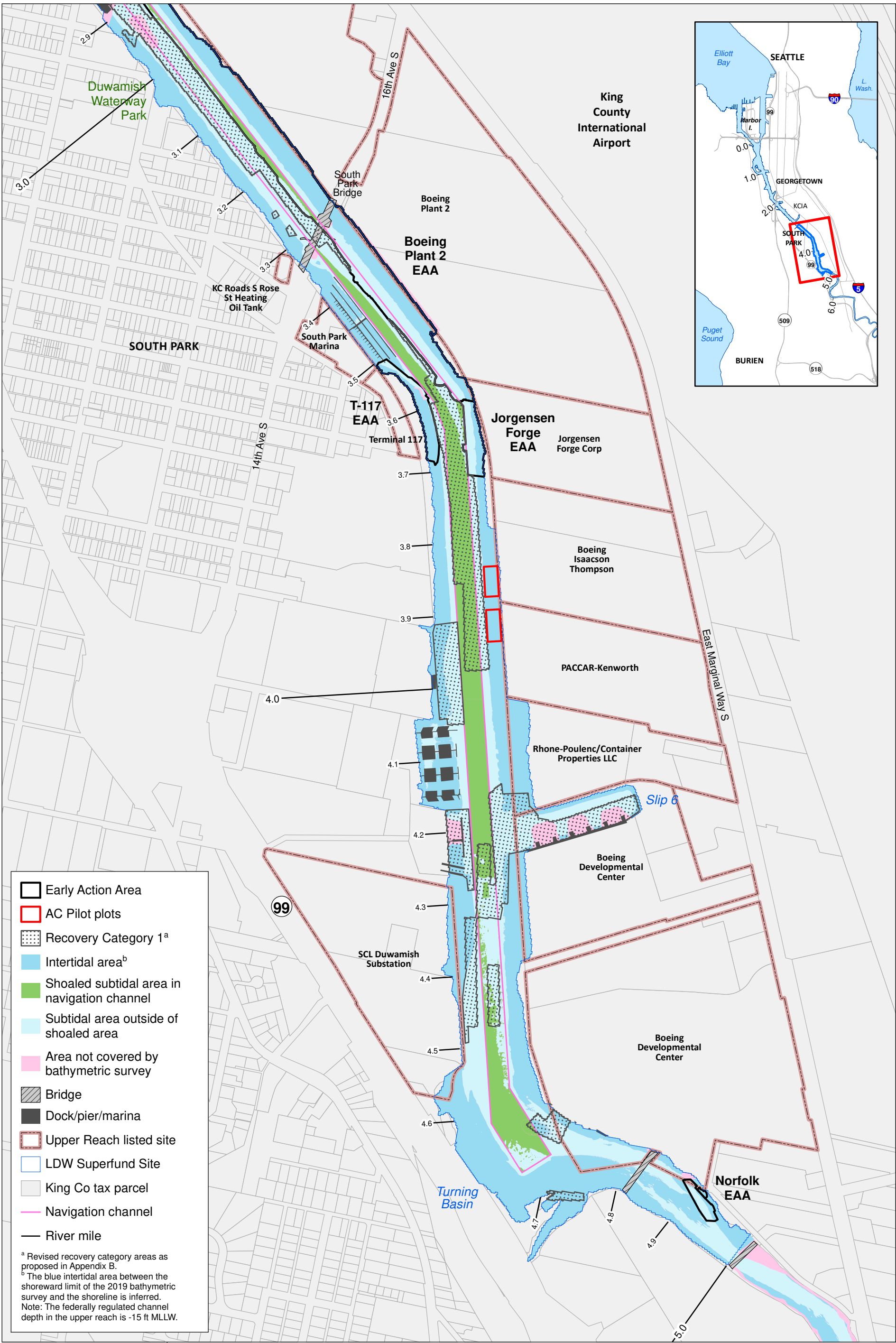


Prepared by craigh, 5/19/20; W:\Projects\Duwamish AOC\GIS\Maps and Analyses\QAPP\Map 01 7059 Upper Reach.mxd



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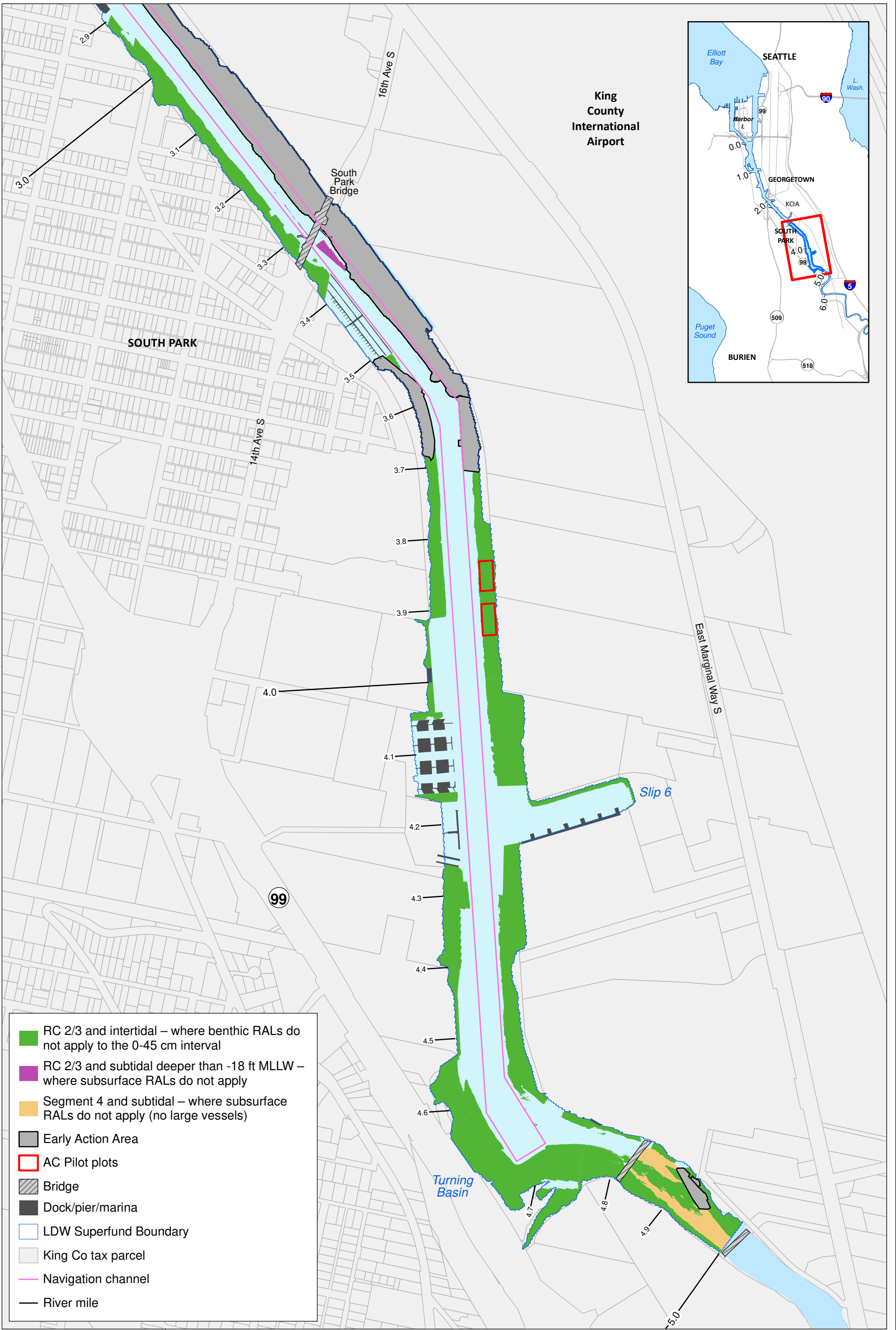
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Map 1. Upper reach of the LDW (RM 3.0 to RM 5.0)

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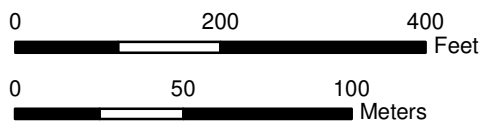
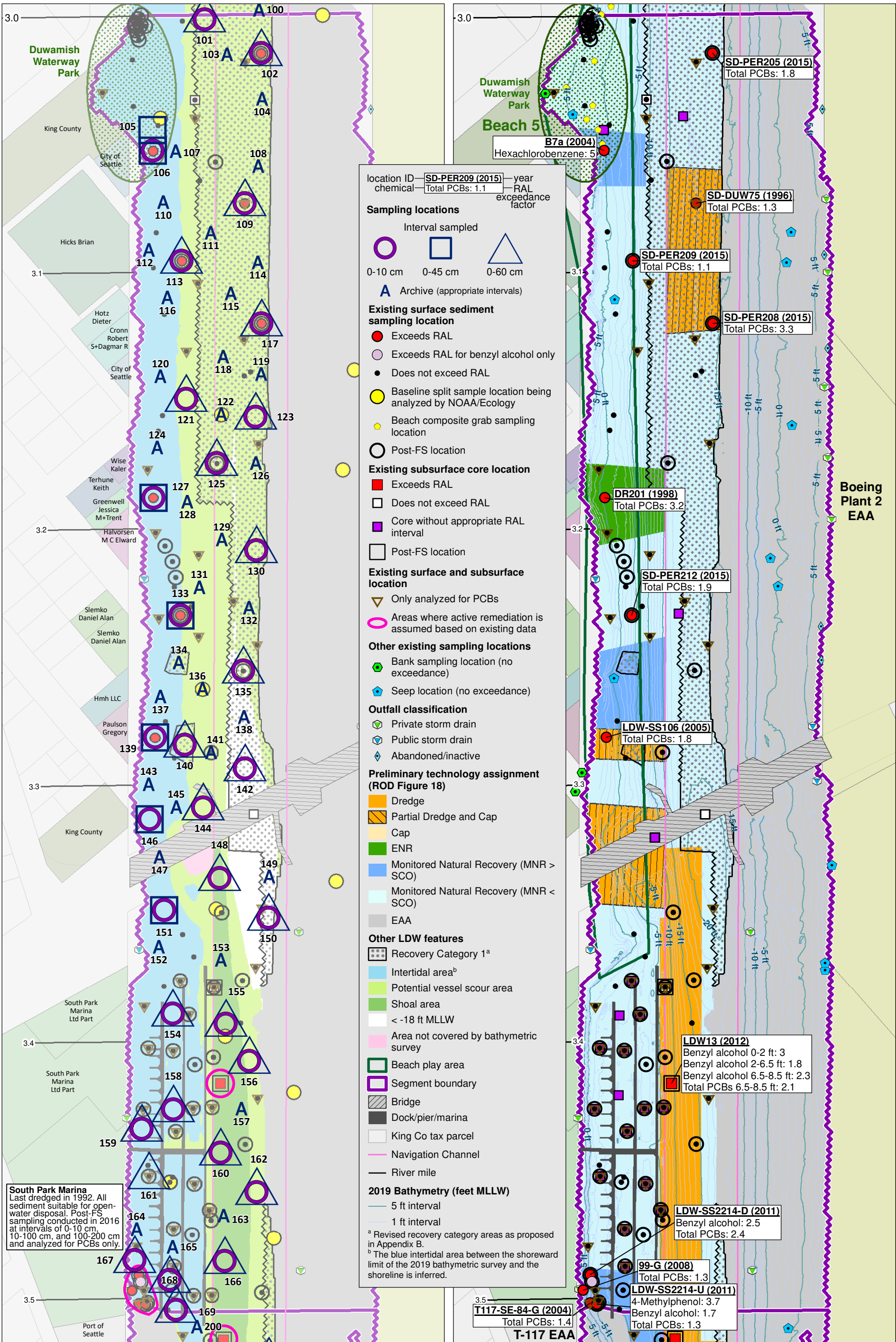
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0 500 1,000 Feet
0 200 400 Meters

Map 2. Areas where certain RALs do not apply

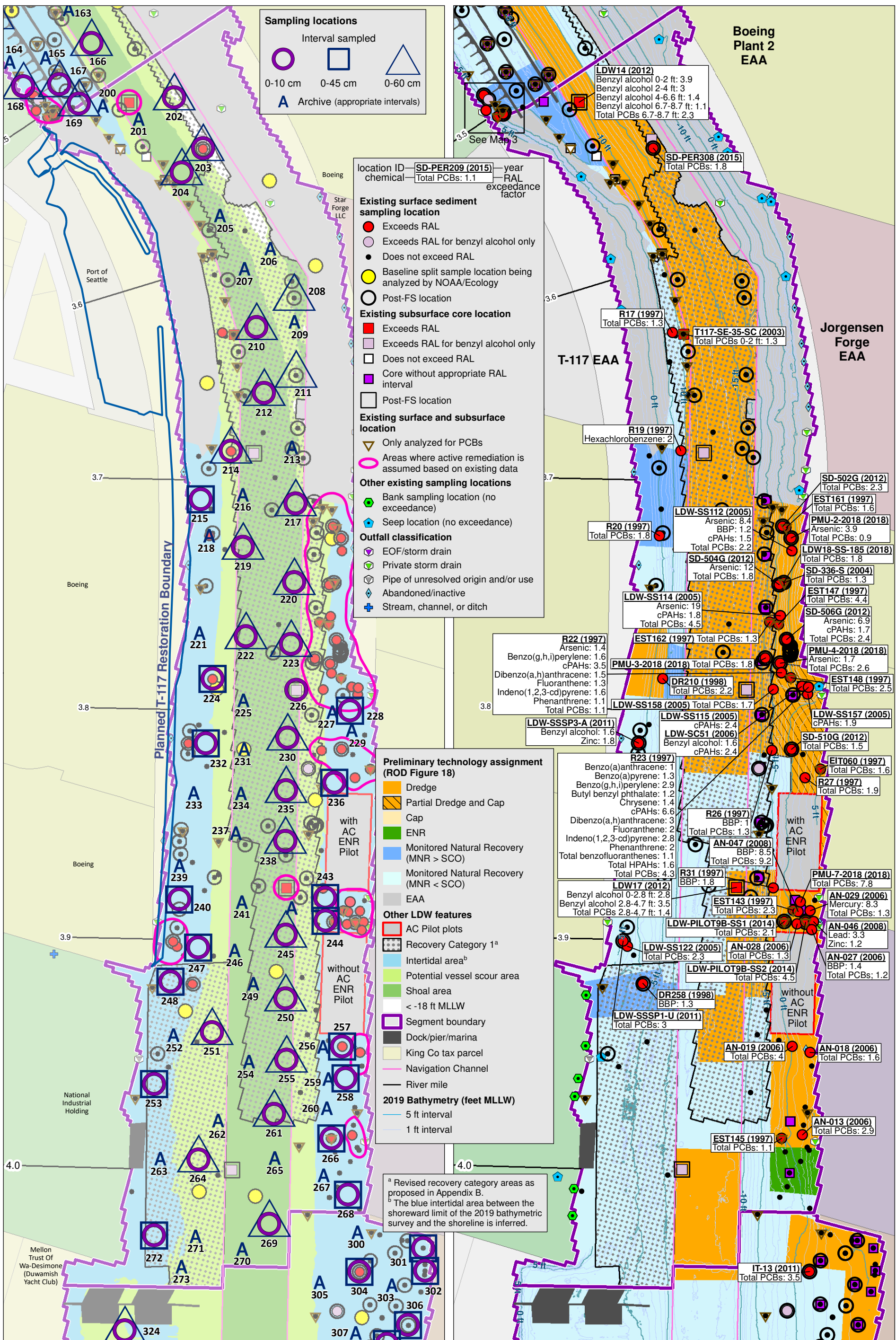
LDW UPPER REACH PRE-DESIGN INVESTIGATION QAPP

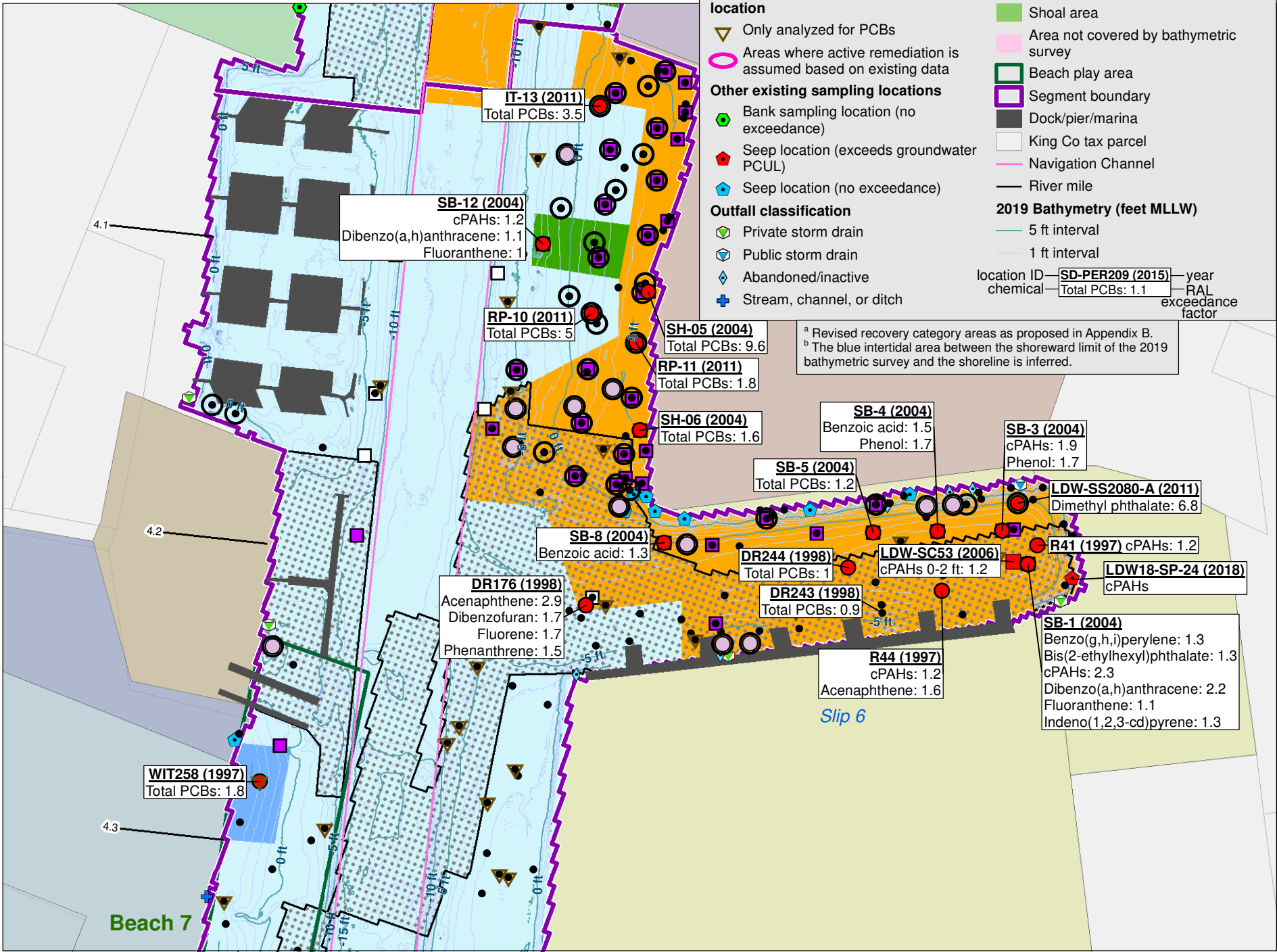
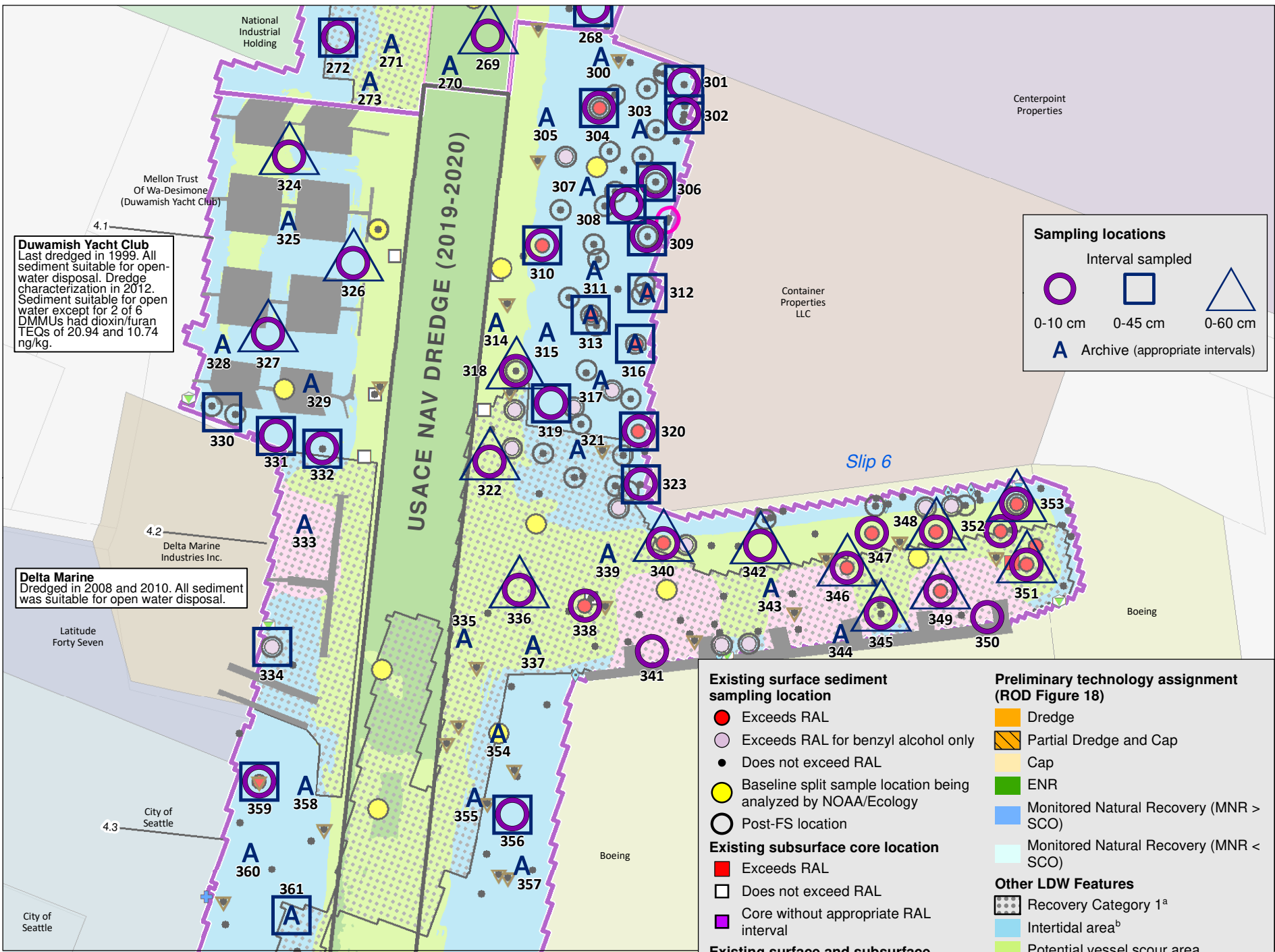


Scale is the same for each inset map

Map 3. Segment 1 (RM 3.0 to RM 3.5) Phase I locations, sediment RAL exceedances, bathymetry, and ROD Figure 18 preliminary remedial action areas

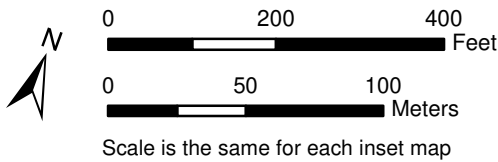
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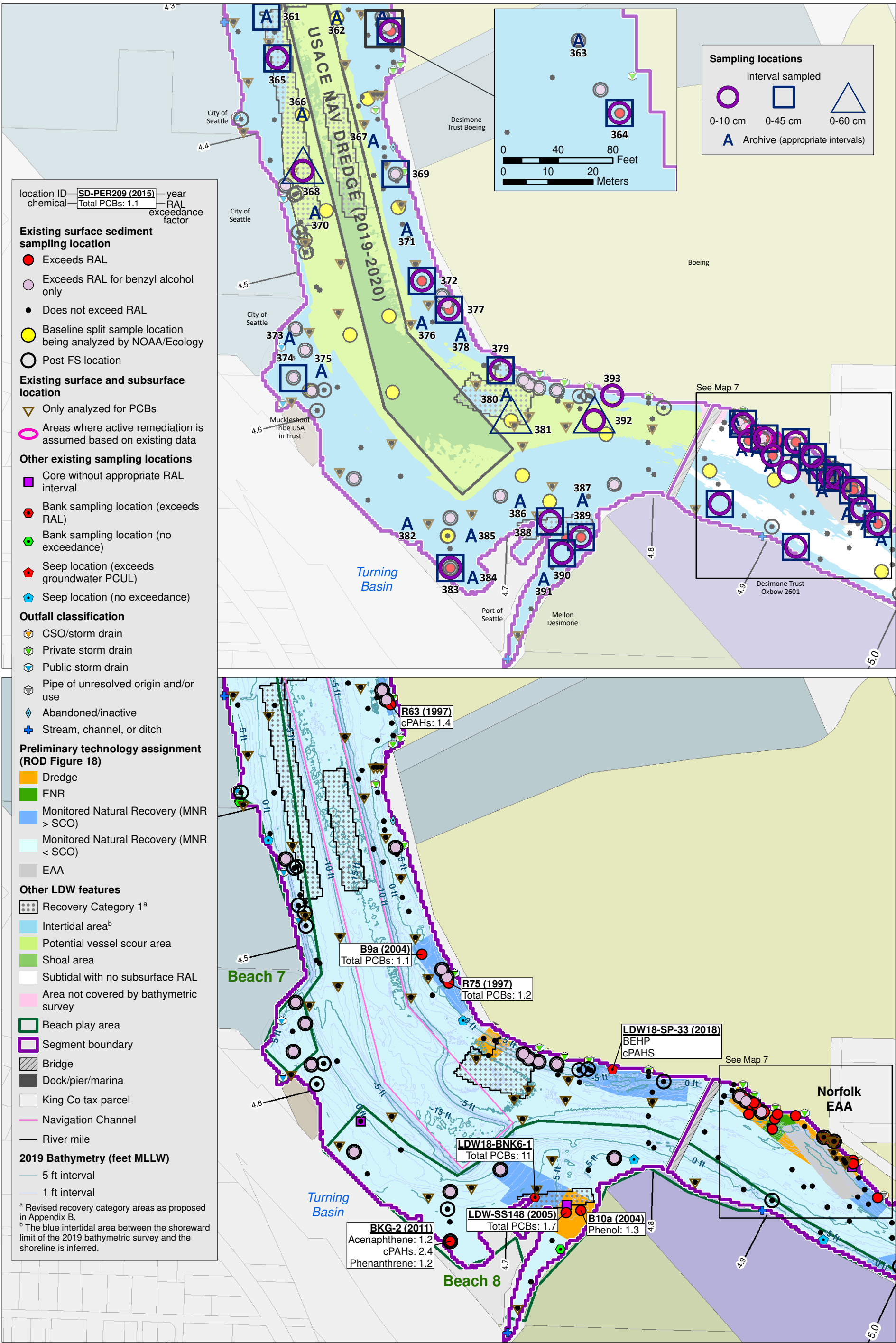
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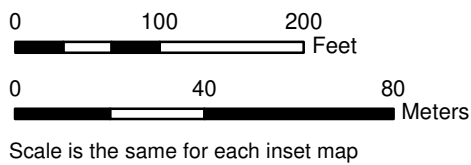
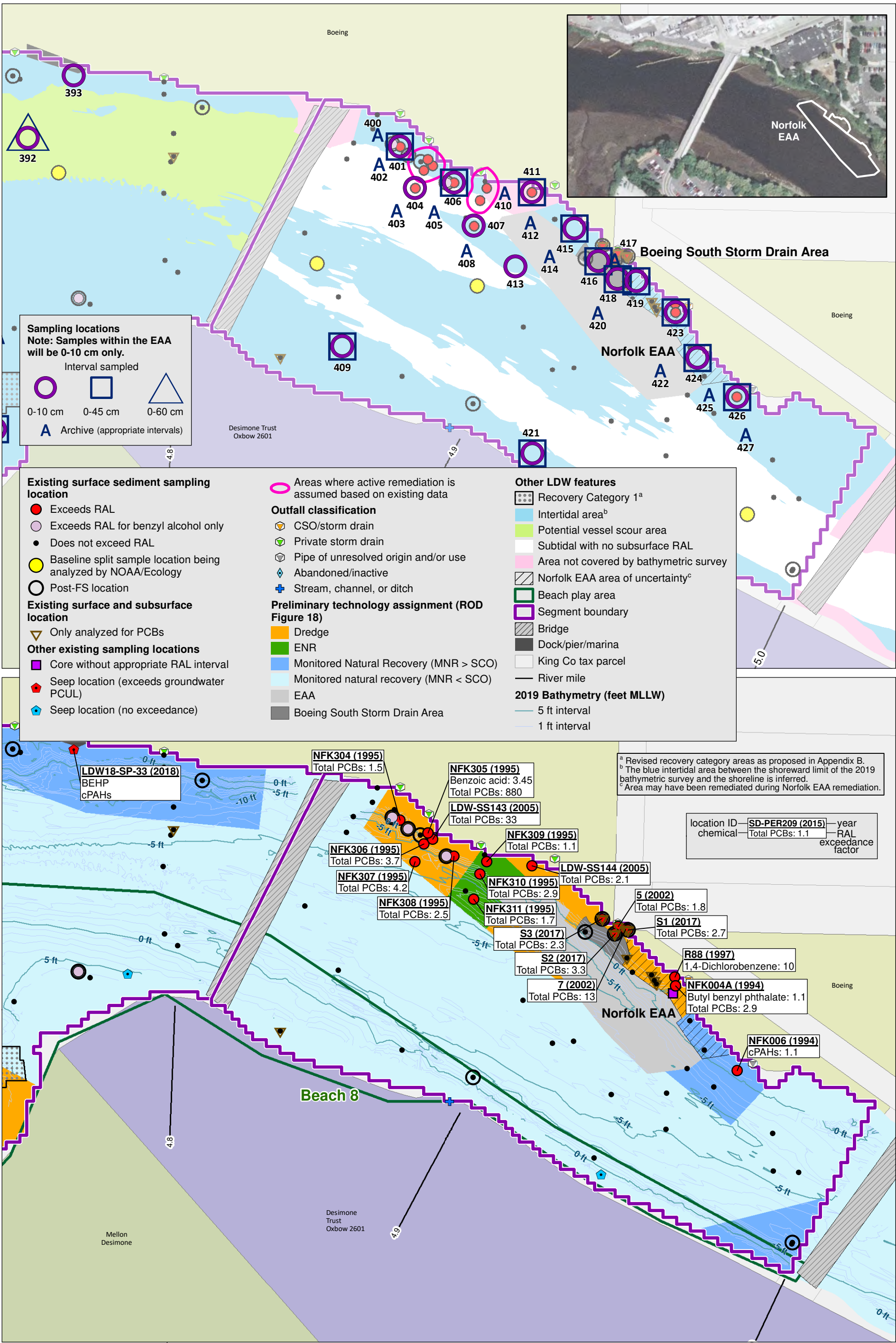
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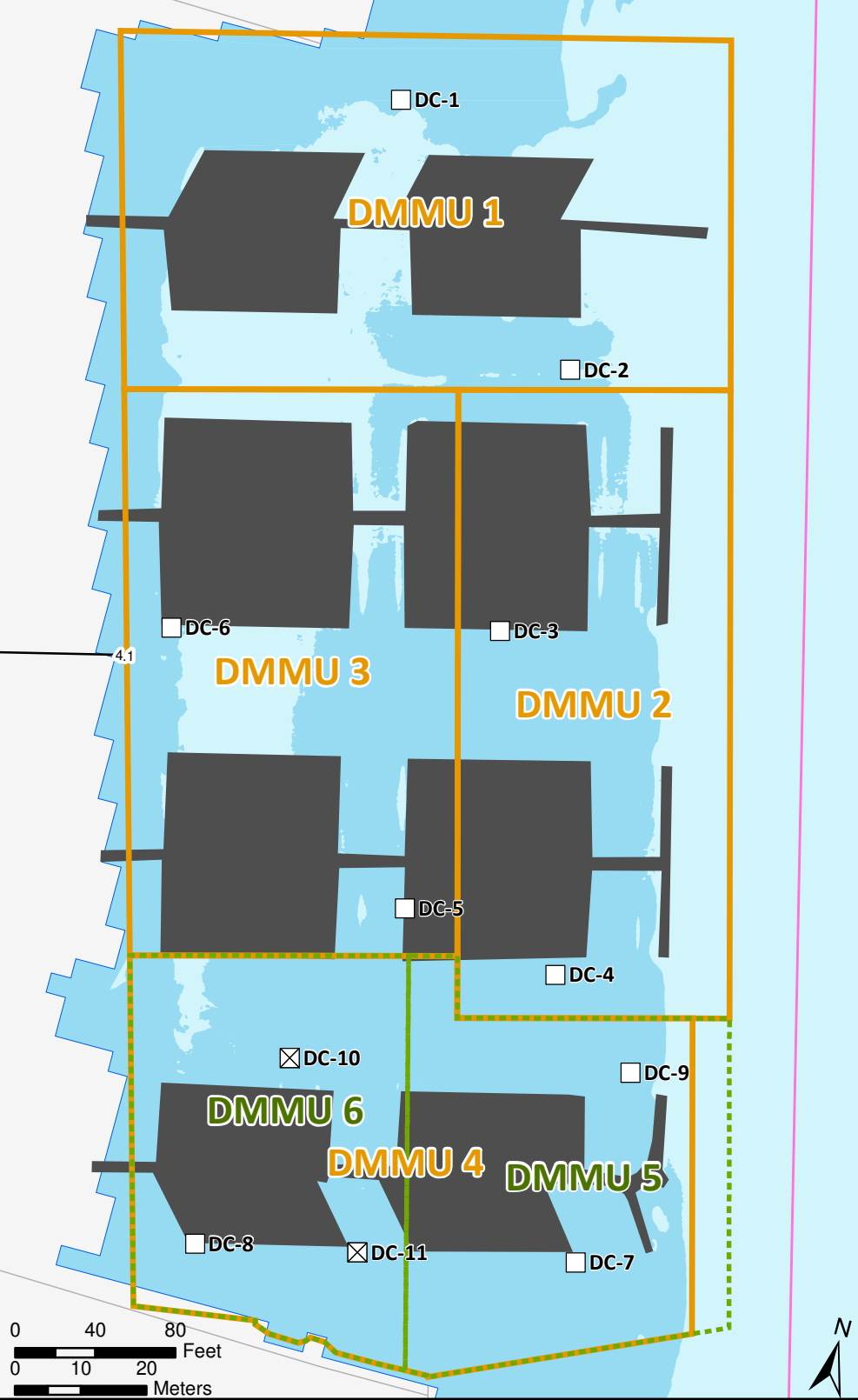
Map 5. Segment 3a (RM 4.05 to RM 4.35) Phase I locations, sediment RAL exceedances, bathymetry, and ROD Figure 18 preliminary remedial action areas

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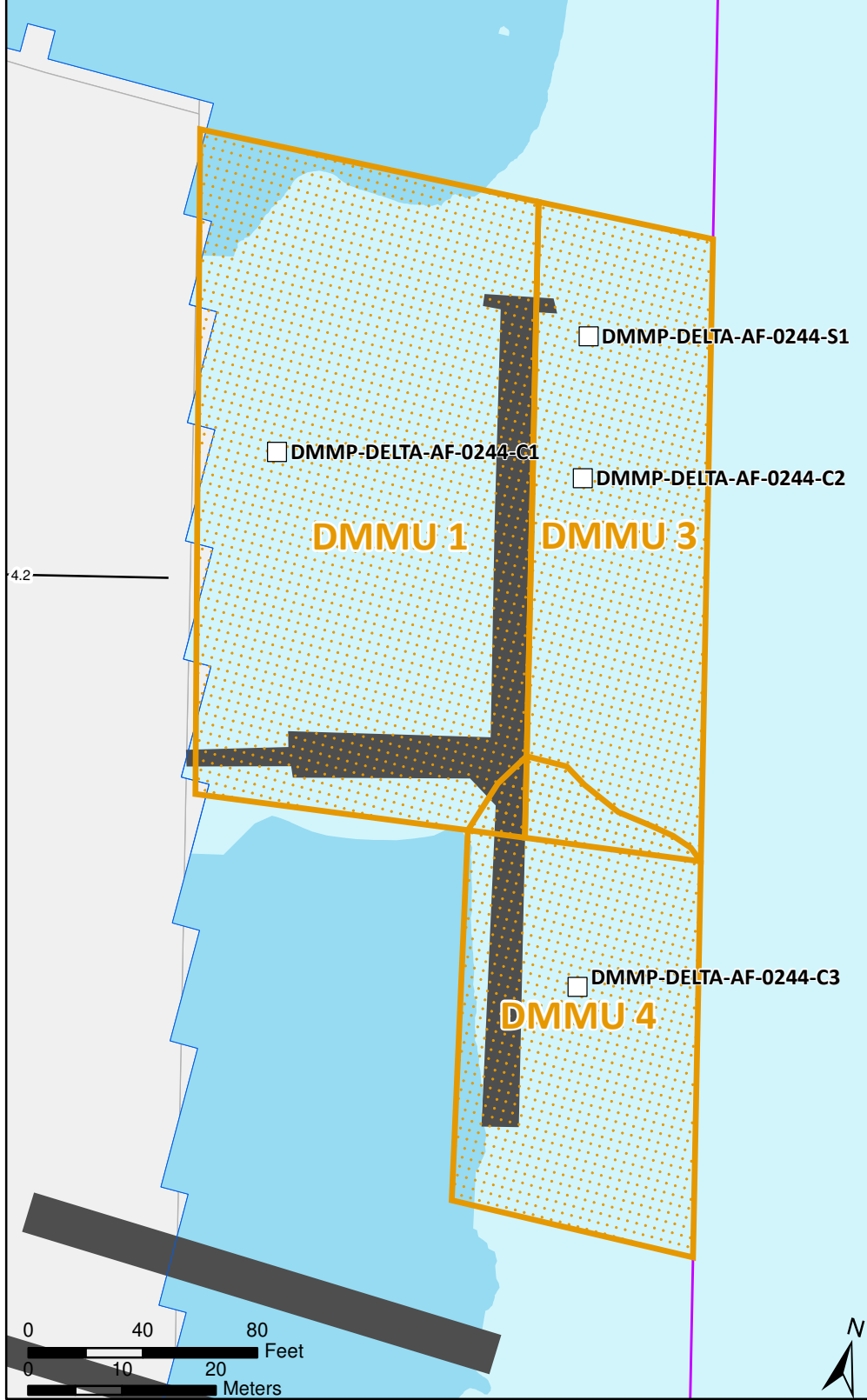




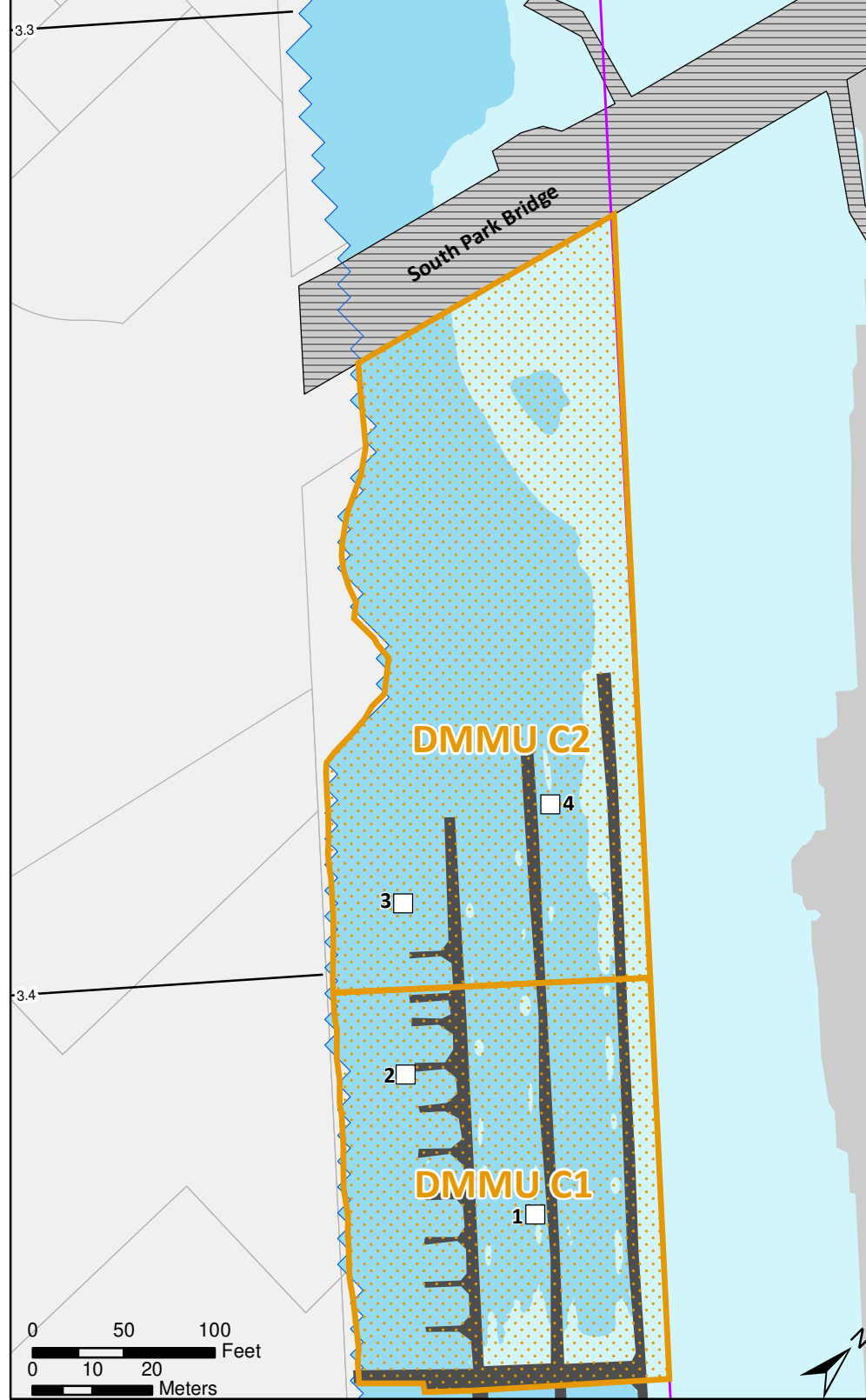
Duwamish Yacht Club – DMMUs not dredged



Delta Marine – DMMUs dredged in 2008 and 2010



South Park Marina – DMMUs dredged in 1992



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Marina DMMUs (approximate)

- Surface DMMU (0-4 ft sediment interval)
- Subsurface DMMU (>4 ft sediment interval)
- Dredged

DMMU subsurface sampled station

DMMU subsurface sampled station with Z sample

Bridge

Dock/pier/marina

Intertidal area

Subtidal area

King Co tax parcel

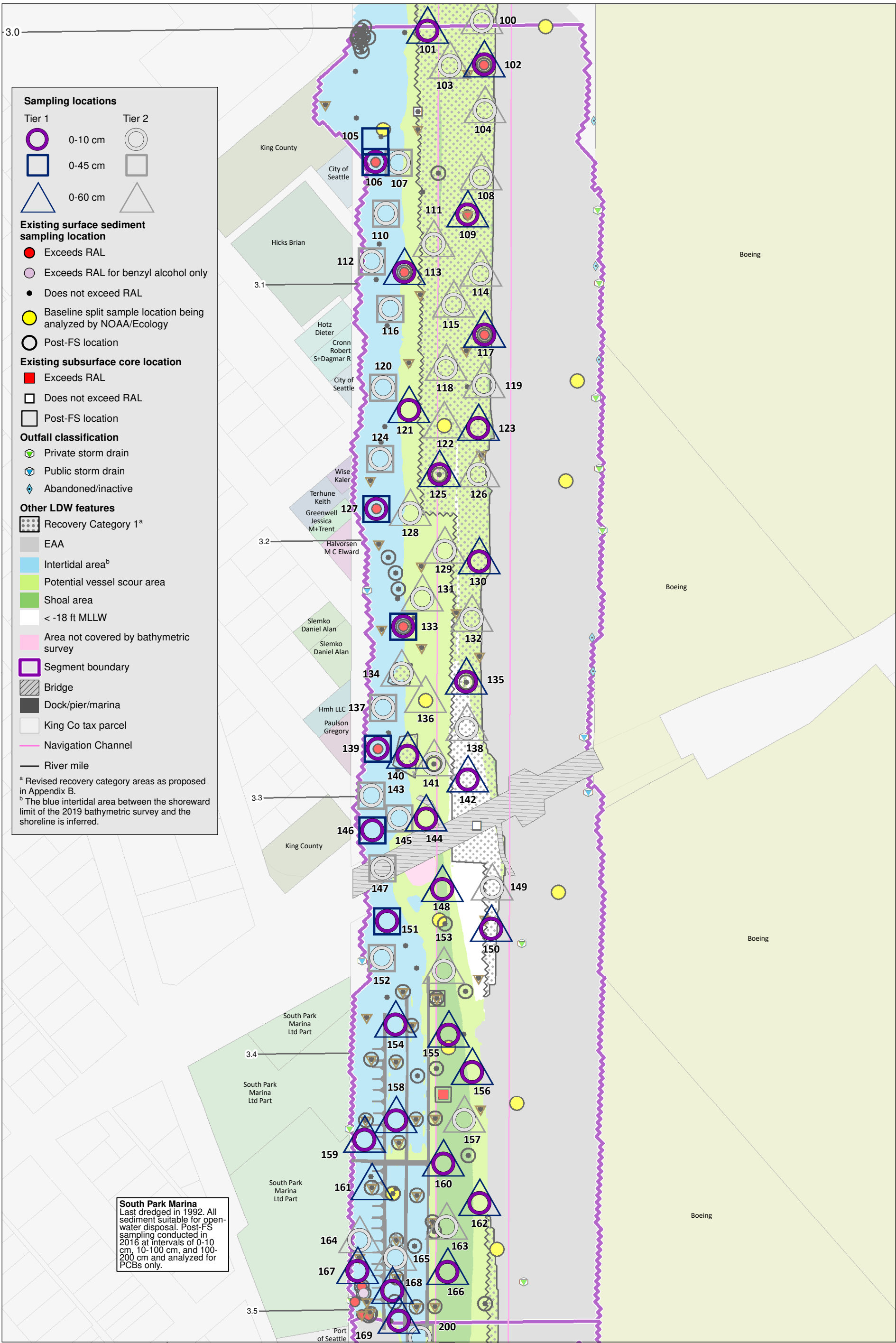
Navigation Channel

River mile

Map 8. DMMUs in Duwamish Yacht Club, Delta Marine, and South Park Marina

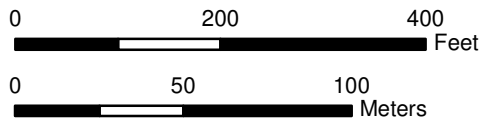
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Prepared by craigh, 5/19/20; W:\Projects\Duwamish AOC\GIS\Maps and Analyses\QAPP\Map 09a 7133 Tier 2 locations - Segment 1.mxd



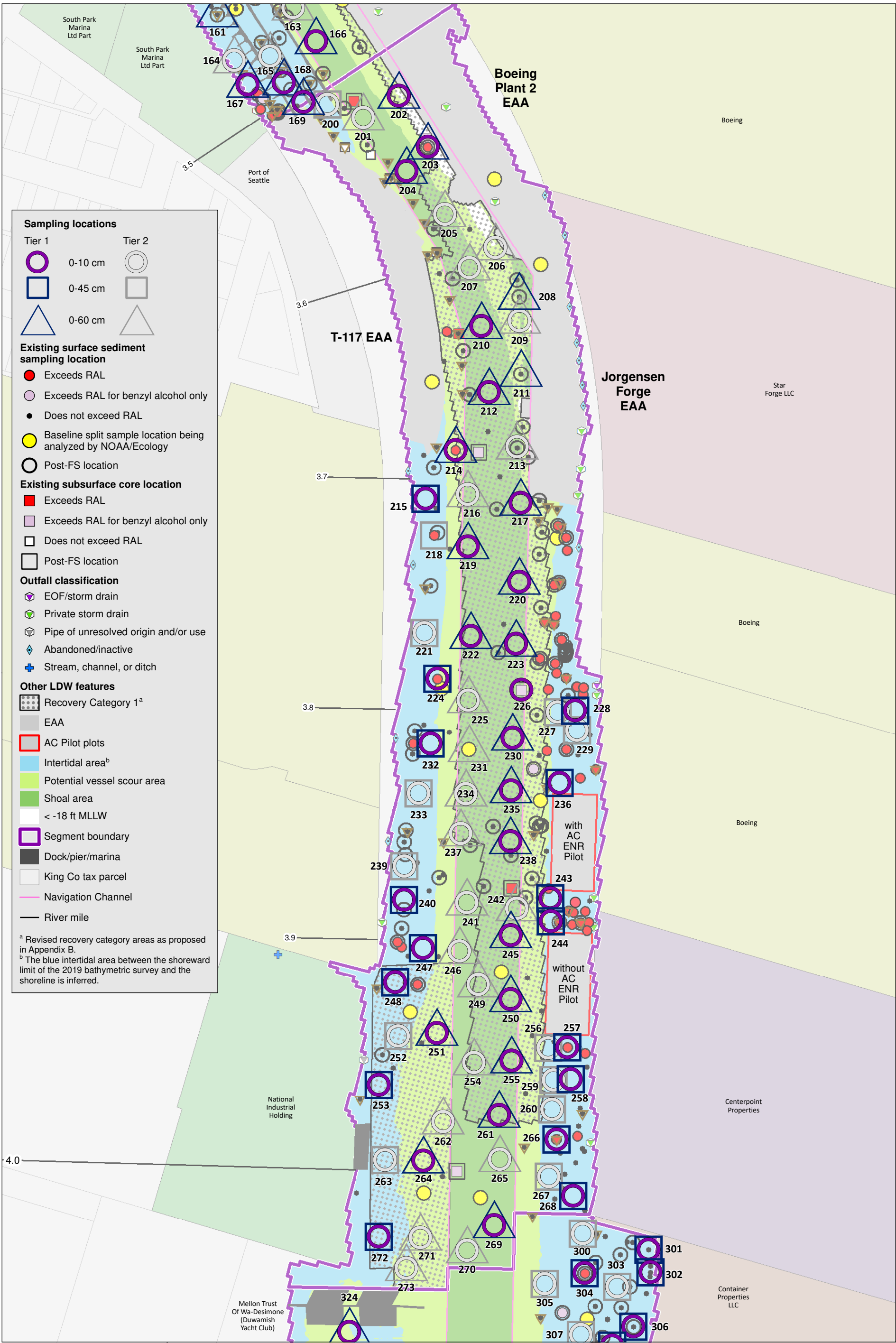
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0 200 400 Feet

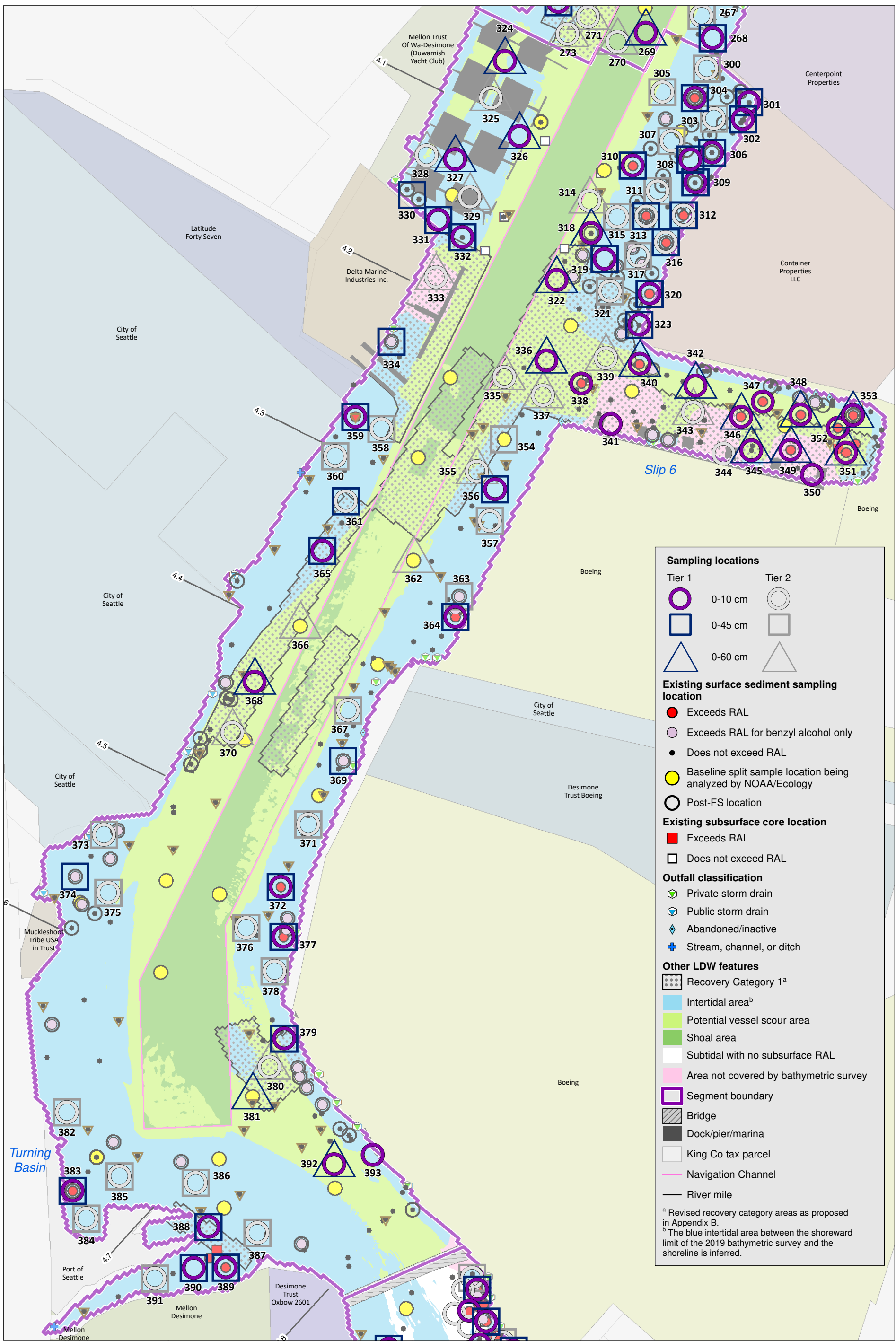
0 50 100 Meters

Scale is the same for each inset map

Map 9b. Phase I intervals to be sampled in
Tiers 1 and 2, Segment 2 (RM 3.5 to RM 4.05)

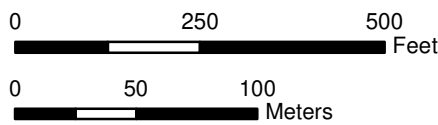
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Prepared by craigh, 5/19/20: W:\Projects\Duwamish AOC\GIS\Maps and Analyses\QAPP\Map 09c 7133 Tier 2 locations - Segment 3.mxd



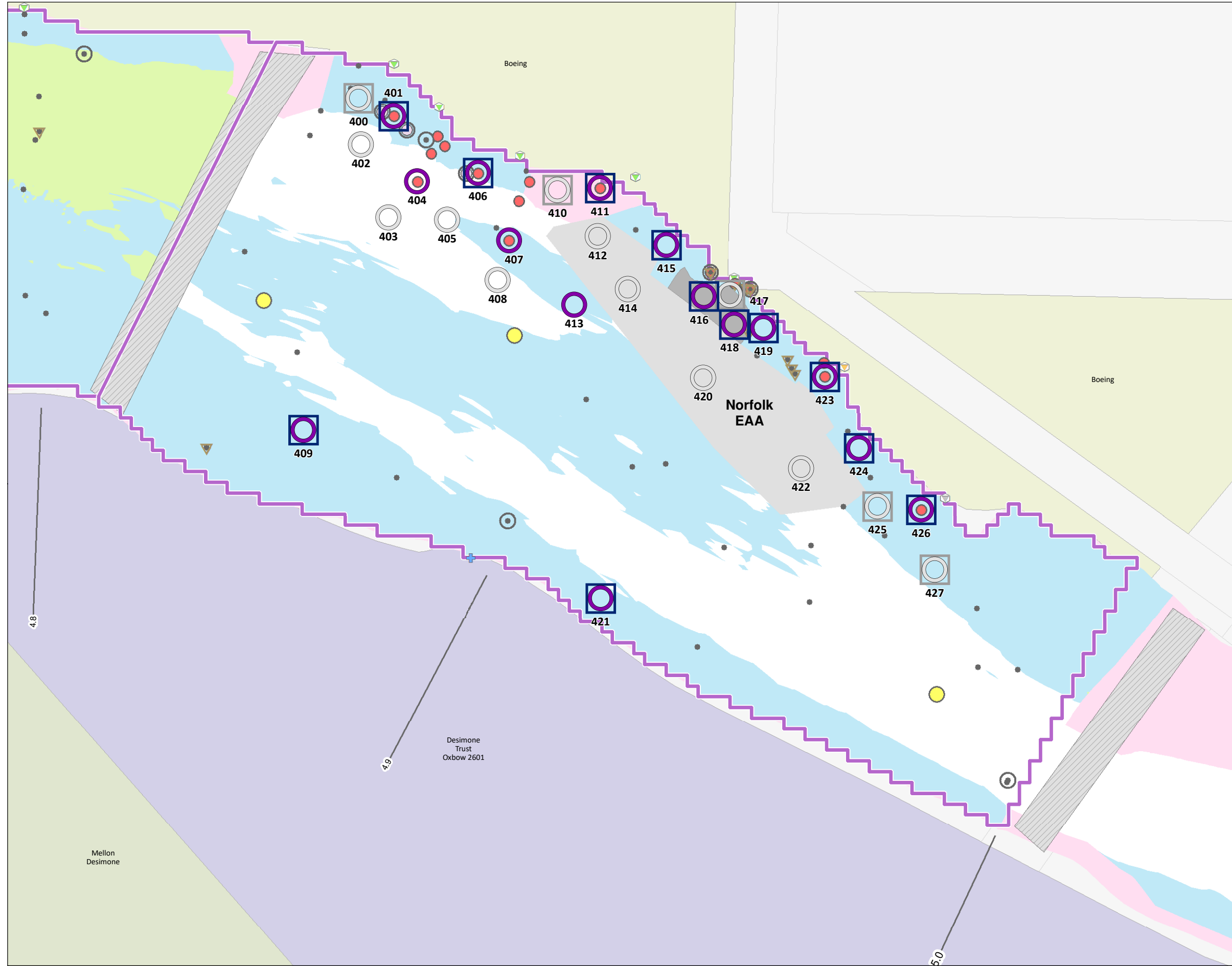
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Map 9c. Phase I intervals to be sampled in Tiers 1 and 2, Segment 3 (RM 4.05 to RM 4.81)

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Sampling locations

Tier 1



0-10 cm



0-45 cm



0-60 cm

Tier 2



0-10 cm



0-45 cm



0-60 cm

Existing surface sediment sampling location

● Exceeds RAL

● Exceeds RAL for benzyl alcohol only

● Does not exceed RAL

● Baseline split sample location being analyzed by NOAA/Ecology

○ Post-FS location

● Only analyzed for PCBs

Outfall classification

● CSO/storm drain

● Private storm drain

● Pipe of unresolved origin and/or use

● Abandoned/inactive

● Stream, channel, or ditch

Classification

● Intertidal area^a

● Potential vessel scour area

● Subtidal with no subsurface RAL

● Area not covered by bathymetric survey

● Segment boundary

● Bridge

● Boeing South Storm Drain

● Early Action Area

● King Co tax parcel

● River mile

^a The blue intertidal area between the shoreward limit of the 2019 bathymetric survey and the shoreline is inferred.



0 50 100 Feet

0 20 40 Meters

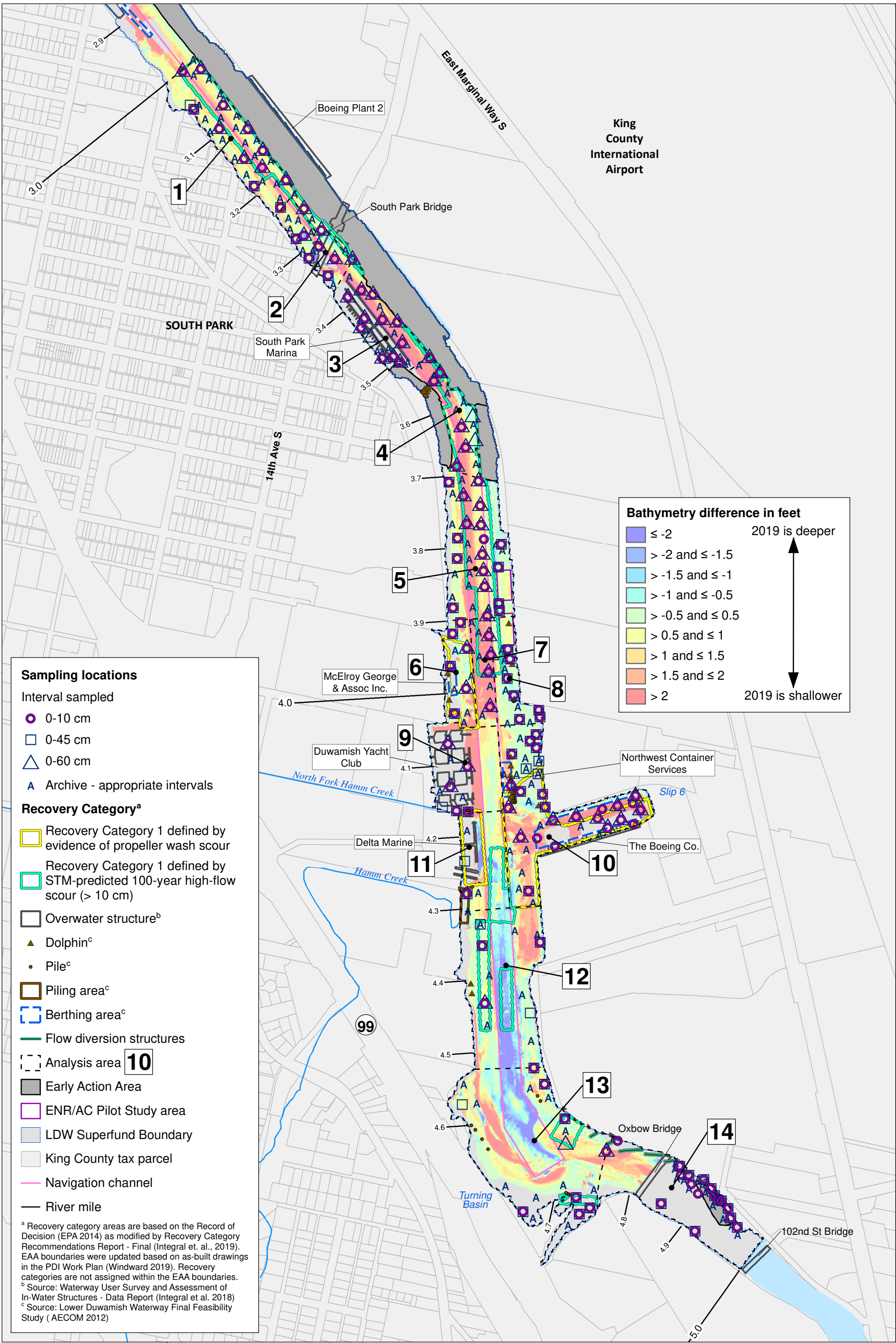
Map 9d. Phase I intervals to be sampled in Tiers 1 and 2, Segment 4 (RM 4.81 to RM 5.0)

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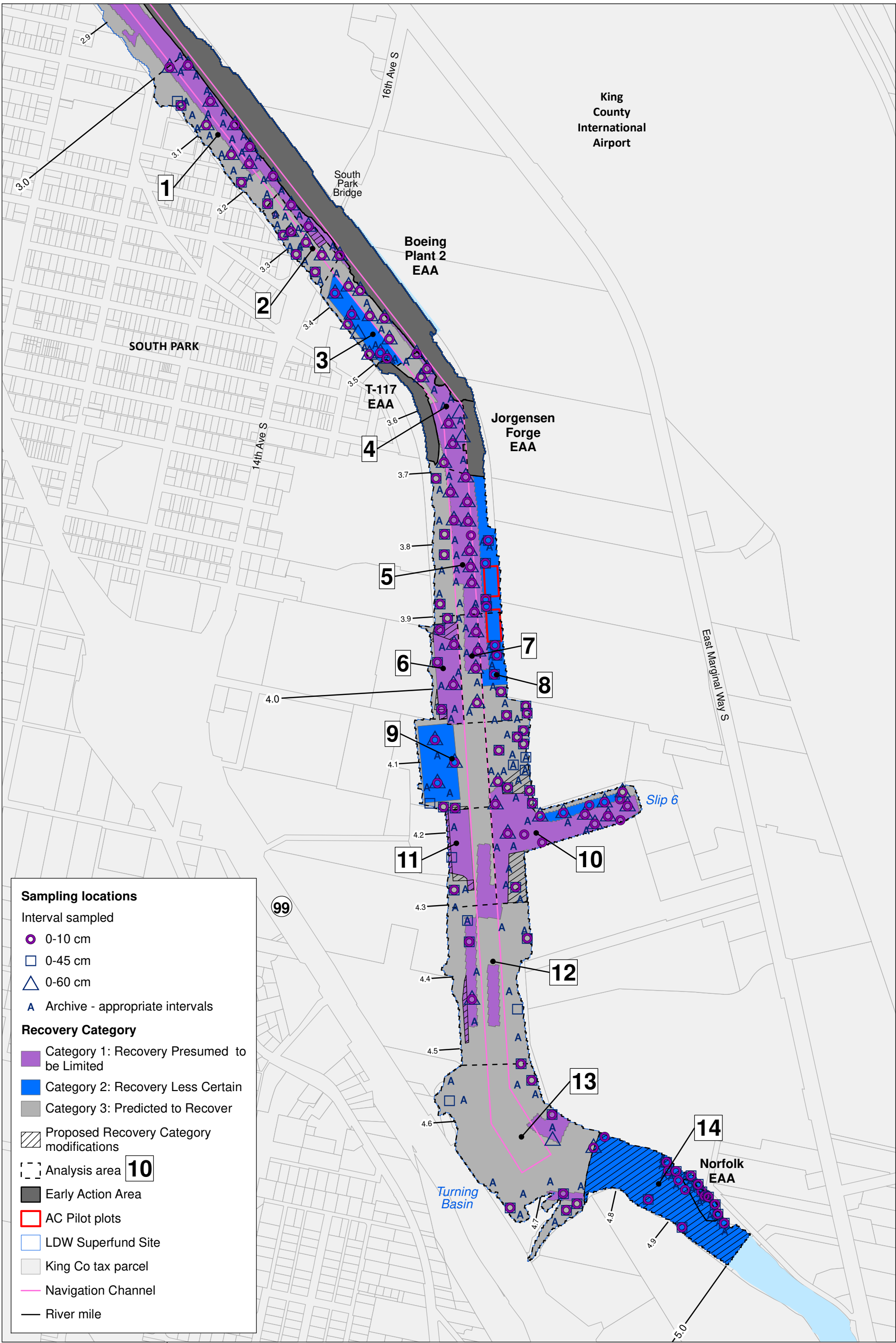


0 500 1,000 Feet
0 200 400 Meters

Map 10. Phase I sampling locations and difference between 2003 and 2019 bathymetry

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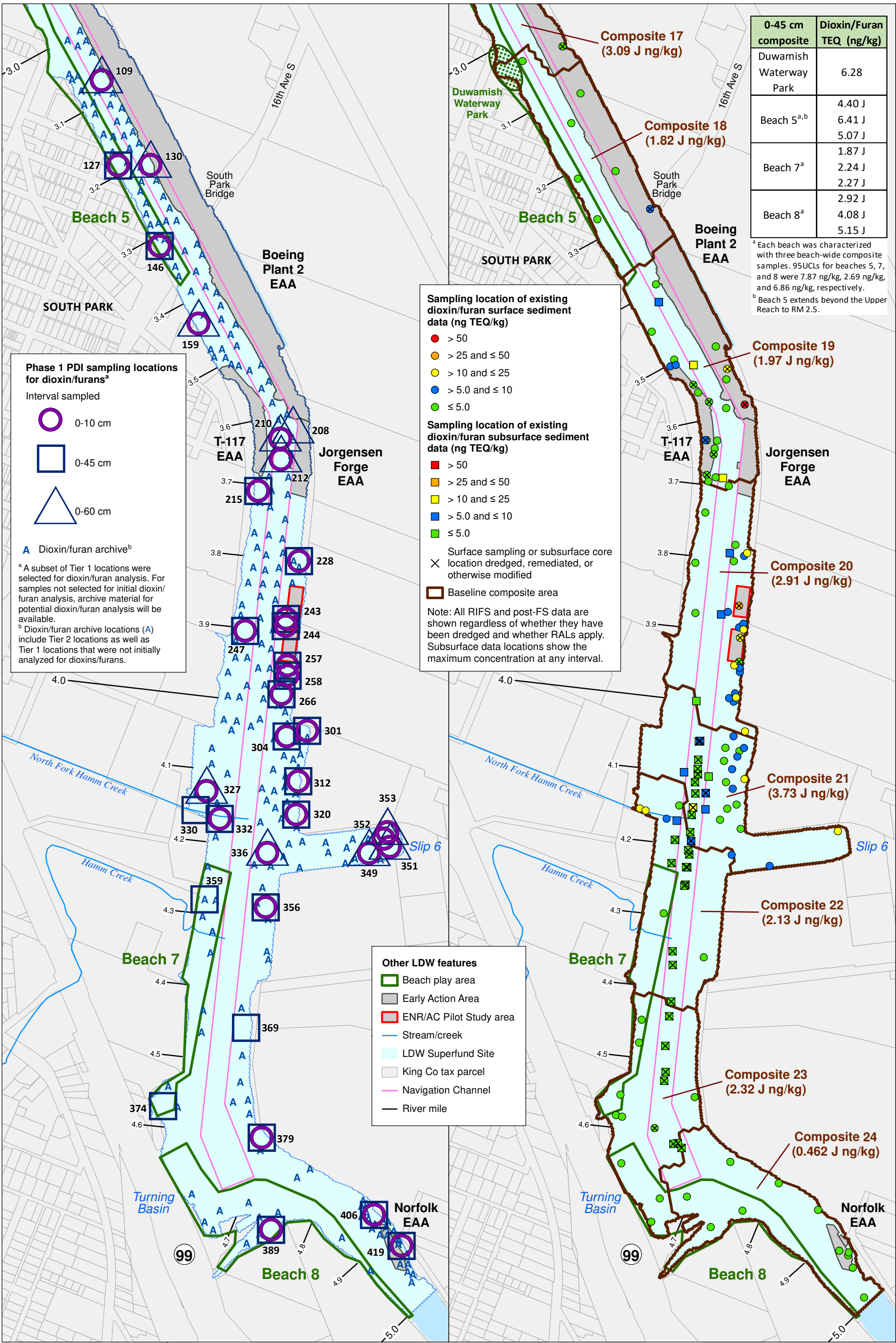
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0 500 1,000 Feet
0 200 400 Meters

Map 11. Phase I sampling locations and recovery categories

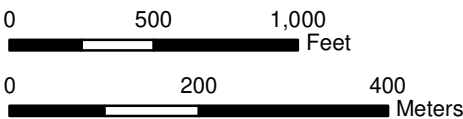
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Prepared by craigh, 5/19/20; W:\Projects\Duwamish AOC\GIS\Maps and Analyses\QAPP\Map 12 6949 Surface sediment composing data - w\l\sed - DF.mxd

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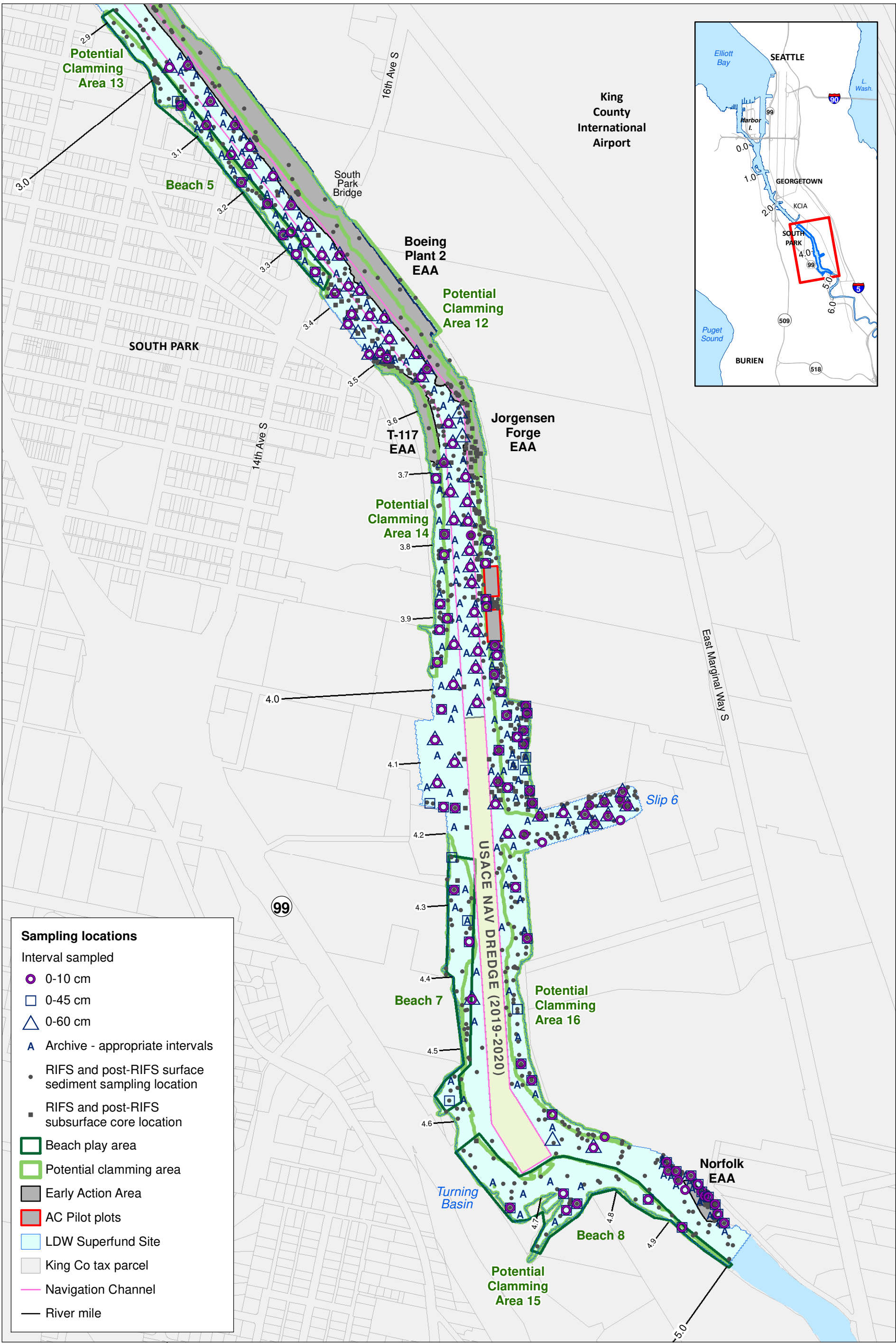
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Map 12. Locations identified for dioxin/furan analysis

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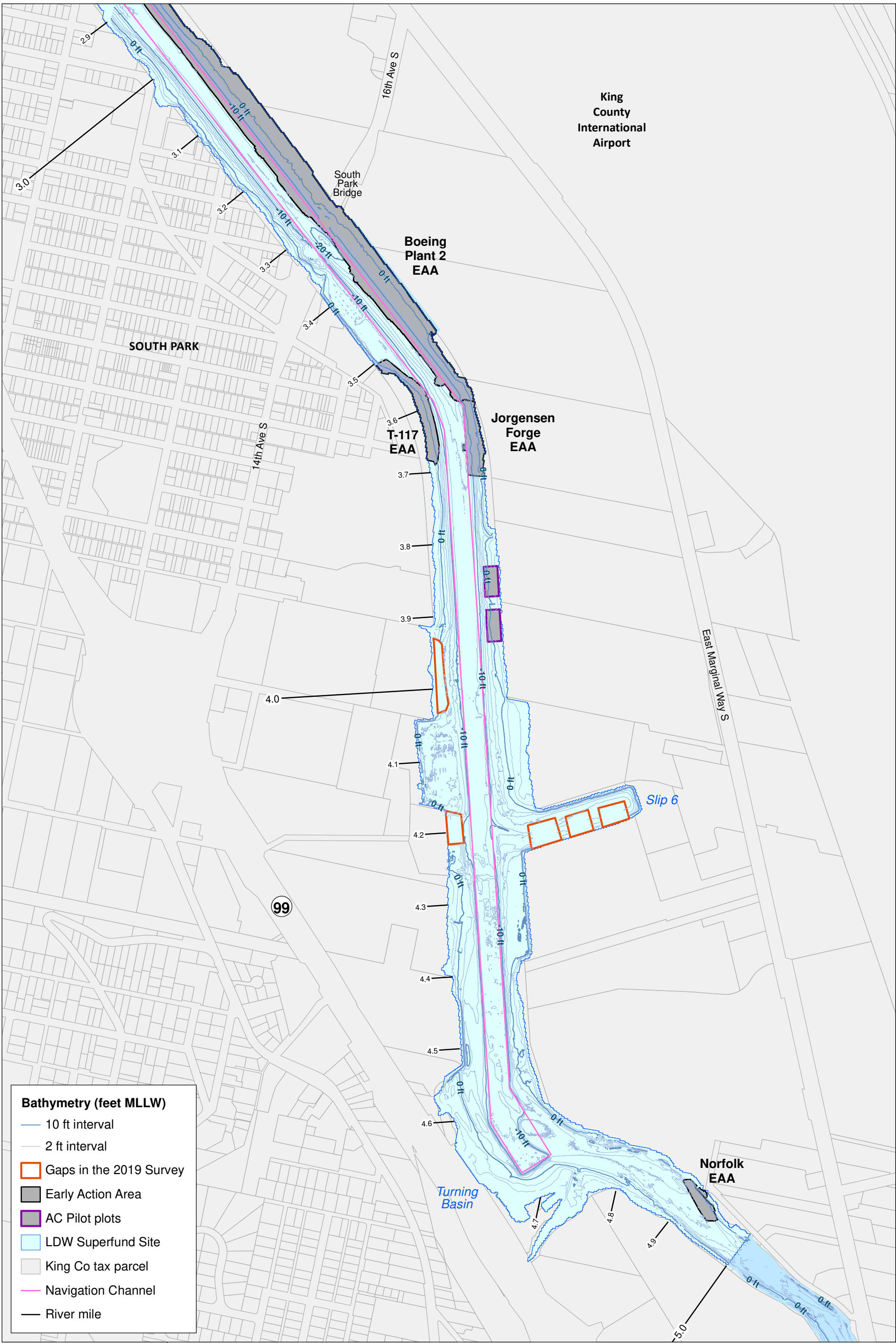
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0 500 1,000 Feet
0 200 400 Meters

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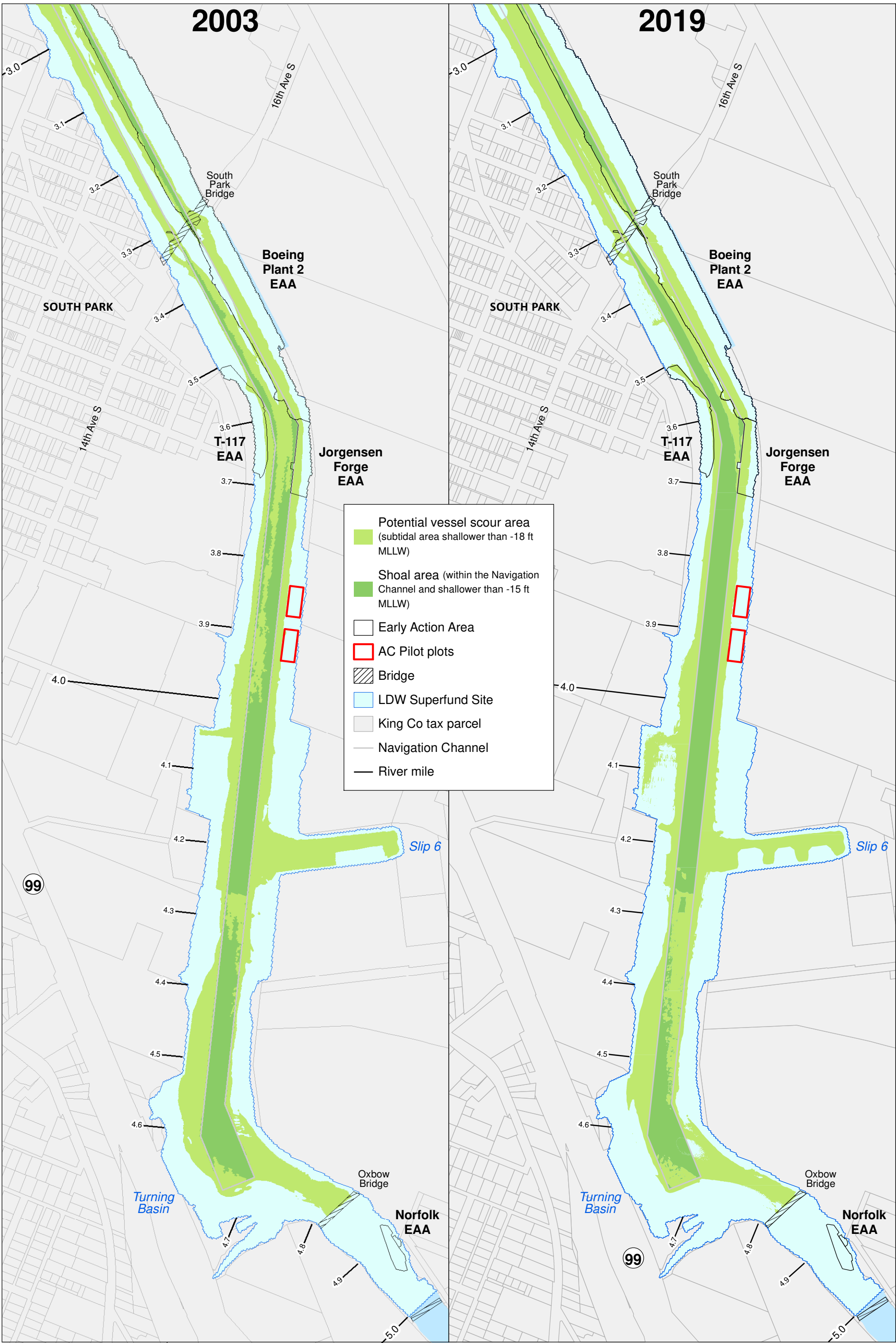
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Figure A-1. 2019 bathymetry

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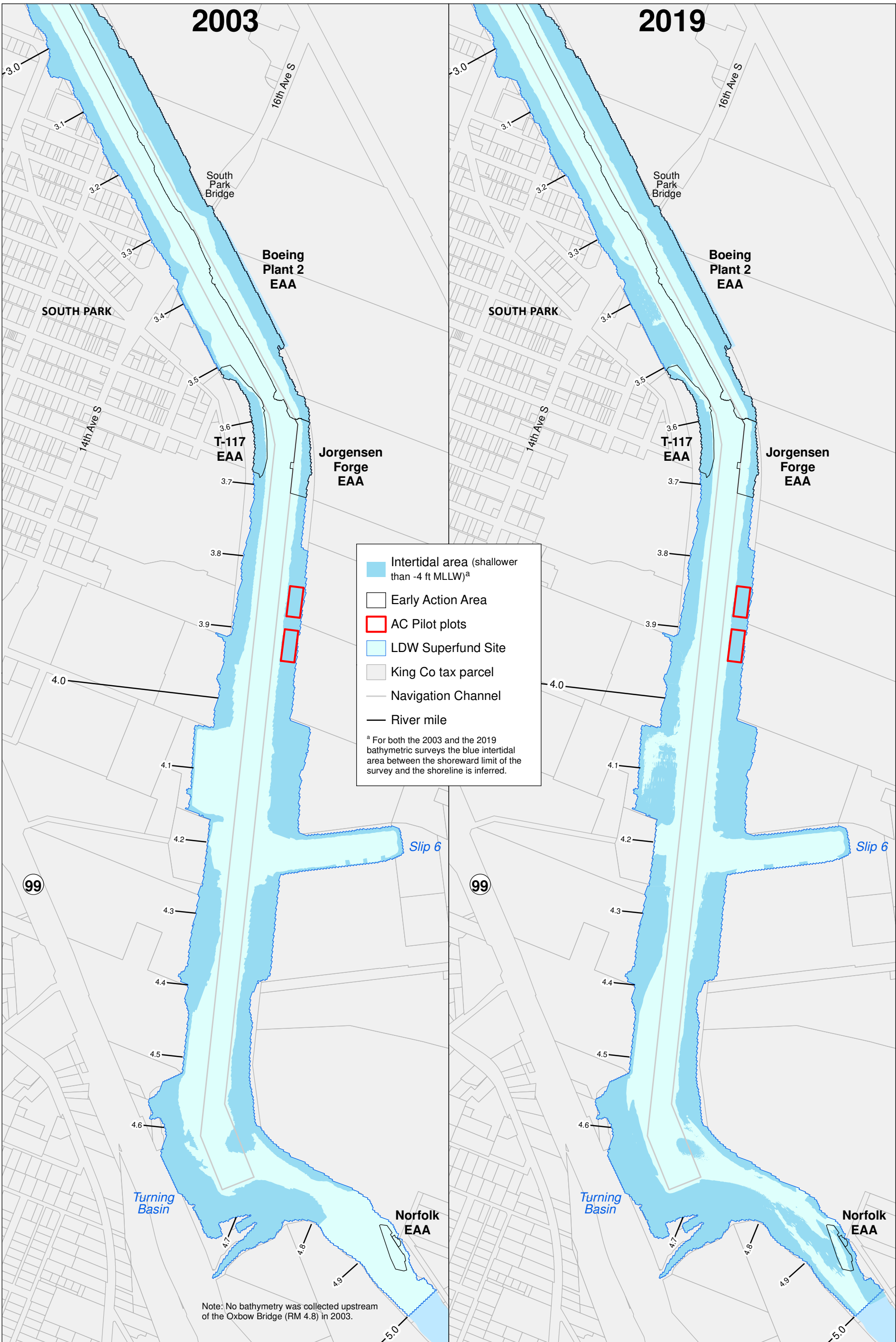
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0 500 1,000 Feet
0 200 400 Meters

Figure A-2. Comparison of 2003 and 2019 potential tug scour area and shoal area in the upper reach

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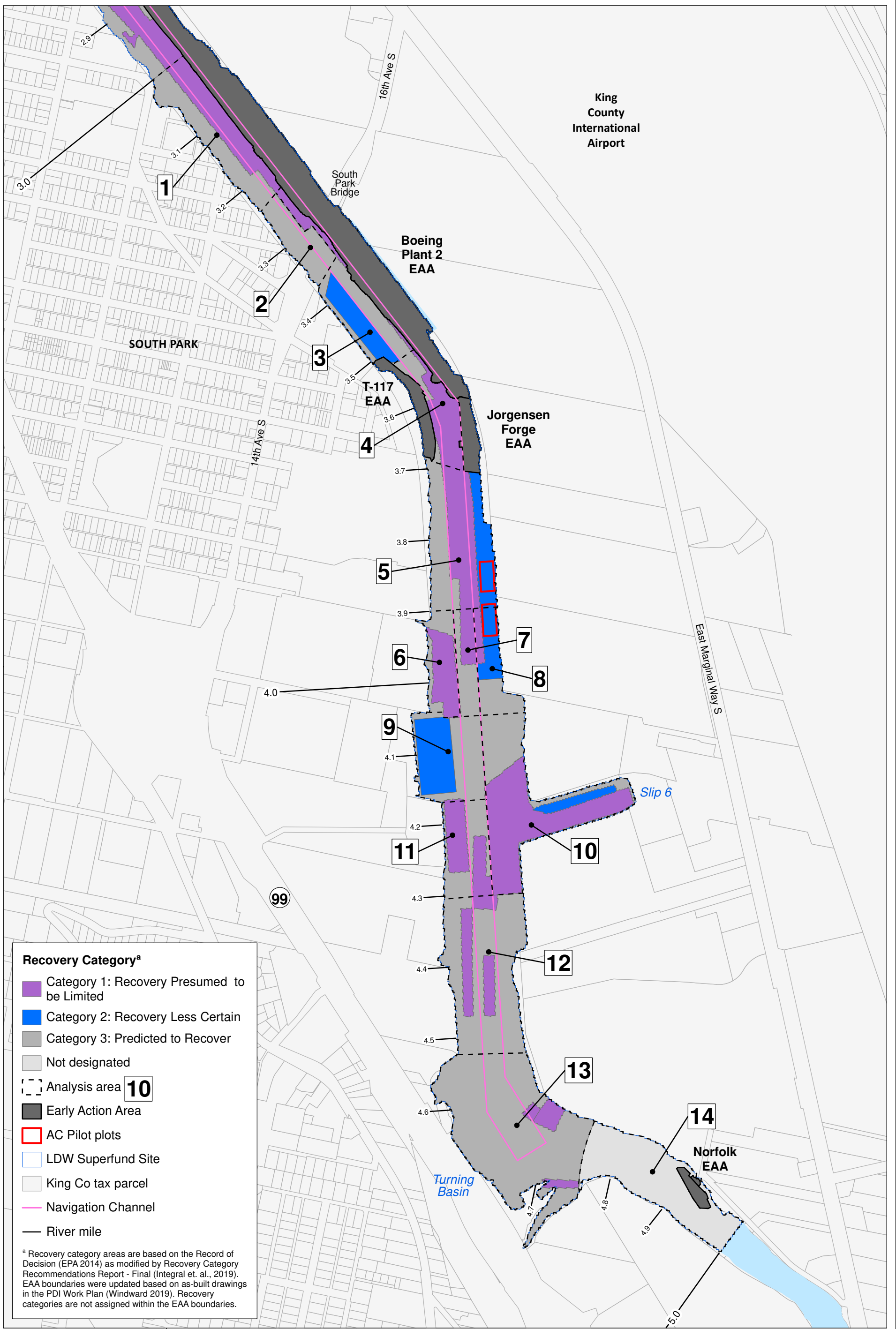


0 500 1,000 Feet
0 200 400 Meters

Figure A-3. Comparison of 2003 and 2019 intertidal area in the upper reach

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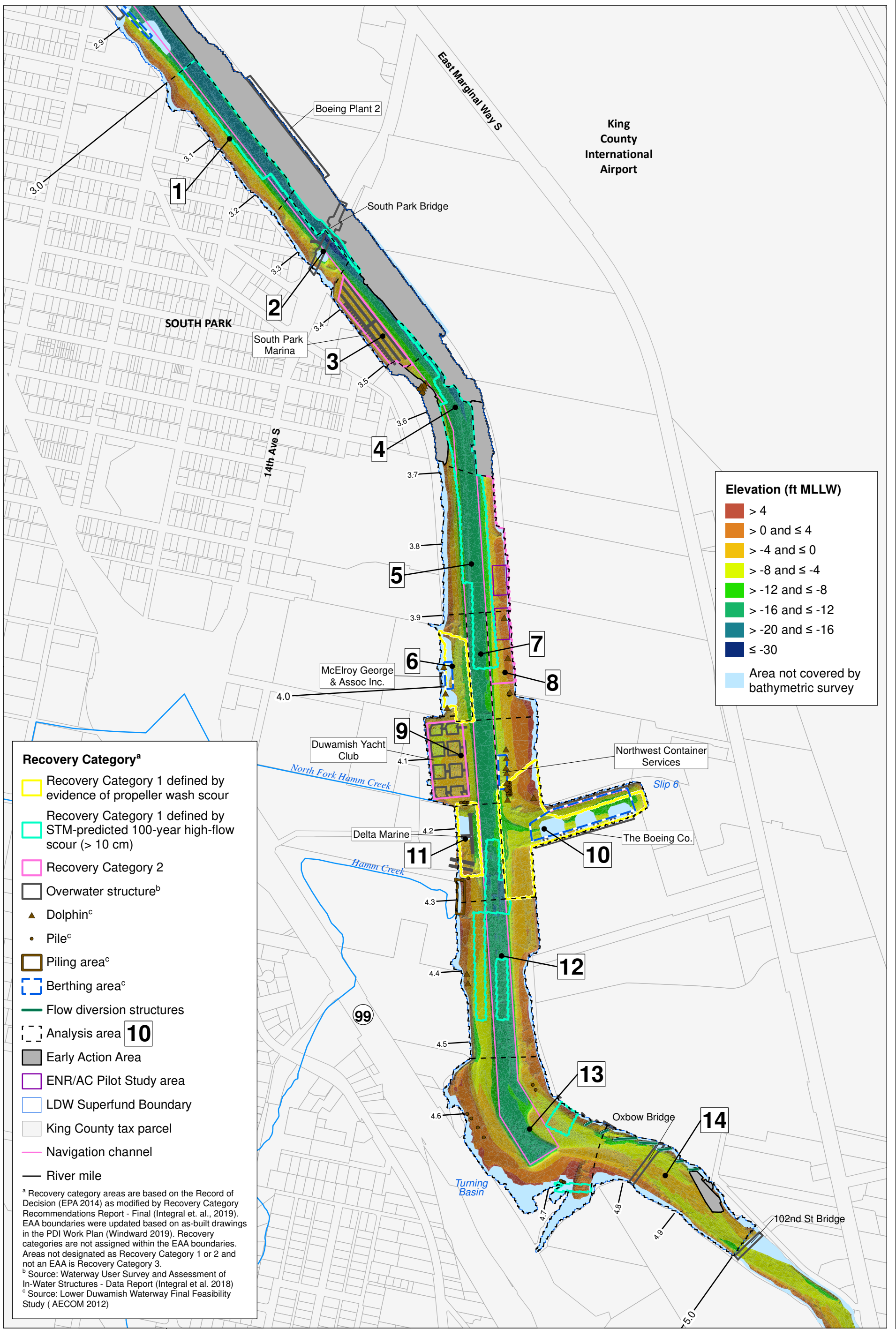


0 500 1,000 Feet
0 200 400 Meters

Figure B-1. Upper reach recovery category designations prior to 2019 bathymetric survey analysis and areas of focus for further recovery category discussions

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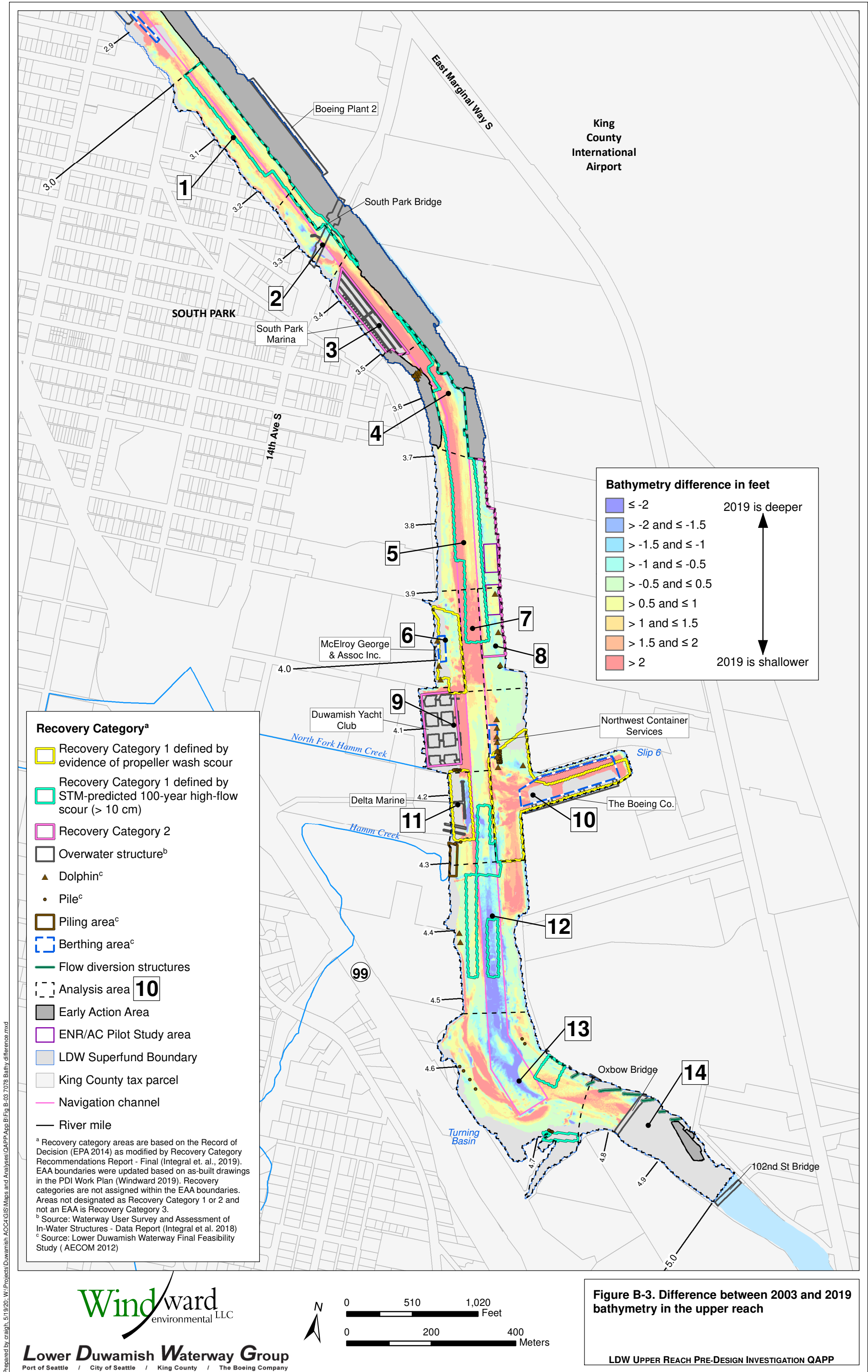
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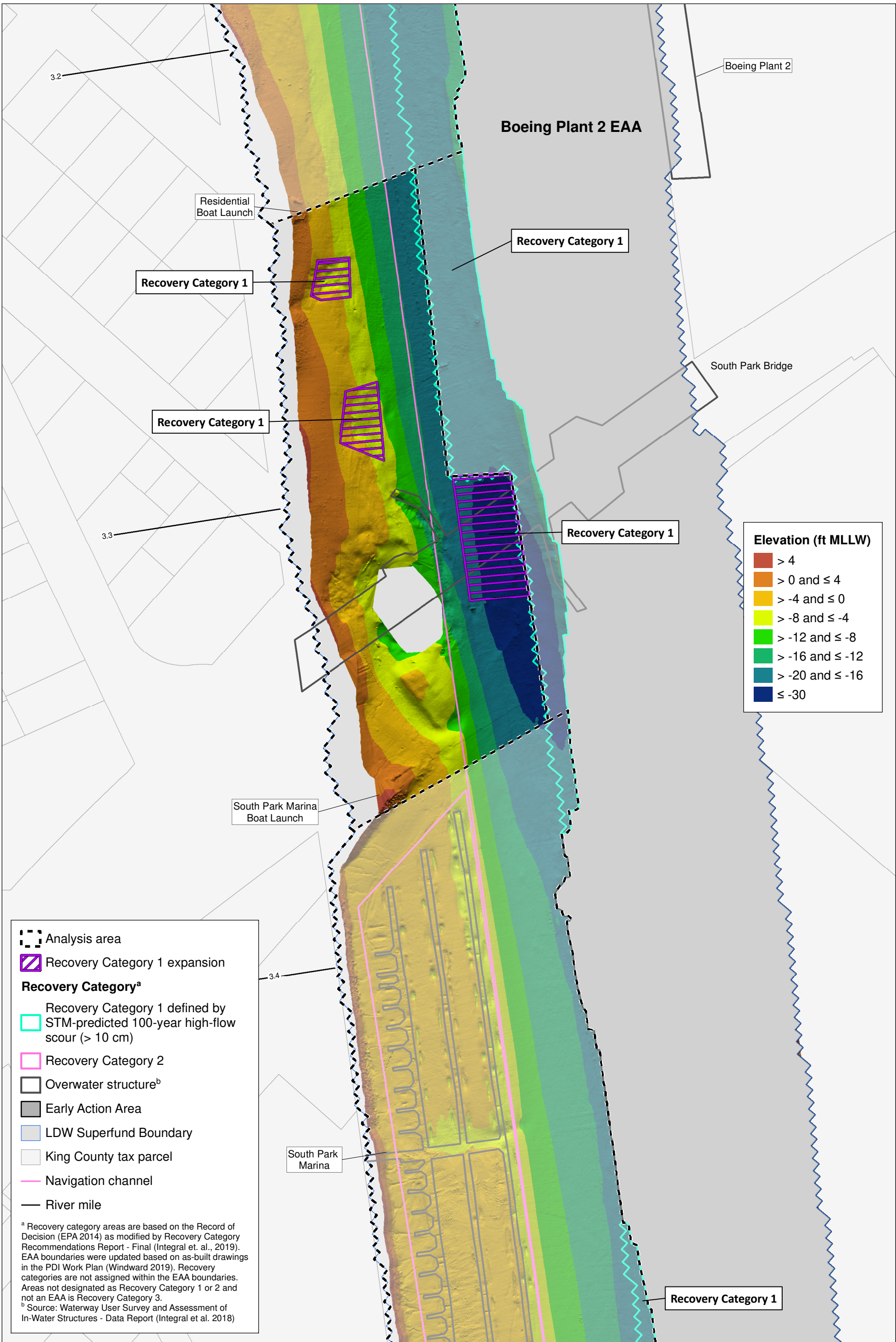
0 500 1,000 Feet
0 200 400 Meters

Figure B-2. Sun-illuminated 2019 bathymetry in the upper reach

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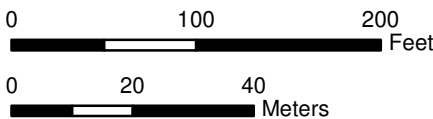
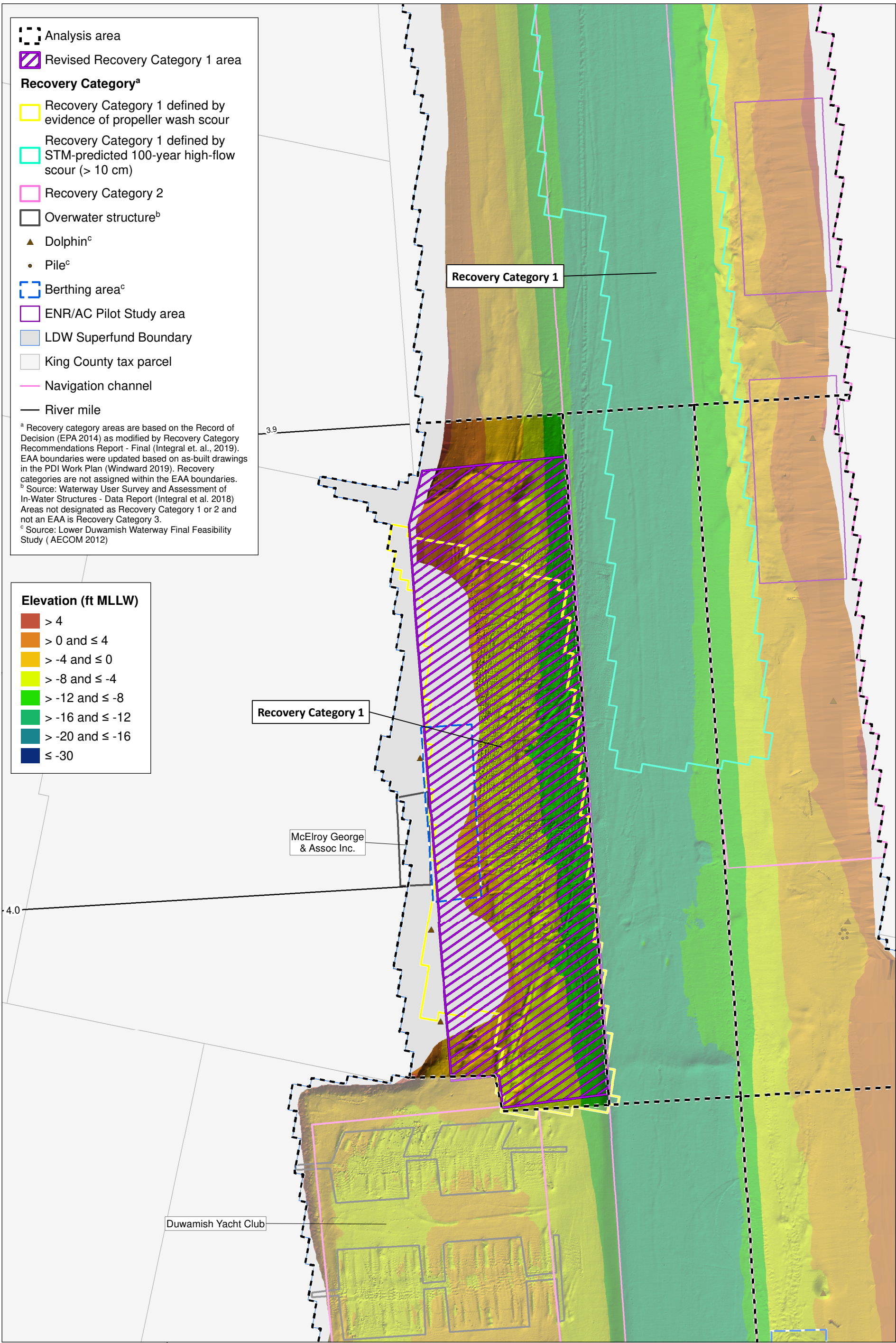


Figure B-4. Potential recovery category modifications, Analysis Area 2

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0 75 150 Feet
0 20 40 Meters

Figure B-5. Potential recovery category modifications, Analysis Area 6

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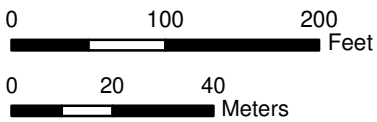
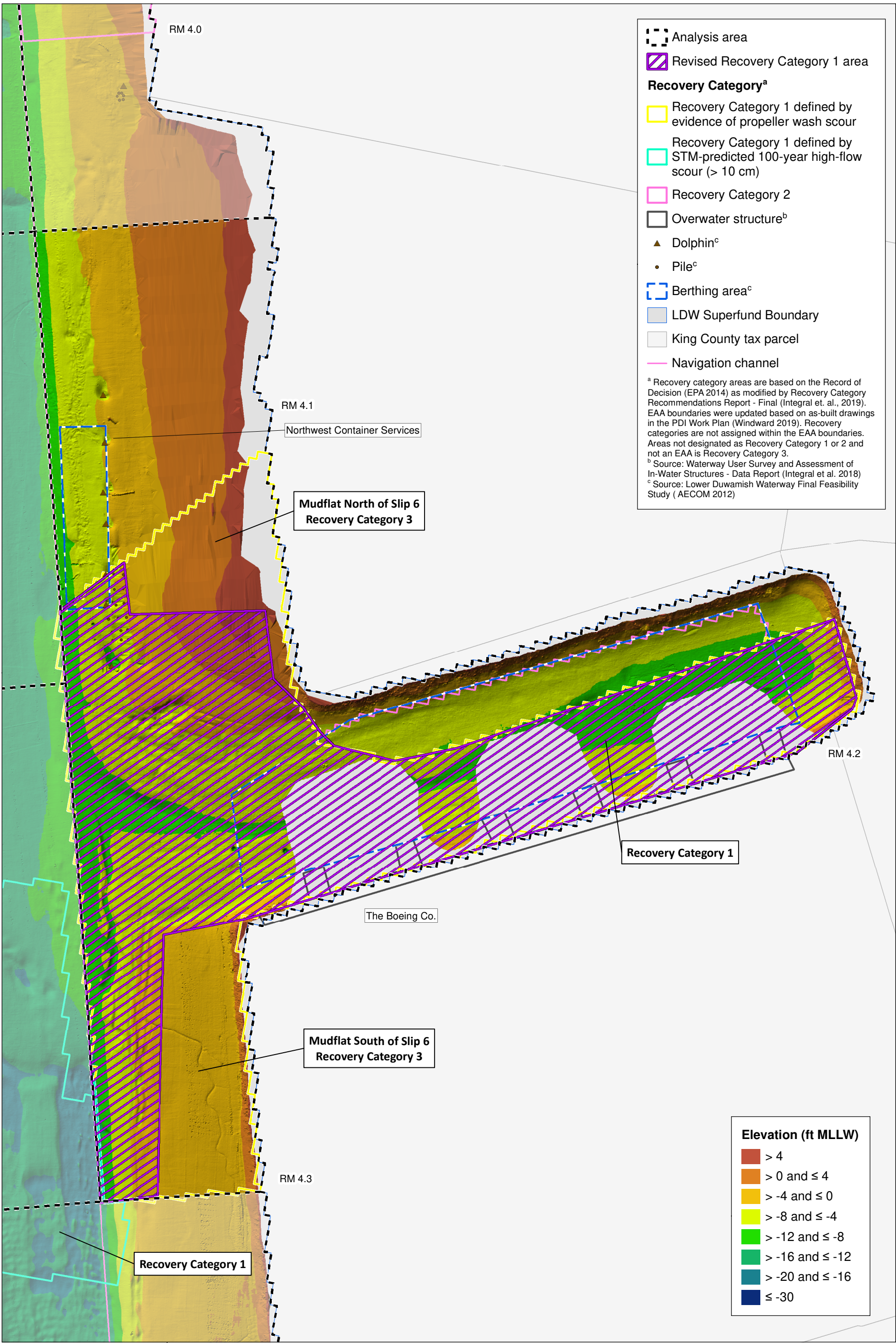
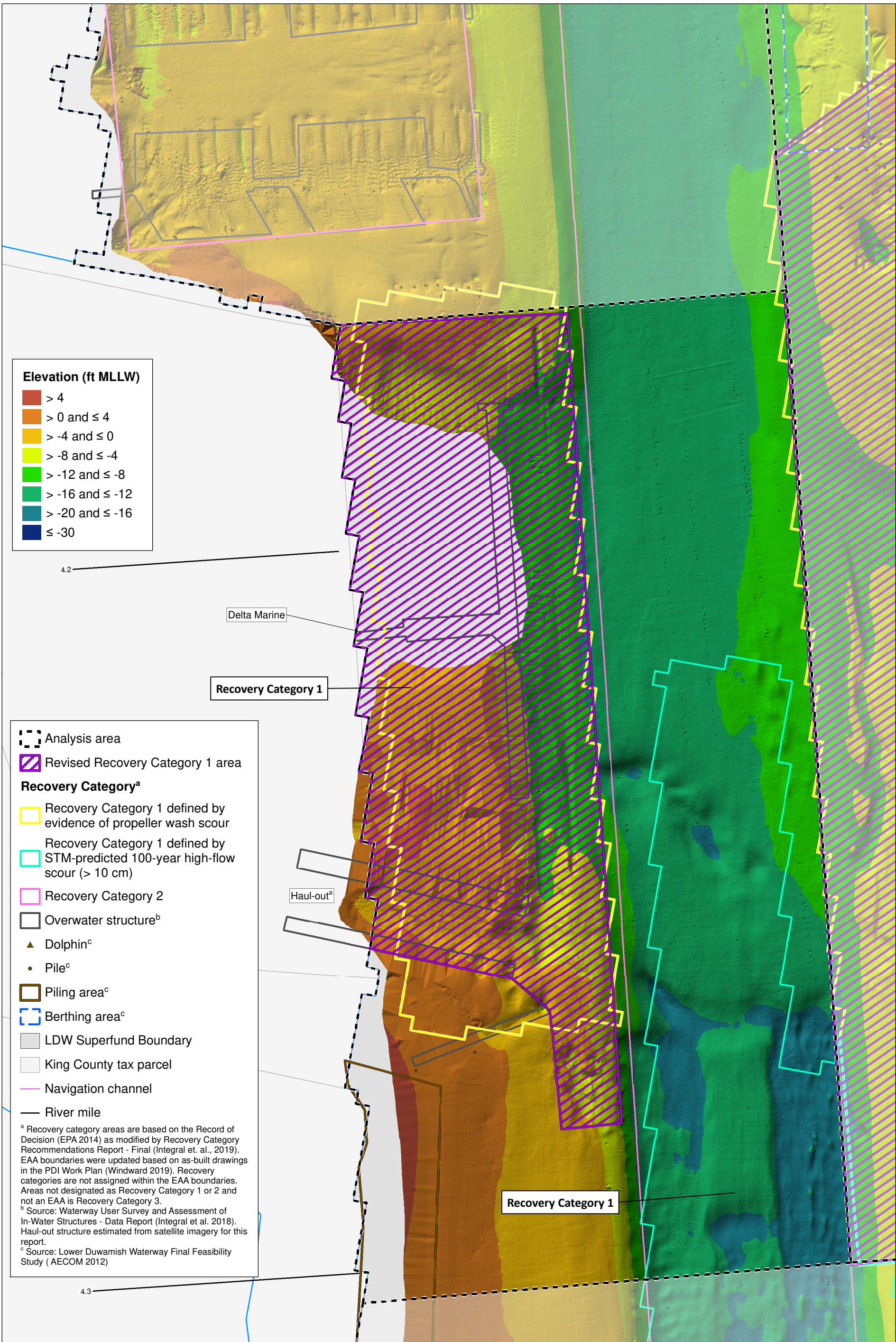


Figure B-6. Potential recovery category modifications, Analysis Area 10

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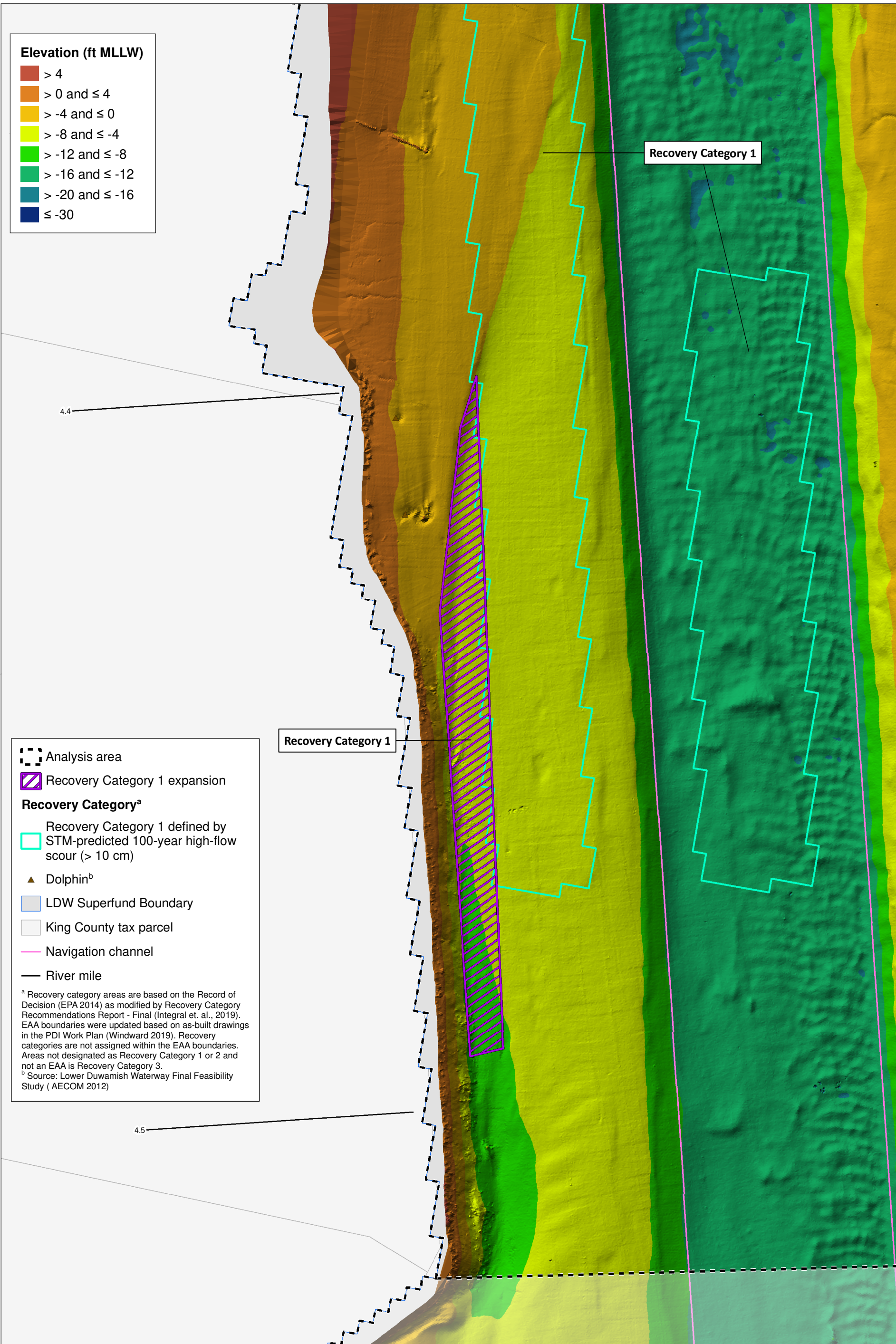


0 50 100 Feet
0 10 20 Meters

Figure B-7. Potential recovery category modifications, Analysis Area 11

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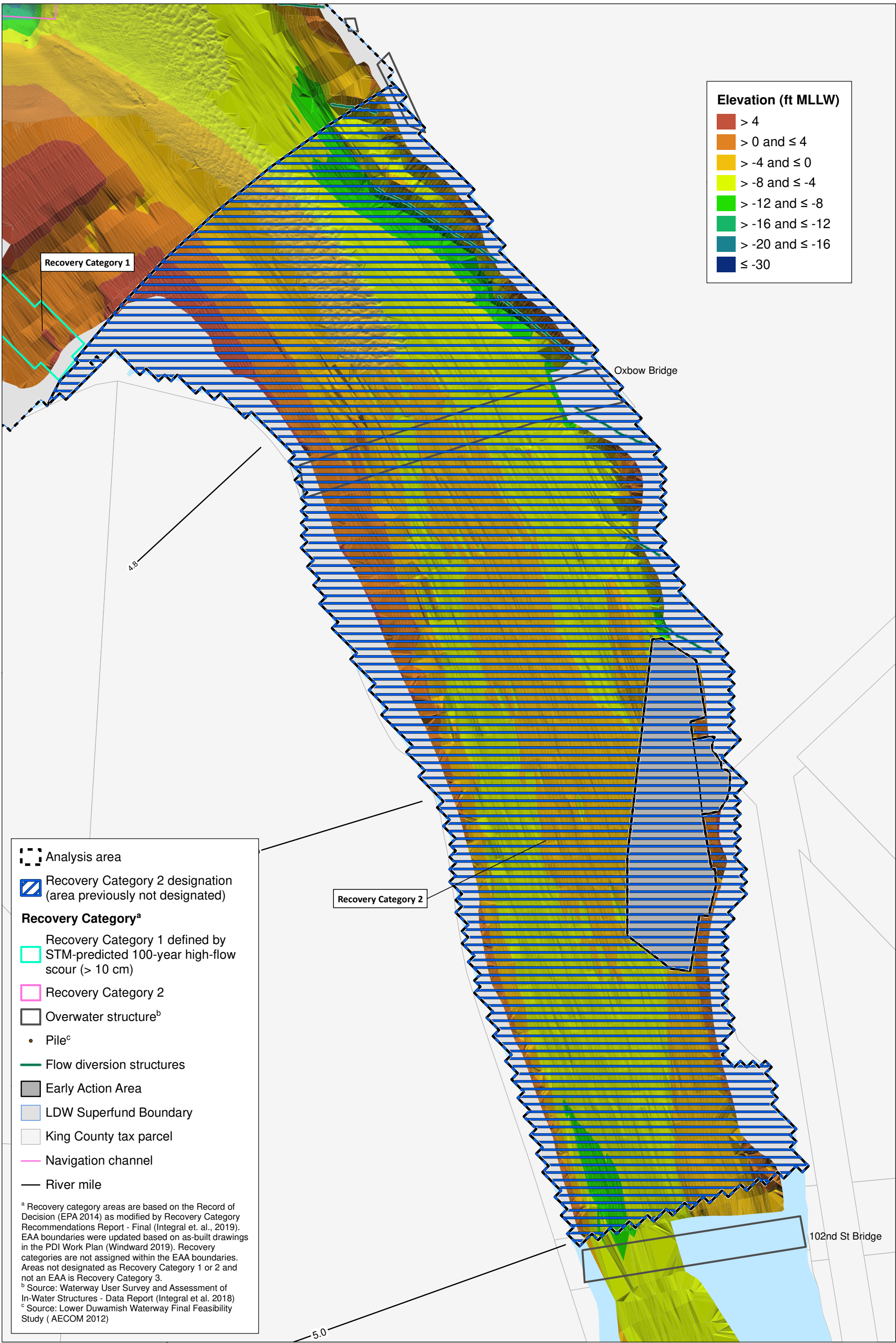


0 50 100 Feet
0 10 20 Meters

Figure B-8. Potential recovery category modifications, Analysis Area 12

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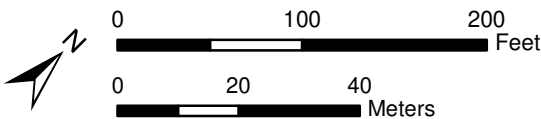
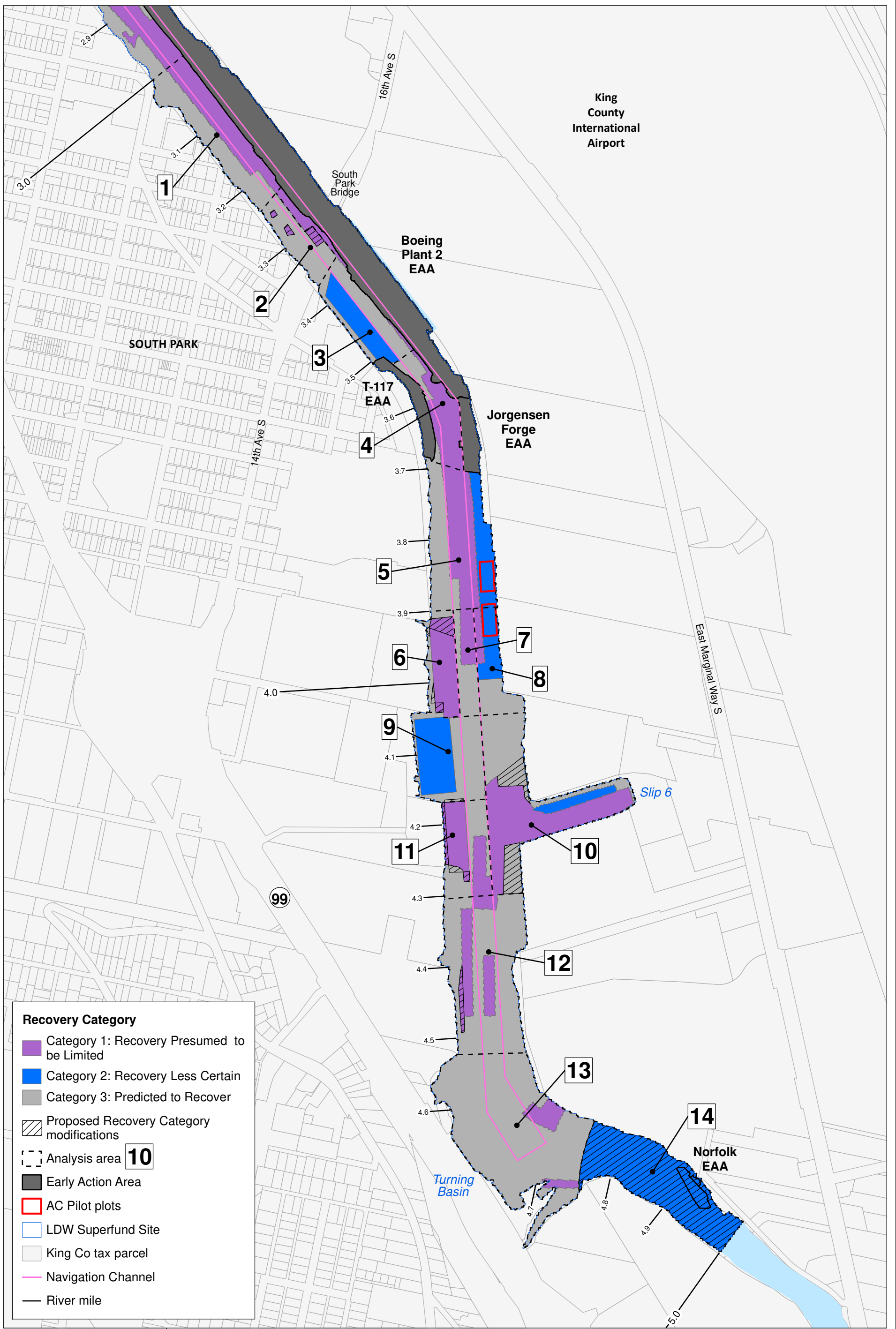


Figure B-9. Potential recovery category modifications, Analysis Area 14

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0 500 1,000 Feet
0 200 400 Meters

Figure B-10. Potential recovery category modifications for the upper reach

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