

February 13, 2023

To: RCYC Board

From: RCYC Dredge Chair

Subject: 5 Year RCYC Dredge Haulout Plan

The Dredge Maintenance subcommittee (Jim Calnon, Alison Mazon and myself) met yesterday and reviewed the work plan that is attached.

The Budget for the work plan is as follows:

Lift/return and paint 2 coats underwater with Coal Tar Epoxy Paint	10,000.00
Remove and replace trunnion bushings and pins, if needed	14,000.00
Replace Anodes	1,000.00
Hydraulic Hose connection; clean and replace, if needed	3,000.00
Replace spud, ladder and swing cables	2,500.00
Modify spud cable connection at spud tip	2,000.00
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Total	\$32,500.00
 <u>Say</u>	 \$35,000.00

There is a reasonable level of confidence that this budget may not need to be fully expended. The trunnion pins and hydraulic could be in reasonable shape and not require replacement.


This budget is based on Schooner Creek doing the work at their yard. The Dredge Maintenance Committee would inspect and monitor Schooner Creek's work. In addition, a firm price agreement would be entered into with Schooner Creek prior to the start of the work.


Initial: 12-Dec-2022  
Revised: 17-Dec-2022  
Rose City Yacht Club






2022 Badger Dredge #5050 major maintenance project.  
Questions about this write-up? Contact Jim Calnon:  
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### **Description of work:**

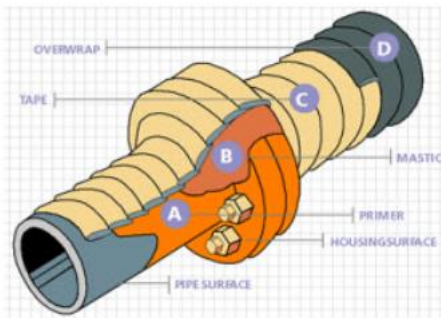
It's time to do a major maintenance haulout for the dredge. This scope of work is intended to be not subject to change except for emergent below-water issues that are discovered after haulout. All other work that can be done with the dredge in the water will be postponed until after relaunch and done while the dredge is in the water.



 - This symbol identifies work items that contain expense items that will be in the cost estimate document. Here is the list of work tasks:

1. Prepare scope and cost estimates
  - a.  Prepare draft to initiate discussion
  - b.  Discuss with Alison, Michael and Christian
  - c.  Reach consensus and finalize scope of work
  - d.  Obtain cost estimate elements for all expense items
  - e.  Review as a team and approve, decide on contingency
  - f.  Sum up total cost estimate plus contingency
2. Prepare schedule
  - a.  Work with Michael and Alison to put together a schedule estimate
3. Prepare materials list and identify procurement means
  - a.  List materials under all work activities and identify how to procure each item
  - b.  Identify where to store materials and tools, add information under each item. The Chapel?
4.  Tow dredge to Schooner Creek
  - a.  Contact Schooner Creek and make arrangements for load-out.
  - b.  Determine tow vessel. Maybe Matt Richard? Maybe our workboat? Both?
  - c.  Estimate fuel consumption and assume RCYC reimburses for fuel.
  - d.  Consider weather and coordinate with Schooner Creek on haul-out day.
  - e.  Set up work party and make the tow, tie up at schooner.

5.  Repaint the bottom – spot-sand the rust spots and scratches, and lightly scuff the rest of the paint just enough to get the new paint to stick. Two new coats of coal-tar epoxy and top coat with something like Devco Coatings Bar-Rust 235, in Navy Blue.
  - a.  Procure paint, sanding tools, vacuums, hoses, hose adapters, power cords, ext cord splitters, rags, rollers, sleeves, brushes and solvent
  - b.  Set up work party
  - c.  Assign some workers to vacuum-sand under the dredge.
  - d.  Assign some workers to spot-sand corrosion spots and scratches by hand.
  - e.  Assign some workers to use brushes to apply two spot coats to spot repairs.
6.  Replace sacrificial anodes on the hull.
  - a.  Procure the new anodes.
  - b.  Unbolt the old anodes, remove, and clean away the old bedding compound.
  - c.  Assume anodes are thru-bolted. Clean up the electrical contact area inside the hull, and spot-repair the paint under the zinc outside the hull.
  - d.  Apply new sealant bedding compound on the anode and on the hull under the anode. If anodes are stud-mounted, do not use sealant bedding compound.
  - e.  Install the new anodes and torque down the nuts to snug-tight plus ¼ turn. If anodes are stud-mounted, use sealant on the threads, inside the nuts, but do not interfere with electrical contact.
7.  Inspect the ladder trunnion bushings, repair if needed, and re-lubricate.
  - a.  Clean and inspect the trunnion assembly. Jack the ladder to check pin clearance.
  - b.  Spot-repair the paint on the trunnion assembly and supporting structural support.
  - c.  Check the grease lines to be sure they are open and functioning. Note any repairs that need to be made.
  - d.  If repairs are needed, open a new repair action and get cost estimates. Take it to the board for additional funding authorization. Proceed with repairs after authorization is granted.
8.  Replace spud wire ropes.
  - a.  Procure new wire rope and clamps.
  - b.  Disconnect the wire rope from the winches, and save the drum wedges for re-use (They are intended to be reused.)
  - c.  Disconnect the wire rope from the spuds, probably by cutting. Discard the old rope and clamps.
  - d.  Anchor the rope to the drums with the wedges, and manually wrap the rope onto the drum. Lead the new rope aft, through the turning blocks and C-Channel rope guide.
9.  Modify the spud rope attachment points to eliminate the abrasion and subsequent rope breakage.
  - a.  Examine the bottom of the C-Channel rope guide, and the bottom of the spuds. Identify the chafe point, and measure for a chafe guard.
  - b.  Make chafe guards out of fire hose or tire tread, and install on wire ropes.
  - c.  Connect ropes at the bottom of the spuds.
10. Repair or straighten the Starboard spud sleeve hinge assembly to ease pin removal.
  - a.  Inspect and identify the bent areas,

- b.  Use a large hammer to straighten the bends.
- 11.  Replace swing cable wire ropes.
  - a.  Procure new wire rope and new clamps.
  - b.  Disassemble distal end of ropes, save the thimbles.
  - c.  Remove old ropes from the drums and save the drum wedges.
  - d.  Install the new ropes onto the drums and manually wrap the ropes on.
  - e.  Reave the new ropes out to the ladder turning blocks and reassembly the distal ends.
- 12.  Repair or replace all submerged hoses and grease lines as needed.
  - a.  Inspect all submerged hoses and grease lines, identify and flag problem areas.
  - b.  If needed, procure new hoses or Petro-Wrap materials:



- c.  Install repair materials, or replace hoses.
- 13.  Touch up and spot-repair paint near water line, where in-water work is difficult.
  - a.  Inspect and flag areas where paint is damaged.
  - b.  Spot-sand and prep.
  - c.  Prime and paint by hand.
- 14.  Launch and tow back to RCYC.
  - a.  Coordinate the launch and tow (date, time & procedure) with Schooner Creek.
  - b.  Check tides and current, determine if RCYC workboat should accompany tow.
  - c.  Estimate fuel and other costs.
  - d.  Arrange work party for day of tow.
  - e.  Perform tow operation, and secure dredge at RCYC.

**Alternatives considered:**

1. Haul and place on trailer, take to RCYC parking lot for work.
  - a. Advantages:
    - i. Labor supplied by members. Yard rate is about \$110/hour.
    - ii. Yard time is free.
    - iii. Trailer rental might be free.
  - b. Disadvantages:
    - i. Space taken up in the parking lot
    - ii. Labor supplied by members.
    - iii. Long and unpredictable schedule.
    - iv. Materials might be hard to procure.

- v. Parking lot security is lacking.
- 2. Haul at Schooner Creek and hire the work.
  - a. Advantages:
    - i. Work will be done quickly and on schedule
    - ii. Materials will be reliably supplied through the yard's commercial sources.
    - iii. Good yard security.
    - iv. Yard provides all cribbing and jacking services.
    - v. Warranty on the work performed.
    - vi. SC has the expertise and is set up to do the work
    - vii. Metal work is complex
    - viii. RCYC Volunteers are not tasked with a major project
    - ix. RCYC parking is not displaced by the work
    - x. SC is set up with all of the environmental protection measures
    - xi. SC has security in place
    - xii. Crane is set up and available at SC
  - b. Disadvantages:
    - i. Labor at \$110/hour.
    - ii. Not in RCYC's yard
    - iii. Requires close inspection by RCYC