

SECTION 5

SUBCONTRACTING STRATEGY

The processes necessary to accomplish the Onondaga Lake remedy are well proven and have been successfully implemented on multiple projects. Because of the large volume of sediment that is being dredged and managed, and the relative complexity of the management steps, developing an integrated design that looks at the processes as a continuous system will be important to ensuring an effective and efficient design. This section outlines the strategy for final design and implementation contracting to assure the necessary coordination and interaction is achieved.

An integrated team of in-house resources, teaming partners, and key subcontractors will execute the final design and implementation of the operational components of the remedial action. The design team will interact with the personnel that will execute the construction and operations to assure that the final design components are complete, implementable, and meet the project objectives, as discussed below. In addition key members of the design team will have functional QA/QC responsibility in the construction efforts.

5.1 OVERVIEW

As described in previous sections, to meet project-specific objectives, certain critical elements of the operations were established during the initial design. These include:

- dredge type will be hydraulic;
- sediment transport to the SCA will be by hydraulic pipeline;
- transport pipeline will be along the Ninemile Creek corridor; and
- sediment dewatering will be by geotextile tubes.

Building on these requirements, the operational process steps have been incorporated into a baseline operational scenario, as described in Section 4. The baseline operational scenario is an approach that meets the design performance requirements and is operationally implementable and efficient based on the evaluations performed to date.

This operational scenario may be revised as the design and contracting advances. The final design will optimize the sediment and water management processes based on further analysis, bench-scale testing, and identification of optimal means and methods in concert with personnel that will implement the operations. This optimization will define such elements as number of dredges, sediment transport pipeline, pumping size, and the sediment dewatering process.

The sediment management design will combine critical process interfaces between dredge operations, sediment transport, sediment dewatering, and related operations. Decisions, approaches and means and methods within these technical areas are interrelated. For example, the potential use of gravity thickeners to remove a significant portion of the water prior to

discharge to the geotextile tubes may impact polymer addition rates, geotextile tube sequencing, and SCA/dewatering effluent management. Therefore, the design for these components will be developed as a complete system. The sediment management design will include these major components:

- utility management;
- debris management;
- dredging;
- sediment transport;
- sediment pre-treatment and dewatering;
- SCA leachate management ;
- support facilities; and
- odor and emissions management.

Water treatment is also an integral part of the overall design, and is impacted by dredging and dewatering operations. However, several components of the water treatment system have long procurement and fabrication lead times. Therefore, a more aggressive design schedule and independent design submittals are required for the water treatment system. Additional details regarding the design and contracting strategy for sediment management and water treatment are provided below.

5.2 SEDIMENT MANAGEMENT

The design and contracting strategy for the sediment management component of the remedy will be a design-bid-build approach. The design and contracting under this approach will incorporate both prescriptive and performance-based components and will include agency review at the intermediate, draft final, and final design phases. It is anticipated that contractor selection will be completed prior to submittal of the final design. Therefore, the final design subject to NYSDEC review and approval will incorporate input and process optimization concepts developed based on contractor recommendations.

Due to the overall expedited schedule required to begin dredging in 2012, certain system components with long procurement and/or fabrication lead times may be identified that require design finalization prior to approval of the complete final design. In the event such critical path items are identified, Honeywell will work with NYSDEC to finalize and obtain regulatory approval of the design of these items on an expedited basis.

5.3 WATER TREATMENT

As discussed in Section 4.6, the WTP will provide treatment of the SCA effluent prior to discharge to Metro for enhanced ammonia removal. The water treatment design package will include the elements of the treatment process and conveyance to Metro for enhanced ammonia removal.

To address these elements and meet the required expedited schedule for construction of the water treatment system, a design\build approach will be used. Under this approach, contractor procurement and construction elements will be initiated during the design process. A design review process will be developed jointly with NYSDEC to assure appropriate agency review and approval of the remedial design and construction submittals. This process will involve the submittal, review, and approval of various design packages as each is developed to move into contractor procurement and remedial construction. The request(s) for proposal for construction services will include the approved intermediate design documents, for which subsequent changes and final design will also need agency review and approval.

The design documents used for evaluation and selection of the design-build team will primarily be performance-based allowing latitude in the means and methods to meet the water treatment requirements. This design and contracting approach will accommodate the expedited schedule required to construct the water treatment system, allow for significant flexibility and creativity during the contracting phase to consider optimal or innovative approaches, and ensure appropriate agency involvement and oversight.

SECTION 6

DESIGN SUBMITTAL AND CONSTRUCTION SCHEDULE

Critical to the success of the lake remedial action is the sequencing of events and interrelations of design and construction activities to assure the process is efficient and completed within the appropriate timeframe. A logical progression of the decisions, analysis, and planning needed to execute the work has been established during the initial design phase. This section outlines the schedule milestones established to accomplish the operational aspects of the remedial action consistent with the CD schedule requirements. The schedule is based on receipt of NYSDEC review and comments within 60 calendar days of submittal.

OPERATIONS DESIGN & CONSTRUCTION MOBILIZATION MILESTONES	
<u>SEDIMENT MANAGEMENT</u>	
Submit Sediment Management Intermediate Design to NYSDEC	2/25/2010
Submit Sediment Management Draft Final Design to NYSDEC	1/24/2011
Start Construction Conveyance Pipeline & Support Facilities	5/28/2011
Conveyance Pipeline & Support Facilities Construction Complete	1/4/2012
Begin Dredging	5/31/2012
Complete Dredging	1/4/2016
<u>WATER TREATMENT</u>	
Submit Water Treatment Intermediate Design to NYSDEC	9/2/2009
Submit Water Treatment Design\Build Procurement Packages to NYSDEC	To be defined in Intermediate Design
Start Construction Water Treatment System	5/31/2011
Water Treatment System Construction Complete	1/4/2012
Water Treatment System Operational	5/30/2012

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