remove sediment. The excavators would work from a network of temporary roadways that could be constructed using gravel or mats placed over the sediment after the water level is lowered.

Construction monitoring shall include physical surveys and surface water monitoring for dioxins and other contaminants once a week during excavation. Following removal, confirmation sampling will be conducted to verify that the cleanup levels were achieved. Post-excavation sediment confirmation samples from the ponds footprints will include an estimated 160 samples (4 samples per acre) and will be analyzed for dioxins/furans, pesticides, PCBs, PAHs, and metals. To establish post-construction baseline conditions, an estimated 20 fish samples (fillet and whole body) will be collected from both re-established ponds and analyzed for dioxins/furans, pesticides, PCBs, PAHs, and metals. The excavated sediment would be disposed of in an upland CDF with an estimated 10 percent shipped off-site for disposal and/or treatment to meet LDRs. During construction, work zone perimeter air monitoring for particulates (dust) will be performed similar to procedures described for Source Area Soil to ensure protection of workers and nearby residents. Objectionable odors from air contaminants releases will also be controlled in accordance with RIDEM Air Pollution Control Regulations. The sequence of excavation activities, excavation volumes and rates, sediment processing, mitigation/restoration activities, long-term monitoring and ICs, and disposal or treatment options are described below.

Construction Sequence

A typical construction sequence is described below:

1. Clear temporary work areas and build access ramps to the ponds.
2. Construct CDF disposal facility and water treatment system prior to sediment removal.
3. Construct sediment dewatering area, install dewatering equipment and water treatment equipment and truck loading and decontamination facilities prior to excavation.
4. Drain the ponds one at a time beginning with Allendale Pond, excavate sediment from the ponds in an upstream to downstream direction, dewater using mechanical means and move excavated material into the upland CDF or transport off site for disposal based on results of designation sampling.
5. Operate the upland CDF water treatment system during excavation.
6. Place a cap over the upland CDF.
7. Evaluate sediment confirmation samples and determine need for a thin-layer of soil cover; install the soil cover if necessary.
8. Remove the temporary vessel launch ramps and restore the vegetation in the temporary work areas.

Excavation Volumes and Rates

Estimated excavation areas for Allendale and Lyman Mill Ponds are shown on Figures L-4 and L-5, respectively. These areas above sediment cleanup levels were developed using the available

chemistry and geotechnical data for surface and subsurface sediment samples in each pond. Total volume of sediment requiring excavation is calculated to be approximately 155,800 cy (2,400 cy in the river channel north of Allendale Pond, 52,900 cy in Allendale Pond and 100,500 cy in Lyman Mill Pond). The back-calculated, average excavation depth in Allendale Pond is 2.2 ft and 2.7 ft in Lyman Mill, assuming an over-excavation thickness of 0.25 ft.

The rate of excavation will be controlled by the rate of material transport from the ponds to the sediment processing area and the rate of mechanical dewatering. One long-reach excavator working to remove a thin layer of soft sediment should remove about 400 in-situ cy per day. This volume will be dewatered with modular equipment delivered by trucks and stockpiled on the Site. Sediment excavation will take approximately 28 weeks for Allendale Pond and 50 weeks for Lyman Mill Pond.

Sediment Processing

All of the excavated sediment will be dewatered, and after dewatering, will be placed and compacted in an upland CDF using conventional earthwork equipment. Sediment with concentrations that exceed the LDR alternative treatment standards (an estimated 10 percent) will be stockpiled in accordance with sampling and analysis (hazardous waste) done during the remedial design or construction phase, to await off-site disposal and/or treatment. Because space is limited at the Site, mechanical dewatering will be employed and the dewatered sediment (filter cake) will then be handled with conventional earthmoving equipment to place into stockpiles or into an upland CDF. If the material is being disposed of off - site, the material will be properly characterized and classified and then loaded onto trucks for transport to an appropriately licensed disposal facility. Mechanical dewatering would reduce the overall volume of contaminated sediment for disposal or treatment by approximately 37 percent and would reduce the disposal/treatment volume from 155,800 cy to 97,700 cy. No volume reduction is expected in the 2,400 cy dredged from the river channel.

Water separated from the excavated material will be pumped to a treatment system. The treatment system will consist of a settling basin sized to provide time for suspended sediment to settle, followed by additional treatment as necessary to meet discharge criteria. The water will be tested on a regular basis to confirm that chemical concentrations are at levels acceptable for return to the surface water in accordance with ARAR requirements. As part of the design, treatment by sand filtration and activated carbon adsorption will be evaluated to see if this provides sufficient treatment.

Removal of 2,000 in-situ cubic yards per week would produce approximately 1,100 cy of dewatered sediment for disposal. The material will be stored between concrete blocks stacked 6-ft high on temporary asphalt pavement pads in an upland area of the Site. The sediment stockpiles will be covered to prevent infiltration of rainwater. An area of 2 to 3 acres would be required for the treatment of equipment and sediment stockpiles, which includes space for the mechanical dewatering and water treatment facilities as well as space to stockpile dewatered sediment prior to placement in the upland CDF. One possible location would be on Cap Area #1 in the Source Area.

Figure L-4. Allendale Pond Sediment Alternative 7A

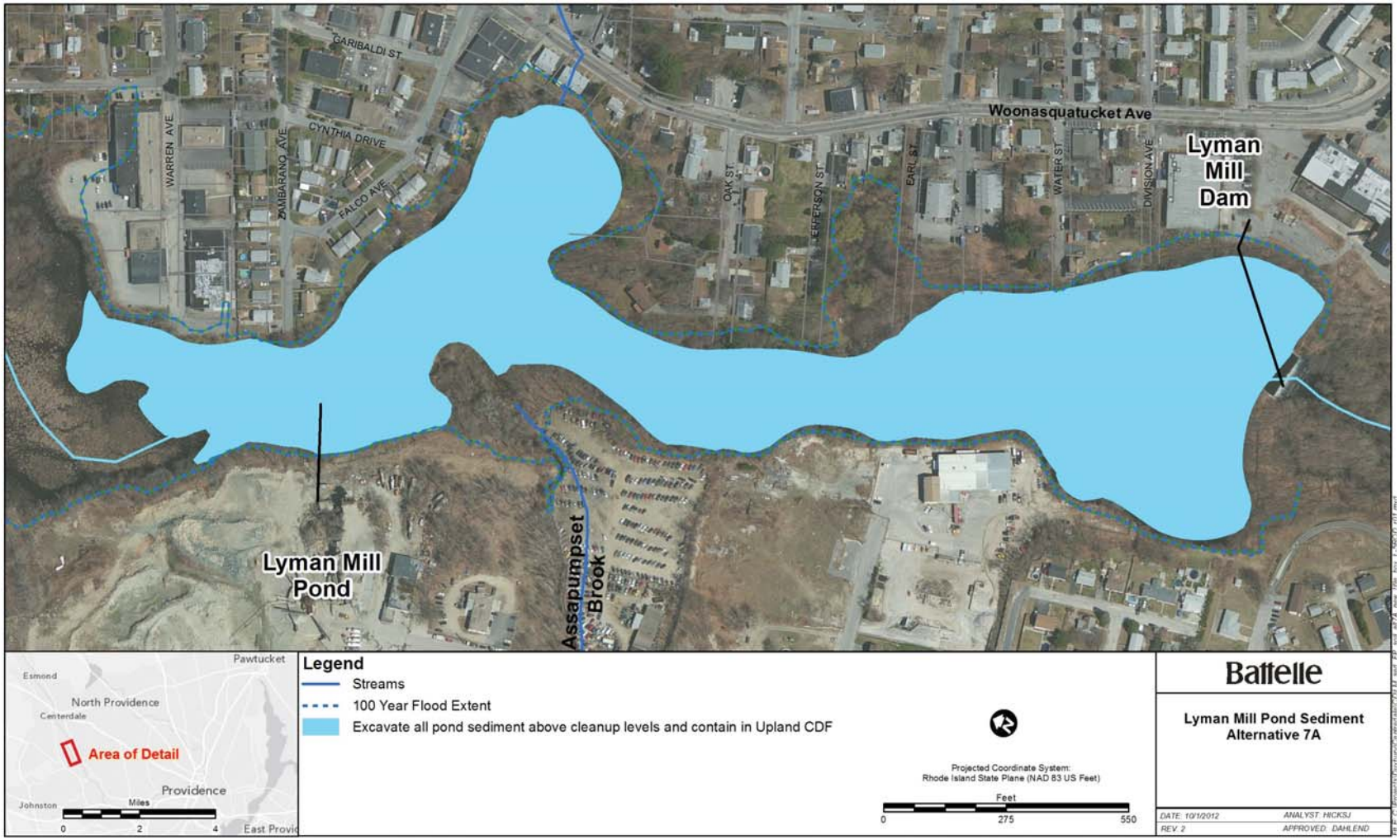

Figure L-5. Lyman Mill Pond Sediment Alternative 7A

REGION 1

RECORD OF DECISION

CENTREDALE MANOR RESTORATION PROJECT
SUPERFUND SITE
NORTH PROVIDENCE, RHODE ISLAND

SEPTEMBER 2012