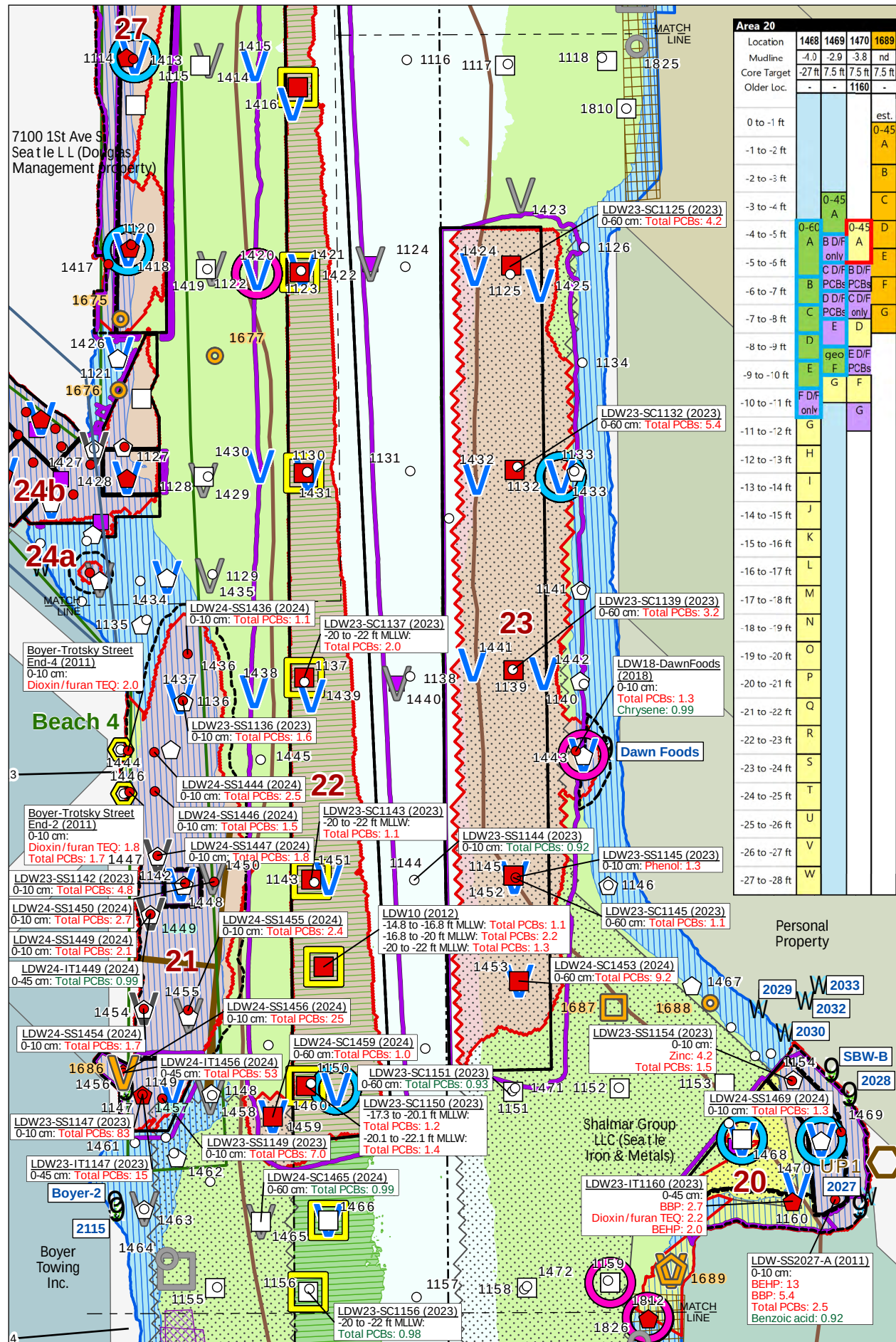
Area 22 - FNC & Sideslopes															
Location	1405	1406	1408	1409	1414	1415	1416	1419	1420	1421	1429	1430	1431	1435	
Mudline	-14.3	-20.8	-15.5	-17.0	-12.9	-16.6	-18.7	-9.6	-14.2	-18.1	-9.6	-16.3	-18.2	-7.4	
Core Target	15 ft	31 ft	15 ft	31 ft	10 ft	15 ft	31 ft	10 ft	15 ft	31 ft	10 ft	15 ft	31 ft	10 ft	
Older Loc.	-	1091	-	1109	1115	-	LDW09	1122	-	1123	1128	-	1130	-	
-7 to -8 ft															0-60 A
-8 to -9 ft															B
-9 to -10 ft															C
-10 to -11 ft															D
-11 to -12 ft															E
-12 to -13 ft															F
-13 to -14 ft															G
-14 to -15 ft															H
-15 to -16 ft															I
-16 to -17 ft															
-17 to -18 ft															
-18 to -19 ft															
-19 to -20 ft															
-20 to -21 ft															
-21 to -22 ft															
-22 to -23 ft															
-23 to -24 ft															
-24 to -25 ft															
-25 to -26 ft															
-26 to -27 ft															
-27 to -28 ft															
-28 to -29 ft															
-29 to -30 ft															
-30 to -31 ft															
-31 to -32 ft															
-32 to -33 ft															
-33 to -34 ft															
-34 to -35 ft															

Area 27						Area 24		
Location	1404	1411	1413	1418	1426	1427	1428	1434
Mudline	0.3	-3.6	-3.5	-3.5	-2.5	nd	-2.9	-2.4
Core Target	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
Older Loc.	-	-	1114	1120	1121	est.	-	-
3 to 2						0-45 A		
** break **						ref.		
1 to 0 ft								
0 to -1 ft	0-45 A							
-1 to -2 ft	B							
-2 to -3 ft	C							
-3 to -4 ft	D							
-4 to -5 ft	E	0-45 A	0-45 A	0-45 A	B		0-45 A	
-5 to -6 ft	ref.	B	B	B	C		B	ref.
-6 to -7 ft		C	C	C	D		C Hg PCBs	
-7 to -8 ft		D	D	D	E		D	
-8 to -9 ft		E	E	E	F		E	
-9 to -10 ft		F	F	F	G		F	
-10 to -11 ft		G	G	G	H		G	
-11 to -12 ft		H	H	H				
-12 to -13 ft		I	I					
-13 to -14 ft		J						

- Proposed Phase III QAPP locations**
- Surface (0-10 cm)
 - Vertical extent (non-RAL interval)
 - Precipitate layer core
- 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
 - Archive PDI sediment samples analyzed (Tier 2b)
 - Archive PDI sediment samples analyzed (Tier 2c)
- Legend for Vertical Extent Cores**
- Vertical extent (non-RAL interval)
 - Surface (0-10 cm), archive
 - Vertical extent (non-RAL interval) archive
 - Vertical extent (non-RAL interval) not collected because of core refusal
 - Shoaling core
 - Sample above MHHW not included in the interpolation dataset
 - RAL exceedance area boundary
 - Combined surface and subsurface sediment PCB indicator kriging RAL exceedance area
 - 30% RD RAA daylight boundary
 - 30% RD RAA placement area
 - 30% RD RAA toe of cut



Map 4-1d. Phase III Sample Locations, RAL Exceedances, and RAL Exceedance Areas Based on the Design Dataset, RM 2.0 to RM 2.25 West
QAPP ADDENDUM FOR PHASE III OF THE PRE-DESIGN INVESTIGATION OF THE LDW MIDDLE REACH JULY 8, 2026



Area 20									
Location	1468	1469	1470	1489					
Mudline	-4.0	-2.9	-3.8	nd					
Core Target	-27 ft	7.5 ft	7.5 ft	7.5 ft					
Older Loc.	-	-	1160	-					
0 to -1 ft				est.					
-1 to -2 ft				A					
-2 to -3 ft				B					
-3 to -4 ft				C					
-4 to -5 ft				D					
-5 to -6 ft				E					
-6 to -7 ft				F					
-7 to -8 ft				G					
-8 to -9 ft				H					
-9 to -10 ft				I					
-10 to -11 ft				J					
-11 to -12 ft				K					
-12 to -13 ft				L					
-13 to -14 ft				M					
-14 to -15 ft				N					
-15 to -16 ft				O					
-16 to -17 ft				P					
-17 to -18 ft				Q					
-18 to -19 ft				R					
-19 to -20 ft				S					
-20 to -21 ft				T					
-21 to -22 ft				U					
-22 to -23 ft				V					
-23 to -24 ft				W					
-24 to -25 ft									
-25 to -26 ft									
-26 to -27 ft									
-27 to -28 ft									

Area 23									
Location	1422	1423	1424	1425	1432	1433	1441	1442	1452
Mudline	-23.4	-15.7	-18.6	-11.3	-16.9	-6.8	-17.1	-8.4	-14.4
Core Target	-31 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft
Older Loc.	-	-	-	-	-	-	1139	1145	-
-7 to -8 ft									
-8 to -9 ft									
-9 to -10 ft									
-10 to -11 ft									
-11 to -12 ft									
-12 to -13 ft									
-13 to -14 ft									
-14 to -15 ft									
-15 to -16 ft									
-16 to -17 ft									
-17 to -18 ft									
-18 to -19 ft									
-19 to -20 ft									
-20 to -21 ft									
-21 to -22 ft									
-22 to -23 ft									
-23 to -24 ft									
-24 to -25 ft									
-25 to -26 ft									
-26 to -27 ft									
-27 to -28 ft									
-28 to -29 ft									
-29 to -30 ft									
-30 to -31 ft									
-31 to -32 ft									
-32 to -33 ft									

Area 21									
Location	1437	1447	1448	1450	1449	1454	1455	1457	1458
Mudline	-2.2	nd	-0.6	-1.0	nd	nd	-1.4	nd	0.1
Core Target	7.5 ft	7.5 ft	7.5 ft	10 ft	7.5 ft	7.5 ft	7.5 ft	7.5 ft	7.5 ft
Older Loc.	1136	-	1142	-	-	-	1456	1147	1148
4 to 3 ft									
3 to 2 ft									
2 to 1 ft									
1 to 0 ft									
0 to -1 ft									
-1 to -2 ft									
-2 to -3 ft									
-3 to -4 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									
-10 to -11 ft									

Area 22 - FNC & Sideslopes									
Location	1438	1439	1440	1451	1459	1460	1465	1466	1156
Mudline	-10.7	-16.8	-22.5	-15.6	-12.4	-17.8	-16.3	-18.7	-17.3
Core Target	10 ft	-31 ft	-31 ft	-31 ft	10 ft	-31 ft	10 ft	-31 ft	-24 ft
Older Loc.	-	1137	-	1143	-	1150	-	-	-
-10 to -11 ft									
-11 to -12 ft									
-12 to -13 ft									
-13 to -14 ft									
-14 to -15 ft									
-15 to -16 ft									
-16 to -17 ft									
-17 to -18 ft									
-18 to -19 ft									
-19 to -20 ft									
-20 to -21 ft									
-21 to -22 ft									
-22 to -23 ft									
-23 to -24 ft									
-24 to -25 ft									
-25 to -26 ft									
-26 to -27 ft									
-27 to -28 ft									
-28 to -29 ft									
-29 to -30 ft									
-30 to -31 ft									
-31 to -32 ft									
-32 to -33 ft									
-33 to -34 ft									
-34 to -35 ft									
-35 to -36 ft									

Proposed Phase III QAPP locations

- Surface (0-10 cm)
- Intertidal (0-45 cm)
- Subtidal (0-60 cm)
- Vertical extent (non-RAL interval)

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
- Archive PDI sediment samples analyzed (Tier 2b)
- Archive PDI sediment samples analyzed (Tier 2c)

Vertical extent (non-RAL interval)

- Surface (0-10 cm), archive
- Subtidal (0-60 cm), archive
- Vertical extent (non-RAL interval) archive
- Vertical extent (non-RAL interval) not collected because of core refusal

Shoaling core

Sample above MHHW not included in the interpolation dataset

Upland soil sample

RAL exceedance area boundary

Combined surface and subsurface sediment PCB indicator kriging RAL exceedance area

Additional Thiessen polygon RAL exceedance area for other COCs

30% RD RAA daylight boundary

30% RD RAA placement area

30% RD RAA toe of cut

Legend for Vertical Extent Cores

- Area
- Loc No.
- 5.6
- mudline elevation (ft MLLW)
- RAL interval(s); red if > RAL, green if < RAL (PCBs unless noted)
- bold outline: RAL interval(s) of non-Phase II core collected within 30 ft; red if > RAL, green if < RAL (PCBs unless noted)
- sample below RAL interval (purple if > surface sediment RAL; green if < surface sediment RAL)
- blue bold outline indicates PDI sediment sample analyzed in Tier 2b
- pink bold outline indicates PDI sediment sample analyzed in Tier 2c
- orange indicates Phase III sample to be analyzed
- light yellow indicates samples not analyzed or not proposed for analysis in Phase III
- hashing indicates native material
- asterisk indicates PCB EF ≥0.9 and ≤1.0

Abbreviations: ref. indicates refusal at or above target depth; sh. indicates shoaling material; o.d. indicates overdrill; est. indicates estimated mudline; and geo indicates geological break.

Light grey shading indicates FNC authorized depth.

Alternating light blue and white backgrounds indicate transects.

Vertical extent core intervals B and deeper are 30 cm in length. PDI shoaling cores identified the intervals alphabetically (i.e., B, C, or D depending on the number of shoaling intervals).

0 100 200 Feet

0 25 50 Meters

Map 4-1f. Phase III Sample Locations, RAL Exceedances, and RAL Exceedance Areas Based on the Design Dataset, RM 2.2 to RM 2.4

QAPP ADDENDUM FOR PHASE III OF THE PRE-DESIGN INVESTIGATION OF THE LDW MIDDLE REACH JULY 8, 2026

Area 17		
Location	1485	1486
Mudline	nd	-1.1
Core Target	7.5 ft	7.5 ft
Older Loc.	-	-
	est.	
4 to 3 ft	0-45 A	
3 to 2 ft	ref.	
2 to 1 ft		
1 to 0 ft		
0 to -1 ft		
-1 to -2 ft		0-45 A
-2 to -3 ft		B
-3 to -4 ft		C
-4 to -5 ft		D
-5 to -6 ft		ref.

RM 2.5 E		1494	1495
Location		-9.1	-6.6
Mudline		-25 ft	10 ft
Core Target		1188	1188
Older Loc.			
-6 to -7 ft			0-60 A tox
-7 to -8 ft			
-8 to -9 ft			B
-9 to -10 ft	0-60 A tox		C
-10 to -11 ft			D
-11 to -12 ft	B		E
-12 to -13 ft	C		ref.
-13 to -14 ft	D		
-14 to -15 ft	E		
-15 to -16 ft	F		

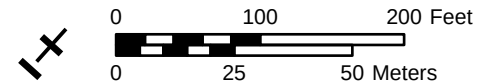
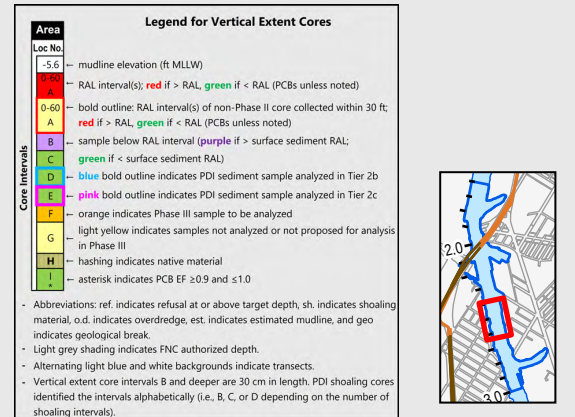
Area 19	
5	Location
	Mudline
1	Core Target
5	Older Loc.
	-3 to -4 ft
	-4 to -5 ft
	-5 to -5 ft
	-6 to -7 ft
	-7 to -8 ft
	-8 to -9 ft
	-9 to -10 ft
	-10 to -11 ft
	-11 to -12 ft
	-12 to -13 ft

Area 14 & 15 - FNC & Sideslopes														Area 11		13	
1476	1479	1483	1482	1488	1489	1695	1490	1696	1491	1492	1493	1501	1697	1502	1505	1503	1698
-19.6	-19.0	-17.3	-18.9	-14.1	-18.8	-19.4	-16.8	-9.6	-9.7	-19.4	-18.8	-15.6	-10.8	-16.8	-3.0	-17.9	-5.6
10 ft	10 ft	10 ft	-31 ft	-31 ft	-31 ft	10 ft	10 ft	-31 ft	10 ft	-31 ft	10 ft	-24 ft	-31 ft	-24 ft	7.5 ft	-31 ft	10 ft
-	1171	-	-	-	LDW11	-	1178	1183	-	-	-	-	-	-	-	1191	-
																	0-45 A
																	ref.
																	0-60 A
																	B
																	C
																	D
																	E
F																	
G																	

Areas 18 & 14 - FNC						
Location	1162	1169	1170	1177	1183	1184
Mudline	-18.4	-15.5	-19.8	-13.8	-10.7	-19.1
Core Target	-24 ft	-24 ft	-24 ft	-24 ft	-24 ft	-24 ft
-10 to -11 ft						
-11 to -12 ft					sh. A	
-12 to -13 ft						
-13 to -14 ft					sh. B	
-14 to -15 ft				sh. A		
-15 to -16 ft		sh. A				
-16 to -17 ft						
-17 to -18 ft				sh. B	sh. C	
-18 to -19 ft		sh. B				
-19 to -20 ft	sh. A					sh. o.d
-20 to -21 ft	o.d.	o.d.	sh. o.d.	o.d.	o.d.	
-21 to -22 ft	B	C	A	C	D	A
-22 to -23 ft	C	D			E	B
-23 to -24 ft						

Area 19				Area 14 & 15 - FNC & Sideslopes												Area 11			13
Location	1476	1479	1483	1482	1488	1489	1695	1490	1696	1491	1492	1493	1501	1697	1502	1505	1503	1698	
Mudline	-19.6	-19.0	-17.3	-18.9	-14.1	-18.8	-19.4	-16.8	-9.6	-9.7	-19.4	-18.8	-15.6	-10.8	-16.8	-3.0	-17.9	-5.6	
Core Target	10 ft	10 ft	10 ft	-31 ft	-31 ft	-31 ft	10 ft	10 ft	-31 ft	10 ft	-31 ft	10 ft	-24 ft	-31 ft	-24 ft	7.5 ft	-31 ft	10 ft	
Older Loc.	-	1171	-	-	-	LDW11	-	1178	1183	-	-	-	-	-	-	-	1191	-	
-3 to -4 ft																0-45 A			
-4 to -5 ft																ref.			
-5 to -5 ft																			
-6 to -7 ft																		0-60 A	
-7 to -8 ft																		B	
-8 to -9 ft																		C	
-9 to -10 ft																		D	
-10 to -11 ft										0-60 A								E	
-11 to -12 ft									sh. A	B				sh. A				F	
-12 to -13 ft										C								G	
-13 to -14 ft										D								H	
-14 to -15 ft					sh. A				sh. B	E					sh. 3			I	
-15 to -16 ft										F			sh. A						
-16 to -17 ft										G									
-17 to -18 ft					sh. B			0-60 A	sh. C	H			sh. B	sh. A	sh. A				
-18 to -19 ft										I							sh. A		
-19 to -20 ft		0-60 A	B	sh. A	sh. A	sh. A	0-60 A	B		J *	sh. o.d.	A	0-60 A	sh. B	sh. B *				
-20 to -21 ft	0-60 A	A	C	o.d.	o.d.	c.d.	A	C	o.d.				o.d.	o.d.	o.d.		o.d.	B	
-21 to -22 ft	B	B	D	B	C	B	B	D	D		A	B	C	D	C				
-22 to -23 ft	C	C	E	C	D	C	C	E	E		B	C	D	E	D		C		
-23 to -24 ft	D	D	F	D	E	D	D	F	F		C	D		F			D		
-24 to -25 ft	E	E	G	E	F	E	E	G	G		D	E		G			E		
-25 to -26 ft	F	F	geo H	F *	G	F	F	H	H	ref.	E	F		H			F *		
-26 to -27 ft	G	G	H	G	H	G	G		I		F	G		I			G		
-27 to -28 ft	H	H		H	I	H	H		J		G	H		J			H		
-28 to -29 ft	I	I	ref.	I	J	I	I		K		H	I		K			geo I		
-29 to -30 ft	J			J	K	J			L		I	J		L			J		
-30 to -31 ft	K			K	L	K			M		J	K		M			K		
-31 to -32 ft				L	M	L													
-32 to -33 ft				M	N														

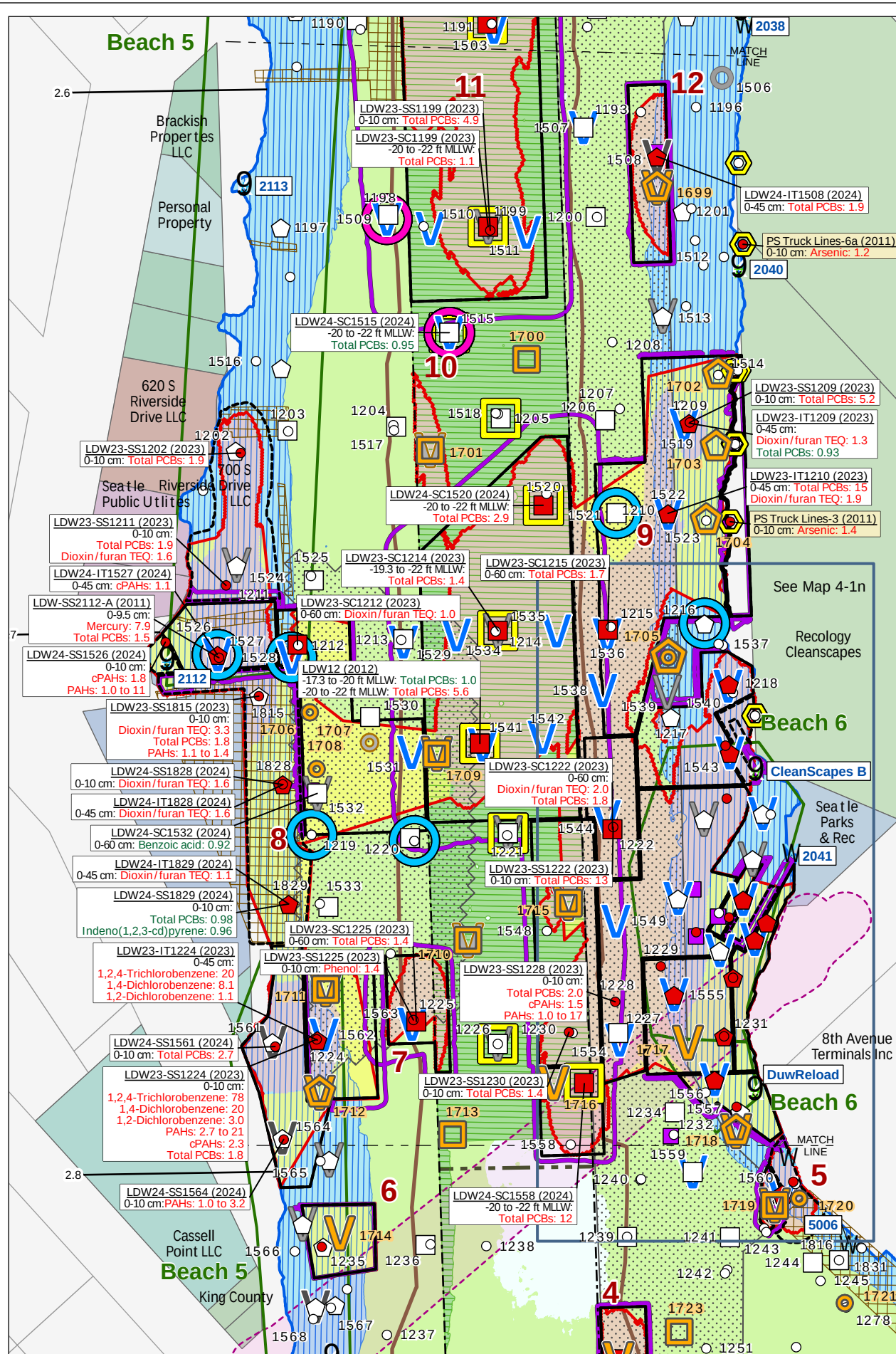
- | | | | |
|---|---|---|--|
| Proposed Phase III QAPP locations | | Vertical extent (non-RAL interval) | |
|  | Surface (0-10 cm) |  | Surface (0-10 cm), archive |
|  | Intertidal (0-45 cm) |  | Subtidal (0-60 cm) archive |
|  | Subtidal (0-60 cm) |  | Vertical extent (non-RAL interval) archive |
|  | Vertical extent (non-RAL interval) |  | Vertical extent (non-RAL interval) not collected because of core refusal |
|  | Vertical extent (non-RAL interval) archive |  | |
| Surface (0-10 cm) sampling location | |  | Surface (0-10cm) bioassay passed |
|  | Exceeds RAL |  | Subtidal (0-60cm) bioassay passed |
|  | Does not exceed RAL |  | Shoaling core |
| Intertidal (0-45 cm) core location | |  | Sample above MHHW not included in the interpolation dataset |
|  | Exceeds RAL | | |
|  | Does not exceed RAL | | |
| Subtidal (0-60 cm) core location | |  | 1 RAL exceedance area boundary |
|  | Exceeds RAL | | Combined surface and subsurface sediment PCB indicator kriging RAL exceedance area |
|  | Does not exceed RAL |  | Additional Thiessen polygon RAL exceedance area for other COCs |
| Other sampling locations | |  | |
|  | Core without appropriate RAL interval |  | |
|  | Archive PDI sediment samples analyzed (Tier 2b) | | |
| | Archive PDI sediment samples analyzed (Tier 2c) | | 30% RD RAA daylight boundary |
| | | | 30% RD RAA placement area |
| | | | 30% RD RAA toe of cut |



Map 4-1g. Phase III Sample Locations, RAL Exceedances, and RAL Exceedance Areas Based on the Design Dataset, RM 2.4 to RM 2.6

**QAPP ADDENDUM FOR PHASE III OF THE PRE-
DESIGN INVESTIGATION OF THE LDW MIDDLE REACH** **JULY 8, 2026**





Areas 10 & 11 - FNC and Sideslopes												
Location	1507	1509	1510	1209	1511	1515	1700	1205	1701			
Mudline	16.5	12.4	16.7	18.9	20.0	17.9	19.2	19.3	16.0			
Core Target	10 ft	10 ft	-31 ft	-24 ft	-31 ft	-31 ft	-24 ft	-24 ft	-31 ft			
Older Loc.	-	1198	-	-	-	-	-	-	-			
-12 to -13 ft												
-13 to -14 ft												
-14 to -15 ft												
-15 to -16 ft												
-16 to -17 ft												
-17 to -18 ft												
-18 to -19 ft												
-19 to -20 ft												
-20 to -21 ft												
-21 to -22 ft												
-22 to -23 ft												
-23 to -24 ft												
-24 to -25 ft												
-25 to -26 ft												
-26 to -27 ft												
-27 to -28 ft												
-28 to -29 ft												
-29 to -30 ft												
-30 to -31 ft												
-31 to -32 ft												
-32 to -33 ft												
-33 to -34 ft												
-34 to -35 ft												

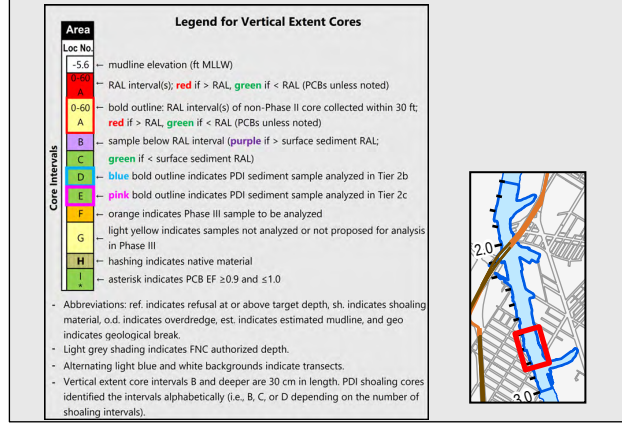
Area 12 & 9 N - Intertidal									
Location	1508	1699	1513	1520	1522				
Mudline	-3.3	-2.7	-1.1	-0.1	-1.5				
Core Target	7.5 ft	7.5 ft	7.5 ft	7.5 ft	7.5 ft				
Older Loc.	-	-	-	-	-				
0 to -1 ft									
-1 to -2 ft									
-2 to -3 ft									
-3 to -4 ft									
-4 to -5 ft									
-5 to -6 ft									
-6 to -7 ft									
-7 to -8 ft									
-8 to -9 ft									
-9 to -10 ft									
-10 to -11 ft									

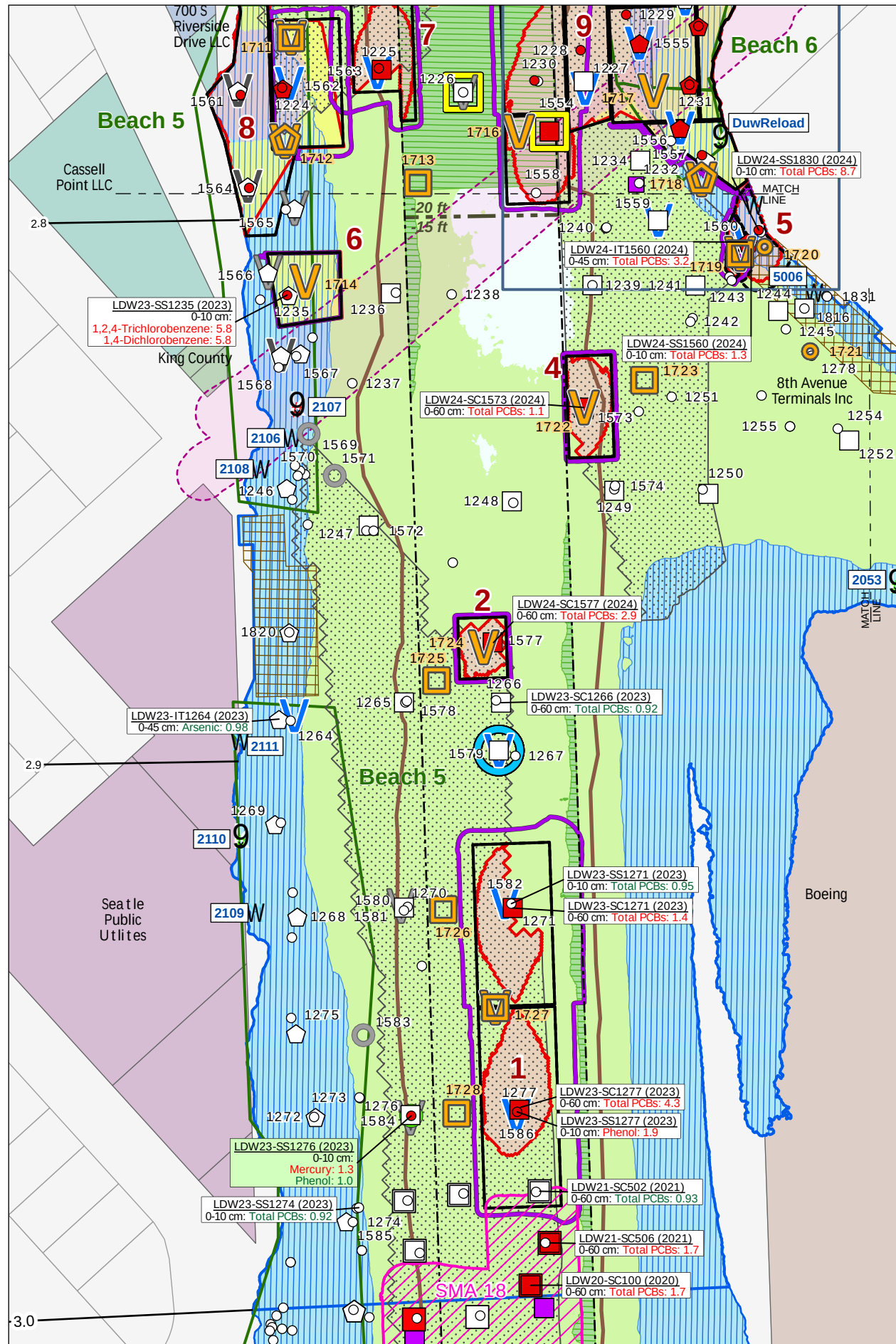
Area 8 - Intertidal and Shallow Subtidal												
Location	1524	1527	1528	1711	1561	1562	1712	1564				
Mudline	0.5	2.3	3.3	5.1	nd	2.6	2.2	nd				
Core Target	7.5 ft	7.5 ft	7.5 ft	7.5 ft	7.5 ft	7.5 ft	7.5 ft	7.5 ft				
Older Loc.	-	-	-	-	-	-	-	-				
3 to 2 ft												
2 to 1 ft												
1 to 0 ft												
0 to -1 ft												
-1 to -2 ft												
-2 to -3 ft												
-3 to -4 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												
-10 to -11 ft												
-11 to -12 ft												
-12 to -13 ft												
-13 to -14 ft												
-14 to -15 ft												
-15 to -16 ft												
-16 to -17 ft												
-17 to -18 ft												

Areas 7 & 8 - Subtidal			
Location	1563	1532	
Mudline	-12.1	-5.5	
Core Target	10 ft	29 ft	
Older Loc.	1225	-	
-5 to -6 ft			
-6 to -7 ft			
-7 to -8 ft			
-8 to -9 ft			
-9 to -10 ft			
-10 to -11 ft			
-11 to -12 ft			
-12 to -13 ft			
-13 to -14 ft			
-14 to -15 ft			
-15 to -16 ft			
-16 to -17 ft			
-17 to -18 ft			
-18 to -19 ft			
-19 to -20 ft			
-20 to -21 ft			
-21 to -22 ft			
-22 to -23 ft			
-23 to -24 ft			

Areas 9, 8, and 7 - Subtidal FNC & Sideslopes																							
Location	1205	1520	1529	1534	1214	1535	1536	1538	1531	1709	1541	1542	1221	1544	1715	1549	1710	1226	1554	1716	1713	1558	
Mudline	-19.3	-19.0	-14.7	-18.5	-19.3	-19.5	-12.1	-14.6	-15.7	-16.1	-19.0	-19.4	-18.8	-14.6	-18.2	-14.0	-18.2	-18.7	-14.2	-18.2	-15.3	-18.1	
Core Target	-24 ft	-24 ft	10 ft	-31 ft	-24 ft	-31 ft	10 ft	10 ft	10 ft	-31 ft	-31 ft	-31 ft	-24 ft	10 ft	-31 ft	-24 ft	10 ft	-31 ft	-24 ft	10 ft	-31 ft	-24 ft	
Older Loc.	-	-	1213	-	-	-	1215	-	-	-	LDW12	-	-	1222	-	-	-	-	1227	1558	-	-	
-12 to -13 ft							0-60 A																
-13 to -14 ft																							
-14 to -15 ft							B										0-60 A						
-15 to -16 ft			0-60 A				C								0-60 A								
-16 to -17 ft							D			0-60 A							B						
-17 to -18 ft			B				E			sh. A					B		C						
-18 to -19 ft			C				F			sh. B					CDIF PCBs								
-19 to -20 ft			D	sh. A			G								sh. A	D	sh. A			geo D	sh. A	sh. A	
-20 to -21 ft		sh. A	E		sh. A	sh. A	H							sh. A	E			sh. A		ref.			
-21 to -22 ft	sh. A	sh. A	F		sh. A	sh. A	I							sh. A	F	B	G	B					
-22 to -23 ft	B	C	G		B	B	J								G								
-23 to -24 ft			H		C										H								
-24 to -25 ft			I		D										I								
-25 to -26 ft			J		E										J								
-26 to -27 ft			K		F										K								
-27 to -28 ft			geo G		F																		
-28 to -29 ft			H		G										H								
-29 to -30 ft			I		H										I								
-30 to -31 ft			J		I										J								
-31 to -32 ft			K		geo J										K								
-32 to -33 ft			L		K																		
-33 to -34 ft			M		L																		

- Proposed Phase III QAPP locations**
- Surface (0-10 cm)
 - Surface (0-10 cm) archive
 - Intertidal (0-45 cm)
 - Subtidal (0-60 cm)
 - Vertical extent (non-RAL interval)
 - Vertical extent (non-RAL interval) archive
 - Surface (0-10 cm) sampling location
 - Intertidal (0-45 cm) core location
 - Subtidal (0-60 cm) core location
 - Other sampling locations
- Legend for Vertical Extent Cores**
- Vertical extent (non-RAL interval)
 - Surface (0-10 cm), archive
 - Vertical extent (non-RAL interval) archive
 - Vertical extent (non-RAL interval) not collected because of core refusal
 - Shoaling core
 - Sample above MHHW not included in the interpolation dataset
 - Utility corridor
 - RAL exceedance area boundary
 - Combined surface and subsurface sediment PCB indicator kriging RAL exceedance area
 - Additional Thiessen polygon RAL exceedance area for other COCs
 - 30% RD RAA daylight boundary
 - 30% RD RAA placement area
 - 30% RD RAA toe of cut



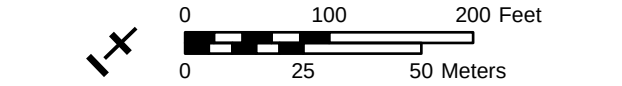


Areas 6 & 8 S				
Location	1565	1566	1714	1568
Mudline	1.3	2.8	-0.2	nd
Core Target	7.5 ft	7.5 ft	7.5 ft	7.5 ft
Older Loc.	-	1235	-	-
3 to 2 ft		0-45 A		0-45 A
2 to 1 ft	0-45 A	B geo C		ref.
1 to 0 ft	B D	0-45 A		
0 to -1 ft	geo C	E ref.	B	
-1 to -2 ft	D		C	
-2 to -3 ft	E		D	
-3 to -4 ft	F		E	
-4 to -5 ft	G		F	
-5 to -6 ft			G	
-6 to -7 ft				
-7 to -8 ft				

Area 4				Area 5			
Location	1722	1719	1559	1560	Location	1722	1719
Mudline	-17.2	-7.0	-11.5	-3.9	Mudline	-17.2	-7.0
Core Target	10 ft	10 ft	10 ft	7.5 ft	Core Target	10 ft	10 ft
Older Loc.	1573	-	-	-	Older Loc.	1573	-
-4 to -5 ft				0-45 A	-4 to -5 ft		
-5 to -6 ft				B	-5 to -6 ft		
-6 to -7 ft				C	-6 to -7 ft		
-7 to -8 ft				D	-7 to -8 ft		
-8 to -9 ft				E	-8 to -9 ft		
-9 to -10 ft				F	-9 to -10 ft		
-10 to -11 ft				G	-10 to -11 ft		
-11 to -12 ft				H	-11 to -12 ft		
-12 to -13 ft				I	-12 to -13 ft		
-13 to -14 ft				J	-13 to -14 ft		
-14 to -15 ft				K	-14 to -15 ft		
-15 to -16 ft					-15 to -16 ft		
-16 to -17 ft					-16 to -17 ft		
-17 to -18 ft	0-60 A				-17 to -18 ft	0-60 A	
-18 to -19 ft	B				-18 to -19 ft	B	
-19 to -20 ft	C				-19 to -20 ft	C	
-20 to -21 ft	D				-20 to -21 ft	D	
-21 to -22 ft	E				-21 to -22 ft	E	
-22 to -23 ft	F				-22 to -23 ft	F	
-23 to -24 ft	G				-23 to -24 ft	G	
-24 to -25 ft	H				-24 to -25 ft	H	
-25 to -26 ft	I				-25 to -26 ft	I	
-26 to -27 ft					-26 to -27 ft		

Areas 1 & 2 - FNC							
Location	1724	1579	1581	1582	1727	1584	1586
Mudline	-17.4	-18.1	-14.5	-17.4	-17.2	-14.5	-18.2
Core Target	-26 ft	-26 ft	10 ft	-26 ft	-26 ft	10 ft	-26 ft
Older Loc.	1577	-	1270	1271	-	1276	1277
-14 to -15 ft			0-60 A			0-60 A	
-15 to -16 ft			B			B	
-16 to -17 ft			C			C	
-17 to -18 ft	0-60 A	0-60 A	D	0-60 A	0-60 A	D	0-60 A
-18 to -19 ft	B	B	E	B	B	E	B
-19 to -20 ft	C	C	F	C	C	F	C
-20 to -21 ft	D	D	G	D	D	G	D
-21 to -22 ft	E	E	H	E	E	H	E
-22 to -23 ft	F	F	I	F	F	I	F
-23 to -24 ft	G	G	J	G	G	J	G
-24 to -25 ft	H	H	K	H	H	K	H
-25 to -26 ft	I	I	L	I	I	L	I
-26 to -27 ft							
-27 to -28 ft							

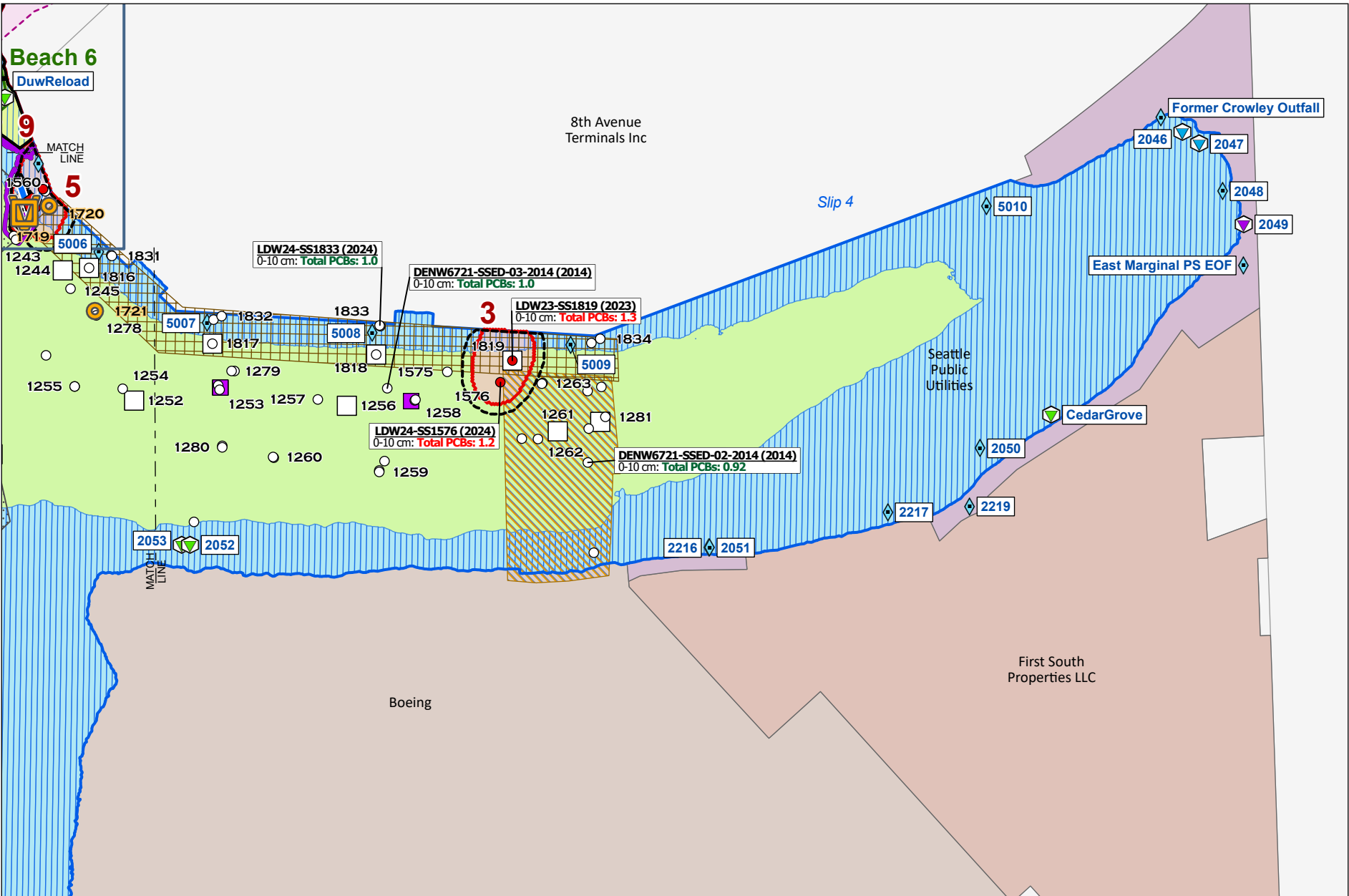
- Proposed Phase III QAPP locations**
- Surface (0-10 cm)
 - Intertidal (0-45 cm)
 - Subtidal (0-60 cm)
 - Vertical extent (non-RAL interval)
 - Vertical extent (non-RAL interval) archive
 - Vertical extent (non-RAL interval) not collected because of core refusal
 - Surface (0-10 cm) bioassay passed
 - Shoaling core
 - Utility corridor
 - RAL exceedance area boundary
 - Combined surface and subsurface sediment PCB indicator kriging RAL exceedance area
 - Additional Thiessen polygon RAL exceedance area for other COCs
 - 30% RD RAA daylight boundary
 - 30% RD RAA placement area
 - 30% RD RAA toe of cut
- 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
 - Archive PDI sediment samples analyzed (Tier 2b)
 - Archive PDI sediment samples analyzed (Tier 2c)
- Legend for Vertical Extent Cores**
- Area
 - Loc No.
 - mudline elevation (ft MLLW)
 - RAL interval(s); red if > RAL, green if < RAL (PCBs unless noted)
 - bold outline: RAL interval(s) of non-Phase II core collected within 30 ft
 - red if > RAL, green if < RAL (PCBs unless noted)
 - sample below RAL interval (purple if > surface sediment RAL; green if < surface sediment RAL)
 - blue bold outline indicates PDI sediment sample analyzed in Tier 2b
 - pink bold outline indicates PDI sediment sample analyzed in Tier 2c
 - orange indicates Phase III sample to be analyzed
 - light yellow indicates samples not analyzed or not proposed for analysis in Phase III
 - hashing indicates native material
 - asterisk indicates PCB EF ≥ 0.9 and ≤ 1.0
- Abbreviations: ref. indicates refusal at or above target depth; sh. indicates shoaling material; o.d. indicates over dredge; est. indicates estimated mudline; and geo indicates geological break.
- Light grey shading indicates FNC authorized depth.
- Alternating light blue and white backgrounds indicate transects.
- Vertical extent core intervals B and deeper are 30 cm in length. PDI shoaling cores identified the intervals alphabetically (i.e., B, C, or D depending on the number of shoaling intervals).



Map 4-1i. Phase III Sample Locations, RAL Exceedances, and RAL Exceedance Areas Based on the Design Dataset, RM 2.8 to RM 3.0

QAPP ADDENDUM FOR PHASE III OF THE PRE-DESIGN INVESTIGATION OF THE LDW MIDDLE REACH JULY 8, 2026

Prepared by CEH 7/7/2026; I:\Client\LDWG\Work_Orders\AOC5 Middle Reach Design\Maps and Analyses\Phase 3 QAPP Addendum\Phase 3 QAPP Addendum.aprx Map 4-1 7790 Phase III locations with design dataset - portrait



Proposed Phase III QAPP locations

- Surface (0-10 cm)
- Surface (0-10 cm) archive
- Surface (0-10 cm) bioassay
- Intertidal (0-45 cm)
- Subtidal (0-60 cm)
- Vertical extent (non-RAL interval)
- 30% RD RAA daylight boundary
- 30% RD RAA placement area
- 30% RD RAA toe of cut

Surface (0-10 cm) sampling location

- Exceeds RAL
- Does not exceed RAL

Intertidal (0-45 cm) core location

- Exceeds RAL

Subtidal (0-60 cm) core location

- Does not exceed RAL

Other sampling locations

- Core without appropriate RAL interval

Vertical extent (non-RAL interval)

- 1 RAL exceedance area boundary
- Combined surface and subsurface sediment PCB indicator kriging RAL exceedance area
- Additional Thiessen polygon RAL exceedance area for other COCs



Legend for Vertical Extent Cores

Area

Loc. No.

-5.6

- RAL interval(s); **red** if > RAL, **green** if < RAL (PCBs unless noted)

0-60

A - bold outline: RAL interval(s) of non-Phase II core collected within 30 ft; **red** if > RAL, **green** if < RAL (PCBs unless noted)

B - sample below RAL interval (**purple** if > surface sediment RAL; **green** if < surface sediment RAL)

C - **blue** bold outline indicates PDI sediment sample analyzed in Tier 2b

D - **pink** bold outline indicates PDI sediment sample analyzed in Tier 2c

E - orange indicates Phase III sample to be analyzed

F - light yellow indicates samples not analyzed or not proposed for analysis in Phase III

G - hashing indicates native material

H - asterisk indicates PCB EF ≥0.9 and ≤1.0

Core Intervals

- Abbreviations: ref. indicates refusal at or above target depth, sh. indicates shoaling material, o.d. indicates over dredge, est. indicates estimated mudline, and geo indicates geological break.

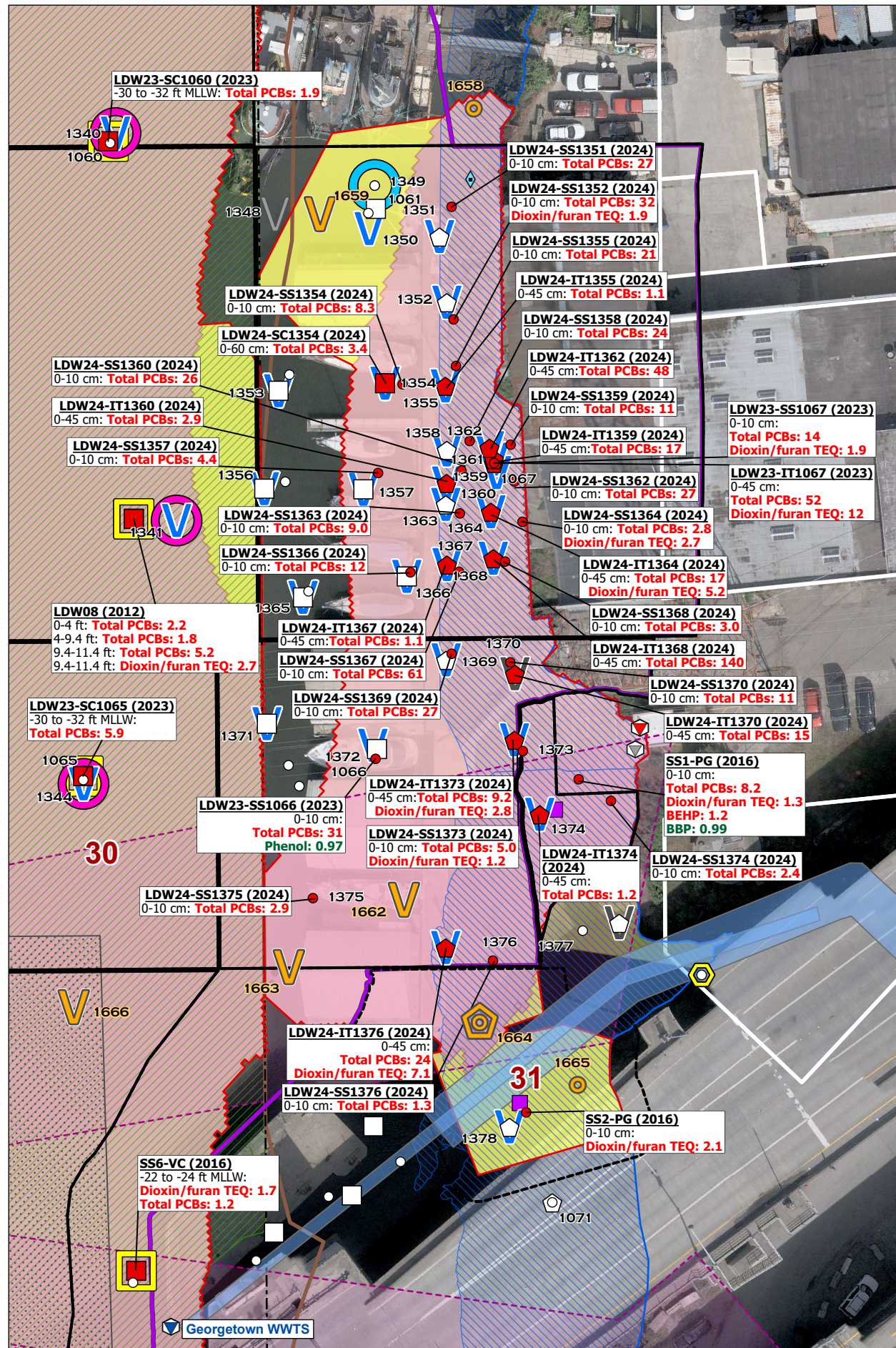
- Light grey shading indicates FNC authorized depth.

- Alternating light blue and white backgrounds indicate transects.

- Vertical extent core intervals B and deeper are 30 cm in length. PDI shoaling cores identified the intervals alphabetically (i.e., B, C, or D depending on the number of shoaling intervals).



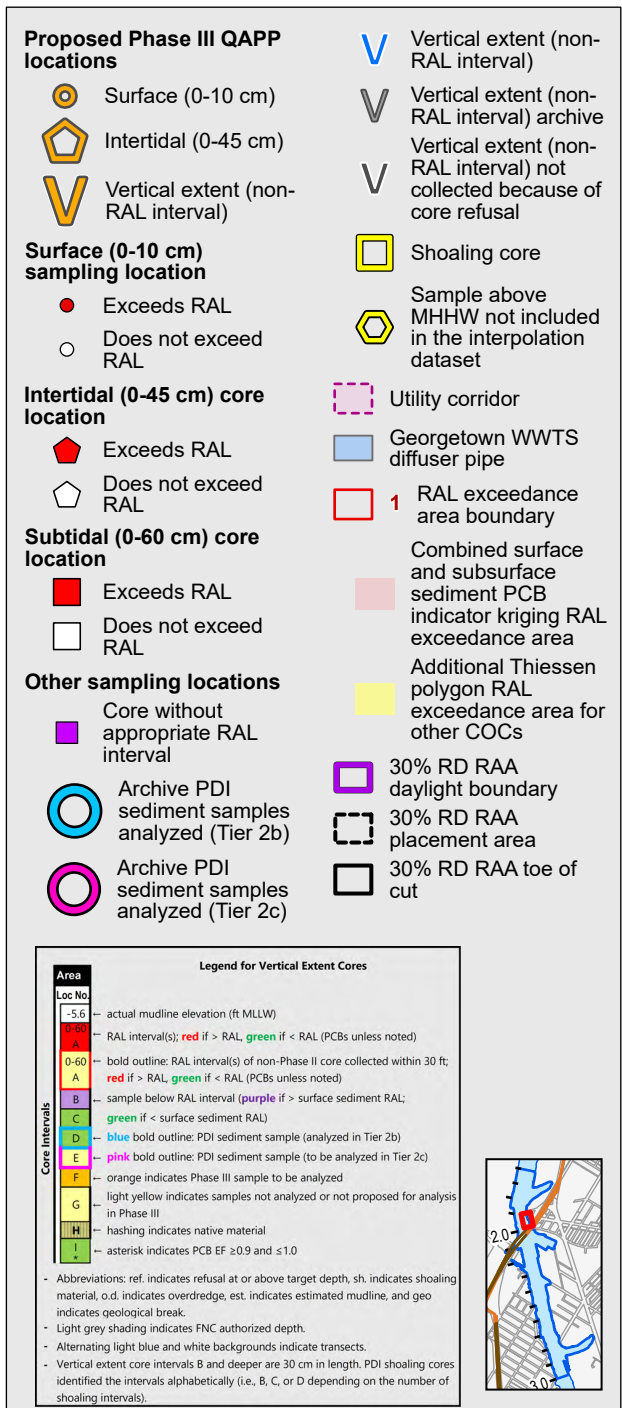
Map 4-1j. Phase III Sample Locations, RAL Exceedances, and RAL Exceedance Areas Based on the Design Dataset, Slip 4



Area 30 - FNC					Area 30 & 31 - Subtidal																
Location	1340	1341	1344	1666	Location	1348	1659	1350	1353	1354	1356	1357	1365	1366	1371	1372	1663	1662			
Mudline	-20.5	-16.4	-22.5	-23.7	Mudline	-14.4	nd	-8.1	-12.0	-7.7	-12.7	-8.9	-11.0	-5.6	-11.8	-8.0	-10.9	-8.4			
Core Target	-41 ft	-41 ft	-41 ft	-37 ft	Core Target	20 ft	19 ft	15 ft	20 ft	15 ft	20 ft	15 ft	20 ft	15 ft	20 ft	15 ft	20 ft	19 ft			
Older Loc.	1060	LDW08	1065	-	Older Loc.	-	-	1061	-	-	-	-	-	-	-	1056	-	-			
-16 to -17 ft					-5 to -6 ft																
-17 to -18 ft					-6 to -7 ft																
-18 to -19 ft					-7 to -8 ft																
-19 to -20 ft					-8 to -9 ft																
-20 to -21 ft					-9 to -10 ft																
-21 to -22 ft					-10 to -11 ft																
-22 to -23 ft					-11 to -12 ft																
-23 to -24 ft					-12 to -13 ft																
-24 to -25 ft					-13 to -14 ft																
-25 to -26 ft					-14 to -15 ft																
-26 to -27 ft					-15 to -16 ft																
-27 to -28 ft					-16 to -17 ft																
-28 to -29 ft					-17 to -18 ft																
-29 to -30 ft					-18 to -19 ft																
-30 to -31 ft					-19 to -20 ft																
-31 to -32 ft					-20 to -21 ft																
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-33 to -34 ft					-22 to -23 ft																
-34 to -35 ft					-23 to -24 ft																
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-36 to -37 ft					-25 to -26 ft																
-37 to -38 ft					-26 to -27 ft																
-38 to -39 ft					-27 to -28 ft																
-39 to -40 ft					-28 to -29 ft																
-40 to -41 ft					-29 to -30 ft																
-41 to -42 ft					-30 to -31 ft																
					-31 to -32 ft																

Area 31 - Intertidal																
Location	1351	1352	1355	1358	1359	1360	1362	1361	1363	1364	1367	1368	1369	1370	1373	1374
Mudline	-4.0	-4.0	-3.9	-4.1	nd	-4.6	nd	nd	-3.9	nd	-3.9	nd	-3.4	nd	-2.3	-0.6
Core Target	7.5 ft	7.5 ft	7.5 ft	7.5 ft	7.5 ft	7.5 ft	7.5 ft	7.5 ft	7.5 ft	7.5 ft	7.5 ft	7.5 ft	7.5 ft	7.5 ft	7.5 ft	7.5 ft
Older Loc.	-	-	-	-	-	-	-	1067	-	-	-	-	-	-	-	-
3 to 2 ft																
2 to 1 ft																
1 to 0 ft																
0 to -1 ft																
-1 to -2 ft																
-2 to -3 ft																
-3 to -4 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																
-10 to -11 ft																

Note: Location 1373 intervals C, D, and E were unable to be analyzed because they were majority gravel.



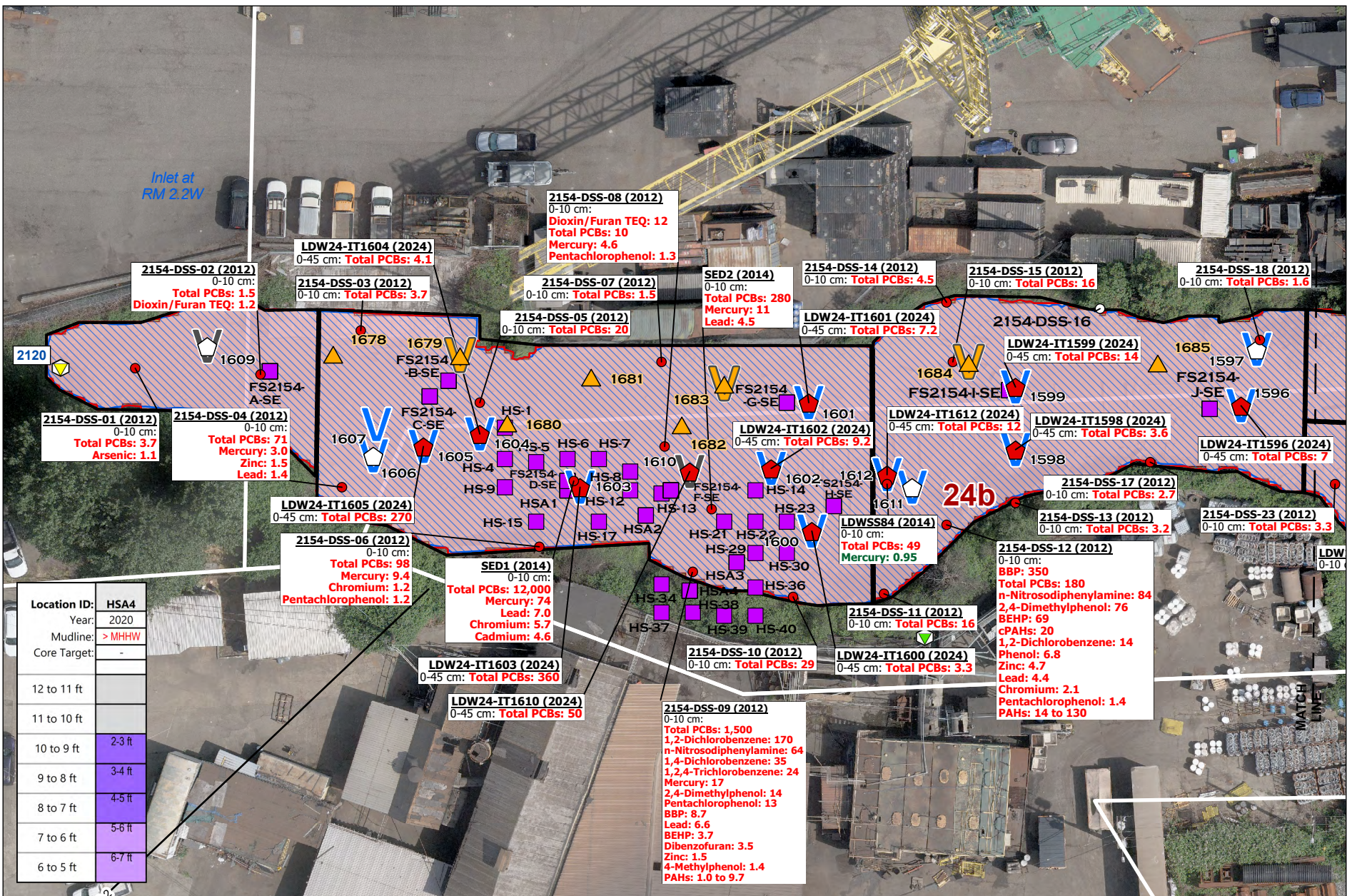
0 40 80 Feet
0 10 20 Meters

Map 4-1k. Phase III Sample Locations, RAL Exceedances, and RAL Exceedance Areas Based on the Design Dataset, Duwamish Marine Center

QAPP ADDENDUM FOR PHASE III OF THE PRE-DESIGN INVESTIGATION OF THE LDW MIDDLE REACH JULY 8, 2026

ANCHOR QEA **BARR**

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



Area 24 - Inner Inlet																												
Location	1609	FS2154-A-SE	1606	1607	FS2154-C-SE	FS2154-B-SE	1605	1603	HSA1	FS2154-D-SE	1604	1610	HSA2	FS2154-F-SE	1602	HSA3	1600	FS2154-H-SE	FS2154-G-SE	1601	1612	1611	1598	FS2154-I-SE	1599	1596	FS2154-J-SE	1597
Mudline	5.6	4.0	4.3	4.1	4.2	5.2	4.3	4.0	est. +5	3.7	4.1	3.7	est. 6	2.9	3.4	est. 7	3.1	2.4	5.9	5.6	3.3	6.4	6.0	1.7	2.5	1.9	2.5	4.4
Core Target	-3 ft	-	-3 ft	-3 ft	-	-	-3 ft	-3 ft	-	-	-3 ft	-3 ft	-	-	-3 ft	-	-5 ft	-	-	-5 ft	-3 ft	-3 ft	-5 ft	-	-5 ft	-5 ft	-	-5 ft
7 to 6 ft			Transect 1					Transect 2										Transect 3					Transect 4			Transect 5		
6 to 5 ft	0-45 A																					0-45 A						
5 to 4 ft	A					0.5-1.7ft	0-45 A				0-45 A					2-3 ft				0-45 A			0-45 A					0-45 A
4 to 3 ft	ref.		0-45 A	0-45 A			A	0-45 A	1-2 ft		0-45 A	0-45 A	2-3 ft		0-45 A	3-3.5 ft	0-45 A		2.5-3.4 ft	B		0-45 A	ref.					B
3 to 2 ft		0.9-1.6ft	B	B			B	8 Hg, PCBs	2-3 ft		B	ref.	4-5 ft		A		0-45 A			C Hg, PCBs		D	ref.		0-45 A			B
2 to 1 ft			C	C Hg, PCBs	2-2.5 ft	2.8-3.8ft	C	C Hg, PCBs	3-4 ft	1.5-2.7ft	B		4-5 ft	1-2.4 ft	B	ref.	B	0.8-2.5 ft	4.8-5.3 ft	D Hg, PCBs	B	E			0-45 A		0-45 A	ref.
1 to 0 ft			D	D	2.5-4 ft	4-4.8 ft	D	C Hg, PCBs	4-5 ft	2.9-4.6ft	ref.						C			E Hg, PCBs	geo C *	F				B Hg, PCBs		B Hg, PCBs
0 to -1 ft		3.3-4.5ft	E	D	4-4.8 ft	5-6 ft	E	ref.									D	2.6-3.9 ft	5.7-7.8 ft	F Hg, PCBs	geo C	ref.				B Hg, PCBs		B Hg, PCBs
-1 to -2 ft		4.6-5.5ft	ref.	E	4-4.8 ft	6.1-7.1ft	F			4.7-5.8ft				3.8-5.2ft			E	4.2-5.2 ft		G	geo D			1.9-3.2 ft		ref.		3.7-6 ft
-2 to -3 ft		5.8-6.8ft		F			G										ref.			H	F			3.3-5 ft		ref.		
-3 to -4 ft		6.8-7.6ft		G			H			5.8-7.6ft				5.4-6.2ft						I	G					ref.		
-4 to -5 ft			ref.				ref.							6.4-7.6ft						J	ref.			5.2-6.5 ft				
-5 to -6 ft														7.8-8.8ft						ref.					ref.			
-6 to -7 ft																												
-7 to -8 ft														9.2-10.1 ft														
-8 to -9 ft														10.2-11.6 ft														
	</																											

Proposed Phase III QAPP locations

Vertical extent (non-RAL interval)

Precipitate layer core

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

Vertical extent (non-RAL interval)

Vertical extent (non-RAL interval) not collected because of core refusal

RAL exceedance area boundary

Combined surface and subsurface sediment PCB indicator kriging RAL exceedance area

Additional Thiessen polygon RAL exceedance area for other COCs

30% RD RAA placement area

30% RD RAA toe of cut

Legend for Vertical Extent Cores

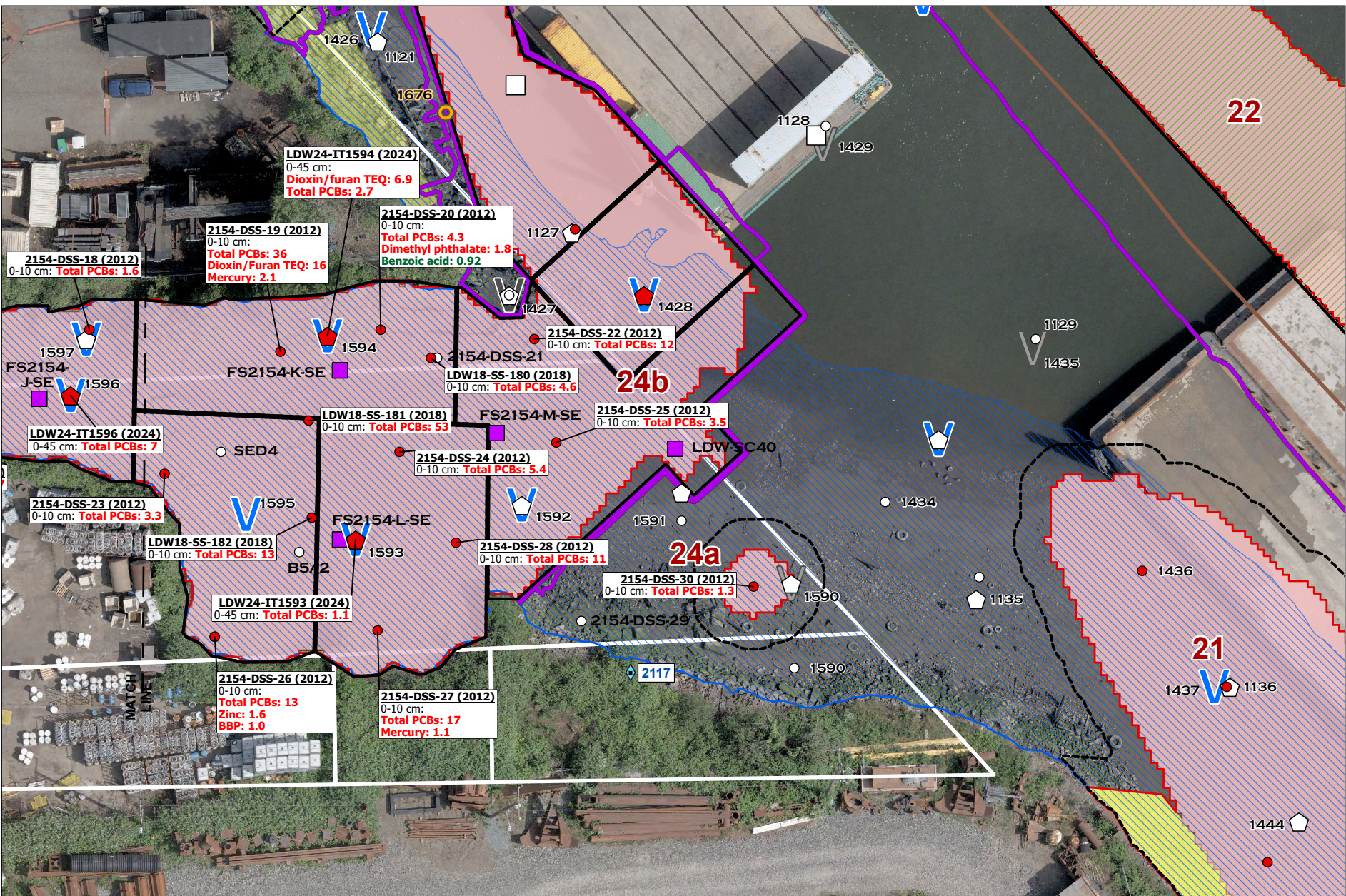
Area	Loc No.	Description
3.5		actual mudline elevation (ft MLLW)
0-60 A		RAL interval(s); red if > RAL, green if < RAL (PCBs unless noted)
B		sample below RAL interval (green if > surface sediment RAL); asterisk indicates PCB EF ≥0.9 and ≤1.0
C		sample below RAL interval (light purple if maximum EF <10 relative to surface sediment RAL) (for PCBs unless noted)
D		sample below RAL interval (purple if maximum EF ≥10 relative to surface sediment RAL) (for PCBs unless noted)
E		sample below RAL interval (dark purple if maximum EF ≥100 relative to surface sediment RAL) (for PCBs unless noted)
F		light yellow indicates samples that were not analyzed

- Abbreviations: ref. indicates refusal at or above target depth, sh. indicates shoaling material, o.d. indicates overdrill, est. indicates estimated mudline, and geo indicates geological break.

- Alternating light blue and white backgrounds indicate transects.

- PDI vertical extent core intervals B and deeper are 30 cm in length.

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Area 24 - Outer Inlet

Location	1595	1593	FS2154-L-SE	FS2154-K-SE	1594	1592	FS2154-M-SE	1427	1590	LDW-SC40	1428	1434
Mudline	3.0	1.9	2.6	-0.6	0.6	0.7	-1.7	nd	3.8	-0.8	-2.9	-2.4
Core Target	-5 ft	-6 ft	-	-	-6 ft	-5 ft	-	7.5 ft	-5 ft	-	7.5 ft	7.5 ft
6 to 5 ft			Transect 6			Transect 7		>+6 ft				
5 to 4 ft								0-45 A				
4 to 3 ft								ref.				
3 to 2 ft	0-45 A								0-45 A			
2 to 1 ft	B	0-45 A							B			
1 to 0 ft	geo C	B	1.4-2.5 ft						C			
0 to -1 ft	D	C	2.8-4.3 ft		0-45 A D/F, PCBs				D			
-1 to -2 ft	E	D			B			ref.	ref.			
-2 to -3 ft	F		4.3-5.9 ft	1.5-2.8	C		0-1.2 ft		0-1.3 ft			
-3 to -4 ft	ref.				D		1.2-2.2 ft		1.3-2 ft			
-4 to -5 ft			3.2-4.4 ft		E		2.2-3.4 ft		2-4 ft	0-45 A		0-45 A
-5 to -6 ft					ref.					B		B
-6 to -7 ft			4.4-6.7 ft							C Hg, PCBs		ref.
-7 to -8 ft			6.7-7.4 ft							D		
-8 to -9 ft										E		
-9 to -10 ft										F		
-10 to -11 ft										geo G		

Proposed Phase III QAPP locations

- Surface (0-10 cm)
- 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

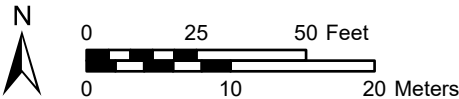
- Core without appropriate RAL interval
- Vertical extent (non-RAL interval)
- Vertical extent (non-RAL interval) archive
- Vertical extent (non-RAL interval) not collected because of core refusal

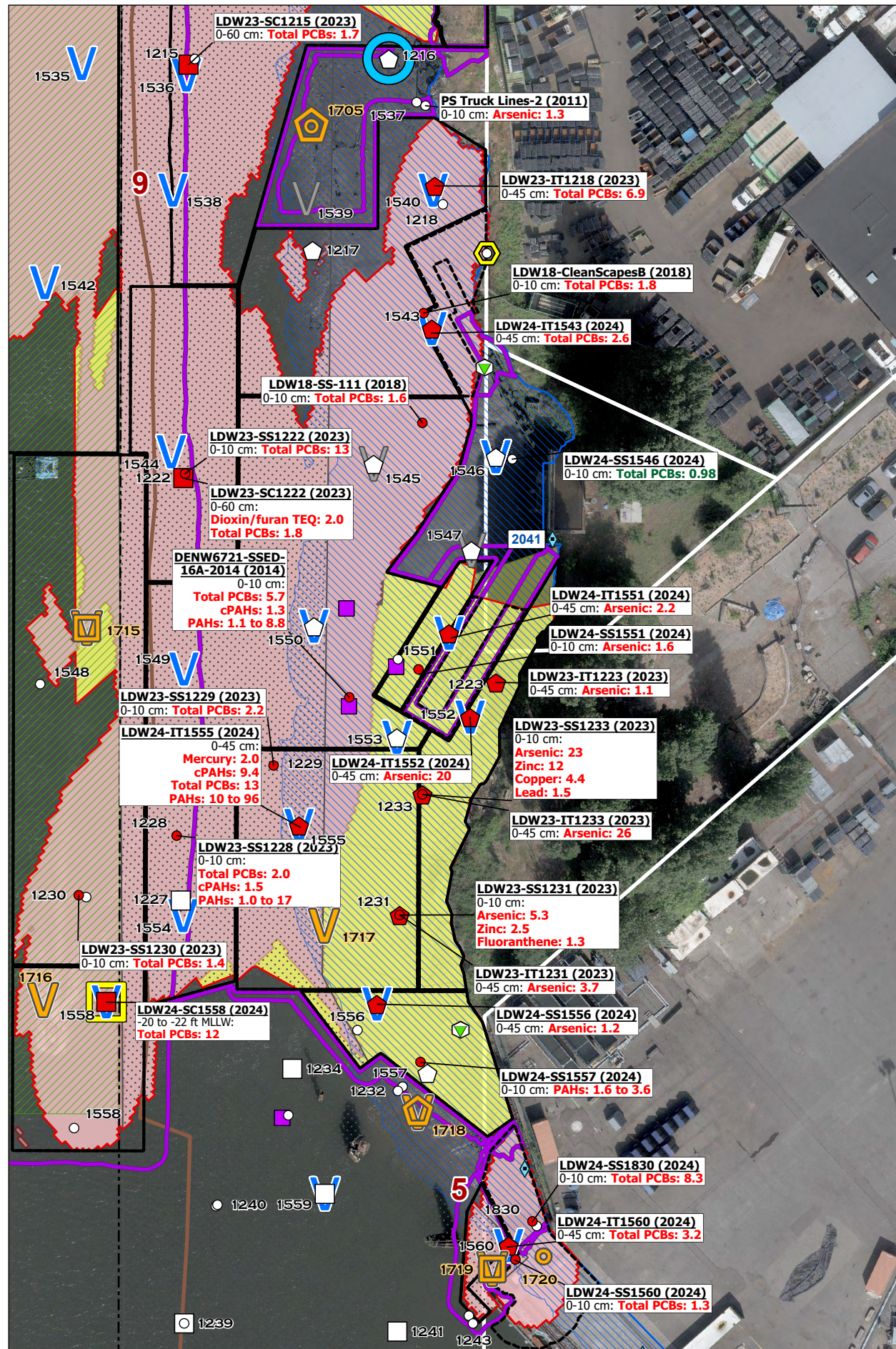
- 1 RAL exceedance area boundary
- Combined surface and subsurface sediment PCB indicator kriging RAL exceedance area
- Additional Thiessen polygon
- 30% RD RAA daylight boundary
- 30% RD RAA placement area
- 30% RD RAA toe of cut



Legend for Vertical Extent Cores

- Area
- Loc No.
- 3.5 actual mudline elevation (ft MLLW)
- 0-60 RAL interval(s); red if > RAL, green if < RAL (PCBs unless noted)
- B sample below RAL interval (green if > surface sediment RAL); asterisk indicates PCB EF ≥0.9 and ≤1.0
- C sample below RAL interval (light purple if maximum EF <10 relative to surface sediment RAL) (for PCBs unless noted)
- D sample below RAL interval (purple if maximum EF ≥10 relative to surface sediment RAL) (for PCBs unless noted)
- E sample below RAL interval (dark purple if maximum EF ≥100 relative to surface sediment RAL) (for PCBs unless noted)
- F light yellow indicates samples that were not analyzed
- Abbreviations: ref. indicates refusal at or above target depth, sh. indicates shoaling material, o.d. indicates overdrift, est. indicates estimated mudline, and geo indicates geological break.
- Alternating light blue and white backgrounds indicate transects.
- PDI vertical extent core intervals B and deeper are 30 cm in length.

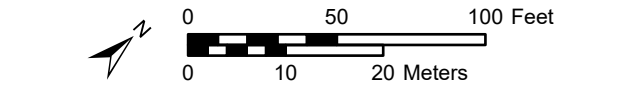
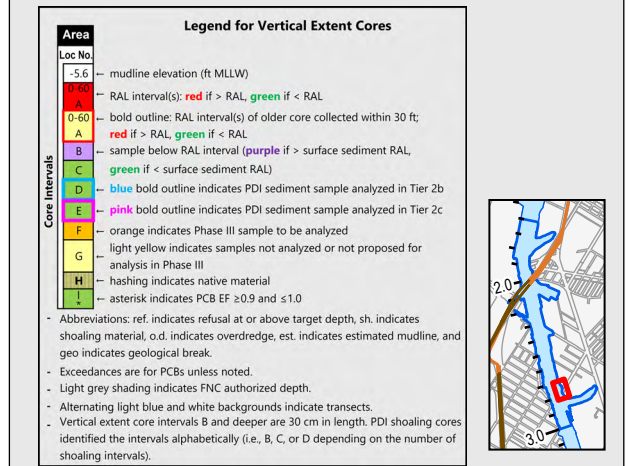




Area 9 S - Subtidal & FNC										
Location	1535	1536	1538	1542	1544	1715	1549	1554	1716	1559
Mudline	-19.5	-12.1	-14.6	-19.4	-14.6	-13.2	-14.0	-14.2	-18.2	-11.5
Core Target	-31 ft	10 ft	10 ft	-31 ft	10 ft	-31 ft	10 ft	10 ft	-31 ft	10 ft
Older Loc.	-	1215	-	-	1222	-	-	1227	1558	-
-11 to -12 ft										0-60 A +
-12 to -13 ft	0-60 A									B
-13 to -14 ft	B				0-60 A					C
-14 to -15 ft	C	A			A					D
-15 to -16 ft	D	B			B					E
-16 to -17 ft	E	C			C					F
-17 to -18 ft	F	D			D					G
-18 to -19 ft	G	E			E					H
-19 to -20 ft	H	F			F					I
-20 to -21 ft	I	G			G					J
-21 to -22 ft	J	H			H					K
-22 to -23 ft	K	I			I					L
-23 to -24 ft	L	J			J					M
-24 to -25 ft		K			K					
-25 to -26 ft		L			L					
-26 to -27 ft		M			M					
-27 to -28 ft										
-28 to -29 ft										
-29 to -30 ft										
-30 to -31 ft										
-31 to -32 ft										
-32 to -33 ft										
-33 to -34 ft										

Area 9 S - Intertidal										
Location	1539	1540	1543	1545	1546	1547	1550	1551	1553	1552
Mudline	-3.7	1.7	-3.1	-3.9	-0.5	0.5	-3.1	2.5	3.8	6.2
Core Target	7.5 ft	7.5 ft	7.5 ft	7.5 ft	15 ft	15 ft	7.5 ft	7.5 ft	7.5 ft	7.5 ft
Older Loc.	1217	1218	-	-	-	-	-	-	-	-
6 to 5 ft										0-45 A
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
-2 to -3 ft										I
-3 to -4 ft										J
-4 to -5 ft										K
-5 to -6 ft										L
-6 to -7 ft										M
-7 to -8 ft										N
-8 to -9 ft										O
-9 to -10 ft										P
-10 to -11 ft										Q
-11 to -12 ft										R
-12 to -13 ft										S
-13 to -14 ft										T

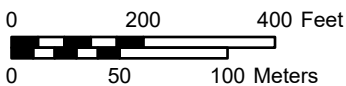
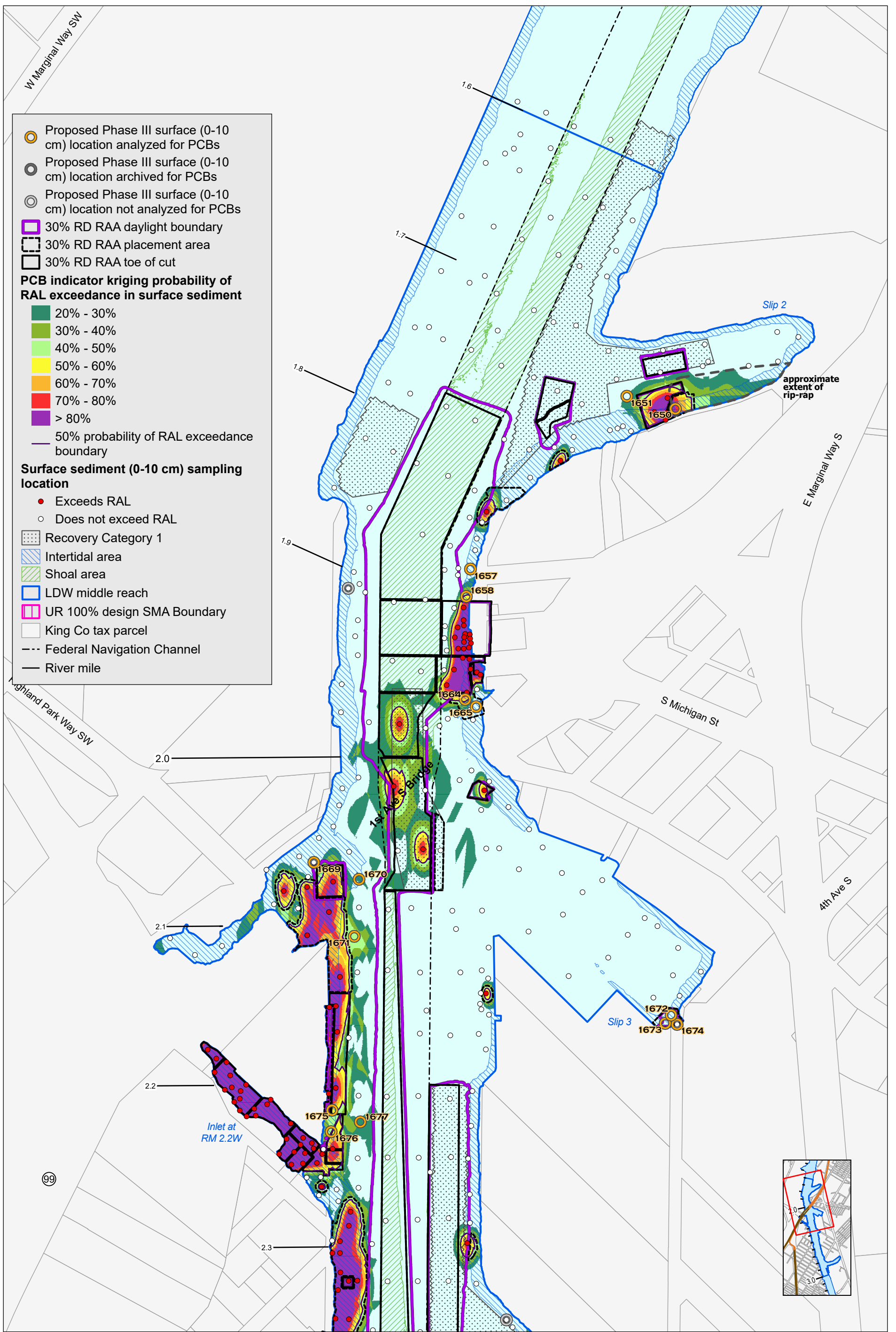
- Proposed Phase III QAPP locations**
- Surface (0-10 cm)
 - Intertidal (0-45 cm)
 - Subtidal (0-60 cm)
 - Vertical extent (non-RAL interval)
 - Shoaling core
 - Sample above MHHW not included in the interpolation dataset
- Surface (0-10 cm) sampling location**
- Exceeds RAL
 - Does not exceed RAL
- 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
 - Archive PDI sediment samples analyzed (Tier 2b)
- Legend for Vertical Extent Cores**
- Area
 - Loc No.
 - 5.6
 - RAL interval(s): red if > RAL, green if < RAL
 - bold outline: RAL interval(s) of older core collected within 30 ft
 - red if > RAL, green if < RAL
 - sample below RAL interval (purple if > surface sediment RAL, green if < surface sediment RAL)
 - blue bold outline indicates PDI sediment sample analyzed in Tier 2b
 - pink bold outline indicates PDI sediment sample analyzed in Tier 2c
 - orange indicates Phase III sample to be analyzed
 - light yellow indicates samples not analyzed or not proposed for analysis in Phase III
 - hashing indicates native material
 - asterisk indicates PCB EF ≥ 0.9 and ≤ 1.0
 - Abbreviations: ref. indicates refusal at or above target depth, sh. indicates shoaling material, o.d. indicates over dredge, est. indicates estimated mudline, and geo indicates geological break.
 - Exceedances are for PCBs unless noted.
 - Light grey shading indicates FNC authorized depth.
 - Alternating light blue and white backgrounds indicate transects.
 - Vertical extent core intervals B and deeper are 30 cm in length; PDI shoaling cores identified the intervals alphabetically (i.e., B, C, or D depending on the number of shoaling intervals).
- Vertical extent (non-RAL interval) archive**
- Vertical extent (non-RAL interval)
- Shoaling core**
- Shoaling core
- Sample above MHHW not included in the interpolation dataset**
- Sample above MHHW not included in the interpolation dataset
- RAL exceedance area boundary**
- RAL exceedance area boundary
- Combined surface and subsurface sediment PCB indicator kriging RAL exceedance area**
- Combined surface and subsurface sediment PCB indicator kriging RAL exceedance area
- Additional Thiessen polygon RAL exceedance area for other COCs**
- Additional Thiessen polygon RAL exceedance area for other COCs
- 30% RD RAA daylight boundary**
- 30% RD RAA daylight boundary
- 30% RD RAA placement area**
- 30% RD RAA placement area
- 30% RD RAA toe of cut**
- 30% RD RAA toe of cut



Map 4-1n. Phase III Sample Locations, RAL Exceedances, and RAL Exceedance Areas Based on the Design Dataset, Gateway Park

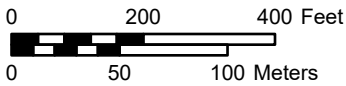
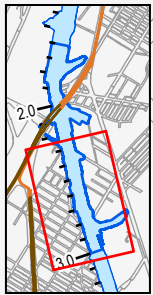
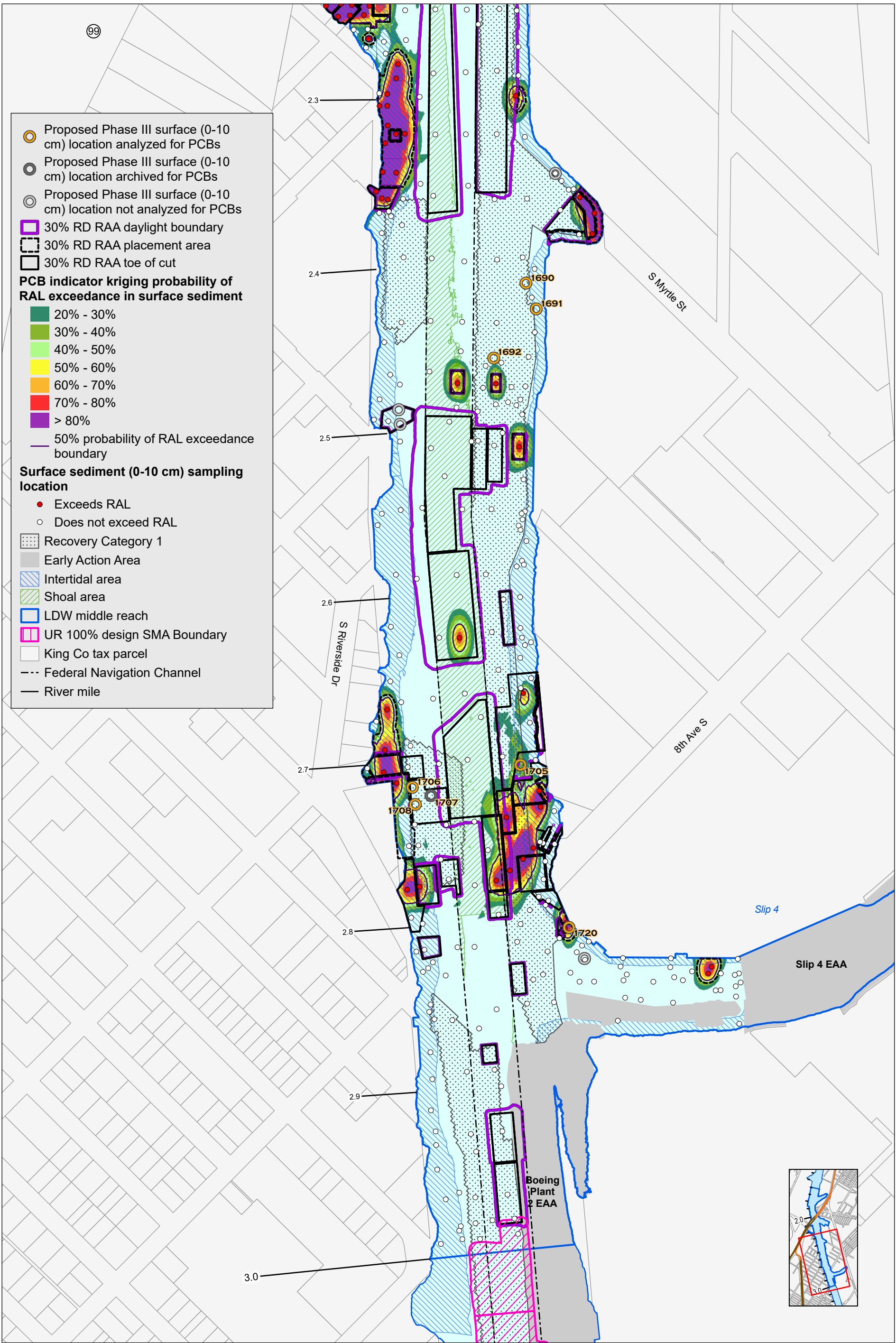
QAPP ADDENDUM FOR PHASE III OF THE PRE-DESIGN INVESTIGATION OF THE LDW MIDDLE REACH JULY 8, 2026

Prepared by CEH 7/1/2026; I:\Client\LDWG\Work_Orders\AOC5 Middle Reach Design\Maps and Analyses\Phase 3 QAPP Addendum\Phase 3 QAPP Addendum.aprx Map 4-2 7546 PH1 interpolation - surface contours



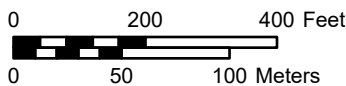
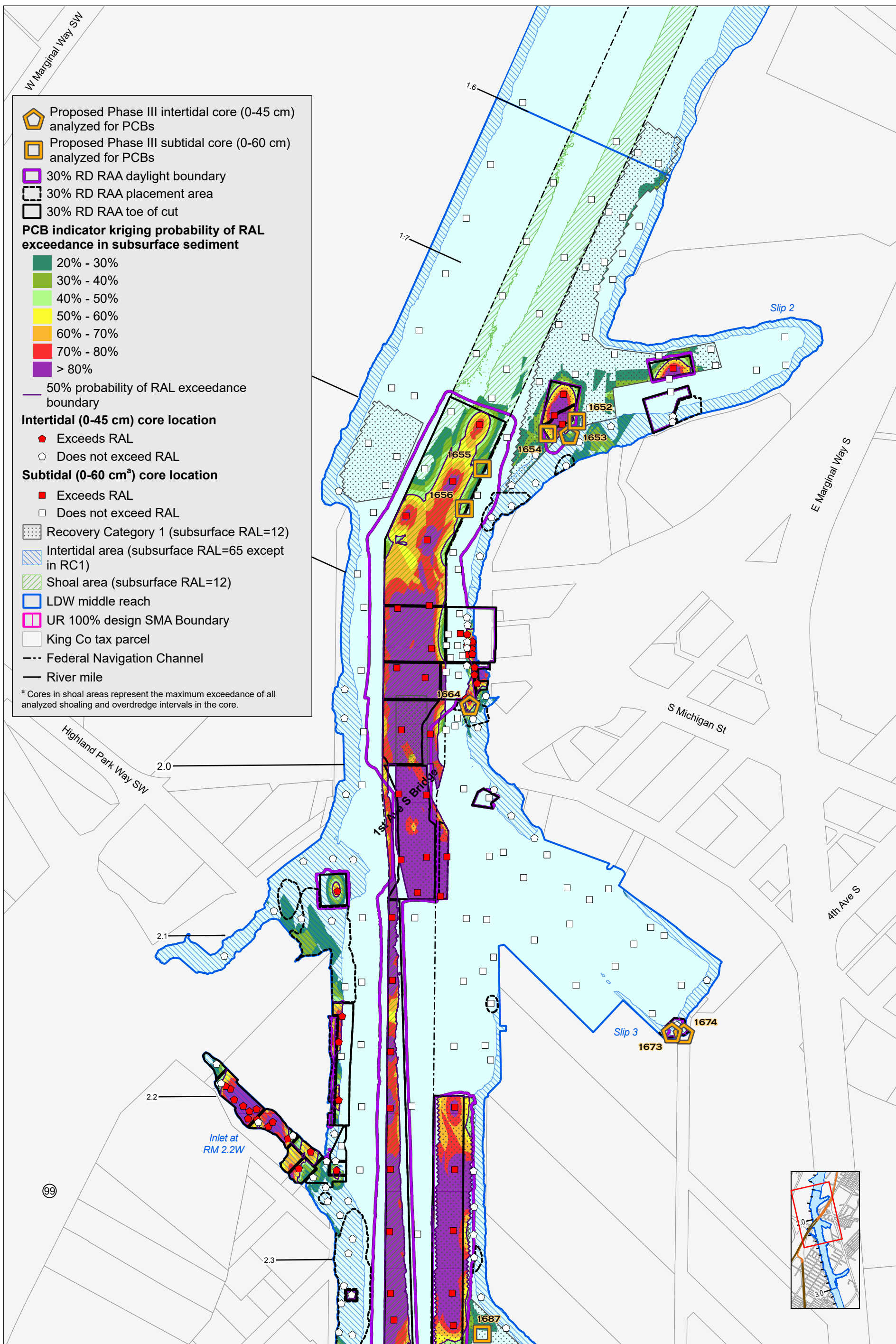
Map 4-2a. Total PCB Surface Sediment Indicator Kriging Interpolation with Phase III PCB Sample Locations (RM 1.6 to RM 2.3)

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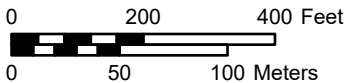
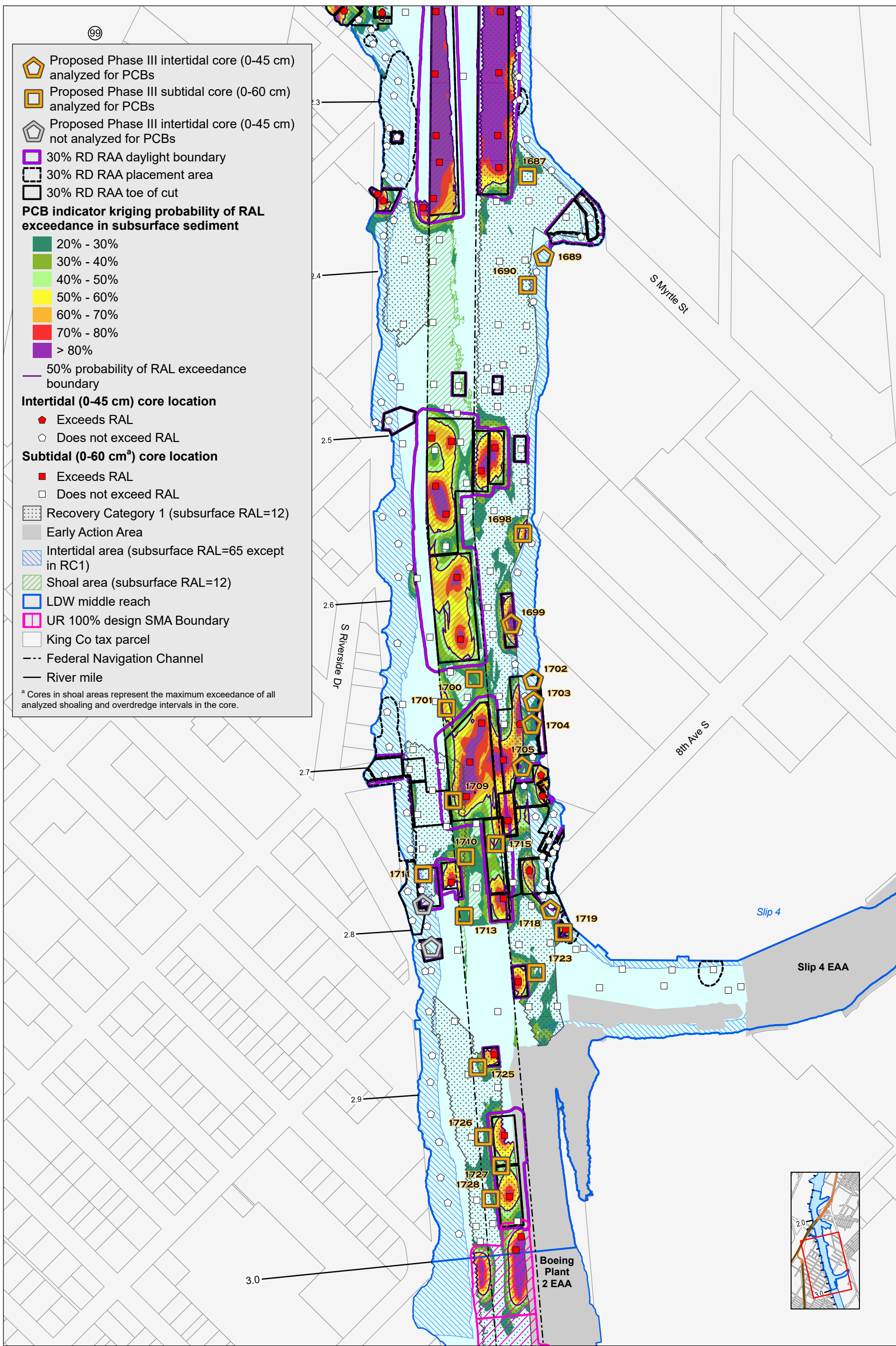
Map 4-2b. Total PCB Surface Sediment Indicator Kriging Interpolation with Phase III PCB Sample Locations (RM 2.3 to RM 3.0)

Prepared by CEH 7/1/2026; I:\Client\LDWG\Work_Orders\AOC5 Middle Reach Design\Maps and Analyses\Phase 3 QAPP Addendum\Phase 3 QAPP Addendum.aprx Map 4-3 7548 PH1 Interpolation - subsurface contours



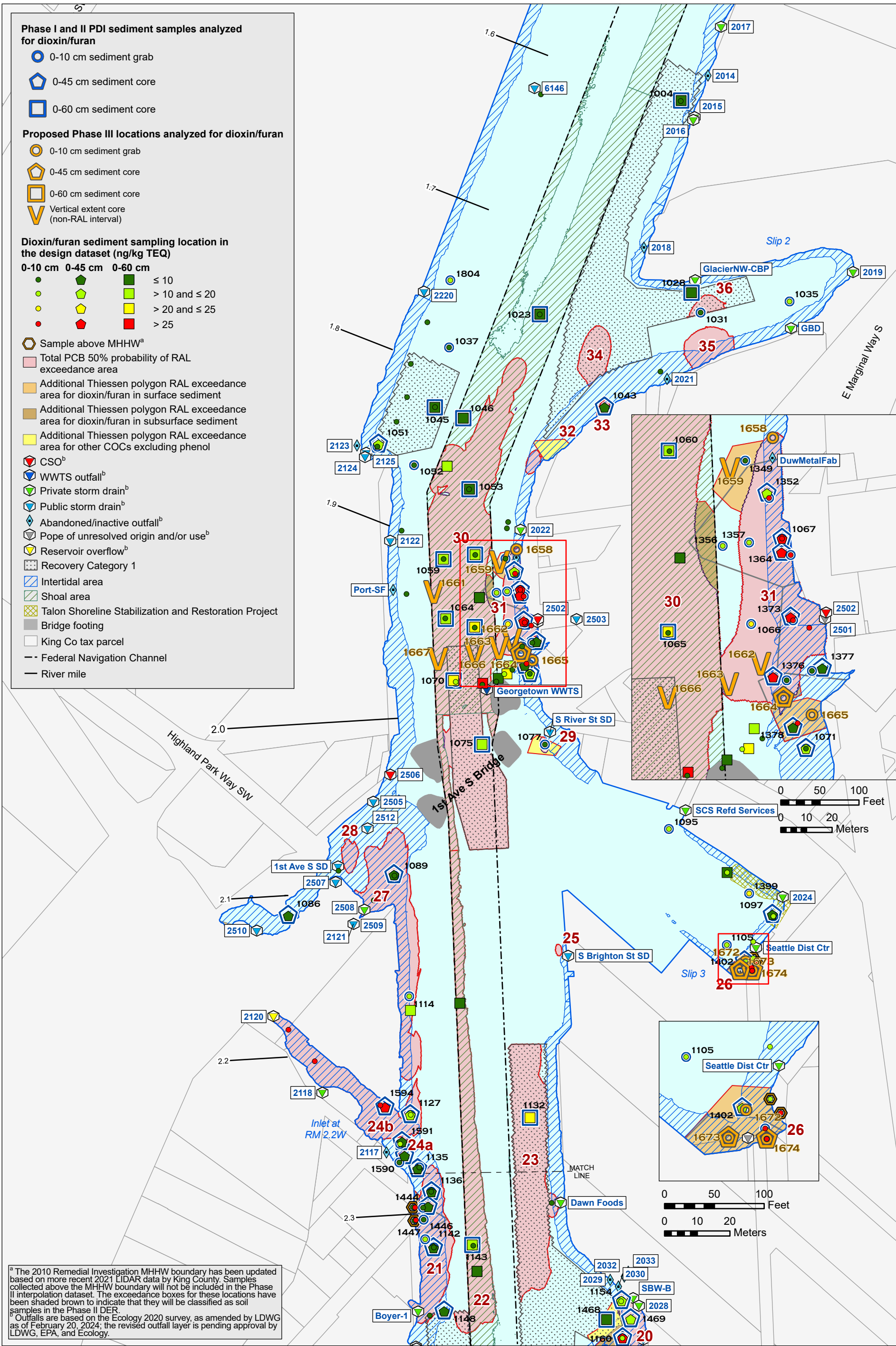
Map 4-3a. Total PCB Subsurface Sediment Indicator Kriging Interpolation with Phase III PCB Sample Locations (RM 1.6 to RM 2.3)

Prepared by CEH 7/1/2026; I:\Client\LDWG\Work_Orders\AOC5 Middle Reach Design\Maps and Analyses\Phase 3 QAPP Addendum\Phase 3 QAPP Addendum.aprx|Map 4-3 7546 Rhl interpolation - subsurface contours



Map 4-3b. Total PCB Subsurface Sediment Indicator Kriging Interpolation with Phase III PCB Sample Locations (RM 2.3 to RM 3.0)

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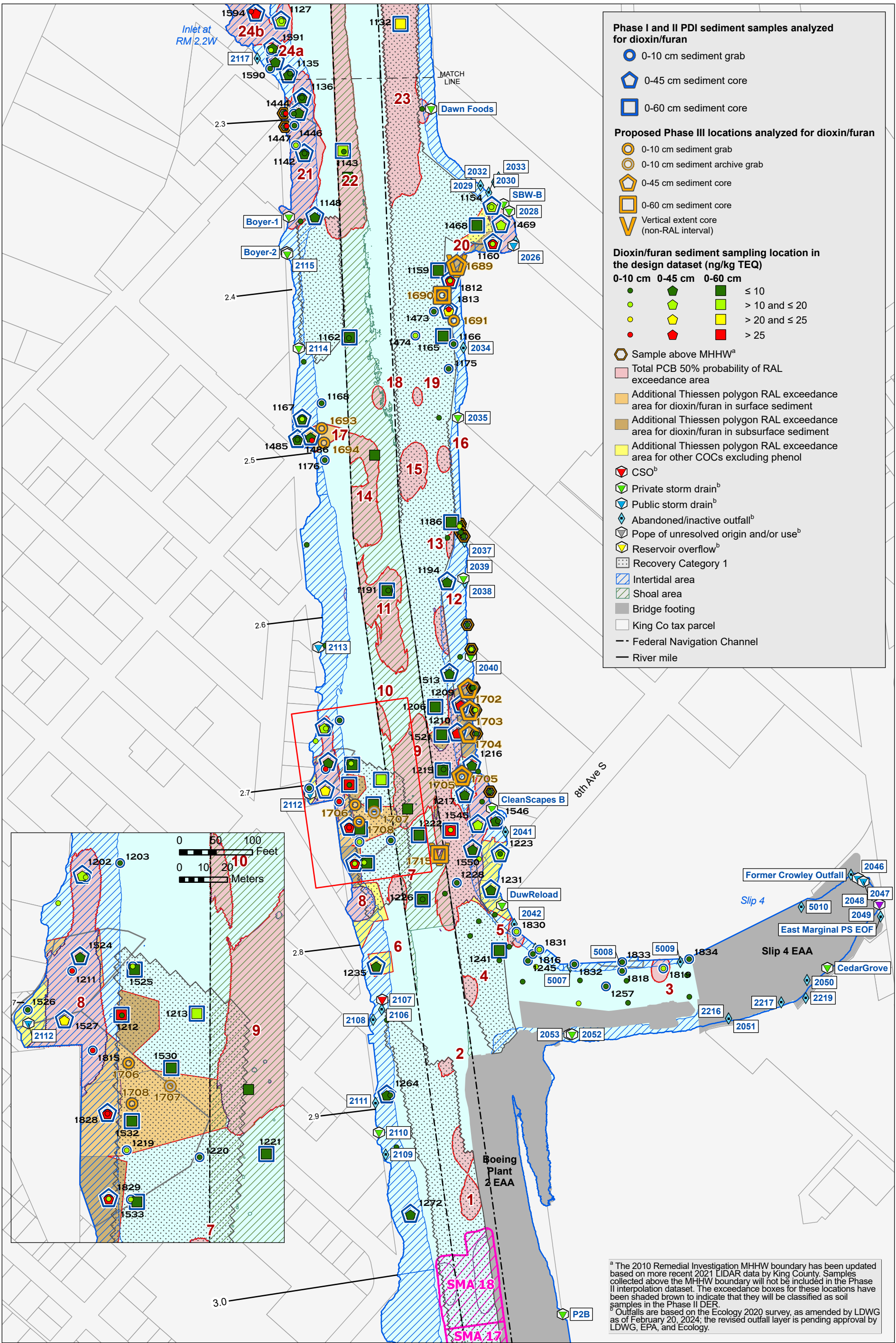


^a The 2010 Remedial Investigation MHHW boundary has been updated based on more recent 2021 LIDAR data by King County. Samples collected above the MHHW boundary will not be included in the Phase II interpolation dataset. The exceedance boxes for these locations have been shaded brown to indicate that they will be classified as soil samples in the Phase II DER.

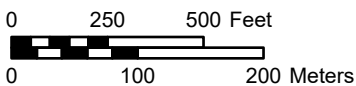
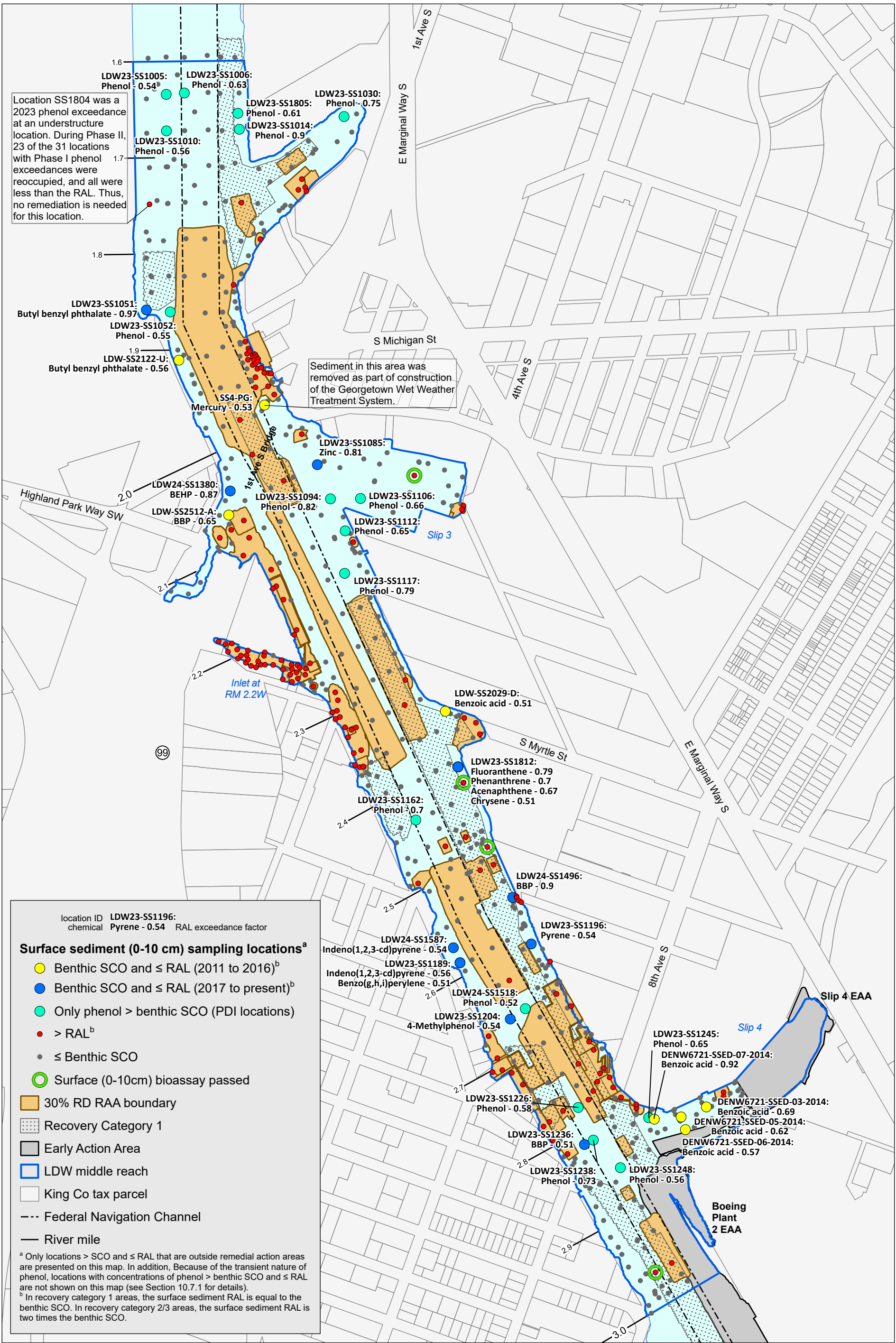
^b Outfalls are based on the Ecology 2020 survey, as amended by LDWG as of February 20, 2024; the revised outfall layer is pending approval by LDWG, EPA, and Ecology.

Map 4-4a. Dioxin/furan TEQs and Phase III Sample Locations, RM 1.6 to RM 2.3

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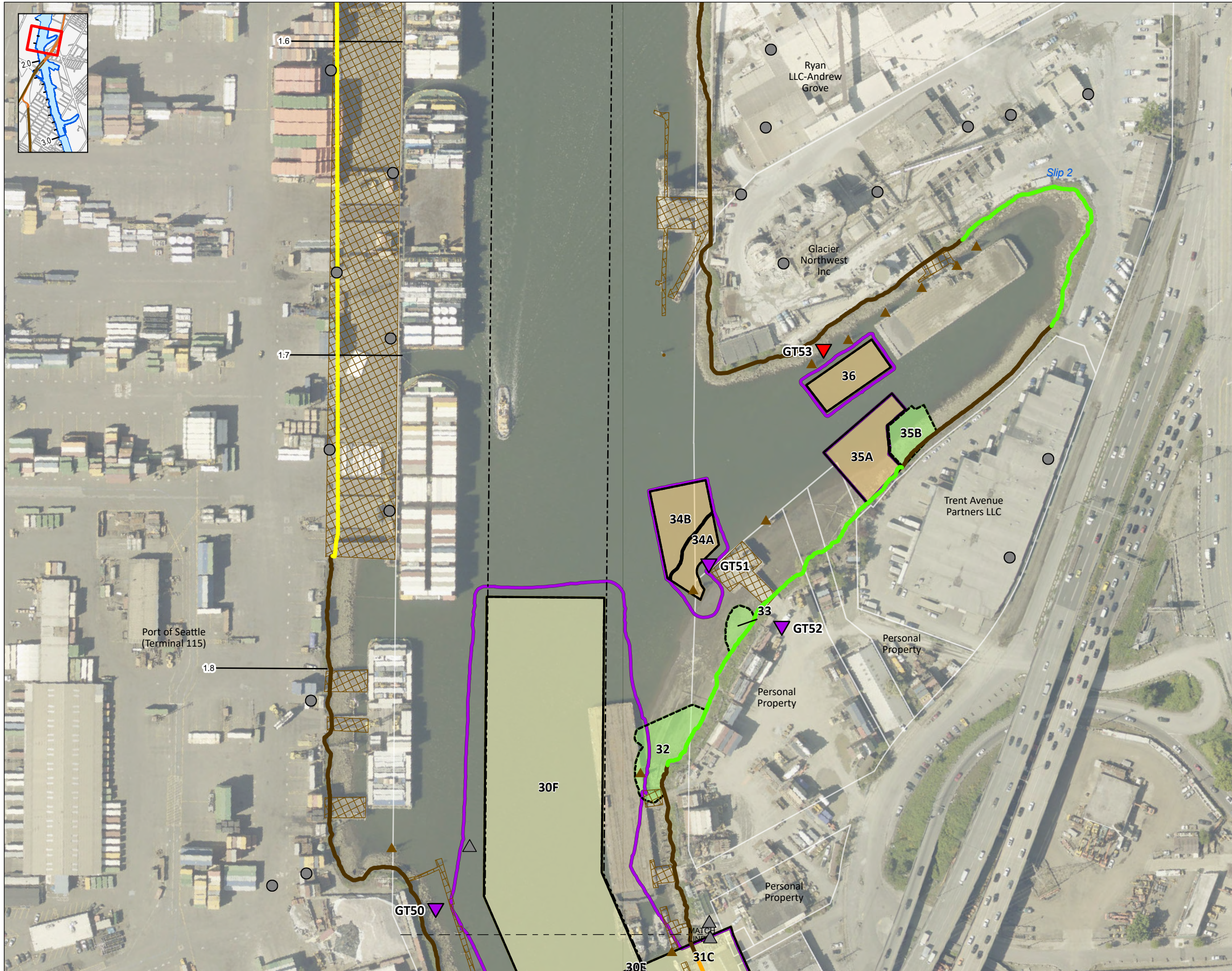


Prepared by CEH 7/1/2026; I:\Client\LDWG\Work_Orders\AOC5 Middle Reach Design\Map and Analysis\Phase 3 QAPP Addendum\Phase 3 QAPP Addendum.aprx Map 4-5 7701 Surfaced benthic SCO



Map 4-5. Selection of MNR to Benthic SCO Locations for Phase III Sampling

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Phase III PDI geotechnical data collection locations

- Geotechnical vibracore location
- Standard penetration test location

Other data collection locations

- Phase II PDI geotechnical data collection location
- Previous geotechnical study by others

30% RD RAA daylight boundary

30% RD RAA placement area

30% RD RAA toe of cut

30% RD RAA technology assignments

- Dredge
- Partial dredge & cap
- Cap
- Area specific technology
- ENR

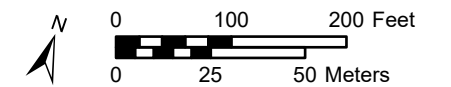
Bank condition

- Armored slope
- Vertical bulkhead
- Bulkhead and armored slope
- Unarmored bank

Overwater structures

- Dock/pier
- Pile^a
- Dolphin^a
- Federal Navigation Channel
- River mile

^a Source: Lower Duwamish Waterway Final Feasibility Study (AECOM 2012)
Aerial photo: 2025 King County (EagleView) Orthogonal Base Imagery - 3 in.

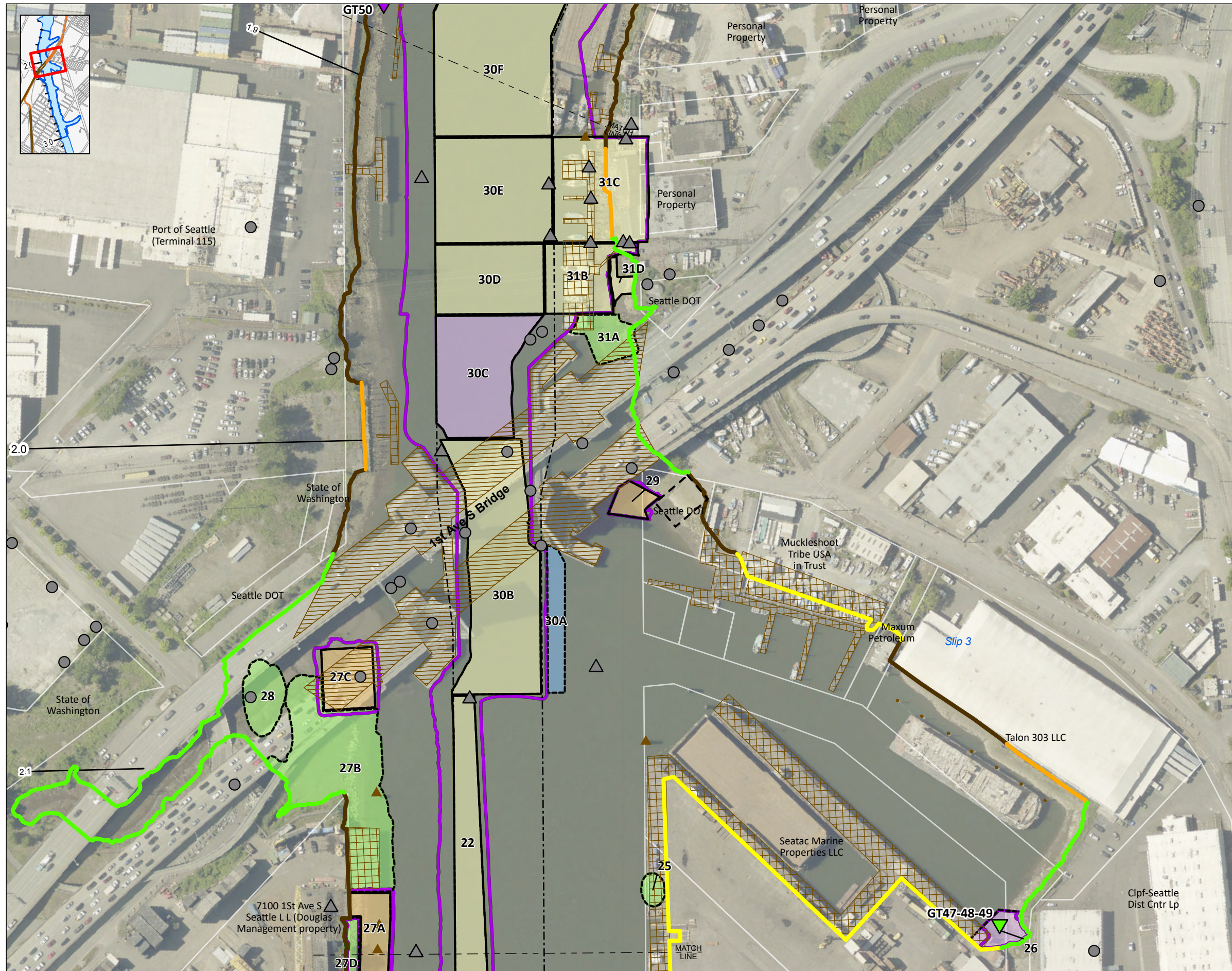


Map 5-1a. Geotechnical Data Locations, RM 1.6 to RM 1.85

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Phase III PDI geotechnical data collection locations

- Standard penetration test location
- Vane Shear location

Other data collection locations

- Phase II PDI geotechnical data collection location
- Previous geotechnical study by others

30% RD RAA daylight boundary

30% RD RAA placement area

30% RD RAA toe of cut

30% RD RAA technology assignments

- Dredge
- Partial dredge & cap
- Cap
- Area specific technology
- ENR

Bank condition

- Armored slope
- Vertical bulkhead
- Bulkhead and armored slope
- Unarmored bank

Overwater structures

- Bridge
- Dock/pier

- Pile^a
- Dolphin^a

--- Federal Navigation Channel

— River mile

^a Source: Lower Duwamish Waterway Final Feasibility Study (AECOM 2012)
Aerial photo: 2025 King County (EagleView) Orthogonal Base Imagery - 3 in.

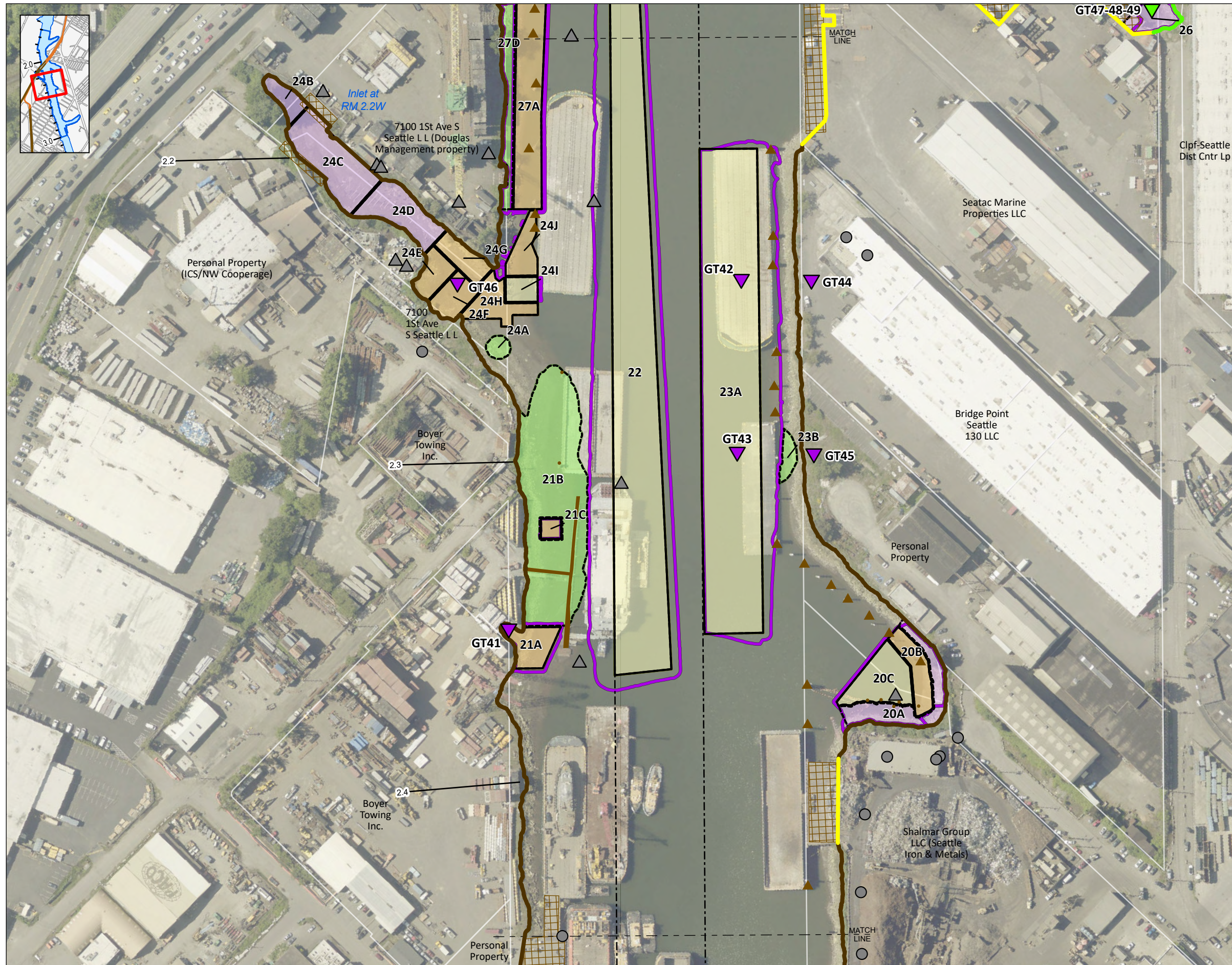


Map 5-1b. Geotechnical Data Locations, RM 1.85 to RM 2.15

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Phase III PDI geotechnical data collection locations

- Standard penetration test location
- Vane Shear location

Other data collection locations

- Phase II PDI geotechnical data collection location
- Previous geotechnical study by others

30% RD RAA daylight boundary

30% RD RAA placement area

30% RD RAA toe of cut

30% RD RAA technology assignments

- Dredge
- Partial dredge & cap
- Cap
- Area specific technology
- ENR

Bank condition

- Armored slope
- Bulkhead and armored slope
- Unarmored bank

Overwater structures

- Dock/pier
- Marina
- Pile^a
- Dolphin^a
- Federal Navigation Channel
- River mile

^a Source: Lower Duwamish Waterway Final Feasibility Study (AECOM 2012)
Aerial photo: 2025 King County (EagleView) Orthogonal Base Imagery - 3 in.



Map 5-1c. Geotechnical Data Locations, RM 2.15 to RM 2.45

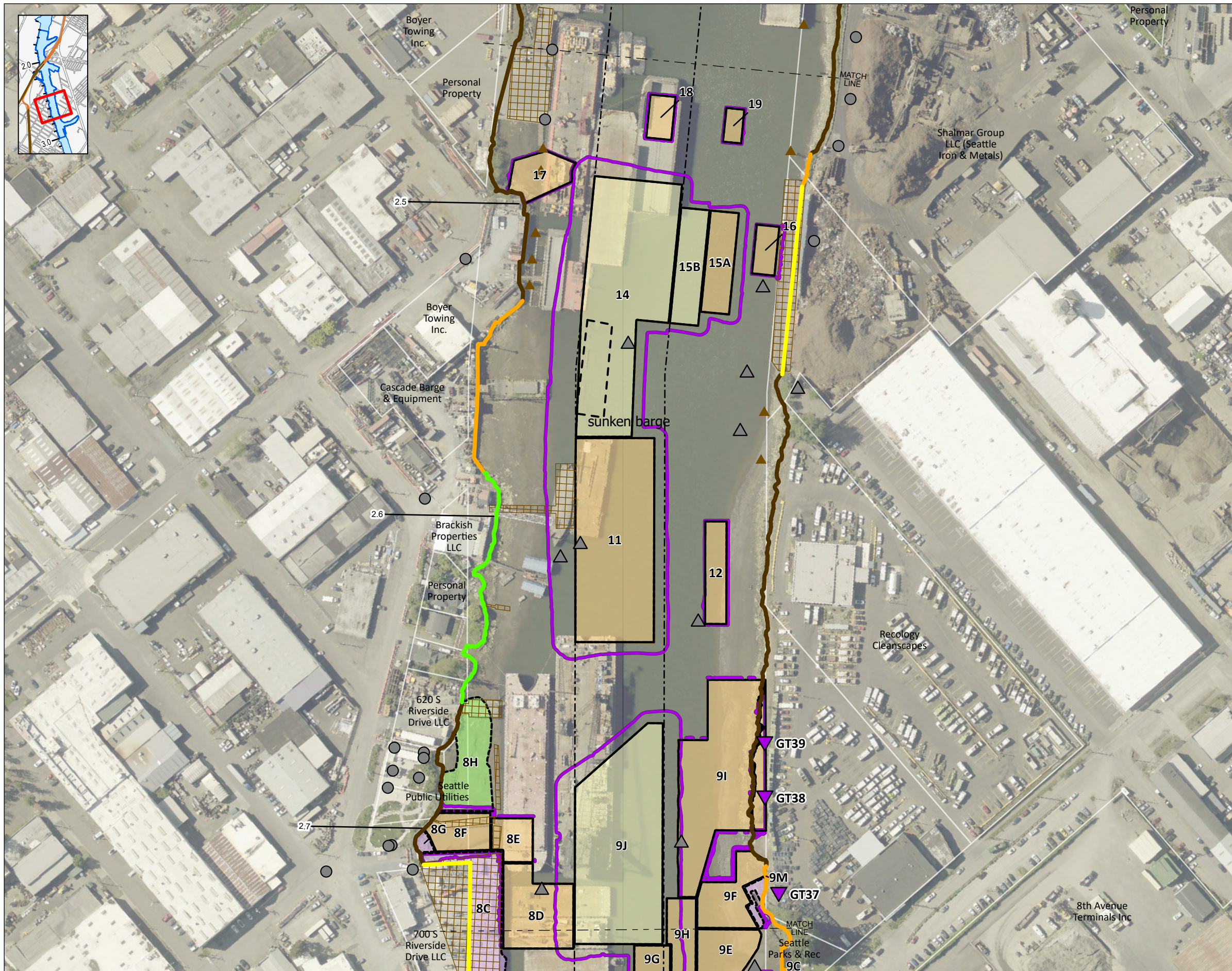
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Phase III PDI geotechnical data collection locations

▼ Standard penetration test location

Other data collection locations

▲ Phase II PDI geotechnical data collection location

● Previous geotechnical study by others

30% RD RAA daylight boundary

30% RD RAA placement area

30% RD RAA toe of cut

30% RD RAA technology assignments

Dredge

Partial dredge & cap

Cap

Area specific technology

ENR

Bank condition

Armored slope

Vertical bulkhead

Bulkhead and armored slope

Unarmored bank

Overwater structures

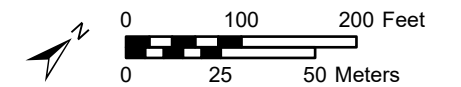
Dock/pier

Dolphin^a

--- Federal Navigation Channel

— River mile

^a Source: Lower Duwamish Waterway Final Feasibility Study (AECOM 2012)
Aerial photo: 2025 King County (EagleView) Orthogonal Base Imagery - 3 in.



Map 5-1d. Geotechnical Data Locations, RM 2.45 to RM 2.75

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Phase III PDI geotechnical data collection locations

▼ Standard penetration test location

Other data collection locations

▲ Phase II PDI geotechnical data collection location

● Previous geotechnical study by others

□ 30% RD RAA daylight boundary

□ 30% RD RAA placement area

□ 30% RD RAA toe of cut

30% RD RAA technology assignments

■ Dredge

■ Partial dredge & cap

■ Cap

■ Area specific technology

■ ENR

Bank condition

— Armored slope

— Vertical bulkhead

— Bulkhead and armored slope

— Unarmored bank

Overwater structures

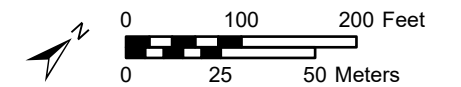
■ Dock/pier

▲ Dolphin^a

--- Federal Navigation Channel

— River mile

^a Source: Lower Duwamish Waterway Final Feasibility Study (AECOM 2012)
Aerial photo: 2025 King County (EagleView) Orthogonal Base Imagery - 3 in.



Map 5-1e. Geotechnical Data Locations, RM 2.75 to RM 3.0

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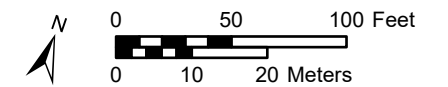
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- Bank and land survey area
- Overwater structure to be inspected and/or surveyed
- Sediment thickness probing
- 30% RD RAA daylight boundary
- 30% RD RAA placement area
- 30% RD RAA toe of cut
- RAL exceedance area boundary
- Private storm drain
- Abandoned/inactive outfall
- 4 ft MLLW
- LDW Superfund Boundary
- King Co tax parcel
- Federal Navigation Channel

^a Waterway User Survey and Assessment of In-Water Structures - Data Report (Integral et al. 2018)
^b Outfalls are based on the Ecology 2020 survey, as amended by LDWG as of February 20, 2024; the revised outfall layer is pending approval by LDWG, EPA, and Ecology.
Aerial photo: AnchorQEA Photogrammetry Survey, June 2024.

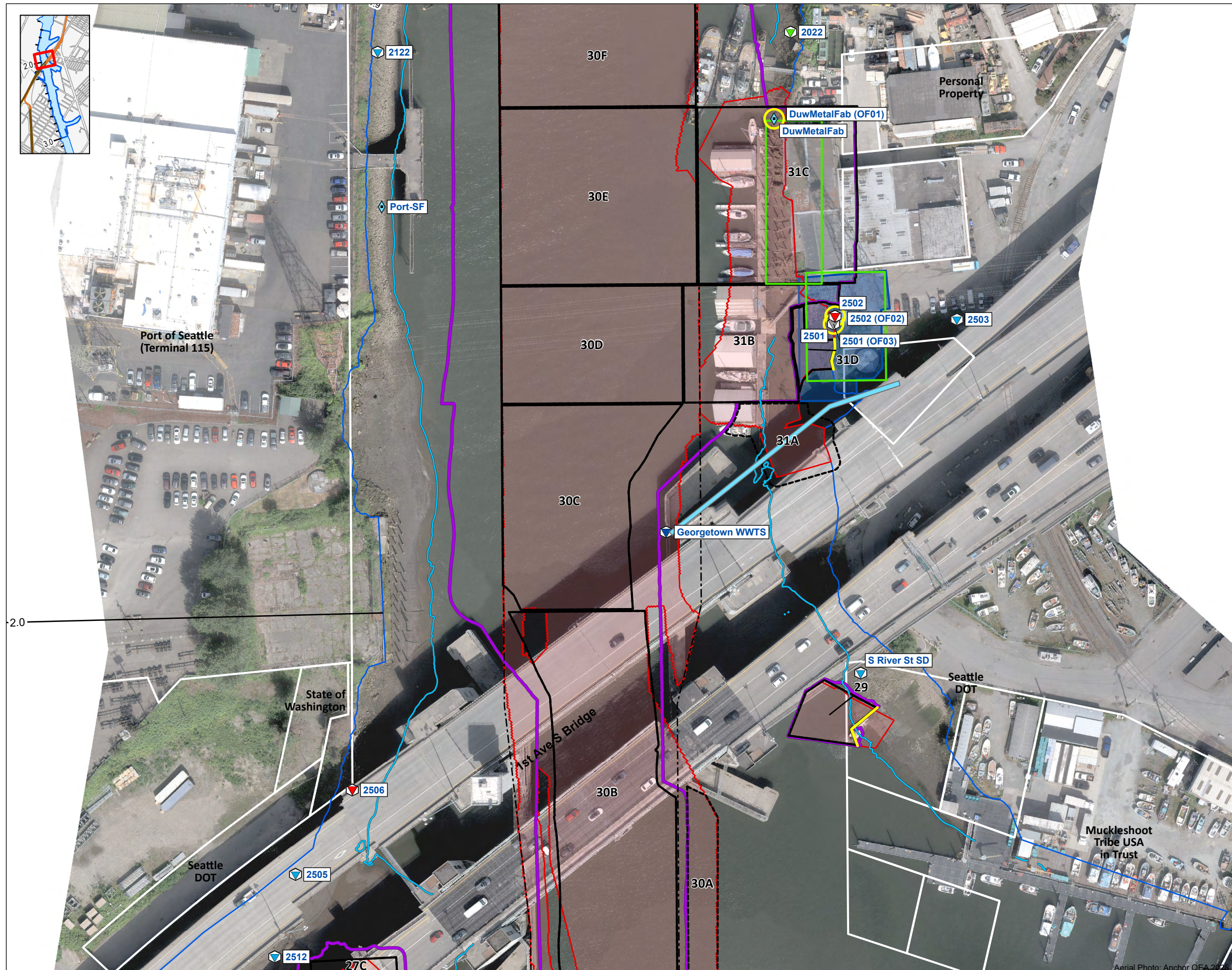


Map 5-2a. Phase III PDI Engineering Data Investigation Locations, RAAs 32, 33, and 35

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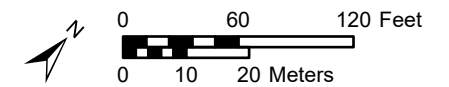
Aerial Photo: Anchor QEA 2025.

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- Bank and land survey area
- Overwater structure to be inspected and/or surveyed
- Sediment thickness probing
- Outfall to be inspected and/or surveyed^b
- 30% RD RAA daylight boundary
- 30% RD RAA placement area
- 30% RD RAA toe of cut
- RAL exceedance area boundary
- CSO
- WWTS outfall
- Private storm drain
- Public storm drain
- Abandoned/inactive outfall
- Pipe of unresolved origin and/or use
- Georgetown WWTS diffuser pipe
- 4 ft MLLW
- LDW Superfund Boundary
- King Co tax parcel
- Federal Navigation Channel
- River mile

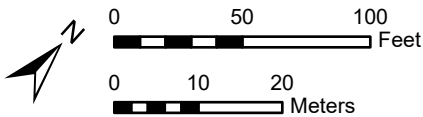
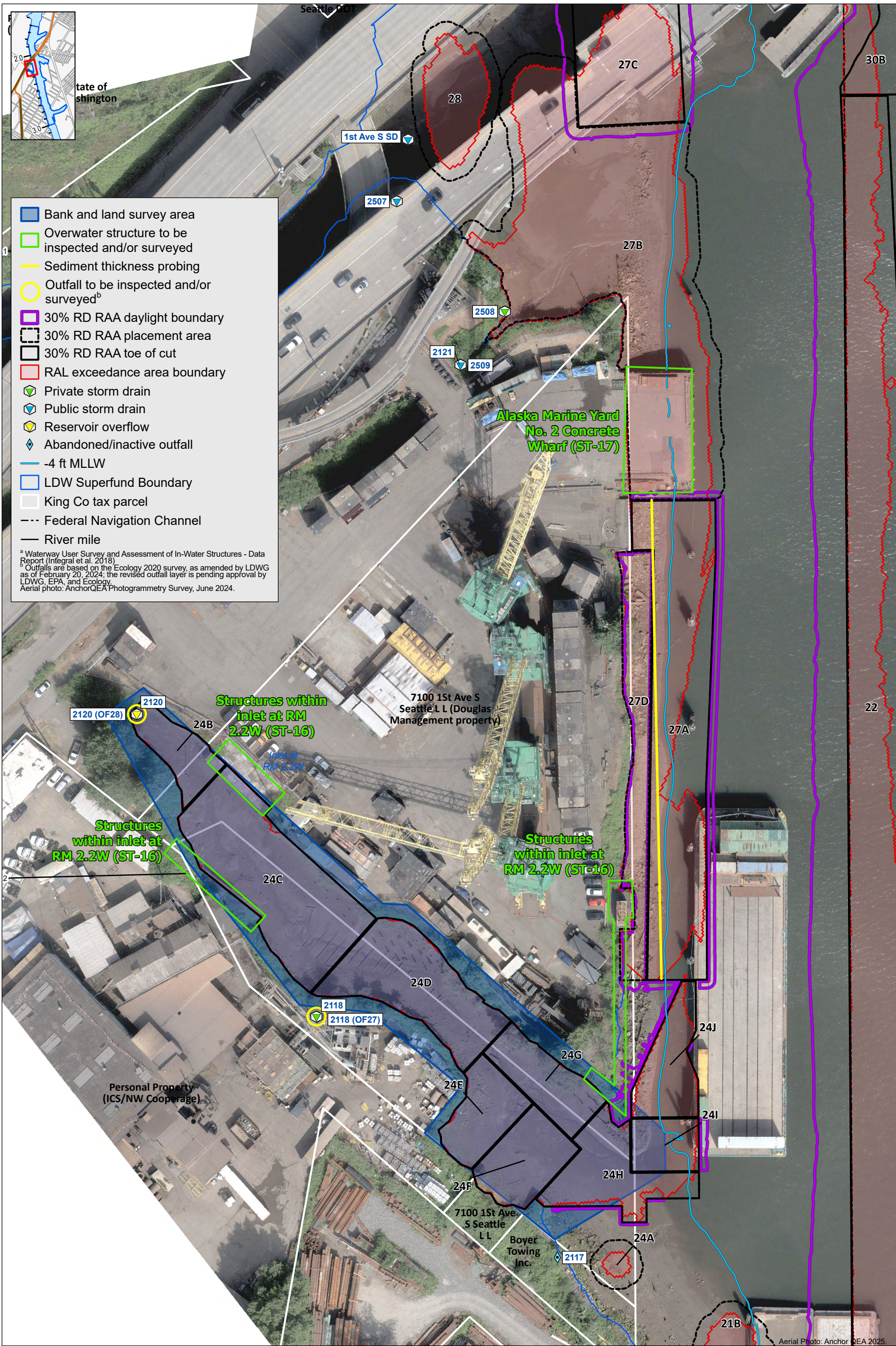
^a Waterway User Survey and Assessment of In-Water Structures - Data Report (Integral et al. 2018)
^b Outfalls are based on the Ecology 2020 survey, as amended by LDWG as of February 20, 2024; the revised outfall layer is pending approval by LDWG, EPA, and Ecology.
Aerial photo: AnchorQEA Photogrammetry Survey, June 2024.



Map 5-2b. Phase III PDI Engineering Data Investigation Locations, RAAs 29 and 31

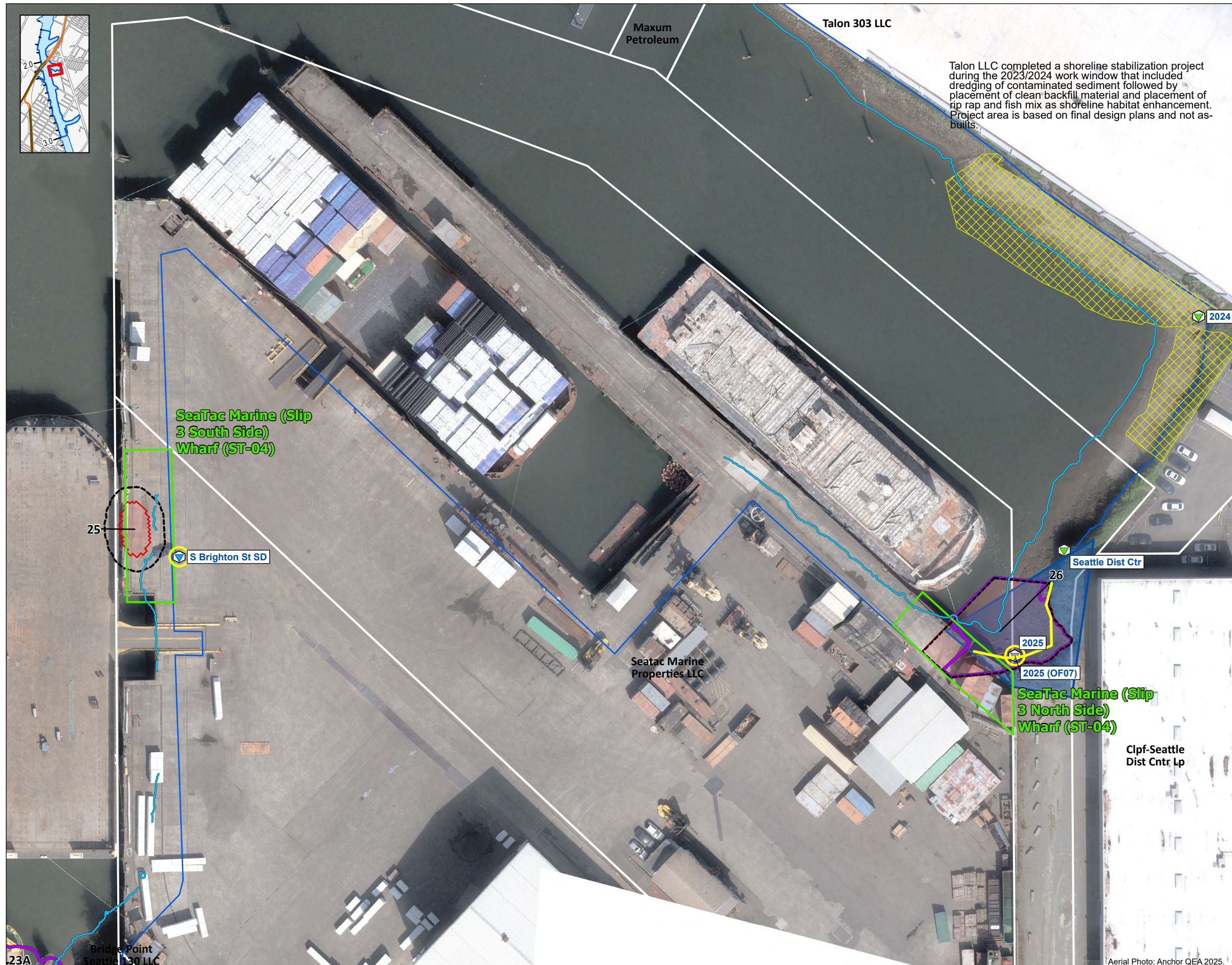
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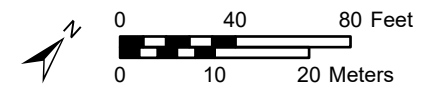
Map 5-2c. Phase III PDI Engineering Data Investigation Locations, RAs 24 and 27

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- Bank and land survey area
- Overwater structure to be inspected and/or surveyed
- Sediment thickness probing
- Outfall to be inspected and/or surveyed^b
- 30% RD RAA daylight boundary
- 30% RD RAA placement area
- 30% RD RAA toe of cut
- RAL exceedance area boundary
- Private storm drain
- Public storm drain
- Pipe of unresolved origin and/or use
- Talon Shoreline Stabilization Project
- 4 ft MLLW
- LDW Superfund Boundary
- King Co tax parcel

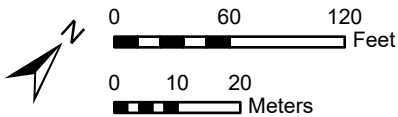
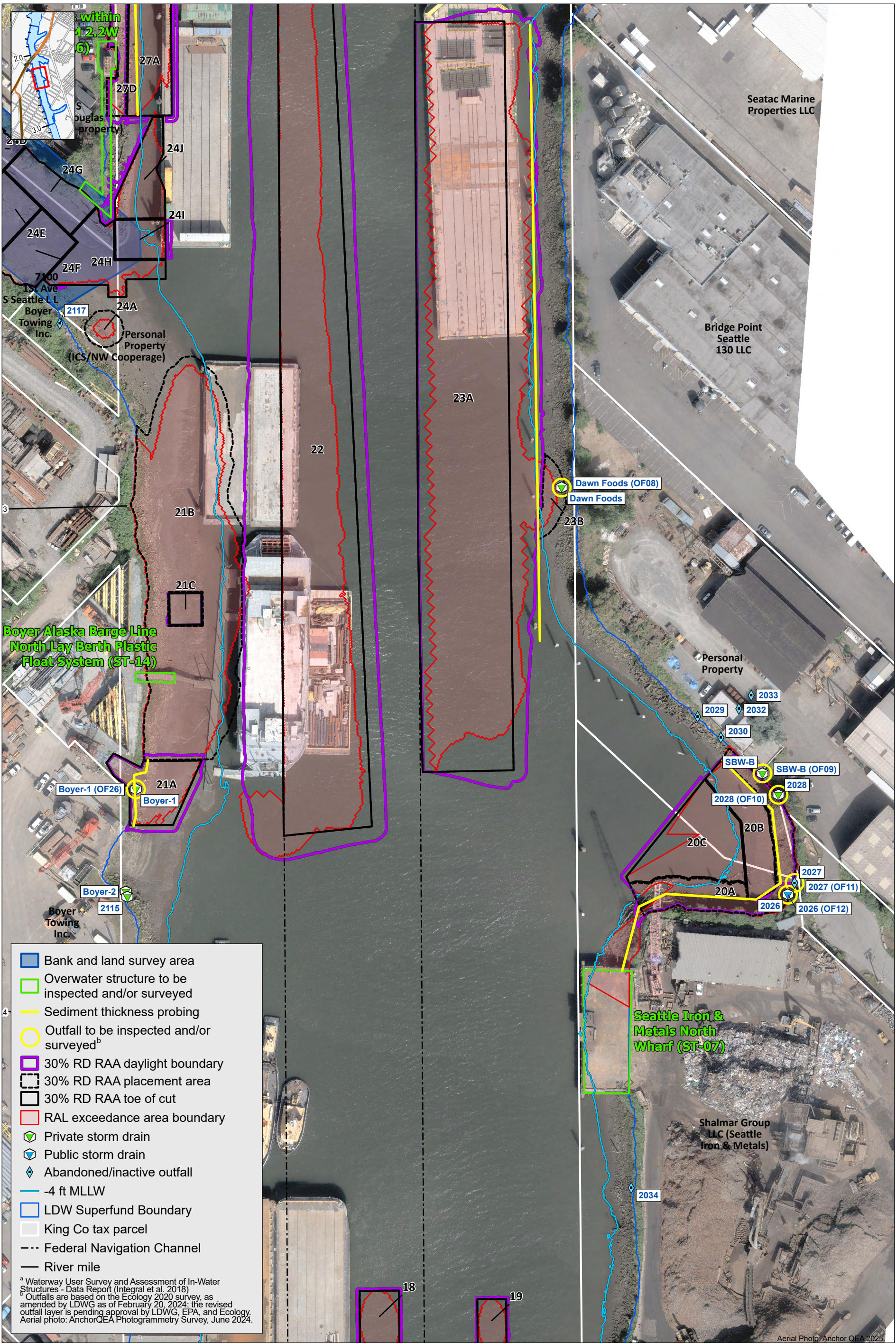
^a Waterway User Survey and Assessment of In-Water Structures - Data Report (Integral et al. 2018)
^b Outfalls are based on the Ecology 2020 survey, as amended by LDWG as of February 20, 2024; the revised outfall layer is pending approval by LDWG, EPA, and Ecology.
Aerial photo: AnchorQEA Photogrammetry Survey, June 2024.



Map 5-2d. Phase III PDI Engineering Data Investigation Locations, RAAs 25 and 26

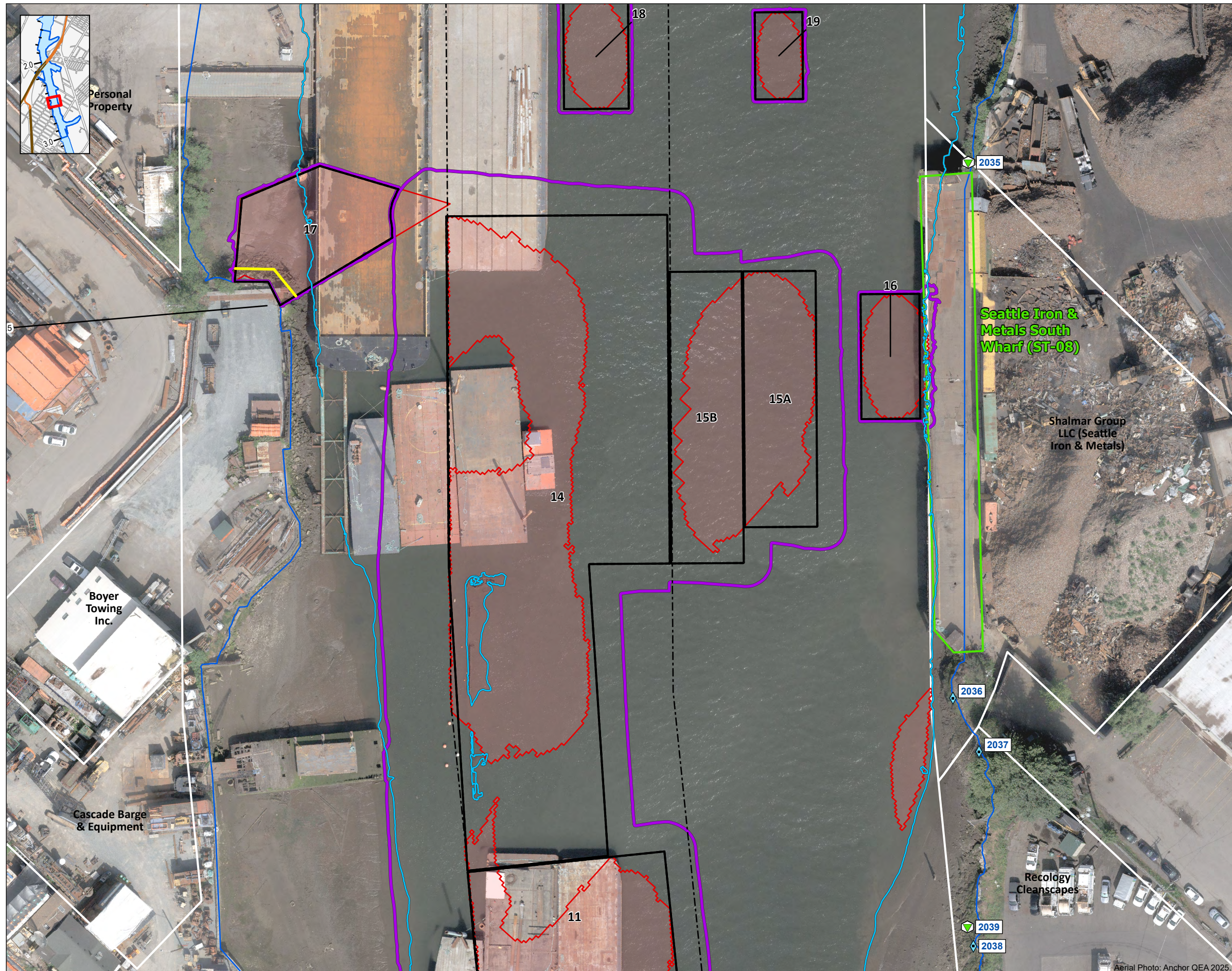
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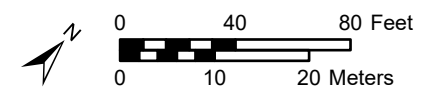
Map 5-2e. Phase III PDI Engineering Data Investigation Locations, RAs 20, 21, and 23

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- Bank and land survey area
- Overwater structure to be inspected and/or surveyed
- Sediment thickness probing
- 30% RD RAA daylight boundary
- 30% RD RAA placement area
- 30% RD RAA toe of cut
- RAL exceedance area boundary
- Private storm drain
- Abandoned/inactive outfall
- 4 ft MLLW
- LDW Superfund Boundary
- King Co tax parcel
- Federal Navigation Channel
- River mile

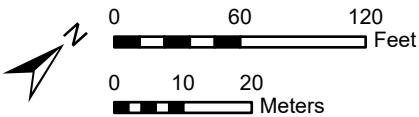
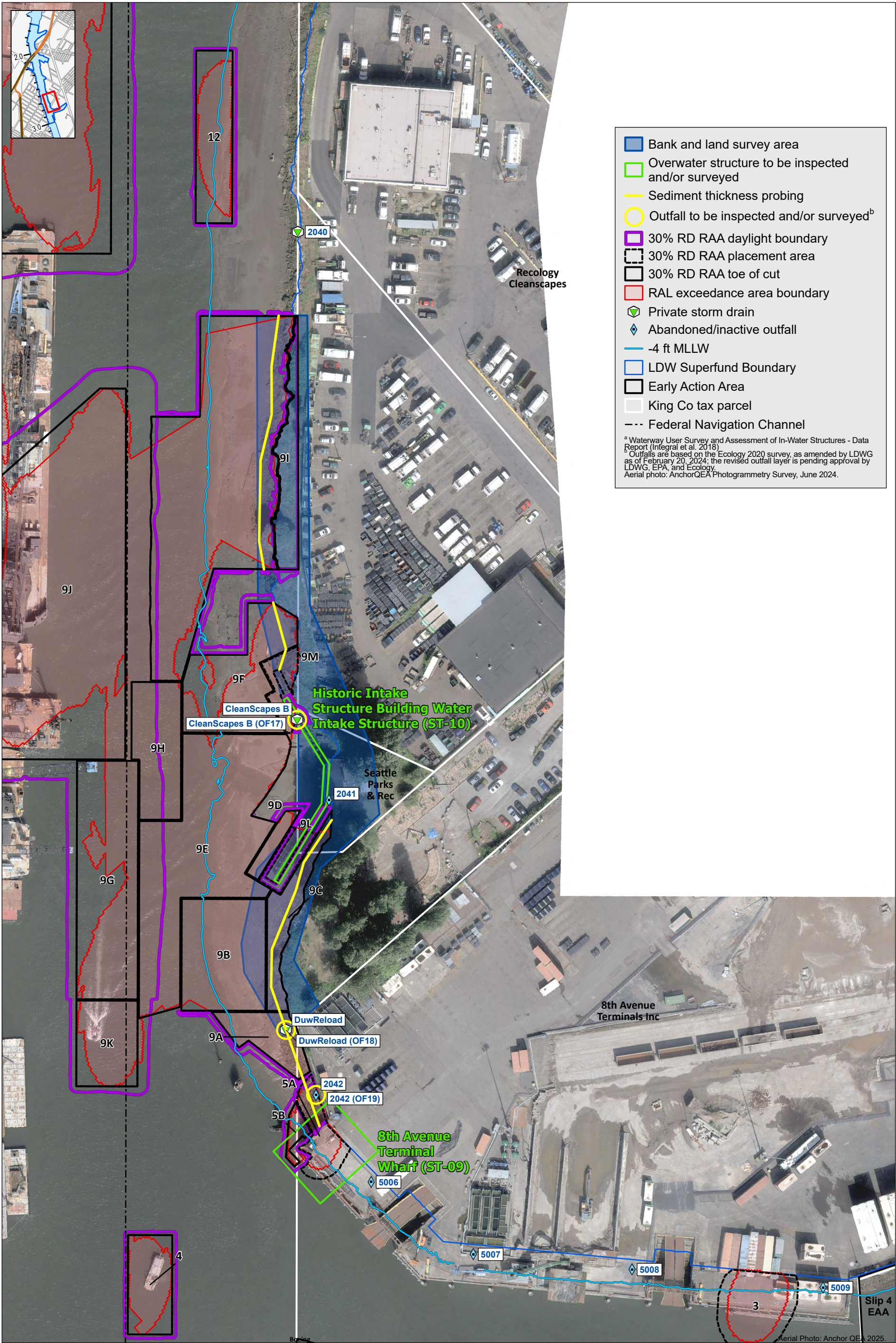
^a Waterway User Survey and Assessment of In-Water Structures - Data Report (Integral et al. 2018)
^b Outfalls are based on the Ecology 2020 survey, as amended by LDWG as of February 20, 2024; the revised outfall layer is pending approval by LDWG, EPA, and Ecology.
Aerial photo: AnchorQEA Photogrammetry Survey, June 2024.



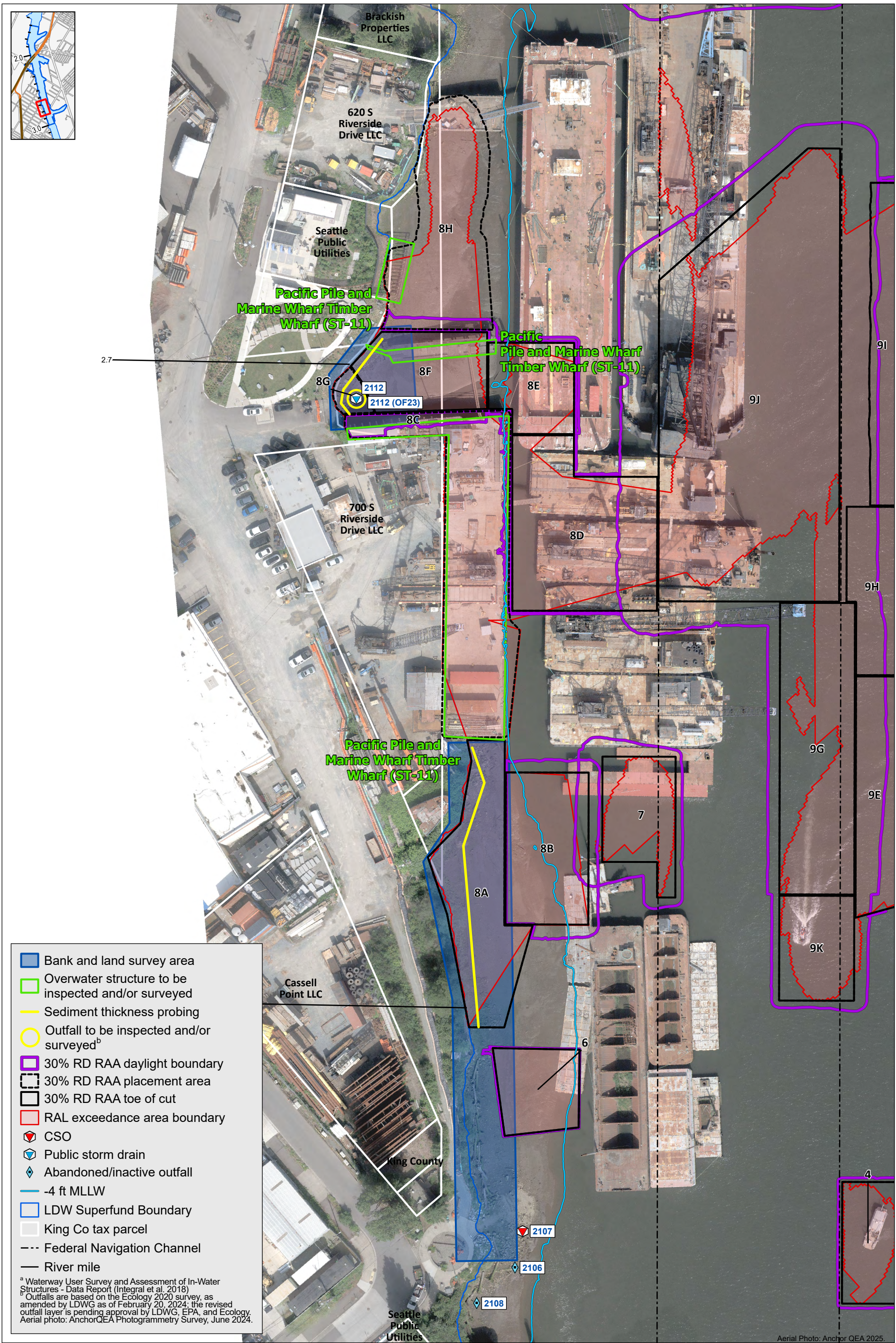
Map 5-2f. Phase III PDI Engineering Data Investigation Locations, RAAs 16 and 17

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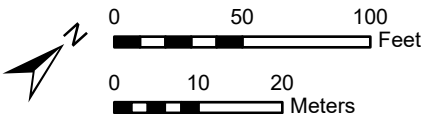
Prepared by CEH 7/8/2026; I:\Client\LDWG\Work_Orders\AOC5 Middle Reach Design\Maps and Analysis\Phase 3 QAPP Addendum\Phase 3 QAPP Addendum.aprx Map 5-2 7569 Shoreline survey areas - portrait



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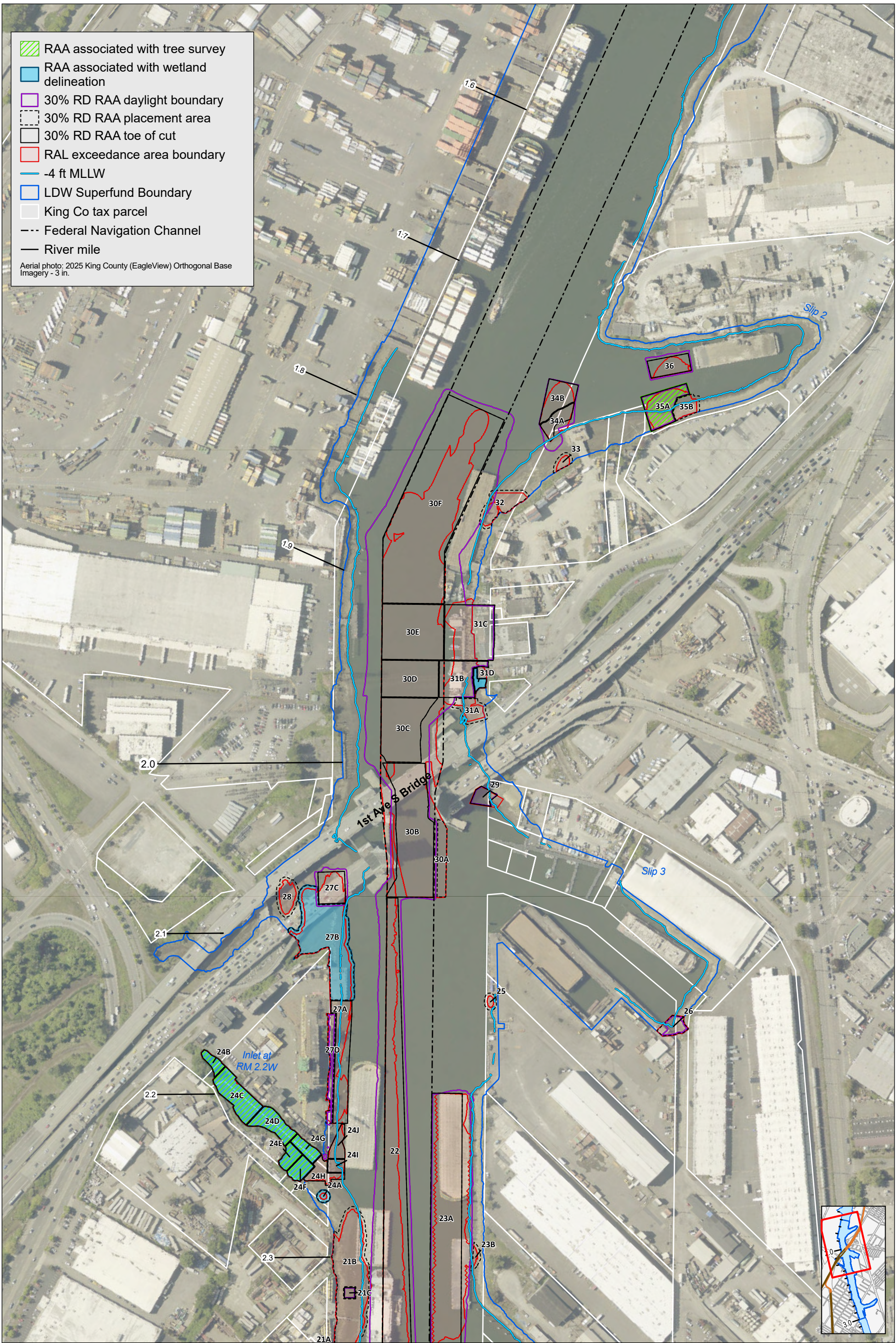
Lower Duwamish Waterway Group
City of Seattle / King County / The Boeing Company

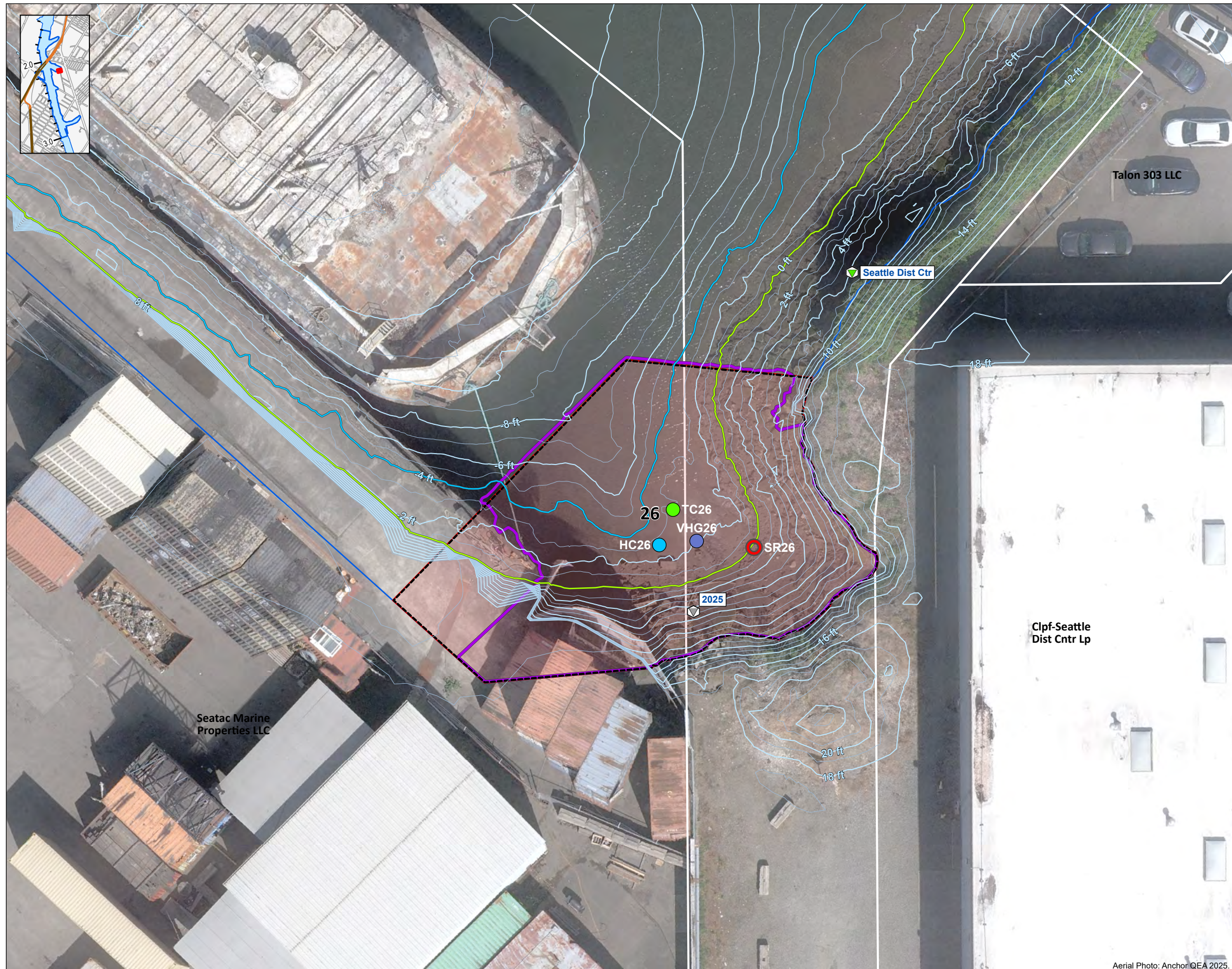


Map 5-2h. Phase III PDI Engineering Data Investigation Locations, RAA 8

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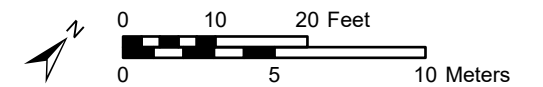
JULY 8, 2026





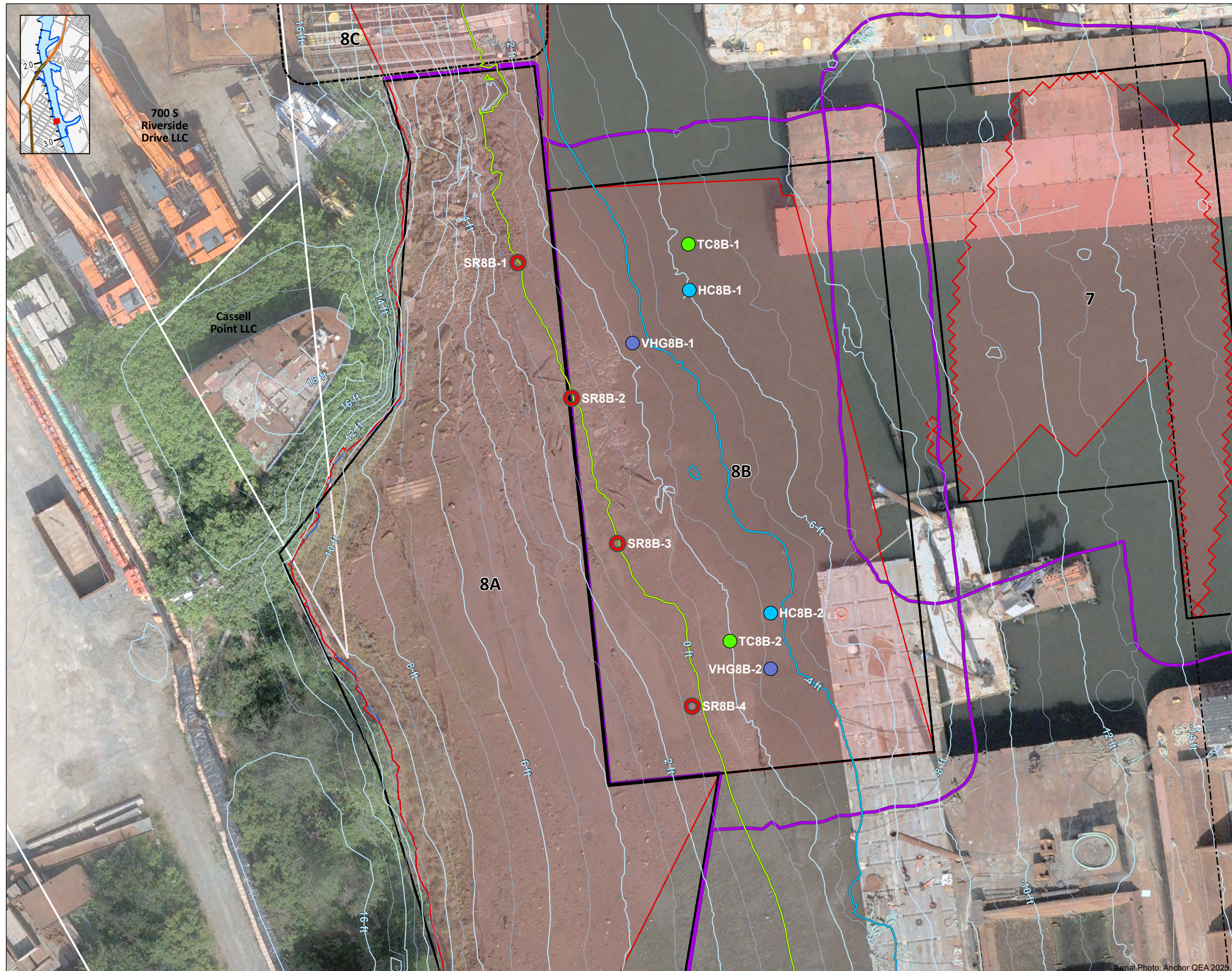
- Vertical Hydraulic Gradient test location
 - Vertical Hydraulic Conductivity core location
 - Treatability core location
 - Seepage ring location
 - 30% RD RAA daylight boundary
 - 30% RD RAA placement area
 - RAL exceedance area boundary
 - Private storm drain
 - Pipe of unresolved origin and/or use
- Bathymetry (feet MLLW)**
- 2 ft interval
 - 1 ft interval
 - 0 ft MLLW
 - 4 ft MLLW
- LDW Superfund Boundary
 - King Co tax parcel

^a Waterway User Survey and Assessment of In-Water Structures - Data Report (Integral et al. 2018)
^b Outfalls are based on the Ecology 2020 survey, as amended by LDWG as of February 20, 2024; the revised outfall layer is pending approval by LDWG, EPA, and Ecology.
Aerial photo: AnchorQEA Photogrammetry Survey, June 2024.



Map 5-4a. Phase III PDI Cap Design Investigation Locations, Area 26

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- Vertical Hydraulic Gradient test location
- Vertical Hydraulic Conductivity core location
- Treatability core location
- Seepage ring location
- 30% RD RAA daylight boundary
- 30% RD RAA placement area
- 30% RD RAA toe of cut
- RAL exceedance area boundary
- Bathymetry (feet MLLW)**
 - 2 ft interval
 - 1 ft interval
 - 0 ft MLLW
 - 4 ft MLLW
- LDW Superfund Boundary
- King Co tax parcel
- Federal Navigation Channel

^a Waterway User Survey and Assessment of In-Water Structures - Data Report (Integral et al. 2018)
^b Outfalls are based on the Ecology 2020 survey, as amended by LDWG as of February 20, 2024; the revised outfall layer is pending approval by LDWG, EPA, and Ecology.
Aerial photo: AnchorQEA Photogrammetry Survey, June 2024.

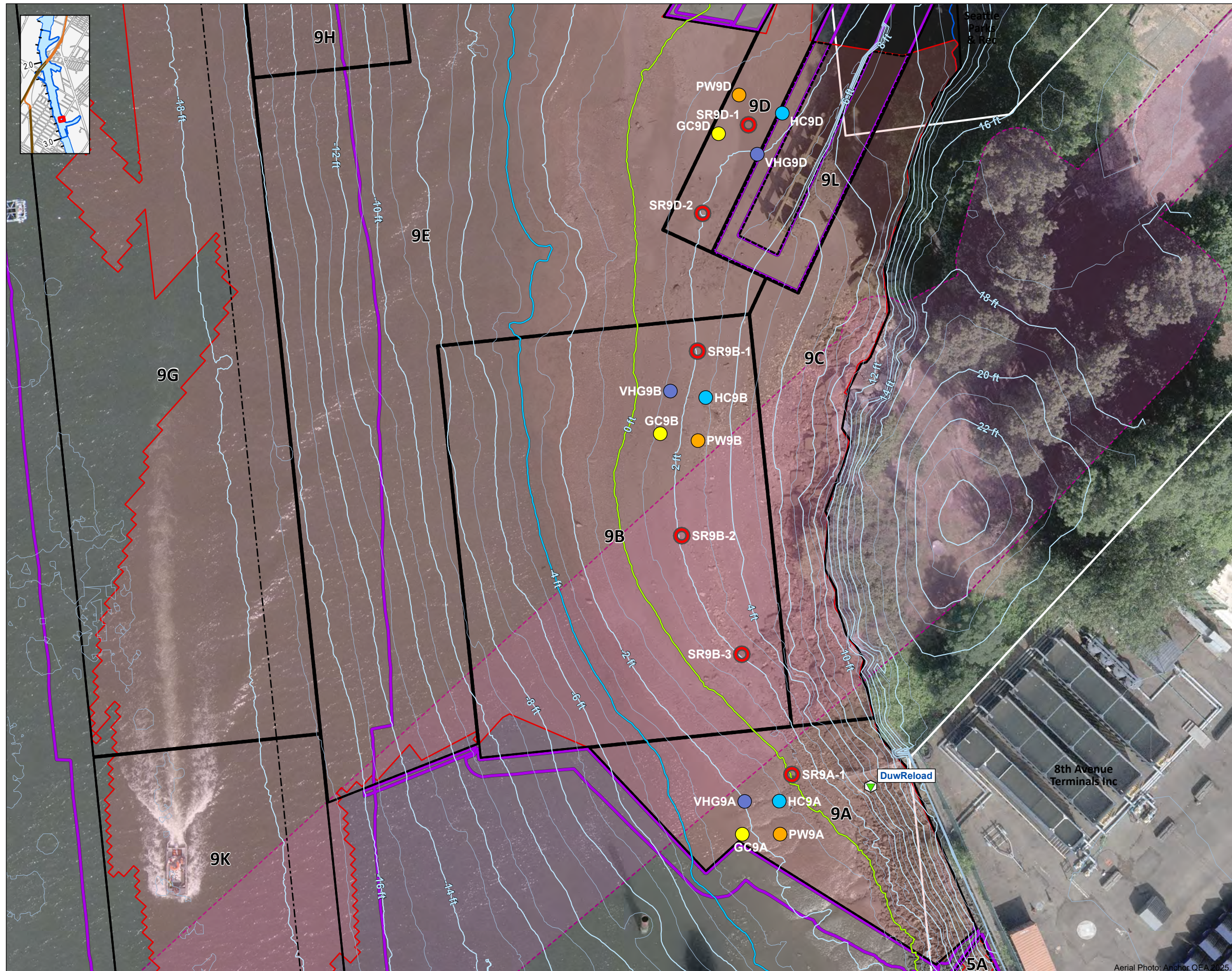


Map 5-4b. Phase III PDI Cap Design Investigation Locations, Area 8B

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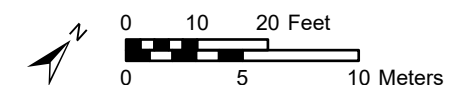
JULY 8, 2026

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- Vertical Hydraulic Gradient test location
 - Vertical Hydraulic Conductivity core location
 - Geochemistry core location
 - Porewater collection location
 - Seepage ring location
 - 30% RD RAA daylight boundary
 - 30% RD RAA placement area
 - 30% RD RAA toe of cut
 - RAL exceedance area boundary
 - Utility corridor
 - Private storm drain
- Bathymetry (feet MLLW)**
- 2 ft interval
 - 1 ft interval
 - 0 ft MLLW
 - 4 ft MLLW
- LDW Superfund Boundary
 - King Co tax parcel
 - Federal Navigation Channel

^a Waterway User Survey and Assessment of In-Water Structures - Data Report (Integral et al. 2018)
^b Outfalls are based on the Ecology 2020 survey, as amended by LDWG as of February 20, 2024; the revised outfall layer is pending approval by LDWG, EPA, and Ecology.
Aerial photo: AnchorQEA Photogrammetry Survey, June 2024.



Map 5-4c. Phase III PDI Cap Design Investigation Locations, Area 9B

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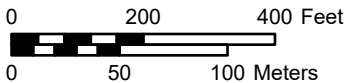
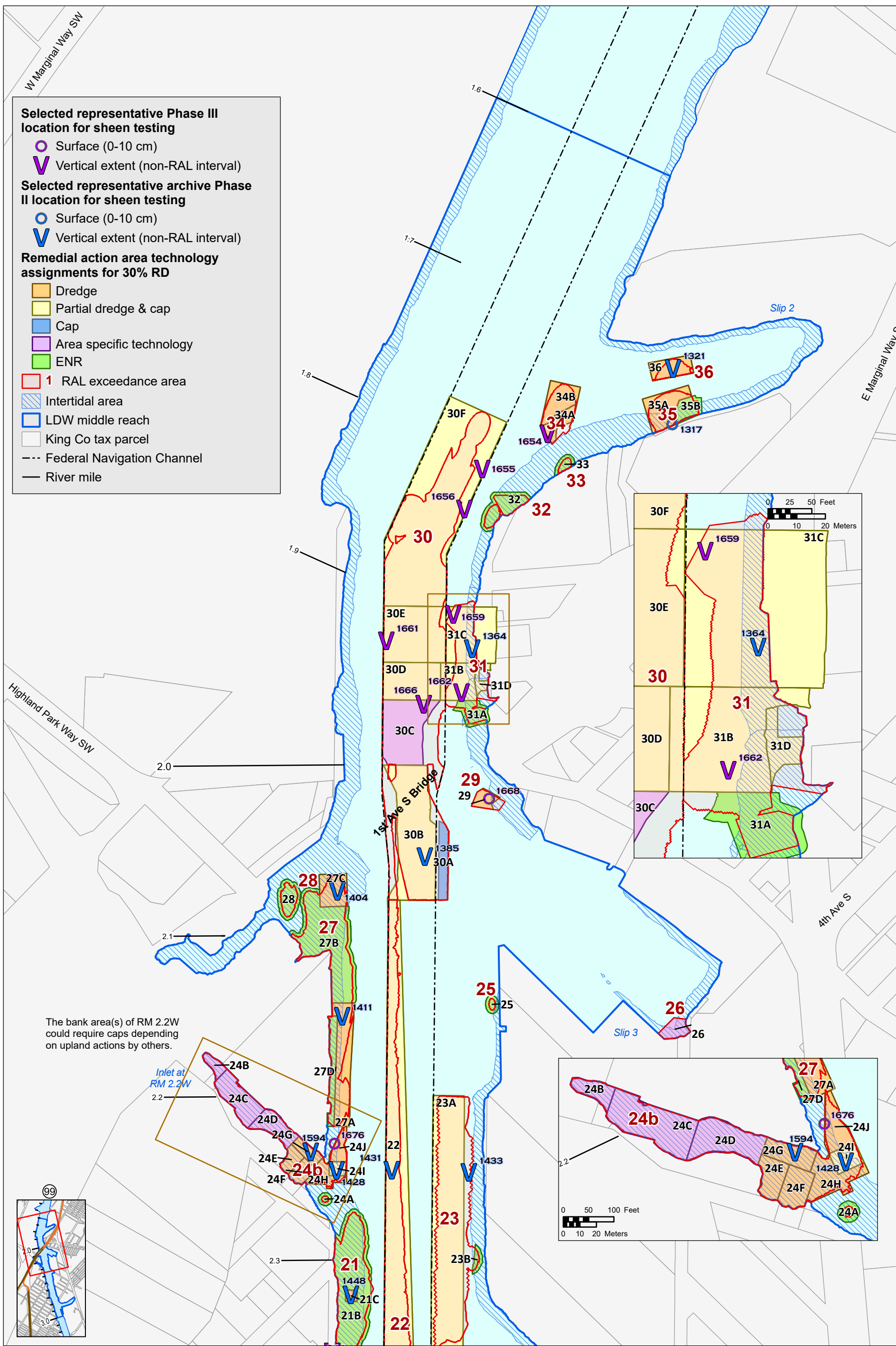


Figure 5-5a. Selected Phase III or Archive Phase II Locations for Sheen Testing, RM 1.6 to RM 2.3

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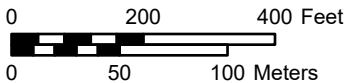
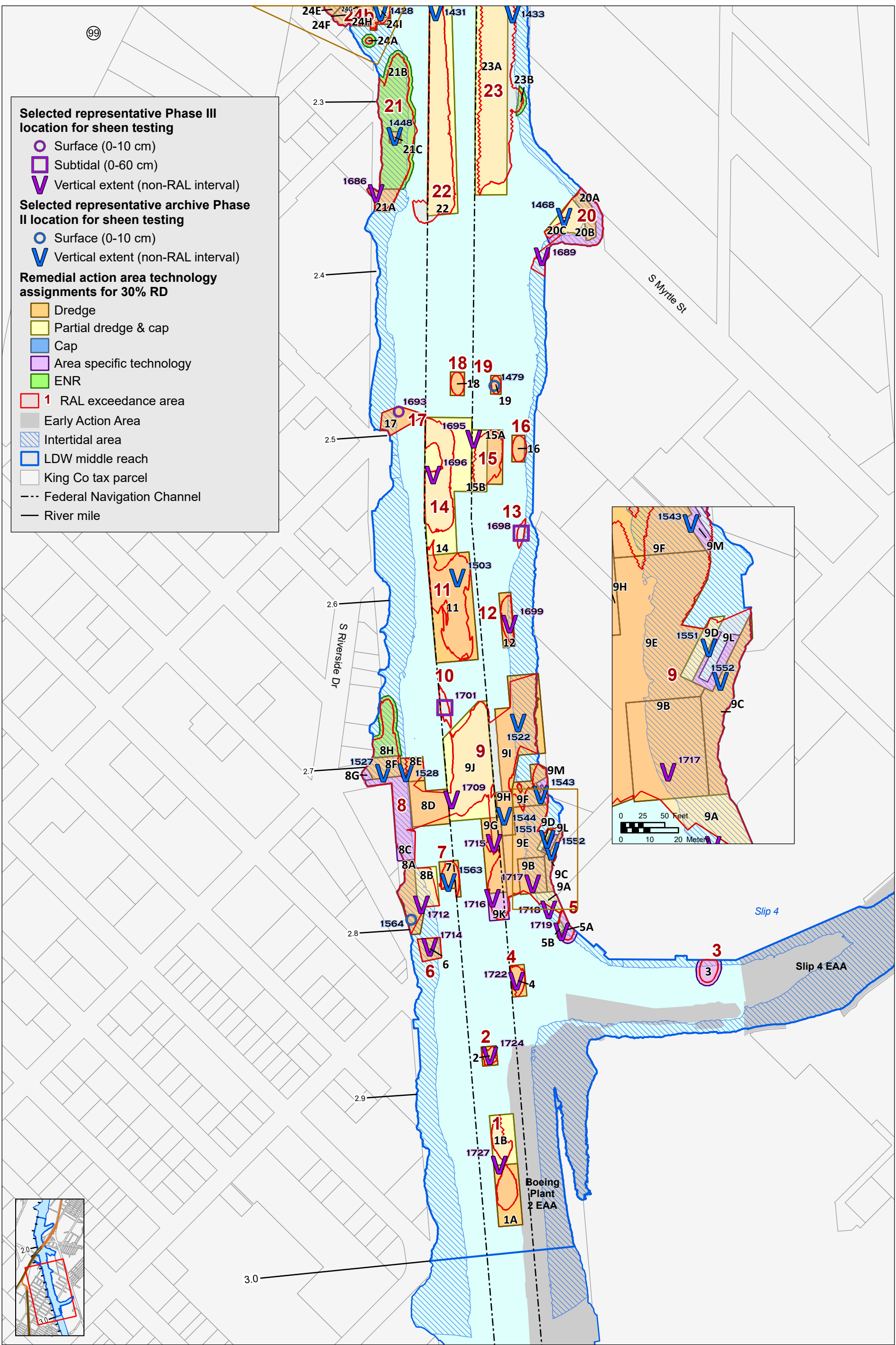
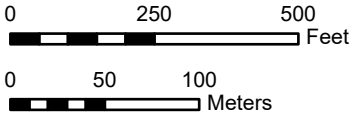
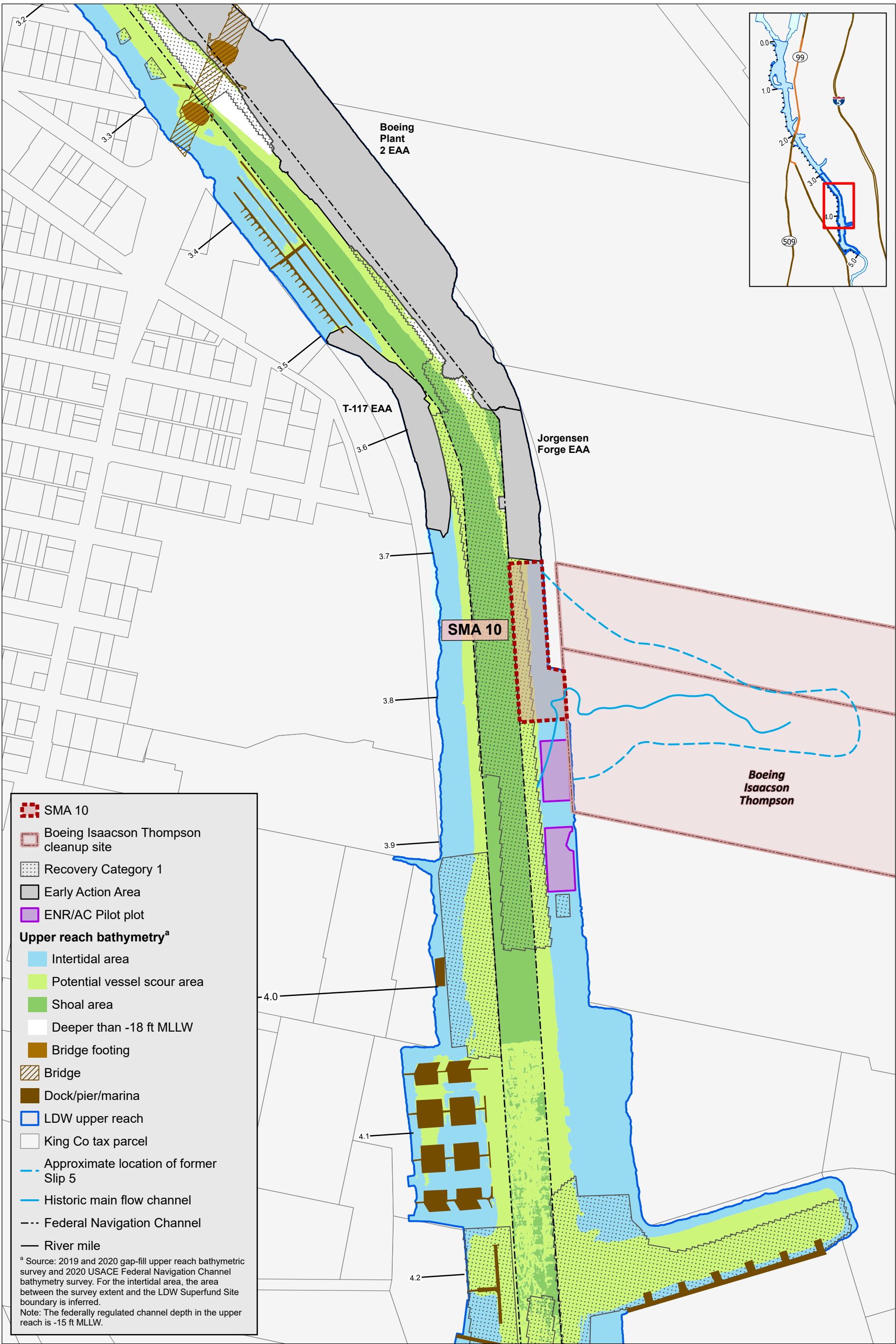
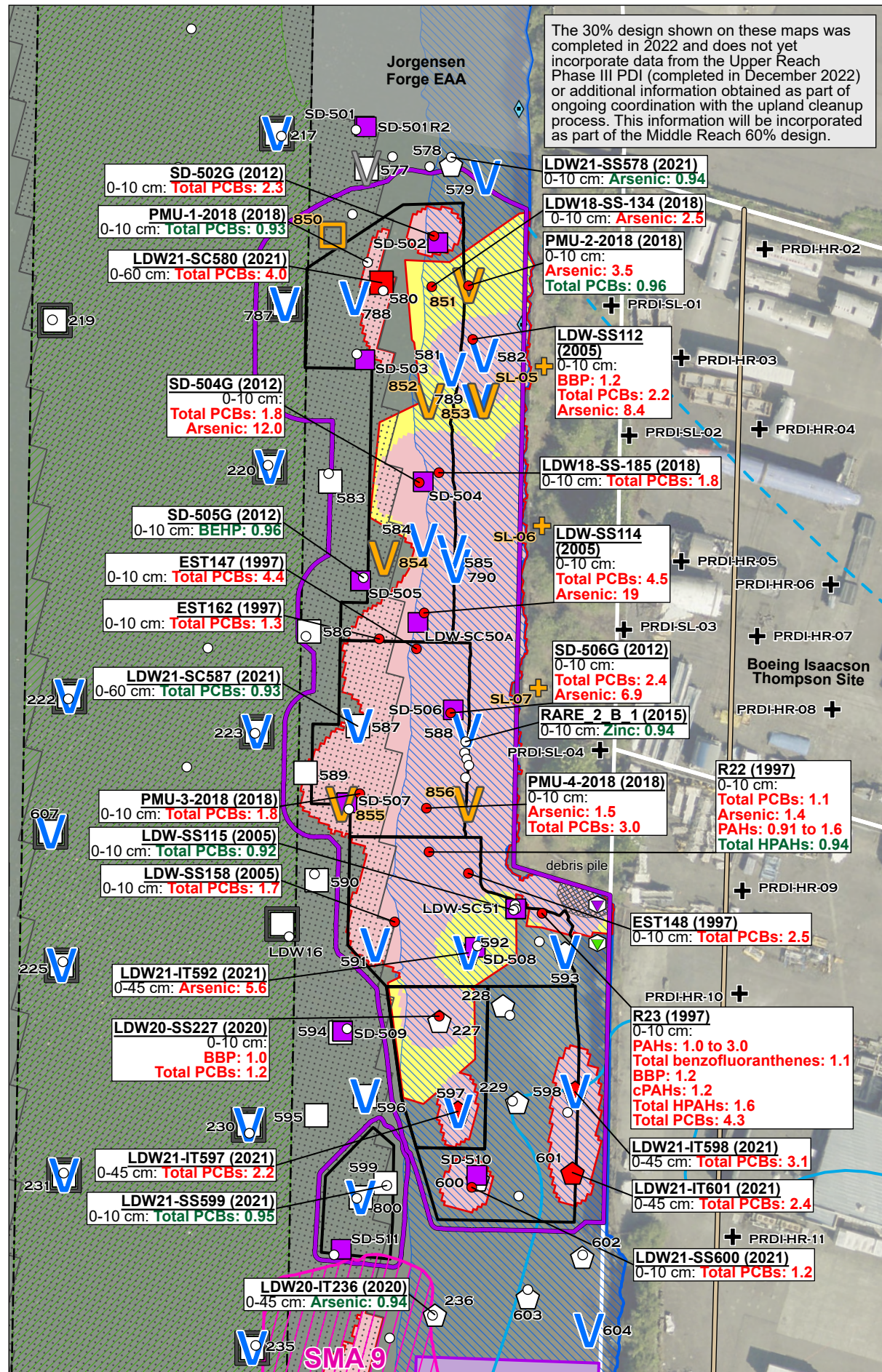


Figure 5-5b. Selected Phase III or Archive Phase II Locations for Sheen Testing, RM 2.3 to RM 3.0

Prepared by CEH 7/1/2026; I:\Client\LDWG\Work_Orders\AOC5 Middle Reach Design\Maps and Analyses\Phase 3 QAPP Addendum\Phase 3 QAPP Addendum\Map D-1 1794 SMA 10 vicinity



Map D-1. Overview of SMA 10 in the Upper Reach



SMA 10 Subtidal (RM 3.7-3.85 E)		217	SD-501	SD-501R2	577	787	788	SD-503	220	SD-505	854	223	587	SD-507	855	LDW16	591	SD-509	230	596	800	SD-511
Location	Mudline	14.5	-12.5	-11.4	11.3	14.0	11.9	-12.5	14.3	-11.6	8.4	14.3	9.5	-11.8	10.6	-13.3	6.0	-11.0	13.2	8.0	7.9	-9.6
Core Target	Older Loc.	-18 ft	-	-	-	6 ft	8 ft	-	-18 ft	-	15 ft	-18 ft	6 ft	-	-	-27 ft	6.5 ft	-	-18 ft	6 ft	8 ft	-
-6 to -7 ft																						
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-26 to -27 ft																						
-27 to -28 ft																						

SMA 10 Intertidal (RM 3.7-3.85 E)		579	SD-502	851	581	582	852	789	853	SD-504	584	585	790	LDW-SC50A	SD-506	588	856	LDW-SC51	592	SD-508	593	597	598	SD-510	604
Location	Mudline	-0.7	-3.5	-1.0	-2.8	-0.2	-3.2	-0.1	0.4	-4.7	-3.8	-1.8	-0.3	-3.7	-2.2	0.6	0.6	0.7	-1.7	-2.9	-1.4	-0.2	3.2	-0.1	4.9
Core Target	Older Loc.	6.5 ft	-	-15 ft	6 ft	6.5 ft	-15 ft	-12 ft	-15 ft	-	6 ft	6.5 ft	-12 ft	-	-	6.5 ft	-15 ft	-	-1.8	-	6.5 ft	6.5 ft	6.5 ft	-	6.5 ft
+3 to +2 ft																									
+2 to +1 ft																									
+1 to 0 ft																									
0 to -1 ft																									
-1 to -2 ft																									
-2 to -3 ft																									
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-13 to -14 ft																									
-14 to -15 ft																									
-15 to -16 ft																									

Phase 3 QAPP locations

- Subtidal (0-60 cm)
- Vertical extent (non-RAL interval)

Proposed Boeing Isaacson Thompson PRDI locations

- Soil sample
- Requested additional upland soil boring locations

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
- Vertical extent (non-RAL interval)
- Vertical archive
- Shoaling core
- Approximate location of proposed Permeable Reactive Barrier (PRB)

Legend for Vertical Extent Cores

- Area
- Loc No.
- Core Intervals
- Legend for Vertical Extent Cores

- EOF/storm drain
- Private storm drain
- Abandoned/inactive outfall
- RAL exceedance area boundary
- Combined surface and subsurface sediment PCB indicator kriging RAL exceedance area
- Additional Thiessen polygon RAL exceedance area for other COCs
- 30% RD RAA boundary
- 30% RD RAA toe of cut
- Upper reach SMA Boundary
- Early Action Area
- Recovery Category 1
- ENR/AC Pilot plot
- Debris pile
- Intertidal area
- Shoal
- LDW upper reach
- King Co tax parcel
- Approximate location of former Slip 5
- Historic main flow channel
- Federal Navigation Channel

Map D-2. SMA 10 in the Upper Reach with RAL Exceedances and Vertical Extent Data in the Design Dataset

QAPP ADDENDUM FOR PHASE III OF THE PRE-DESIGN INVESTIGATION OF THE LDW MIDDLE REACH

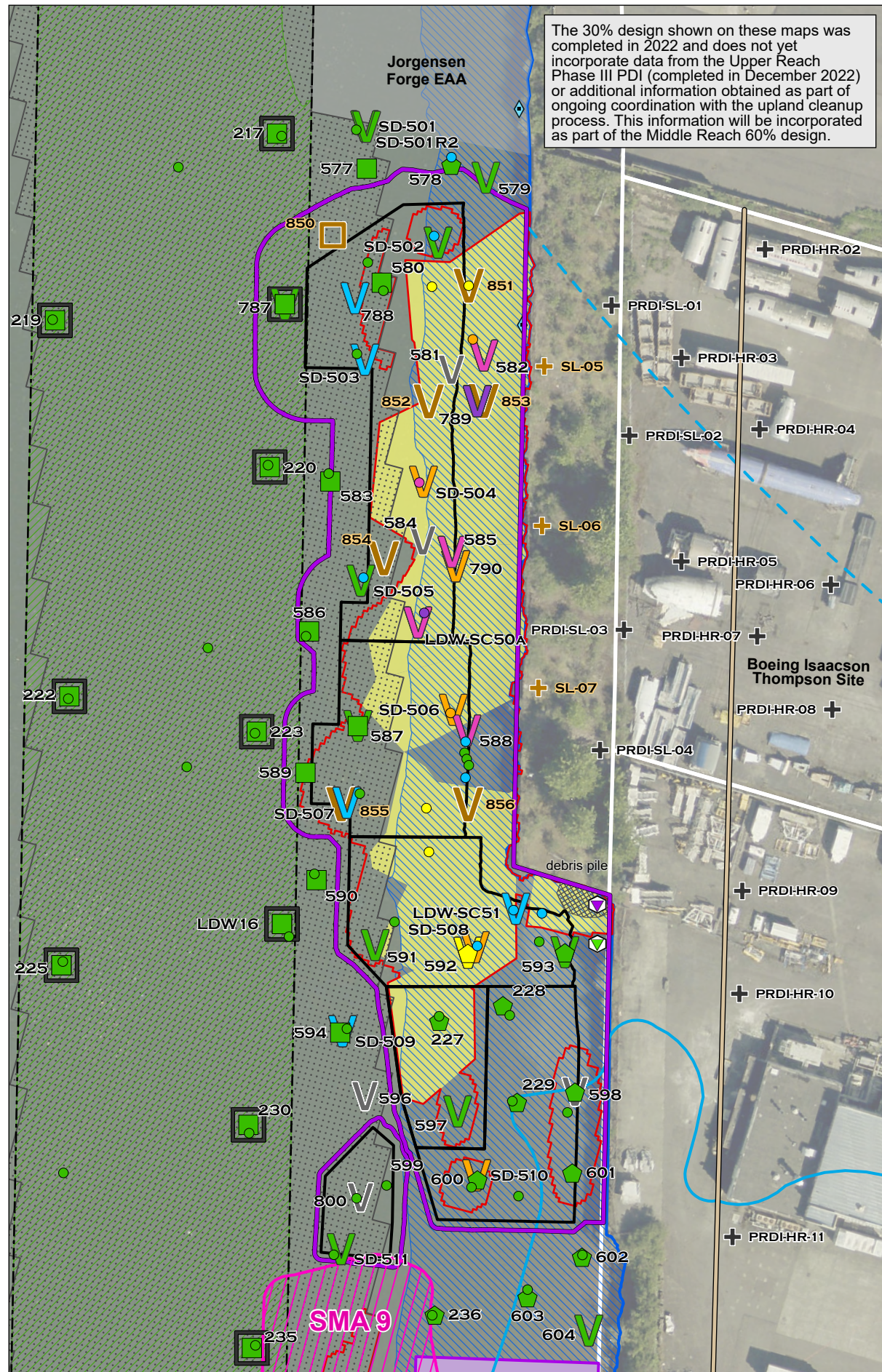
JULY 8, 2026

ANCHOR QEA

BARR

Lower Duwamish Waterway Group

City of Seattle / King County / The Boeing Company



SMA 10 Subtidal (RM 3.7-3.85 E)												
Location	217	SD-501	SD-501R2	577	787	788	SD-503	220	SD-505	854	223	587
Mudline	-14.5	-12.5	-11.4	-11.3	-14.0	-11.9	-12.5	-14.3	-11.6	-8.4	-14.3	-9.5
Core Target	-18 ft	-	-	6 ft	-26 ft	8 ft	-	-18 ft	-	15 ft	-18 ft	6 ft
Older Loc.	-	-	-	-	580	-	-	-	-	-	-	-
-6 to -7 ft												
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SMA 10 Intertidal (RM 3.7-3.85 E)												
Location	579	SD-502	851	581	582	852	789	SD-504	584	790	LDW-SC50A	SD-506
Mudline	-0.7	-3.5	-1.0	-2.8	-0.2	-3.2	-0.1	0.4	-4.7	-3.8	-1.8	-0.3
Core Target	6.5 ft	-	-15 ft	6 ft	6.5 ft	-15 ft	-12 ft	-15 ft	-	6 ft	6.5 ft	-12 ft
Older Loc.	-	-	-	-	-	-	-	-	-	-	-	-
+4 to 5 ft												
+3 to +4 ft												
+3 to 2 ft												
+2 to +1 ft												
+1 to 0 ft												
0 to -1 ft												
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-15 to -16 ft												

