

**Specifications for  
TWRA Spillway Control Systems Repair  
For Tennessee Wildlife Resources Agency (TWRA)  
ITB 32801-12814**

This solicitation is for repairing four (4) spillway control systems and additional gate maintenance as specified at four (4) lakes in west Tennessee.

**A. General Requirements**

1. Contractor shall provide a commercially certified dive crew on site. All diving shall be performed in accordance with Occupational Health & Safety Administration (OSHA) and the Association of Diving Contractors' International (ADCI) regulations and standards.
2. Contractor shall provide surface-supposed diving equipment which shall be used for all underwater portions of the work.
3. **Warranty** - One (1) year warranty on all parts and repairs.
4. **Bar Screens**
  - a. See Appendix for diagram.
  - b. Shall be fabricated from two (2) inch galvanized steel angle with ½ inch galvanized steel type rods.
  - c. Rods shall be welded to angle intersection with maximum of six (6) inch openings.
  - d. Shall be fabricated to dimensions of existing bar screen.
  - e. New stainless-steel anchors shall be used for installation.
  - f. New 316 stainless steel hardware shall be provided by Contractor for installation.
5. **Trash Rack**
  - a. See Appendix for diagram.
  - b. Shall be a flat grill-type trash rack fabricated from ½ inch stainless steel type 304L rods.
  - c. Rods shall be welded together at intersections with maximum six (6) inch openings.
  - d. Shall be fabricated to dimensions allowing for installation over existing or new sluice gate.
  - e. Shall provide three (3) inches by ¼ inch stainless steel band with seven (7) eight (8) inch holes for three (3) four (4) inch diameter anchor bolts.
  - f. Shall install ¾ inch diameter Hilti Kwik Bolt TZ (KB-TZ) stainless steel expansion anchor (or of equal quality and strength) with a minimum six (6) inch embedment.
  - g. Shall install anchors in strict accordance with manufacturer's instructions.
  - h. Installation of anchors shall be performed by personnel trained and certified to install Hilti expansion anchors.
6. **Sluice Gate**
  - a. See Appendix for diagram.
  - b. Gate system shall be fabricated using cast iron or stainless-steel.
  - c. The slide gate shall be supplied complete with all accessories such as gate assembly, gasket, studs and nuts for mounting, stem, thrust nut, stem couplings, stem guides, pedestal, operating mechanism as required, gate opening in arrangement and as required anchor bolts and fasteners for stem guides and pedestal.
  - d. The gates shall utilize self-adjusting seals. Due to the difficulty of accessing gates when they are in service, gates that utilize adjustable wedges, wedging devices, or pressure pads are not acceptable.
  - e. Gates shall be shop tested to verify the leakage performance at operating head in the un-seating direction. Where sealing configuration permits, hydrostatic testing shall be

conducted at 1.5 times operating head, to demonstrate structural integrity. Testing for opening load at the unseating operating head to verify actuating mechanism sizing shall also be conducted.

- f. All welds shall be full and continuous performed by welders with AWS certification for the material grades used in fabrication.

**B. Point of Contact**

1. Tim Broadbent at [Tim.Broadbent@tn.gov](mailto:Tim.Broadbent@tn.gov) or 731-571-4673
2. Hunter Henley at [Hunter.Henley@tn.gov](mailto:Hunter.Henley@tn.gov) or 615-917-5284
3. Nickki Davis at [Nickki.Davis@tn.gov](mailto:Nickki.Davis@tn.gov) or 615-781-6603

**C. Completion**

1. Shall be within 180 days of receipt of purchase order.
2. Contractor shall call Tim Broadbent or Hunter Henley three (3) business days before beginning repair project so on-site oversight can be arranged.

**D. Location Specific Information**

**1. Brown's Creek Lake Specifications**

1735 Browns Lake Road  
Lexington, TN 38351

**a. Riser Structure**

1. Contractor shall perform concrete spall repair on identified areas on columns using a permanent concrete repair material intended for underwater application. Materials shall be Structural Concrete Underwater Hand Pack by Five Star or equivalent quality and strength.
2. Contractor shall perform concrete spall repair on walkway. Materials shall be Sikacrete 211 or equivalent quality and strength.

**b. Sluice Gate**

1. Contractor shall clean and service all components of the sluice gate system.
  - i. Shall use high-pressure (minimum 5,000 psi) water blasting of all underwater surfaces
  - ii. Shall use wire brush and/or hand scrape of all hardware and serviceable components such as guide rails, top and side wedge assemblies, thrust nut, stem guides, coupler, etc.

**c. Bar Screens**

1. Contractor shall replace the existing bar screen system with newly fabricated bar screens.

**d. Trash Rack**

1. Contractor shall add a trash rack over the sluice gate to prevent debris from entering and becoming lodged in the gate opening during operation, a condition which can prevent closure of the gate and lead to loss of the pool.

**2. Garrett Lake Specifications**

1395 Salmon Road  
Paris, TN 38242

**a. Sluice Gate**

1. Contractor shall replace the existing mid-level sluice gate system with a newly fabricated cast iron or stainless-steel gate system.
  2. Contractor shall furnish all labor, materials, equipment, and incidentals required to install ready for operation and field test gate system.
- b. **Bar Screens**
1. Contractor shall replace the existing bar screen system with newly fabricated bar screens.

**3. Gibson County Lake Specifications**

19 Red Benthall Road

Trenton 38382

a. **Riser Structure**

1. Contractor shall perform structural crack repair to identified areas using a low viscosity, high strength, high modulus epoxy resin designed to be injected into cracks in concrete for structural repair. Materials shall be Prime Rez 1100 High Mod LV by Prime Resins or equivalent quality and strength.
2. Contractor shall perform concrete spall repair to identified area using a permanent concrete repair material intended for underwater application. Materials shall be Structural Concrete Underwater Hand Pack by Five Star or equivalent quality and strength.

b. **Sluice Gate**

1. Contractor shall clean and service all components of the sluice gate system.
  - i. Shall use high-pressure (minimum 5,000 psi) water blasting of all underwater surfaces
  - ii. Shall use wire brush and/or hand scrape of all hardware and serviceable components such as guide rails, top and side wedge assemblies, thrust nut, stem guides, coupler, etc.
  - iii. Shall clean and grease operator, 6 Zerk fittings.
2. Contractor shall run a function test if no obvious deficiencies are observed during cleaning.
  - i. A plan for mitigating risk of pool loss shall be incorporated into any testing.

c. **Trash Rack**

1. Contractor shall add a trash rack over the sluice gate to prevent debris from entering and becoming lodged in the gate opening during operation, a condition which can prevent closure of the gate and lead to loss of the pool.

**4. Maples Creek Lake**

1230 Maple Lake Road

Westport, TN 38387

a. **Sluice Gate**

1. Contractor shall clean and service all components of the sluice gate system.
  - i. Shall use high-pressure (minimum 5,000 psi) water blasting of all underwater surfaces

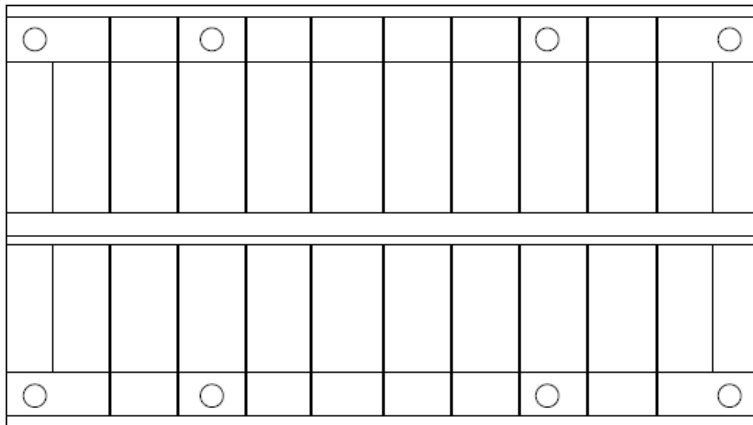
- ii. Shall use wire brush and/or hand scrape of all hardware and serviceable components such as guide rails, top and side wedge assemblies, thrust nut, stem guides, coupler, etc.
  2. Contractor shall replace broken bolt in stem coupler.
- b. **Bar Screens**
  1. Contractor shall replace the existing bar screen system with newly fabricated bar screens.
- c. **Trash Rack**
  1. Contractor shall add a trash rack over the sluice gate to prevent debris from entering and becoming lodged in the gate opening during operation, a condition which can prevent closure of the gate and lead to loss of the pool.

#### **E. Site Visit**

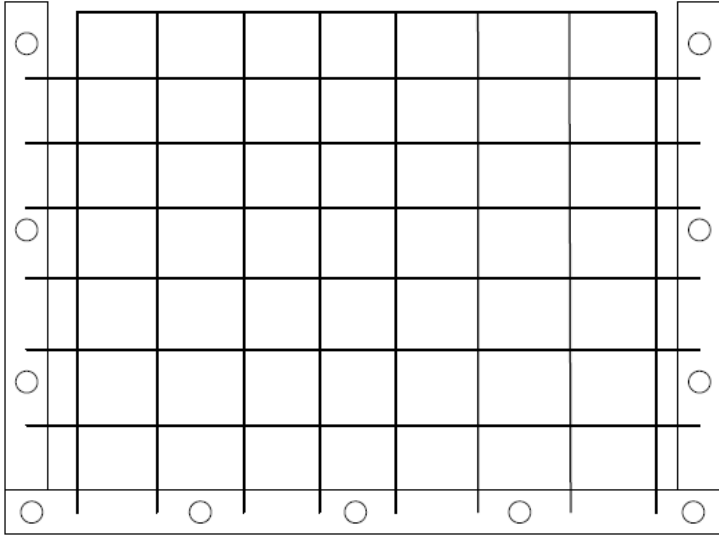
1. **Dates:** June 13, 2023, through June 16, 2023.
2. **Appointment:** Contractor shall contact site visit contact at least 24 hours before intended visit to schedule their visit.
3. **Site Visit Contact:**
  - a. Hunter Henley: 615-917-5284
  - b. Nathan Warden: 615-917-5281

APPENDIX

Bar Screen



Trash Rack



Sluice Gate

