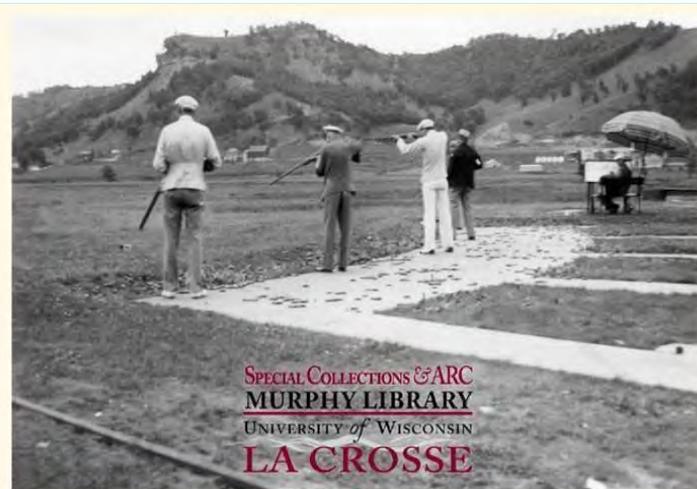
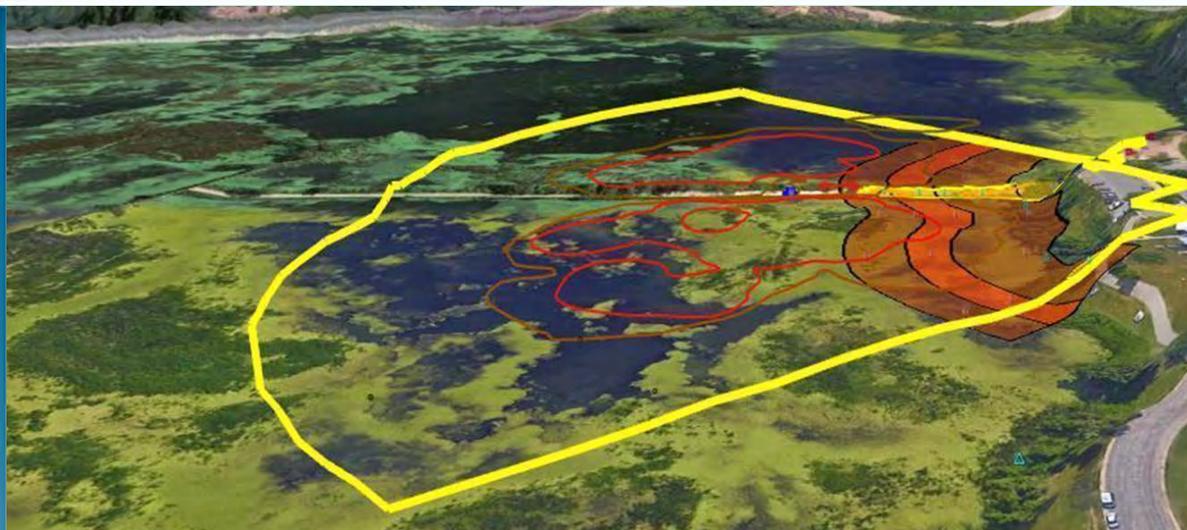


# La Crosse River Marsh

## Remedial Action Options Report



Gun Club members shooting skeet in Myrick Park



SPECIAL COLLECTIONS & ARC  
MURPHY LIBRARY  
UNIVERSITY of WISCONSIN  
LA CROSSE

### Cost Estimate Summary

Site: La Crosse River Marsh  
 Location: La Crosse, Wisconsin  
 Phase: Remedial Action Options Report  
 Base Year: 2020  
 Date: 09/28/2020

| Alternative   | Active Remediation Time (years) | Estimated Active Remediation Cost | Active Remediation Cost Range <sup>1</sup> | Monitoring and Maintenance Duration (years) | Annual Monitoring and Maintenance Cost | Annual Monitoring and Maintenance Cost Range | Total Annual Monitoring and Maintenance Cost (\$Millions/duration) | Net Present Value (NPV) Annual Monitoring and Maintenance Cost (\$Millions/ duration) | Total Alternative Cost (\$ Millions) <sup>2</sup> |
|---|---------------------------------|-----------------------------------|--|---|--|--|--|---|---|
| Option A - No Further Remedial Action                             | N/A                             | \$0                               | \$0  | 50  | \$10,000                               | \$7K - \$15K                                 | \$500,000  | \$290,000   | \$0.2M - \$0.4M                                   |
| <b>Option B - PAH Hot Spot Removal and Institutional Controls</b> | <b>1</b>                        | <b>\$460,000</b>                  | <b>\$0.3M - \$1M</b>                       | <b>30</b>                                   | <b>\$22,000</b>                        | <b>\$15K - \$33K</b>                         | <b>\$669,400</b>   | <b>\$450,000</b>  | <b>\$0.6M - \$1.4M</b>                            |
| Option C - Lead and PAH Hot Spot Removal                          | 1-2                             | \$7,910,000                       | \$6M - \$12M                               | 5 Year Review (Single Event)                | \$50,000                               | \$35K - \$75K                                | \$50,000   | \$49,200  | \$6M - \$12M                                      |
| Option D - Dredging & Disposal                                    | 2                               | \$28,490,000                      | \$20M - \$43M                              | 5 Year Review (Single Event)                | \$50,000                               | \$35K - \$75K                                | \$50,000   | \$49,200  | \$20M - \$43M                                     |

Notes:

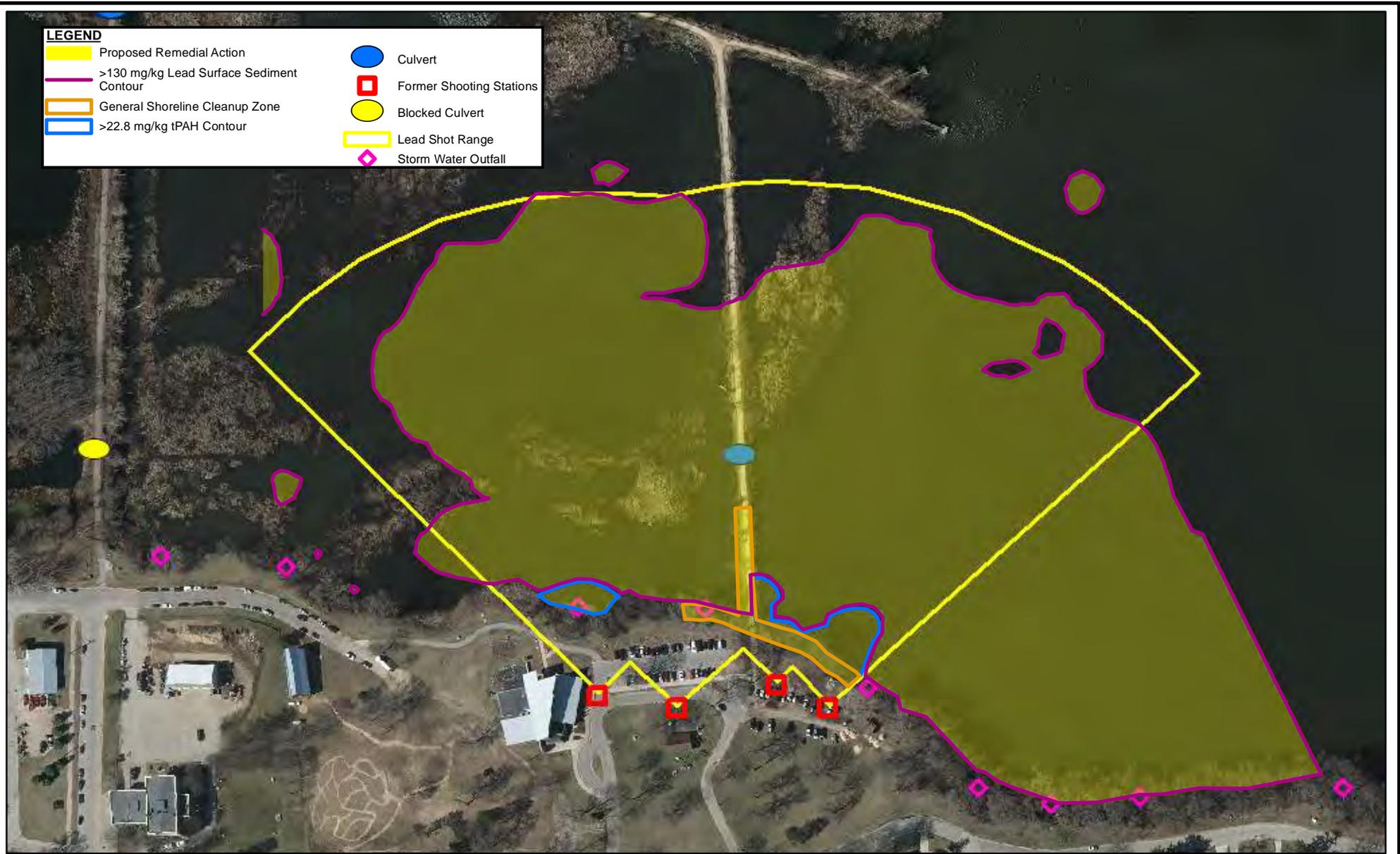
<sup>1</sup> A range of +50% and -30% is considered appropriate for this project.

<sup>2</sup> Adjusted for Net Present Value (NPV) of maintenance and monitoring program using an annual interest rate from OMB Circular A-94 2020 update.

Prepared by: JAM8

Checked by: TSW1

Option B is recommended



| LEGEND |  |
|--------|--|
|        | Proposed Remedial Action                 |
|        | >130 mg/kg Lead Surface Sediment Contour |
|        | General Shoreline Cleanup Zone           |
|        | >22.8 mg/kg tPAH Contour                 |
|        | Culvert                                  |
|        | Former Shooting Stations                 |
|        | Blocked Culvert                          |
|        | Lead Shot Range                          |
|        | Storm Water Outfall                      |

**NOTES:**

1. Coordinate System used: UTM Zone 15, meters.
2. Aerial imagery provided by City of La Crosse.
3. Surficial lead samples and sediment core lead samples were taken as part of the UWL Monitoring and Assessment of Legacy Lead Contamination in the La Crosse River Marsh report in 2011.
4. Raster created using Arcmap 10.6 natural neighbor, 10ft grid cells.
5. Sediment tPAH sampling (2/16/17-2/18/17) and geoprobe borings (11/7/16) were completed as part of the Site investigation by The OS Group.
6. tPAH contours are approximate and represent maximum concentrations observed in any core depth.

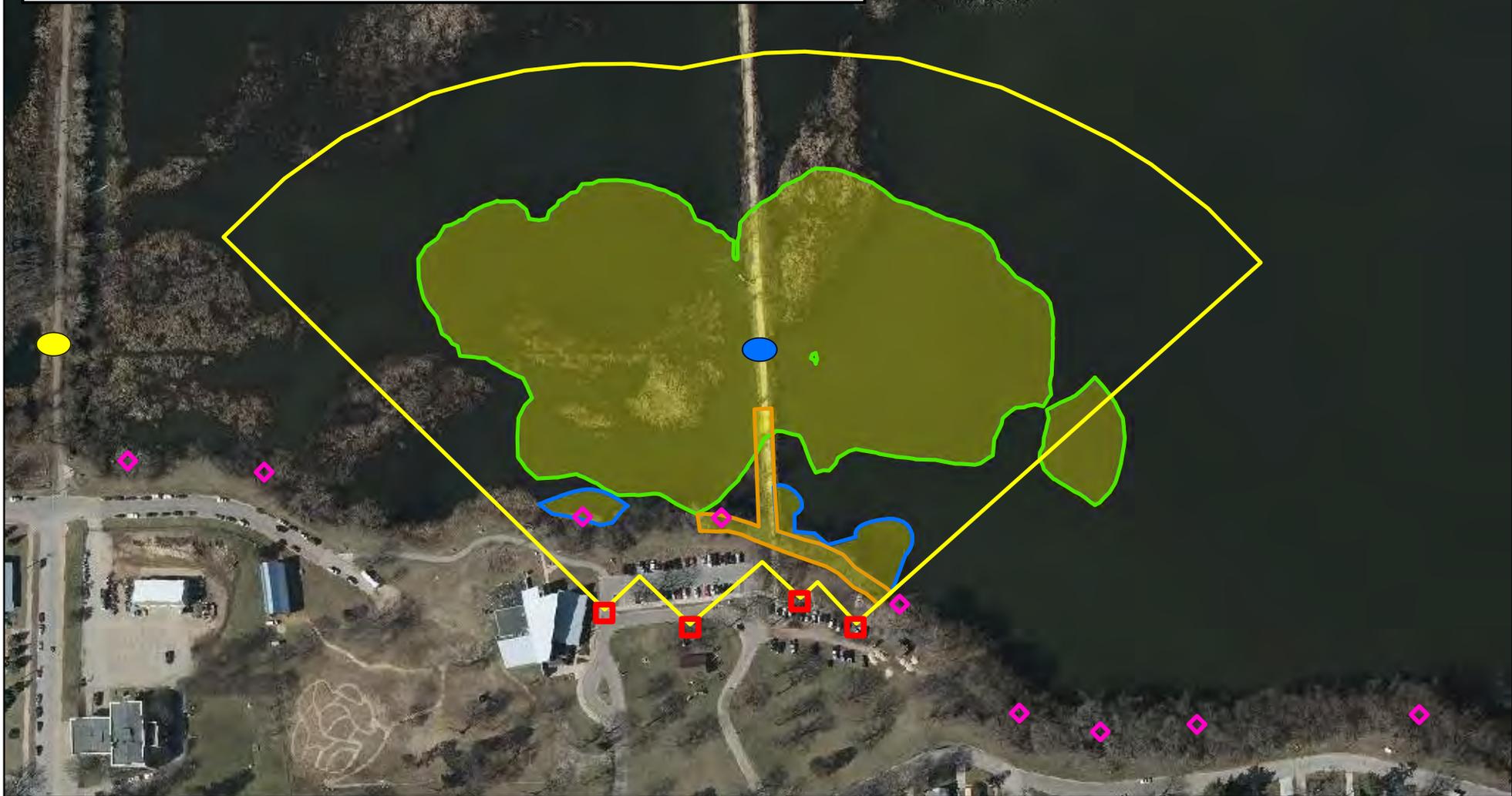
This drawing is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only.

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|                                |                 |                 |
|--------------------------------|-----------------|-----------------|
| The OS Group                   |                 |                 |
| <b>FIGURE 14</b>               |                 |                 |
| REMEDIAL ACTION OPTION D       |                 |                 |
| LA CROSSE RIVER MARSH          |                 |                 |
| REMEDIAL ACTION OPTIONS REPORT |                 |                 |
| LA CROSSE, WI                  |                 |                 |
| Date: AUGUST 2020              | Revision Date:  |                 |
| Drawn By: JRS6                 | Checked By: TSW | Project: 19O003 |

**LEGEND**

|   |  |   |
|---|--|---|
|  Proposed Remedial Action                  |  >400 mg/kg Lead Surface Sediment Contour |  Storm Water Outfall |
|  General Shoreline Cleanup Zone            |  Former Shooting Stations                 |  Culvert             |
|  >22.8 mg/kg Maximum tPAH Sediment Contour |  Lead Shot Range                          |  Blocked Culvert     |



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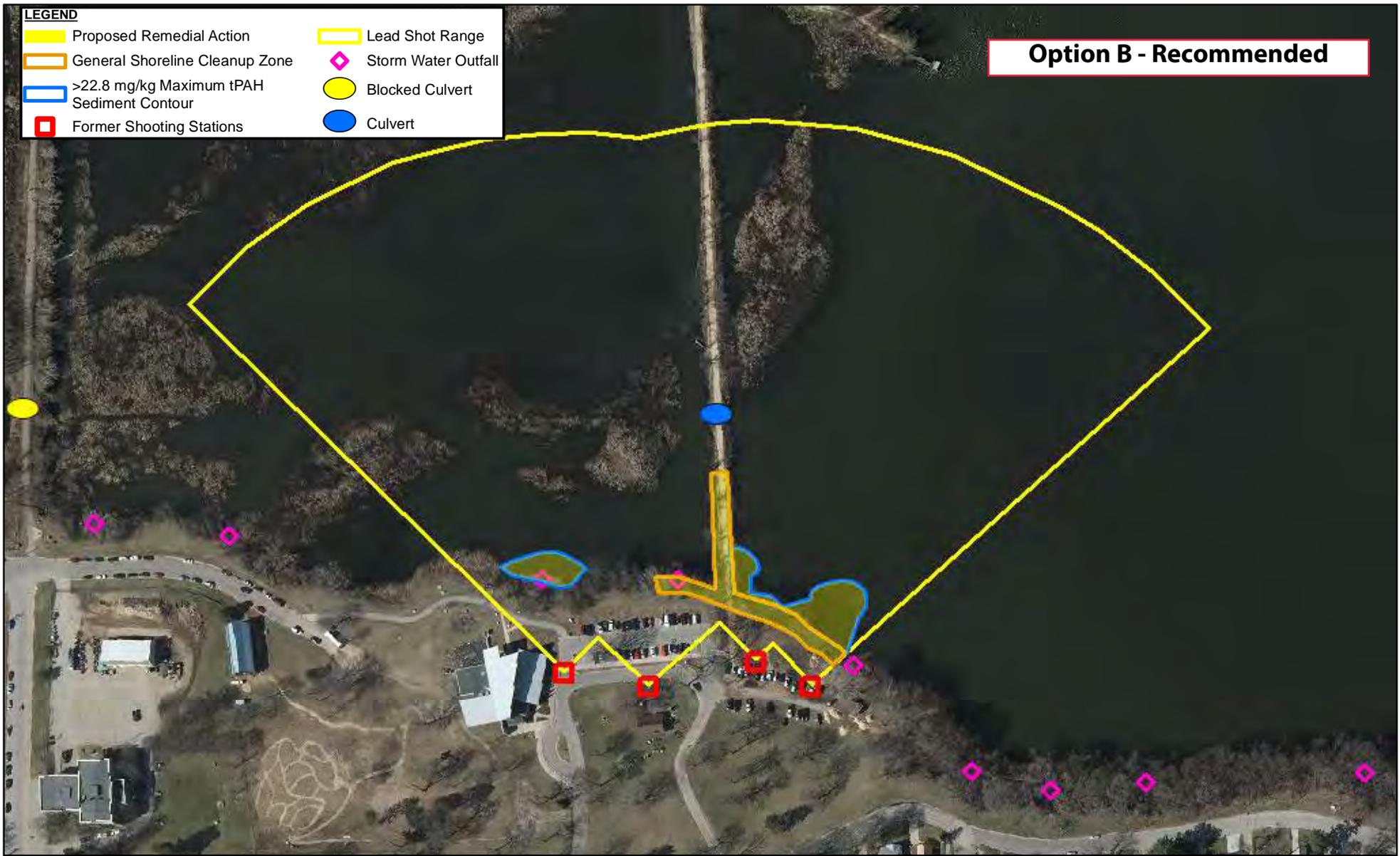
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|                                |                 |                 |
|--------------------------------|-----------------|-----------------|
| <b>The OS Group</b>            |                 |                 |
| <b>FIGURE 13</b>               |                 |                 |
| REMEDIAL ACTION OPTION C       |                 |                 |
| LA CROSSE RIVER MARSH          |                 |                 |
| REMEDIAL ACTION OPTIONS REPORT |                 |                 |
| LA CROSSE, WI                  |                 |                 |
| Date: AUGUST 2020              | Revision Date:  |                 |
| Drawn By: JRS6                 | Checked By: TSW | Project: 19O003 |

| LEGEND  |   |
|---|---|
|   | Proposed Remedial Action                  |
|  | General Shoreline Cleanup Zone            |
|  | >22.8 mg/kg Maximum tPAH Sediment Contour |
|  | Former Shooting Stations                  |
|   | Lead Shot Range                           |
|  | Storm Water Outfall                       |
|  | Blocked Culvert                           |
|  | Culvert                                   |

**Option B - Recommended**



**NOTES:**

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|                                |                 |                 |
|--------------------------------|-----------------|-----------------|
| The OS Group                   |                 |                 |
| <b>FIGURE 12</b>               |                 |                 |
| REMEDIAL ACTION OPTION B       |                 |                 |
| LA CROSSE RIVER MARSH          |                 |                 |
| REMEDIAL ACTION OPTIONS REPORT |                 |                 |
| LA CROSSE, WI                  |                 |                 |
| Date: AUGUST 2020              | Revision Date:  |                 |
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