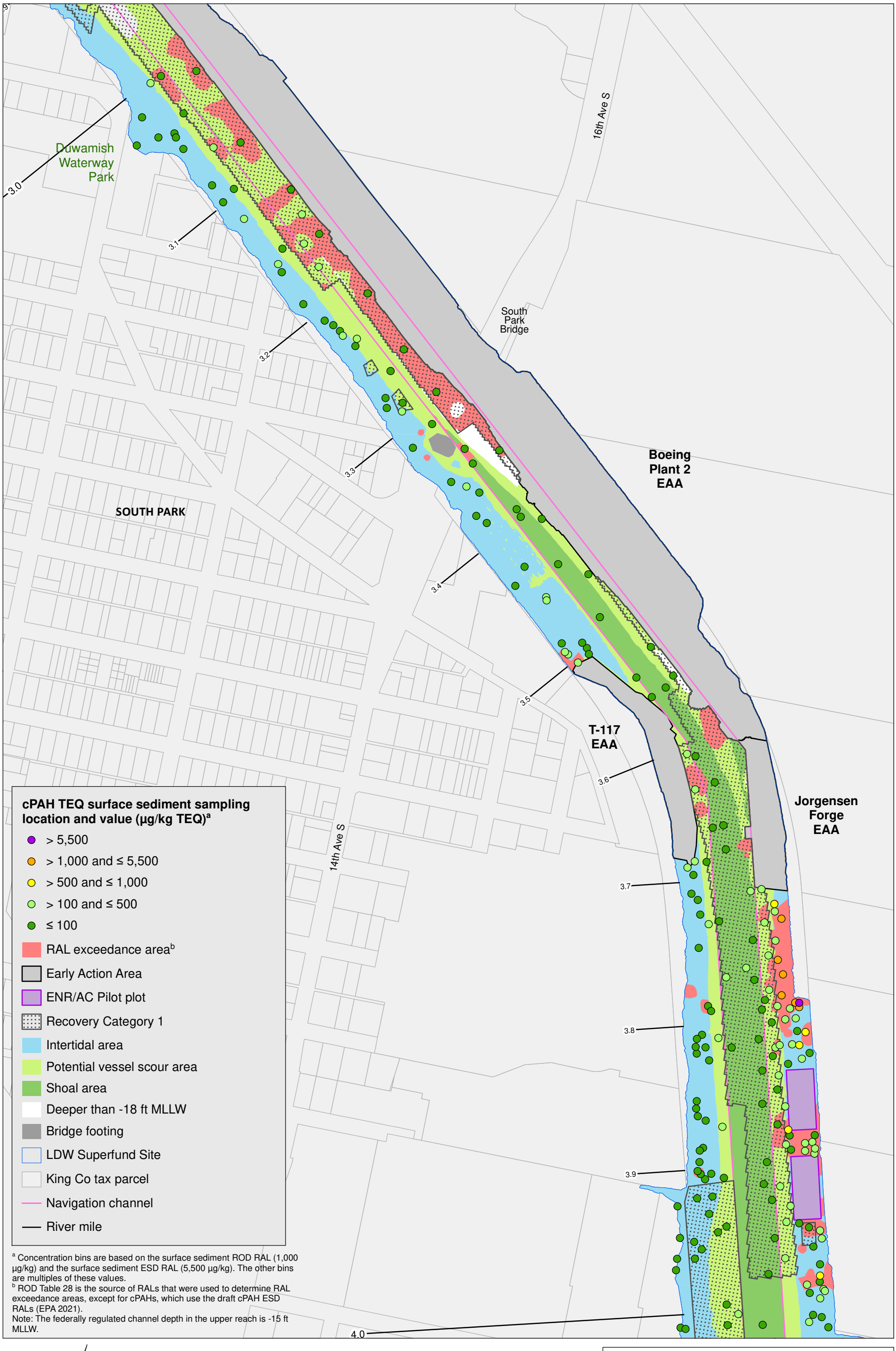
Duwamish Waterway Park
3.0
3.1
3.2
3.3
3.4
3.5
3.6
3.7
3.8
3.9
4.0
16th Ave S
South Park Bridge
SOUTH PARK
14th Ave S
Boeing Plant 2 EAA
T-117 EAA
Jorgensen Forge EAA
cPAH TEQ surface sediment sampling location and value (µg/kg TEQ)[a]
> 5,500
> 1,000 and ≤ 5,500
> 500 and ≤ 1,000
> 100 and ≤ 500
≤ 100
RAL exceedance area[b]
Early Action Area
ENR/AC Pilot plot
Recovery Category 1
Intertidal area
Potential vessel scour area
Shoal area
Deeper than -18 ft MLLW
Bridge footing
LDW Superfund Site
King Co tax parcel
Navigation channel
River mile
[a] Concentration bins are based on the surface sediment ROD RAL (1,000 µg/kg) and the surface sediment ESD RAL (5,500 µg/kg). The other bins are multiples of these values.
[b] ROD Table 28 is the source of RALs that were used to determine RAL exceedance areas, except for cPAHs, which use the draft cPAH ESD RALs (EPA 2021).
Note: The federally regulated channel depth in the upper reach is -15 ft MLLW.
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ANCHOR QEA
Lower Duwamish Waterway Group
Port of Seattle / City of Seattle / King County / The Boeing Company
N
0 250 500 Feet
0 40 80 120 160 200 Meters
Map A-6a. Surface sediment cPAH TEQs in the design dataset, RM 3.0 to RM 4.0
Pre-Design Investigation Data Evaluation Report for the LDW Upper Reach
JULY 15, 2022
Prepared by craigh, 7/15/22, W:\Projects\Duwamish AOC4\GIS\Maps and Analyses\Phase II\Data Evaluation Report\Appendix A\Map A-06a_7302 Dry wt concentrations - cPAH - Surface RM 3-4.mxd

East Marginal Way S

Slip 6

RECENTLY DREDGED - NO SAMPLES COLLECTED

4.0
4.1
4.2
4.3
4.4
4.5
4.6
4.7
4.8
4.9
5.0

Turning Basin

Norfolk EAA

cPAH TEQ surface sediment sampling location and value (µg/kg TEQ)[a]

- > 1,000 and ≤ 5,500
- > 500 and ≤ 1,000
- > 100 and ≤ 500
- ≤ 100
- RAL exceedance area[b]
- Early Action Area
- Boeing South Storm Drain removal area
- ENR/AC Pilot plot
- USACE 2018-2020
- Recovery Category 1
- Intertidal area
- Potential vessel scour area
- Shoal area
- Deeper than -18 ft MLLW
- Subtidal shallower than -18 ft MLLW with no subsurface RAL
- Area not covered by bathymetric survey
- LDW Superfund Site
- King Co tax parcel
- Navigation channel
- River mile

[a] Concentration bins are based on the surface sediment ROD RAL (1,000 µg/kg) and the surface sediment ESD RAL (5,500 µg/kg). The other bins are multiples of these values.
[b] ROD Table 28 is the source of RALs that were used to determine RAL exceedance areas, except for cPAHs, which use the draft cPAH ESD RALs (EPA 2021).
Note: The federally regulated channel depth in the upper reach is -15 ft MLLW.

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N

0 250 500 Feet

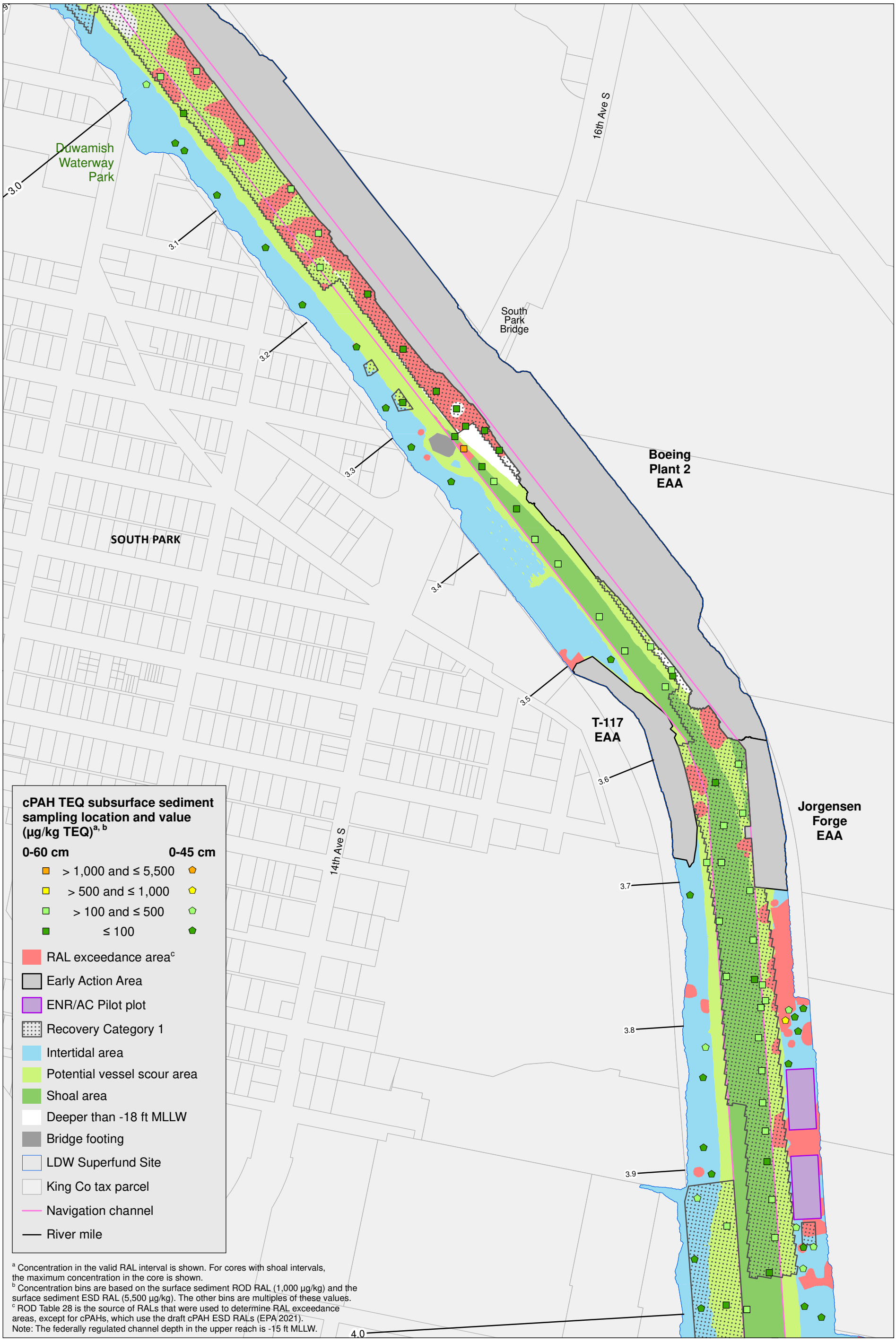
0 100 200 Meters

Map A-6b. Surface sediment cPAH TEQs in the design dataset, RM 4.0 to RM 5.0

PRE-DESIGN INVESTIGATION DATA EVALUATION REPORT FOR THE LDW UPPER REACH

JULY 15, 2022

Prepared by craigh, 7/15/22; W:\Projects\Duwamish AOC4\GIS\Maps and Analyses\Phase II\Data Evaluation Report\Appendix A\Map A-06b 7302 Dry wt concentrations - cPAH - Surface RM 4-5.mxd



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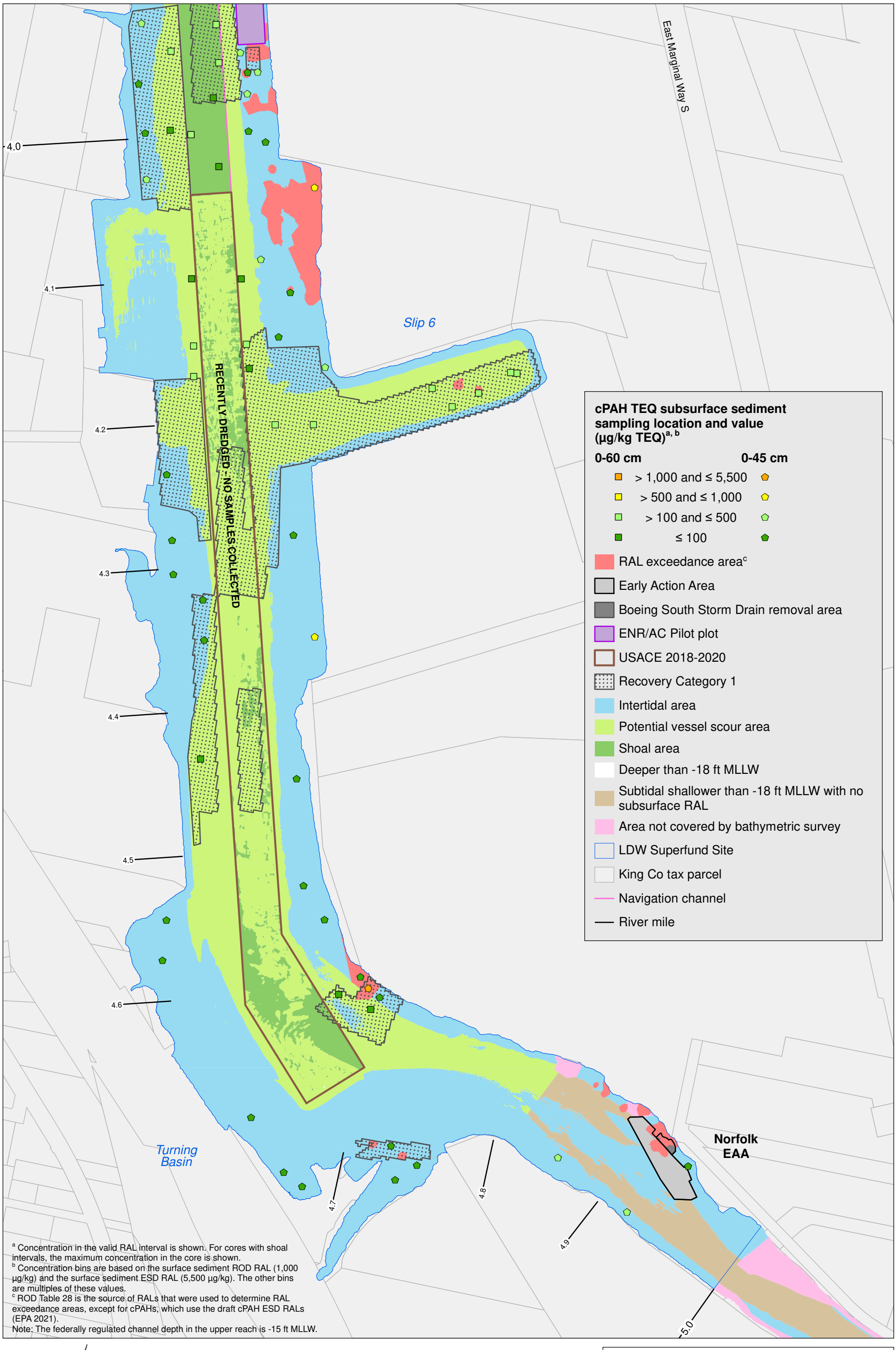
Map A-7a. Subsurface sediment cPAH TEQs in the design dataset, RM 3.0 to RM 4.0

PRE-DESIGN INVESTIGATION DATA EVALUATION REPORT FOR THE LDW UPPER REACH

JULY 15, 2022

Prepared by craigh, 7/15/22; W:\Projects\Duwamish AOC4\GIS\Maps and Analyses\Phase II\Data Evaluation Report\Appendix A\Map A-07a 7302 Dry wt concentrations - cPAH - Subsurface RM 3-4.mxd



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Map A-7b. Subsurface sediment cPAH TEQs in the design dataset, RM 4.0 to RM 5.0

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JULY 15, 2022

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Duwamish Waterway Park

3.0

3.1

3.2

3.3

3.4

3.5

3.6

3.7

3.8

3.9

4.0

16th Ave S

South Park Bridge

SOUTH PARK

14th Ave S

Boeing Plant 2 EAA

T-117 EAA

Jorgensen Forge EAA

Dioxin/furan TEQ surface sediment sampling location and value (ng/kg TEQ)[a]

- > 25
- > 20 and ≤ 25
- > 10 and ≤ 20
- > 5.0 and ≤ 10
- ≤ 5.0
- RAL exceedance area[b]
- Early Action Area
- ENR/AC Pilot plot
- Recovery Category 1
- Intertidal area
- Potential vessel scour area
- Shoal area
- Deeper than -18 ft MLLW
- Bridge footing
- LDW Superfund Site
- King Co tax parcel
- Navigation channel
- River mile

[a] Concentration bins are based on the surface sediment RAL (25 ng/kg). The other bins are multiples of these values.
[b] ROD Table 28 is the source of RALs that were used to determine RAL exceedance areas.
Note: The federally regulated channel depth in the upper reach is -15 ft MLLW.

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N

0 250 500 Feet

0 100 200 Meters

Map A-8a. Surface sediment dioxin/furan TEQs in the design dataset, RM 3.0 to RM 4.0

PRE-DESIGN INVESTIGATION DATA EVALUATION REPORT FOR THE LDW UPPER REACH

JULY 15, 2022

Prepared by craigh, 7/15/22: W:\Projects\Duwamish AOC4\GIS\Maps and Analyses\Phase II\Data Evaluation Report\Appendix A\Map A-08a 7302 Dry wt concentrations - DF - Surface RM 3-4.mxd

East Marginal Way S

4.0

4.1

4.2

4.3

4.4

4.5

4.6

4.7

4.8

4.9

5.0

Slip 6

RECENTLY DREDGED - NO SAMPLES COLLECTED

Turning Basin

Norfolk EAA

Dioxin/furan TEQ surface sediment sampling location and value (ng/kg TEQ)[a]

- > 25
- > 20 and ≤ 25
- > 10 and ≤ 20
- > 5.0 and ≤ 10
- ≤ 5.0
- RAL exceedance area[b]
- Early Action Area
- Boeing South Storm Drain removal area
- ENR/AC Pilot plot
- USACE 2018-2020
- Recovery Category 1
- Intertidal area
- Potential vessel scour area
- Shoal area
- Deeper than -18 ft MLLW
- Subtidal shallower than -18 ft MLLW with no subsurface RAL
- Area not covered by bathymetric survey
- LDW Superfund Site
- King Co tax parcel
- Navigation channel
- River mile

[a] Concentration bins are based on the surface sediment RAL (25 ng/kg). The other bins are multiples of these values.
[b] ROD Table 28 is the source of RALs that were used to determine RAL exceedance areas.
Note: The federally regulated channel depth in the upper reach is -15 ft MLLW.

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N

0 250 500 Feet

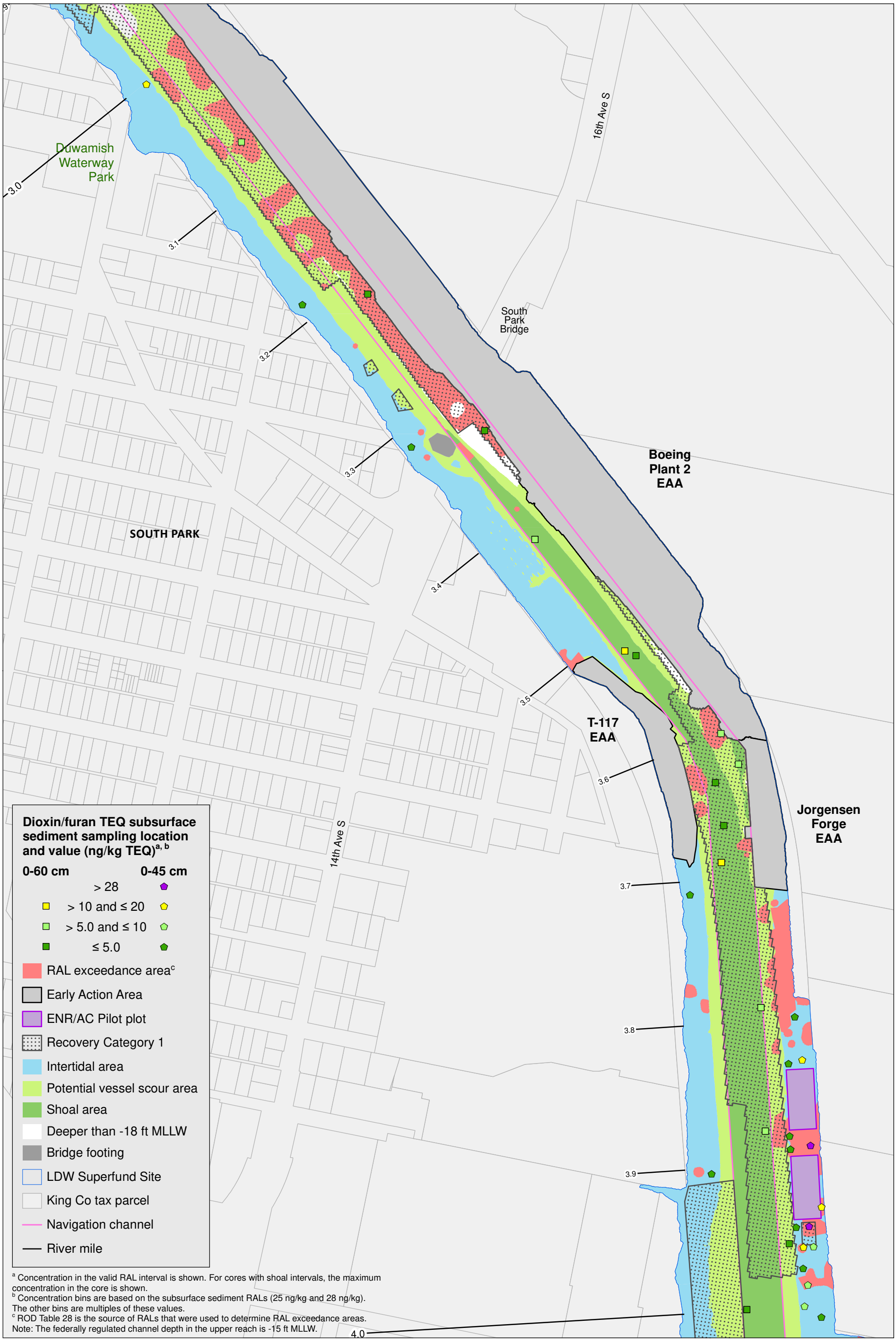
0 100 200 Meters

Map A-8b. Surface sediment dioxin/furan TEQs in the design dataset, RM 4.0 to RM 5.0

PRE-DESIGN INVESTIGATION DATA EVALUATION REPORT FOR THE LDW UPPER REACH

JULY 15, 2022

Prepared by craigh, 7/15/22; W:\Projects\Duwamish AOC4\GIS\Maps and Analyses\Phase II\Data Evaluation Report\Appendix A\Map A-08b 7302 Dry wt concentrations - DF - Surface RM 4-5.mxd



[a] Concentration in the valid RAL interval is shown. For cores with shoal intervals, the maximum concentration in the core is shown.
[b] Concentration bins are based on the subsurface sediment RALs (25 ng/kg and 28 ng/kg). The other bins are multiples of these values.
[c] ROD Table 28 is the source of RALs that were used to determine RAL exceedance areas.
Note: The federally regulated channel depth in the upper reach is -15 ft MLLW.

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N

0 250 500 Feet

0 100 200 Meters

Map A-9a. Subsurface sediment dioxin/furan TEQs in the design dataset, RM 3.0-4.0

PRE-DESIGN INVESTIGATION DATA EVALUATION REPORT FOR THE LDW UPPER REACH

JULY 15, 2022

Prepared by craigh, 7/15/22: W:\Projects\Duwamish AOC4\GIS\Maps and Analyses\Phase II\Data Evaluation Report\Appendix A\Map A-09a 7302 Dry wt concentrations - DF - Subsurface RM 3-4.mxd

East Marginal Way S

4.0

4.1

4.2

4.3

4.4

4.5

4.6

4.7

4.8

4.9

5.0

Slip 6

RECENTLY DREDGED - NO SAMPLES COLLECTED

Turning Basin

Norfolk EAA

Dioxin/furan TEQ subsurface sediment sampling location and value (ng/kg TEQ)[a, b]

0-60 cm	0-45 cm
> 28	
> 20 and ≤ 28	
> 10 and ≤ 20	
> 5.0 and ≤ 10	
≤ 5.0	

- RAL exceedance area[c]
- Early Action Area
- Boeing South Storm Drain removal area
- ENR/AC Pilot plot
- USACE 2018-2020
- Recovery Category 1
- Intertidal area
- Potential vessel scour area
- Shoal area
- Deeper than -18 ft MLLW
- Subtidal shallower than -18 ft MLLW with no subsurface RAL
- Area not covered by bathymetric survey
- LDW Superfund Site
- King Co tax parcel
- Navigation channel
- River mile

[a] Concentration in the valid RAL interval is shown. For cores with shoal intervals, the maximum concentration in the core is shown.
[b] Concentration bins are based on the subsurface sediment RALs (25 ng/kg and 28 ng/kg). The other bins are multiples of these values.
[c] ROD Table 28 is the source of RALs that were used to determine RAL exceedance areas.
Note: The federally regulated channel depth in the upper reach is -15 ft MLLW.

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N

0 250 500 Feet

0 100 200 Meters

Map A-9b. Subsurface sediment dioxin/furan TEQs in the design dataset, RM 4.0 to RM 5.0

PRE-DESIGN INVESTIGATION DATA EVALUATION REPORT FOR THE LDW UPPER REACH

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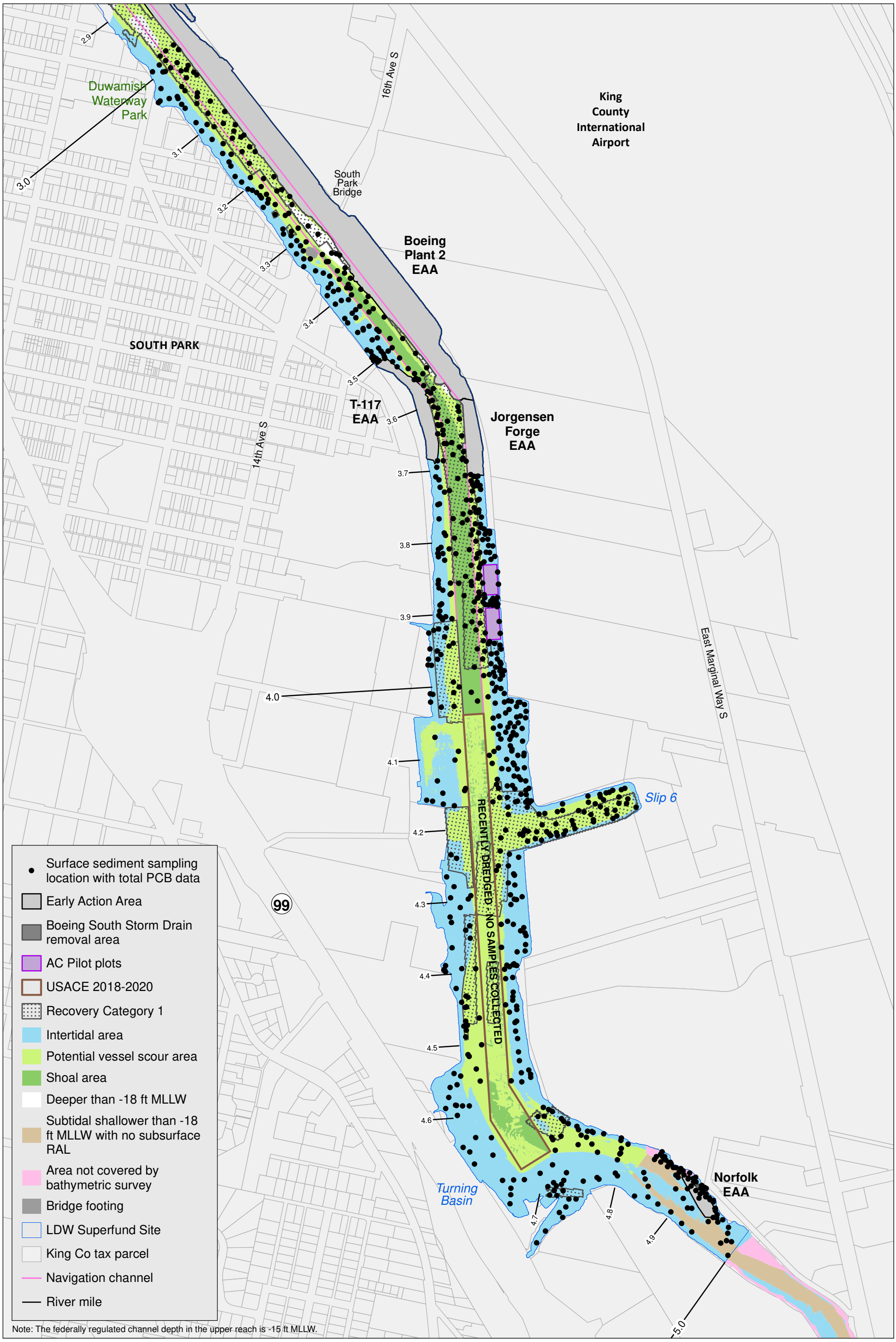
Prepared by craigh, 7/15/22: W:\Projects\Duwamish AOC4\GIS\Maps and Analyses\Phase II\Data Evaluation Report\Appendix A\Map A-09b 7302 Dry wt concentrations - DF - Subsurface RM 4-5.mxd



Note: The federally regulated channel depth in the upper reach is -15 ft MLLW.

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N

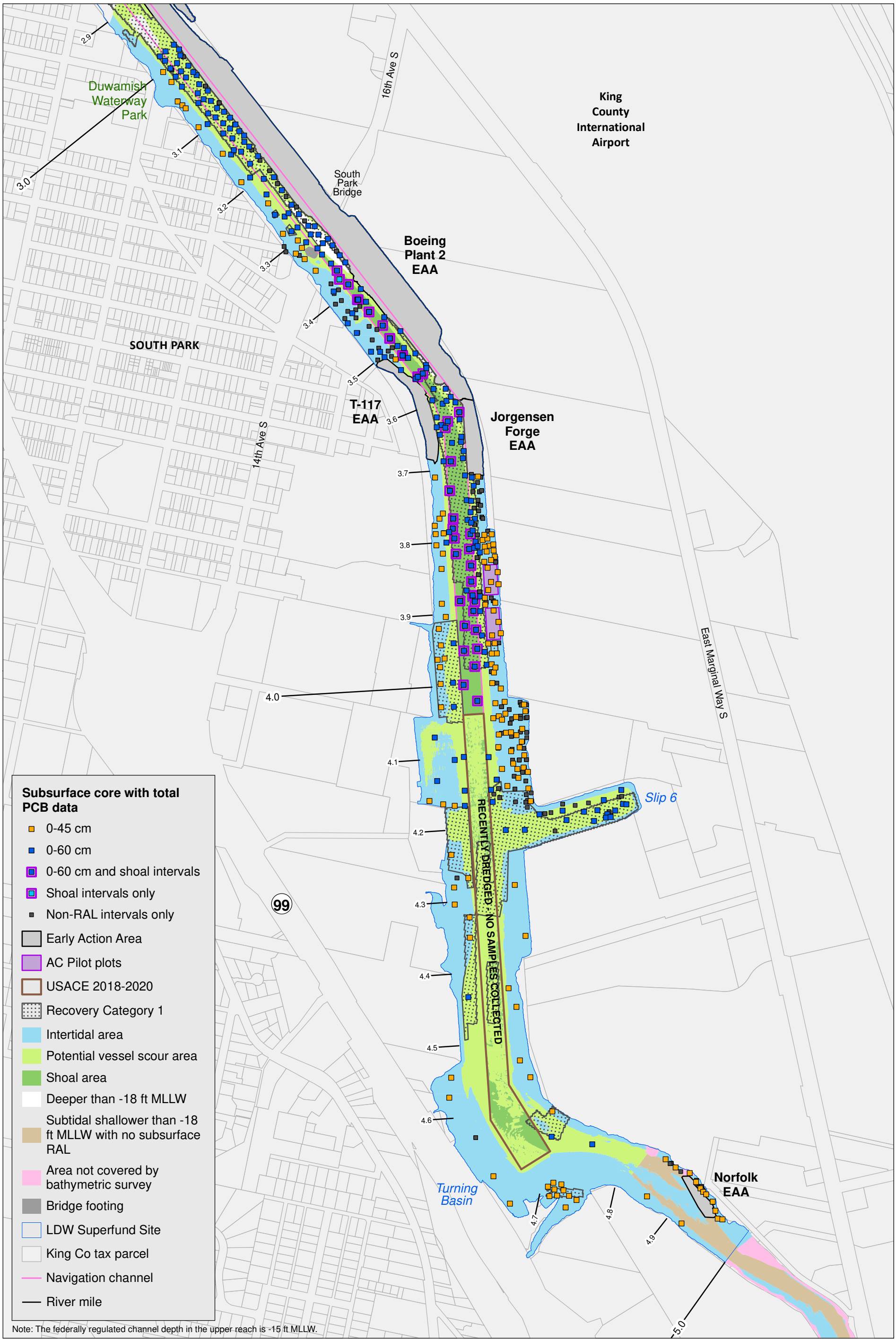
0 500 1,000 Feet

0 200 400 Meters

Map A-10. Areal coverage of total PCB data in the surface design dataset

PRE-DESIGN INVESTIGATION DATA EVALUATION REPORT FOR THE LDW UPPER REACH

JULY 15, 2022



Note: The federally regulated channel depth in the upper reach is -15 ft MLLW.

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N

0 500 1,000 Feet

0 200 400 Meters

Map A-11. Areal coverage of total PCB data in the subsurface design dataset

PRE-DESIGN INVESTIGATION DATA EVALUATION REPORT FOR THE LDW UPPER REACH

JULY 15, 2022

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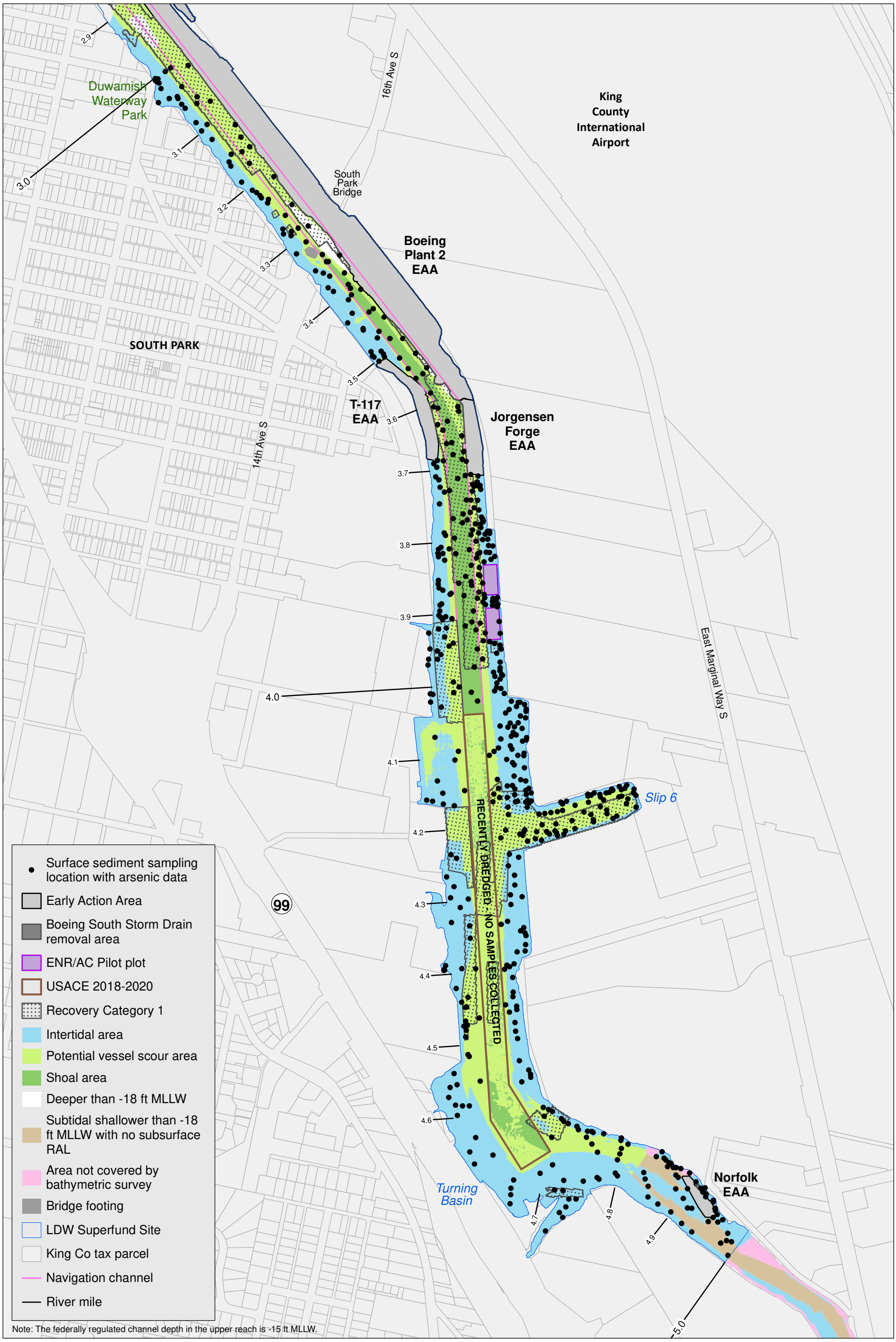

Prepared by craigh, 7/15/22: W:\Projects\Duwamish AOC4\GIS\Maps and Analyses\Phase II\Data Evaluation Report\Appendix A\Map A-12 7297 Areal coverage - As - Surface.mxd

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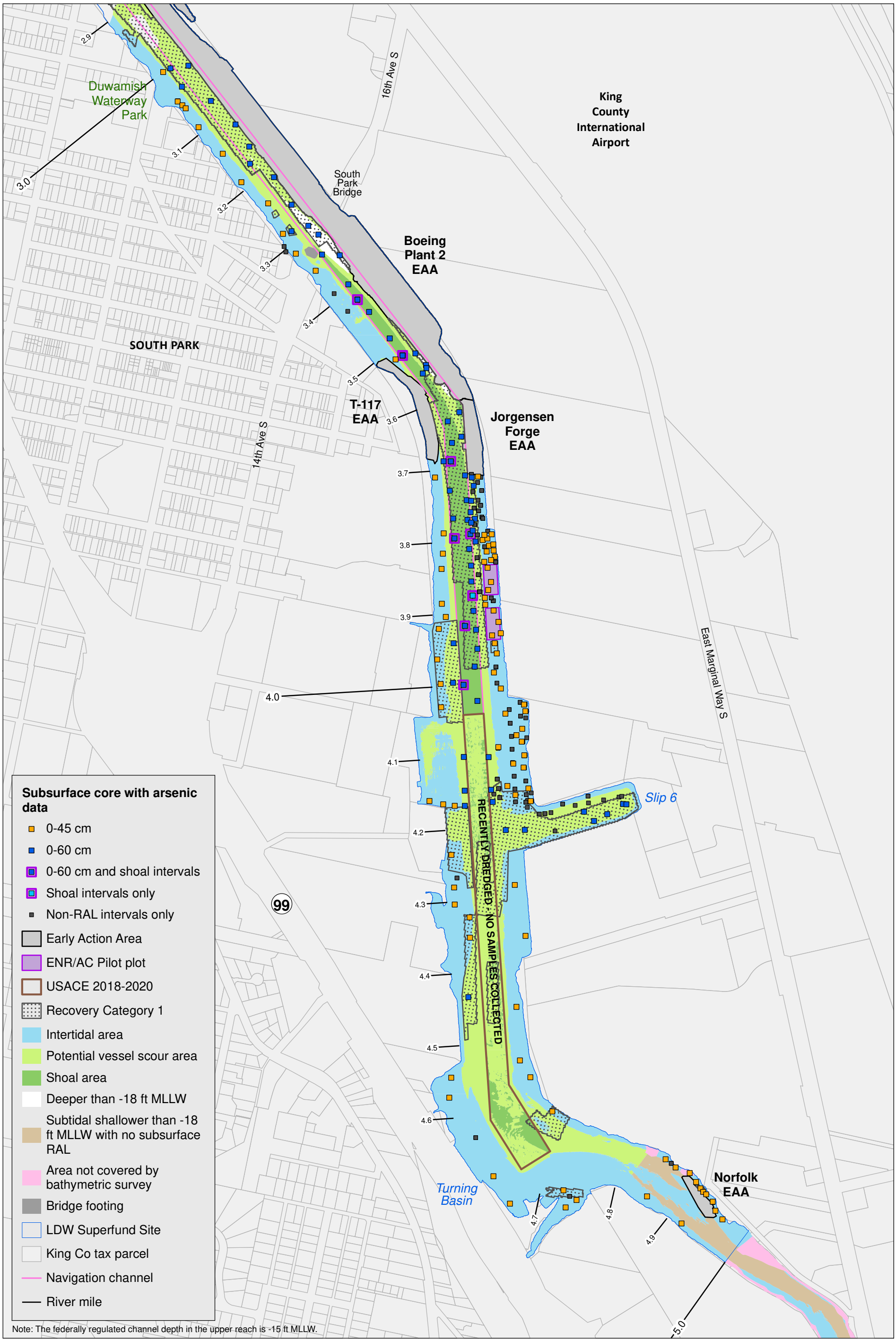
Map A-12. Areal coverage of arsenic data in the surface design dataset

PRE-DESIGN INVESTIGATION DATA EVALUATION REPORT FOR THE LDW UPPER REACH

JULY 15, 2022


Duwamish Waterway Park
16th Ave S
King County International Airport
South Park Bridge
Boeing Plant 2 EAA
SOUTH PARK
T-117 EAA
Jorgensen Forge EAA
14th Ave S
East Marginal Way S
RECENTLY DREDGED - NO SAMPLES COLLECTED
Slip 6
Turning Basin
Norfolk EAA
99
2.9
3.0
3.1
3.2
3.3
3.4
3.5
3.6
3.7
3.8
3.9
4.0
4.1
4.2
4.3
4.4
4.5
4.6
4.7
4.8
4.9
5.0
Subsurface core with arsenic data
0-45 cm
0-60 cm
0-60 cm and shoal intervals
Shoal intervals only
Non-RAL intervals only
Early Action Area
ENR/AC Pilot plot
USACE 2018-2020
Recovery Category 1
Intertidal area
Potential vessel scour area
Shoal area
Deeper than -18 ft MLLW
Subtidal shallower than -18 ft MLLW with no subsurface RAL
Area not covered by bathymetric survey
Bridge footing
LDW Superfund Site
King Co tax parcel
Navigation channel
River mile
Note: The federally regulated channel depth in the upper reach is -15 ft MLLW.
N
0 500 1,000 Feet
0 200 400 Meters
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Port of Seattle / City of Seattle / King County / The Boeing Company
Map A-13. Areal coverage of arsenic data in the subsurface design dataset
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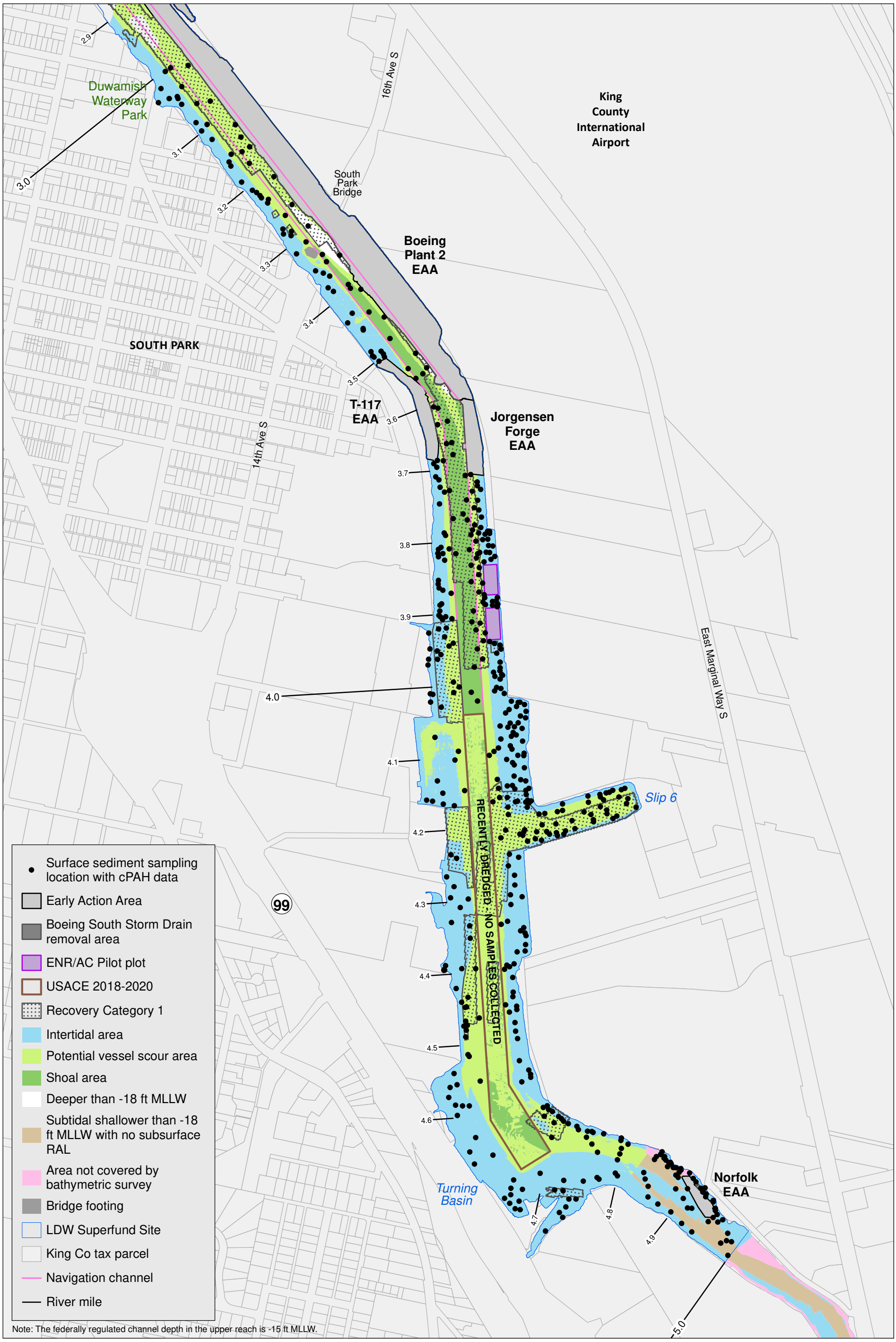
JULY 15, 2022
Prepared by craigh, 7/15/22: W:\Projects\Duwamish AOC4\GIS\Maps and Analyses\Phase II\Data Evaluation Report\Appendix A\Map A-13 7297 Areal coverage - As - Subsurface.mxd


Duwamish Waterway Park
16th Ave S
King County International Airport
South Park Bridge
Boeing Plant 2 EAA
SOUTH PARK
T-117 EAA
Jorgensen Forge EAA
14th Ave S
East Marginal Way S
RECENTLY DREDGED - NO SAMPLES COLLECTED
Slip 6
Turning Basin
Norfolk EAA
99
2.9
3.0
3.1
3.2
3.3
3.4
3.5
3.6
3.7
3.8
3.9
4.0
4.1
4.2
4.3
4.4
4.5
4.6
4.7
4.8
4.9
5.0
Surface sediment sampling location with cPAH data
Early Action Area
Boeing South Storm Drain removal area
ENR/AC Pilot plot
USACE 2018-2020
Recovery Category 1
Intertidal area
Potential vessel scour area
Shoal area
Deeper than -18 ft MLLW
Subtidal shallower than -18 ft MLLW with no subsurface RAL
Area not covered by bathymetric survey
Bridge footing
LDW Superfund Site
King Co tax parcel
Navigation channel
River mile
Note: The federally regulated channel depth in the upper reach is -15 ft MLLW.
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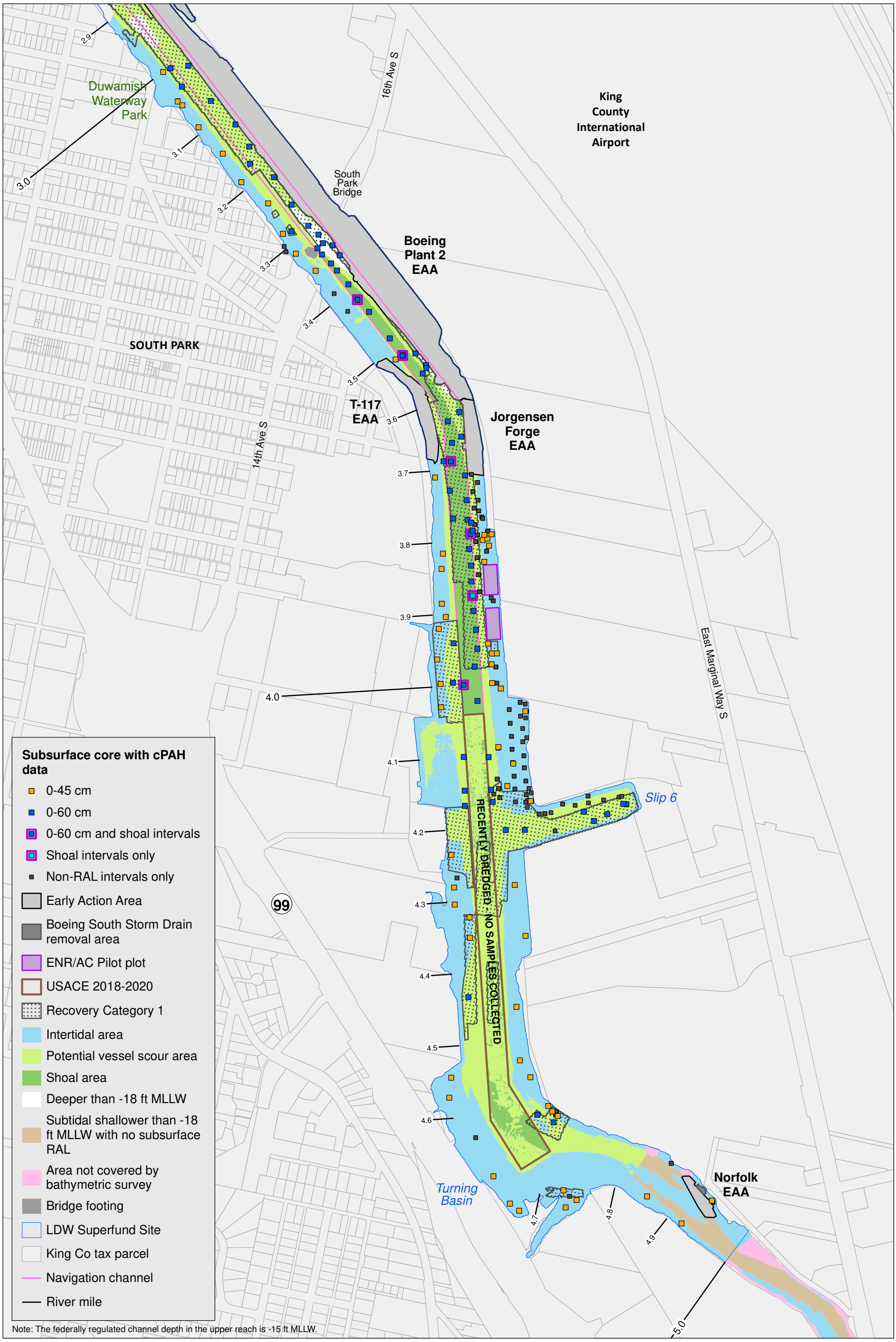
Port of Seattle / City of Seattle / King County / The Boeing Company
N
0 500 1,000 Feet
0 200 400 Meters
Map A-14. Areal coverage of cPAH data in the surface design dataset
Pre-Design Investigation Data Evaluation Report for the LDW Upper Reach
JULY 15, 2022
Prepared by craigh, 7/15/22: W:\Projects\Duwamish AOC4\GIS\Maps and Analyses\Phase II\Data Evaluation Report\Appendix A\Map A-14 7297 Areal coverage - cPAH - Surface.mxd



Prepared by craigh, 7/15/22: W:\Projects\Duwamish AOC4\GIS\Maps and Analyses\Phase II\Data Evaluation Report\Appendix A\Map A-15 7297 Areal coverage - cPAH - Subsurface.mxd

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Map A-15. Areal coverage of cPAH data in the subsurface design dataset

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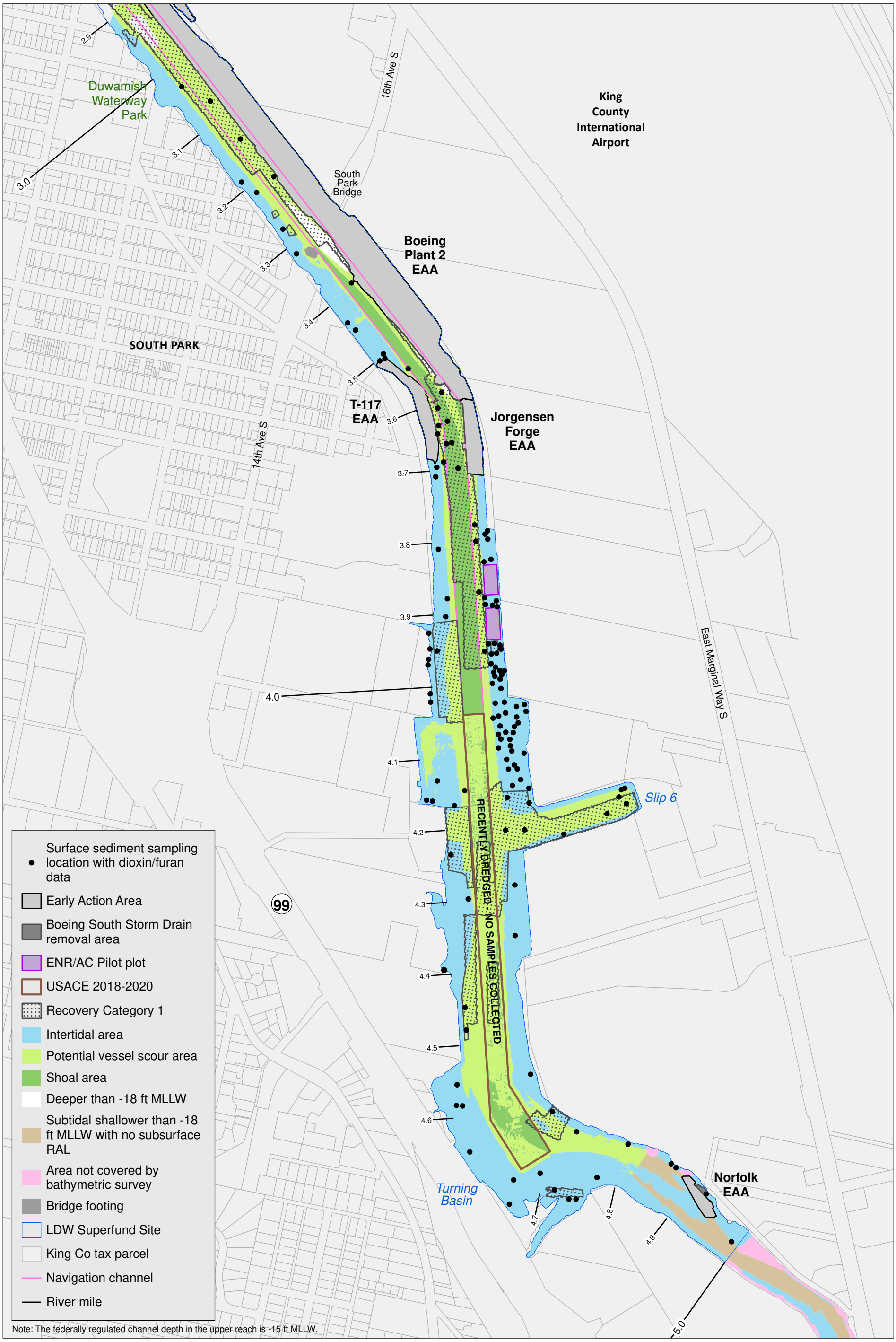
JULY 15, 2022



Prepared by craigh, 7/15/22: W:\Projects\Duwamish AOC4\GIS\Maps and Analyses\Phase II\Data Evaluation Report\Appendix A\Map A-16 7297 Areal coverage - DF - Surface.mxd

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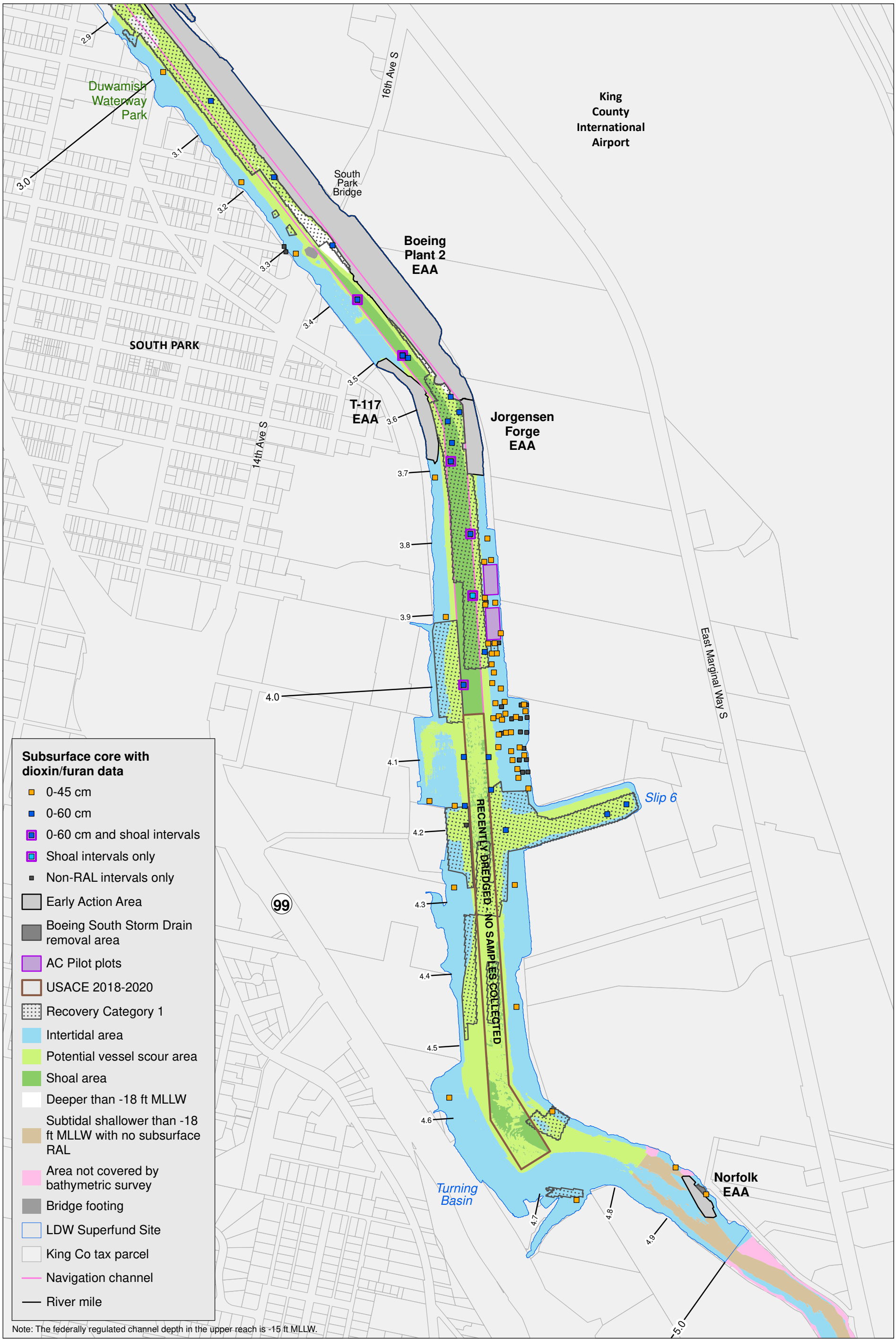
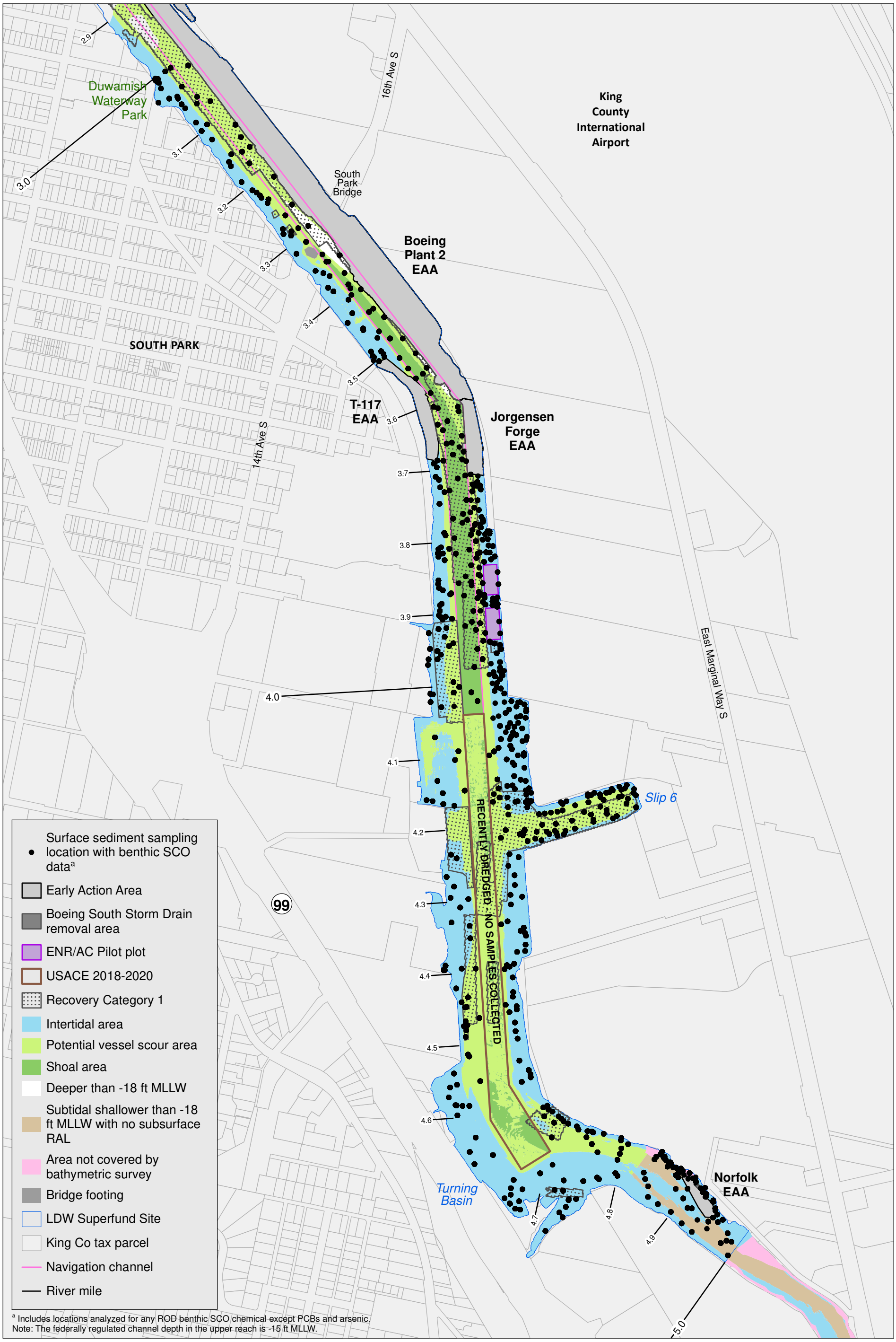
Map A-16. Areal coverage of dioxin/furan data in the surface design dataset

PRE-DESIGN INVESTIGATION DATA EVALUATION REPORT FOR THE LDW UPPER REACH

JULY 15, 2022


Duwamish Waterway Park
South Park Bridge
16th Ave S
King County International Airport
Boeing Plant 2 EAA
SOUTH PARK
T-117 EAA
Jorgensen Forge EAA
14th Ave S
East Marginal Way S
RECENTLY DREDGED - NO SAMPLES COLLECTED
Slip 6
Turning Basin
Norfolk EAA
99
2.9
3.0
3.1
3.2
3.3
3.4
3.5
3.6
3.7
3.8
3.9
4.0
4.1
4.2
4.3
4.4
4.5
4.6
4.7
4.8
4.9
5.0
Subsurface core with dioxin/furan data
0-45 cm
0-60 cm
0-60 cm and shoal intervals
Shoal intervals only
Non-RAL intervals only
Early Action Area
Boeing South Storm Drain removal area
AC Pilot plots
USACE 2018-2020
Recovery Category 1
Intertidal area
Potential vessel scour area
Shoal area
Deeper than -18 ft MLLW
Subtidal shallower than -18 ft MLLW with no subsurface RAL
Area not covered by bathymetric survey
Bridge footing
LDW Superfund Site
King Co tax parcel
Navigation channel
River mile
Note: The federally regulated channel depth in the upper reach is -15 ft MLLW.
N
0 500 1,000 Feet
0 200 400 Meters
Windward environmental LLC
ANCHOR QEA
Lower Duwamish Waterway Group
Port of Seattle / City of Seattle / King County / The Boeing Company
Map A-17. Areal coverage of dioxin/furan data in the subsurface design dataset
Pre-Design Investigation Data Evaluation Report for the LDW Upper Reach
JULY 15, 2022
Prepared by craigh, 7/15/22: W:\Projects\Duwamish AOC4\GIS\Maps and Analyses\Phase II\Data Evaluation Report\Appendix A\Map A-17 7297 Areal coverage - DF - Subsurface.mxd



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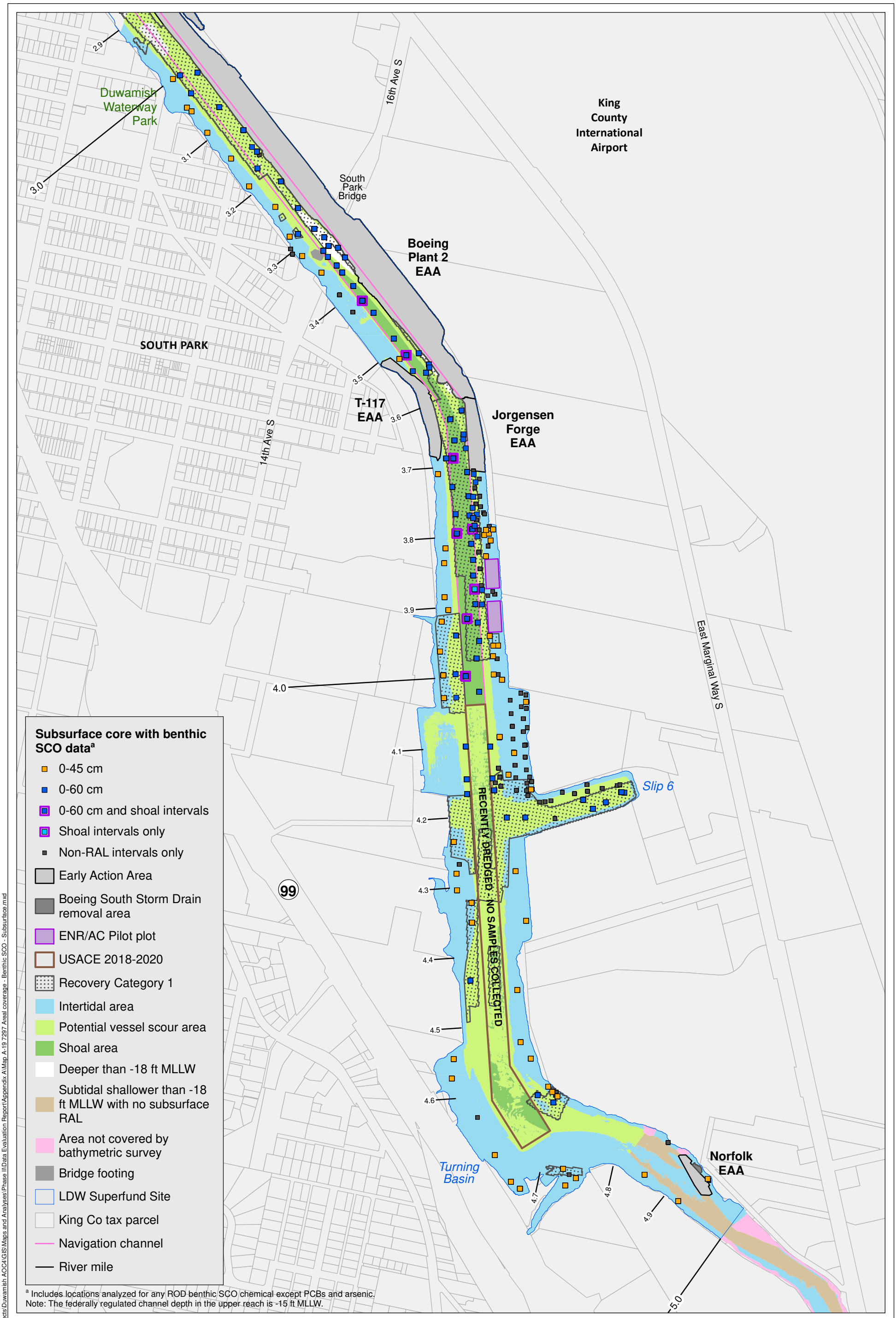
Map A-18. Areal coverage of benthic SCO data in the surface design dataset

PRE-DESIGN INVESTIGATION DATA EVALUATION REPORT FOR THE LDW UPPER REACH

JULY 15, 2022

Prepared by craigh, 7/15/22; W:\Projects\Duwamish AOC4\GIS\Maps and Analyses\Phase II\Data Evaluation Report\Appendix A\Map A-18 7297 Areal coverage - Benthic SCO - Surface.mxd



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Map A-19. Areal coverage of benthic SCO data in the subsurface design dataset

PRE-DESIGN INVESTIGATION DATA EVALUATION REPORT FOR THE LDW UPPER REACH

JULY 15, 2022

Prepared by craigh, 7/15/22; W:\Projects\Duwamish AOC4\GIS\Maps and Analyses\Phase II\Data Evaluation Report\Appendix A\Map A-19 7297 Areal coverage - Benthic SCO - Subsurface.mxd