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MEMORANDUM

To:	Joyce Mercuri, Washington State Department of Ecology	**Date:**	July 1, 2013
From:	Joy Dunay and David Templeton, Anchor QEA	**Project:**	040289-02.07
Cc:	Steve Misiurak, City of Gig Harbor William Joyce, Joyce Ziker Parkinson, PLLC		
Re:	Eddon Boat Park Long-Term Monitoring Plan Year 5 Memorandum		

This Long-Term Monitoring Plan (LTMP) Year Five (Year 5) memorandum for the Eddon Boat Park Site (Site) was prepared on behalf of the City of Gig Harbor (City) to comply with the requirements in the Washington State Department of Ecology (Ecology) approved LTMP (Anchor 2009). The LTMP complies with the requirements described in the Cleanup Action Plan (CAP; Anchor 2008), which is included as an exhibit to the Agreed Order (AO) DE 5597 (Ecology 2008). This is the final year of cap monitoring. A comprehensive background including Site history and regulatory timeline is provided in the Project Completion Report (Anchor QEA 2011).

The LTMP required five years of visual monitoring and one year of chemical testing. The areas assessed in the LTMP are cap area SMU-3 and enhanced natural recovery (ENR) area SMU-2 (Figure 1). SMU-3 contained three of ten sample locations that exceeded the total mercury sediment quality standard (SQS) cleanup levels. Additionally, three samples in this area contained tributyltin (TBT) above benchmark values established by Ecology, as described in the CAP. As part of the cleanup action, this area was capped with 12 inches of sand and overlain by 6 inches of habitat mix. SMU-2 contained total mercury above the cleanup screening level (CSL) and TBT porewater above Site cleanup levels (0.15 micrograms per liter [µg/L]), and was dredged to 2 feet below mudline and then overdredged to remove possible contaminated residuals. Post-construction, one location in this area (SE-03) exceeded the TBT Site cleanup level; therefore, ENR material consisting of a 1-foot sand layer was placed, followed by a 6-inch habitat mix layer. Year 3 monitoring included chemical analysis of the cap sand layer at three locations in SMU-2 and SMU-3 to determine if TBT or mercury were migrating to the surface layer. All samples yielded non-detects of

these chemicals concluding that the remedy is successful and additional chemical monitoring is not required.

Five years of visual monitoring were required in areas SMU-2 and SMU-3 to verify that the sediment cap has achieved its performance standard. As set forth in the LTMP, the performance standard is met if the cap has remained in place and has not substantially eroded over time by natural and anthropogenic forces. This was assessed through visual inspection of the cap surface layer to confirm that the material (i.e., habitat mix) has remained in place. In addition, the visual inspection included the measurement of any accumulations of fine-grained material that have deposited on top of the surface layer (i.e., habitat mix) to determine if more than 2 centimeters (cm) of fine-grained material has accumulated.

Year 5 visual inspections were performed on May 28, 2013, between 1215 and 1415 hours. Present during a portion of the visual inspection was the City Engineer, Stephen Misiurak, and the Remediation Project Manager for the City. During this time, the tidal elevation ranged from 0.0 to -2.7 mean lower low water (MLLW). This allowed for direct observation of most of SMU-3 and part of SMU-2. Digital photographs were taken in each area from locations marked on Figure 2 and Figure 3. A panoramic view of the cap is provided in Figure 4. As shown in the photographs, the cap material is present in all areas with minimal (fewer than 2 cm) accumulation of fine-grained material. The visual inspection did not identify any areas of concern (i.e., areas where cap material is no longer present). Based on the visual survey and associated photographs, the cap and ENR areas are achieving performance standards and no additional remedial actions are recommended.

In conclusion, Year 5 monitoring was performed in accordance with the Ecology-approved LTMP. Visual inspection confirmed that the cap material is present in SMU-3 and shows no sign of erosion. As expected, some fine-grained material has accumulated, and recolonization of native plant species such as rockweed (*Fucus gardneri*) and pickleweed (*Salicornia virginica*) is evident. Similarly, the material placed in SMU-2 is present, has not eroded, and is showing signs of deposition. This is consistent with the yearly visual inspections conducted since 2009 and confirms that the cleanup action has functioned as desired and in accordance with the CAP.

This event has fulfilled the City's obligations per the LTMP and CAP. The City looks forward to continuing park construction including installing sidewalks and footpaths to allow pedestrian access to the water. Other developments such as pier and floating dock construction, and restoration of the Eddon Boat Shop were completed over the last five years. Photographs of the reconstructed park are included in Appendix A. Upon Ecology's concurrence with the conclusions in this memo, the City is requesting a formal Notice of Completion letter for the Site indicating that all requirements of the Agreed Order have been satisfied. In addition, the City would like to begin the Hazardous Sites List delisting process.

Attachments

Figure 1 Site Areas and Features
Figure 2 SMU-3 Visual Inspection Results
Figure 3 SMU-2 Visual Inspection Results
Figure 4 Panoramic View
Appendix A Eddon Boat Park Photographs

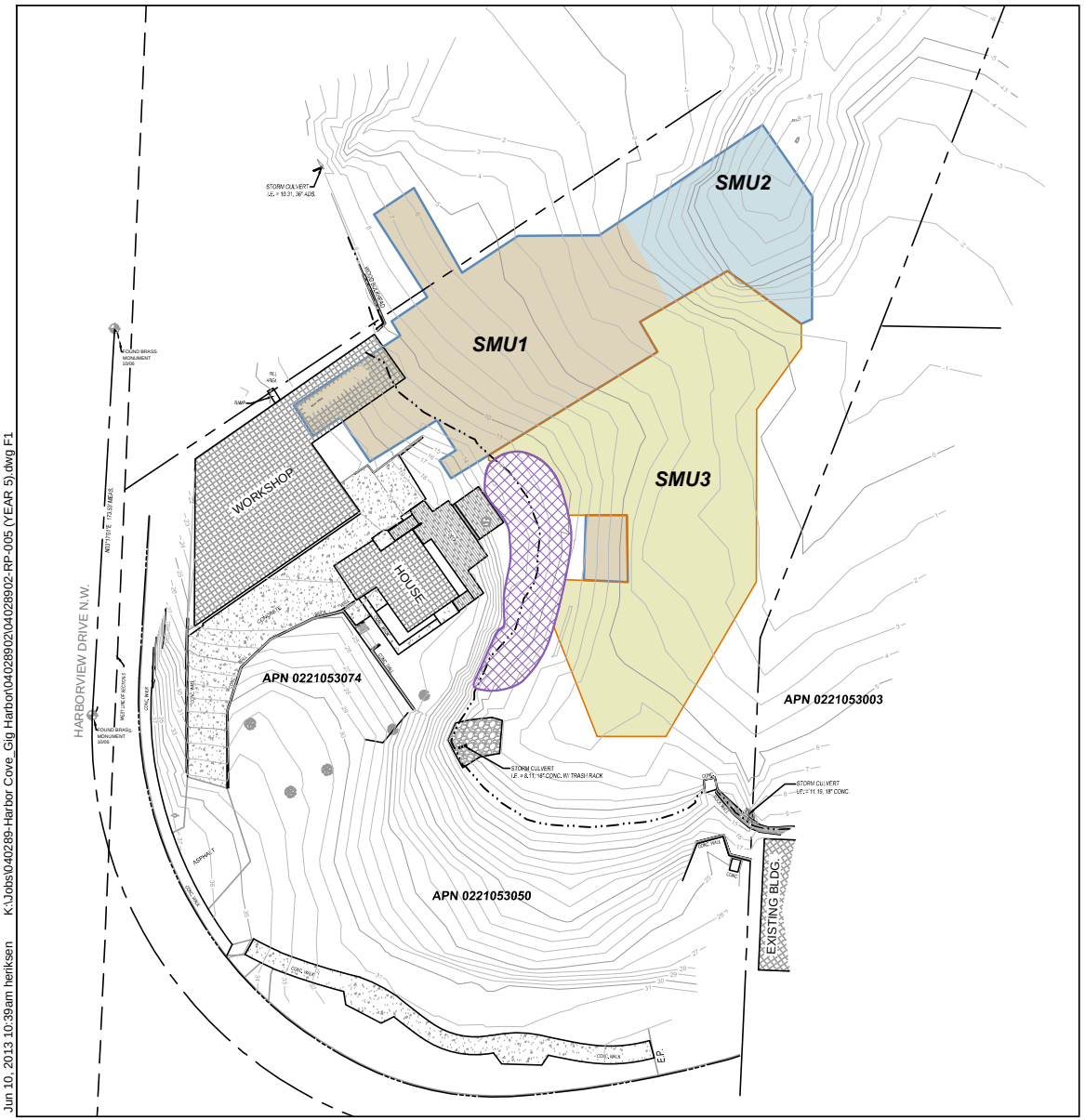
References

Anchor Environmental, LLC (Anchor), 2008. Exhibit B. *Cleanup Action Plan for Eddon Boatyard Site*. Gig Harbor, Washington. June 2008.

Anchor, 2009. *Long-Term Monitoring Plan.* Gig Harbor, Washington. January 2009.

Washington State Department of Ecology (Ecology), 2008. *Agreed Order No. DE 5597*.

Anchor, 2011. *Project Completion Report. Eddon Boat Park Remedial Action Ecology Facility Site No. 1301959 Agreed Order No. DE 5597*. Prepared for Ecology, June 2011.



LEGEND:

- Dredge And Backfill Boundary
- Enhanced Natural Recovery Area
- Cap Boundary
- Existing Salt Marsh Vegetation Restricted Area (No Equipment, Dredging, or Material Placement Allowed)
- Stormwater Outfall
- Approximate Ordinary High Water Mark (OHWM)
- -16 Bathymetric/Topographic Contour (in Feet)

0 80

Scale in Feet

NOTE: Bathymetric and topographic survey by Prizm Surveying, Inc. dated 12/11/2008.

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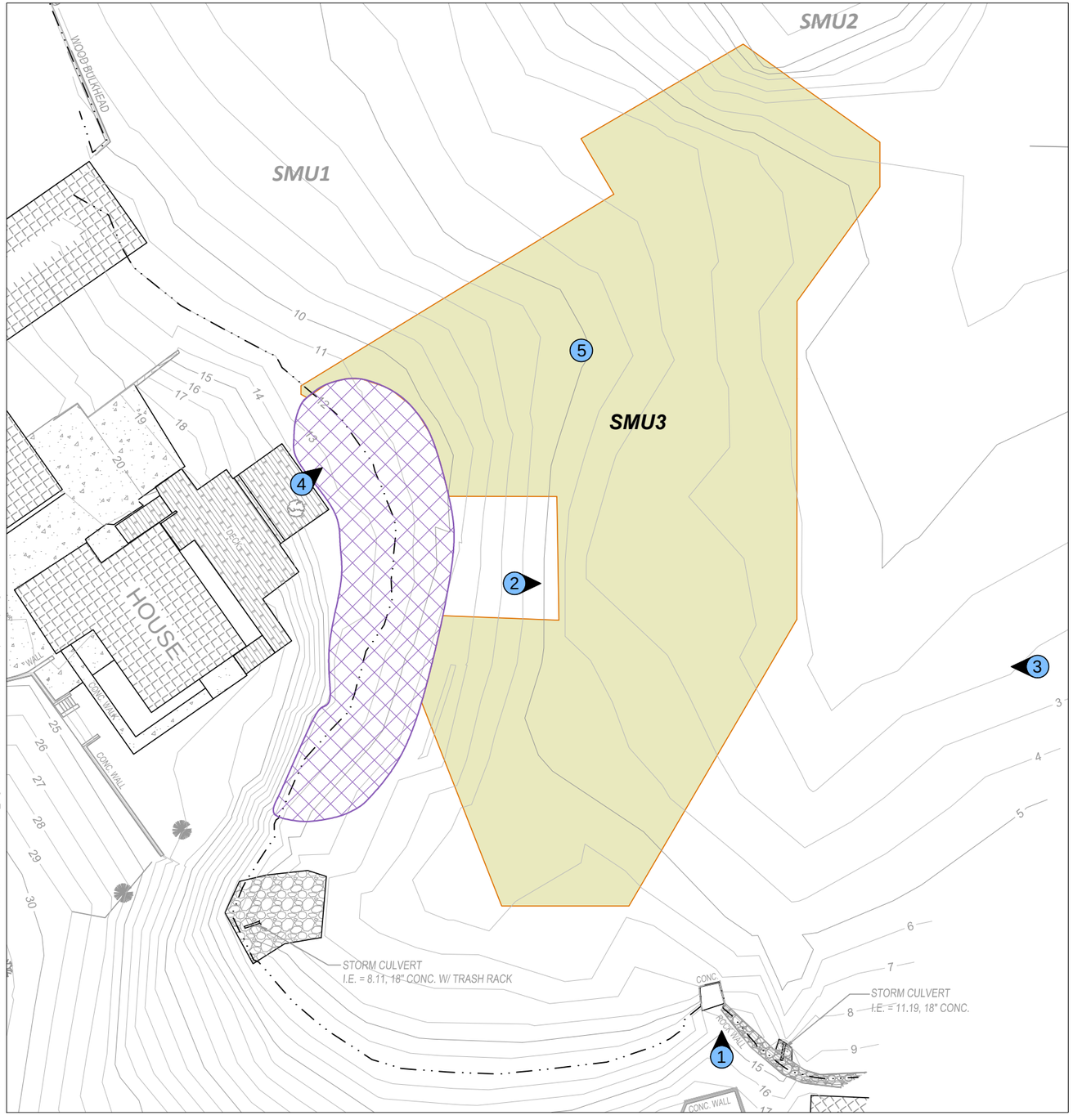
Figure 1
Site Areas, Features, and Sample Locations
Long-Term Monitoring Plan - Year 5 Report
Eddon Boat Park



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LEGEND:

- Cap Boundary
- Existing Salt Marsh Vegetation Restricted Area (No Equipment, Dredging, or Material Placement Allowed)
- Stormwater Outfall
- Approximate Ordinary High Water Mark (OHWM)
- -16 Bathymetric/Topographic Contour (in Feet)
- 3 Photograph Location and Orientation

0 30
Scale in Feet

NOTE: Bathymetric and topographic survey by Prizm Surveying, Inc. dated 12/11/2008.

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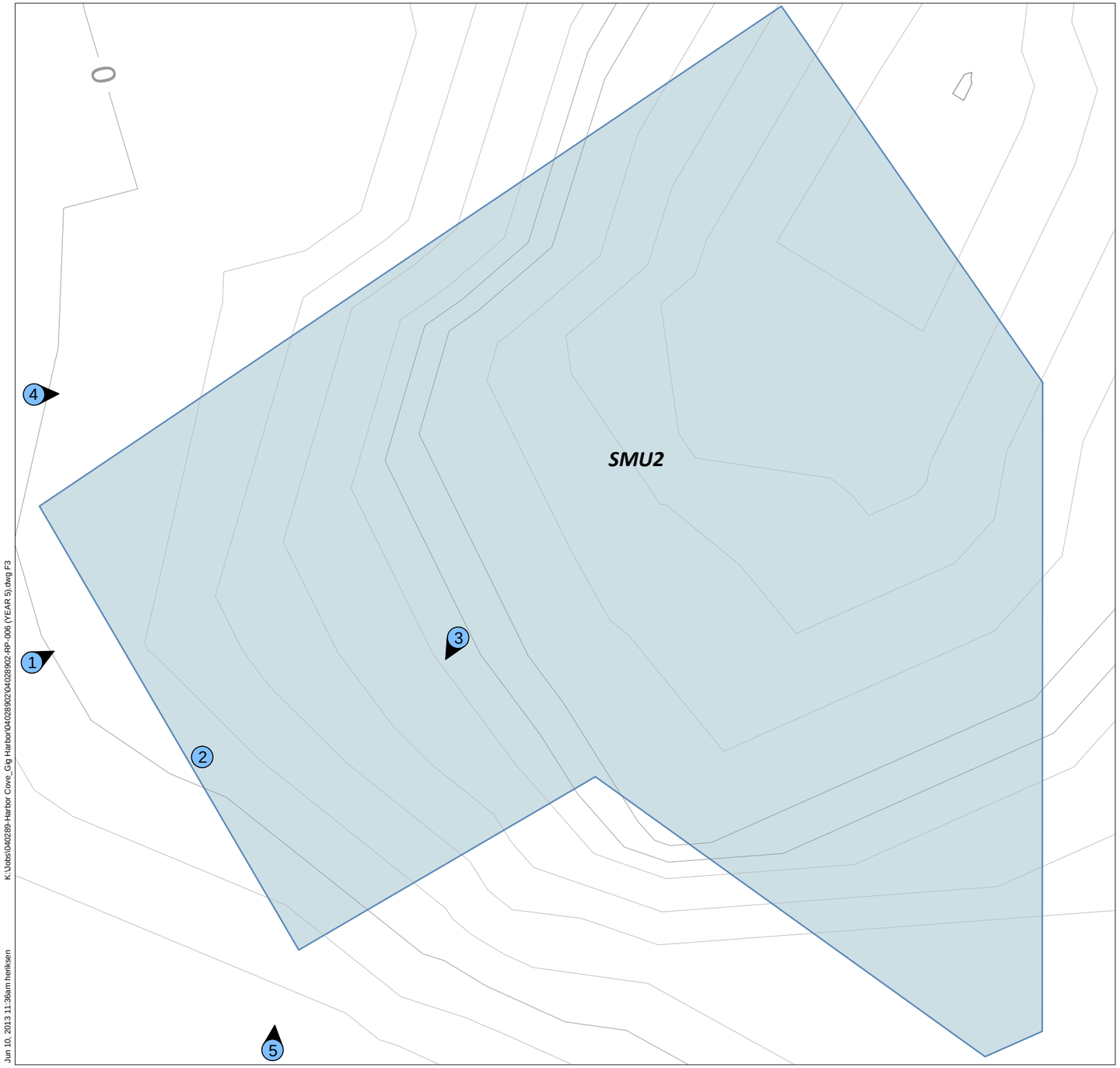
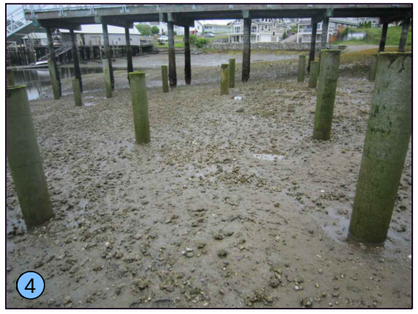
Figure 2
SMU-3 Visual Inspection Results
Long-Term Monitoring Plan - Year 5 Report
Eddon Boat Park





LEGEND:

- Enhanced Natural Recovery Area
- -16 Bathymetric/Topographic Contour (in Feet)
- 3 Photograph Location and Orientation

0 10
Scale in Feet

NOTE: Bathymetric and topographic survey by Prizm Surveying, Inc. dated 12/11/2008.

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Figure 3
SMU-2 Visual Inspection Results
Long-Term Monitoring Plan - Year 5 Report
Eddon Boat Park

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Figure 4
Panoramic View
Long-Term Monitoring Plan - Year 5 Report
Eddon Boat Park

Appendix A
Eddon Boat Park Photographs

Eddon Boat Park Entrance

Appendix A
Eddon Boat Park Photographs

Eddon Boat Shop

Appendix A
Eddon Boat Park Photographs

Eddon Boat Shop

Appendix A
Eddon Boat Park Photographs

Eddon Boat Shop

Appendix A
Eddon Boat Park Photographs

Dock

Appendix A
Eddon Boat Park Photographs

View of Park from the Pier

Appendix A
Eddon Boat Park Photographs

View of Park from the Upper Deck

Appendix A
Eddon Boat Park Photographs

Pier

Appendix A
Eddon Boat Park Photographs

Boating Amenity