
Appendix H
Cost Estimates

Conventional Sediment Excavation Estimate of Probable Costs (Conceptual Design)

ALTERNATIVE 2 – MAXIMUM DREDGE

Assumptions:

- No easements necessary to complete work
- Disposal within 15 minute trucking distance
- All work to be performed in the dry
- Water surface in pond can be lowered by minimum of three feet.
- Assumes clean sediment (no contamination)

Phase 1– Haul Road Construction:

Labor:

- 1 Foreman with Truck \$75/hour
- 1 Excavator \$150/hour
- 10 Tri-axle Dump Trucks (10 @\$70/hr) \$700/hour
\$925/hour x 8 hour/day = \$7,400/day
- 1.1) Mobilization 2% of project cost = \$40,000
- 1.2) Sediment and Erosion Controls 1% of project cost = \$20,000
- 1.3) Handling Water 5% of project cost = \$100,000
- 1.4) Engineering Design/Permitting 2% of project cost = \$40,000
- 1.5) Survey/Stakeout 1% of project cost = \$20,000
- 1.6) Haul Road/Water Control Berm (Assume 150LF/day) 4,500 LF/150LF/day = 30 days
30 days x \$7,400 /day = \$222,000
- 1.7) Import Stone for Berm Construction 4,500 LF x 15FT X 3 FT = 7,500 CY
7,500 CY x \$40/CY = \$300,000

SUBTOTAL: \$742,000

Phase 2–Sediment Excavation:

Labor:

- 1 foreman with truck \$75/hour
- 1 Bulldozer \$125/hour
- 2 Excavators (2 @ \$150/hr) \$300/hour
- 10 Tri-axle Dump Trucks (10 @\$70/hr) \$700/hour
\$1,200/hour x 8 hour/day = \$9,600/day
- 2.1) Sediment Removal; excavate/stockpile/ haul/dispose of (82,000 CY material
assume 10 mins. to load each truck →
6 trucks per hour x 8 hr/day = 48 trucks per day
82,000 CY. / 10 cu. yd. per truck =8,200 truck trips @ 48 trucks/day = 171 days
82,000 CY @ \$11/CY = \$902,000

SUBTOTAL: \$902,000

Phase 3 –Haul Road Removal/Site Restoration:

Labor:

- 1 foreman with truck \$75/hour
- 1 Excavator \$150/hour
- 5 Tri-axle Dump Trucks (5@\$70/hr) \$350/hour
\$575/hour x 8 hour/day = \$4,600/day
- 3.1) Road Removal (Assume 200 LF/day) 4,500 LF/200 LF/day = 23 days
23 days x \$4,600 /day = \$185,800

SUBTOTAL: \$185,800

Alternative 2 Project Total: \$742,000 + \$902,000 + \$185,800 = \$1,829,800; say \$1,900,000

Hydraulic Dredging
Estimate of Probable Costs (Conceptual Design)

ALTERNATIVE 2 – MAXIMUM DREDGE

Assumptions:

- No easements necessary to complete work
- Disposal within 15 minute trucking distance
- Assumes clean sediment (no contamination)

Phase 1– Sediment Dewater Area Construction

Labor:

- 1 Excavator \$150/hour
\$150/hour x 8 hour/day = \$1,200/day

- 1.1) Mobilization 3% of project cost = \$60,000
- 1.2) Sediment and Erosion Controls 2% of project cost = \$40,000
- 1.3) Survey/Stakeout 1% of project cost = \$20,000
- 1.4) Engineering Design/Permitting 2% of project cost = \$40,000
- 1.5) Construct Sediment Dewatering Area 10 days x \$1,200/day = \$12,000

SUBTOTAL: \$172,000

Phase 2–Sediment Dredging:

Labor:

- 1 Barge with Hydraulic Dredge \$100/hour
- 1 Bulldozer \$125/hour
- 1 Excavator \$150/hour
- 10 Tri-axle Dump Trucks (10 @\$70/hr) \$700/hour
\$1,075/hour x 8 hour/day = \$8,600/day

- 2.1) Sediment Excavation and Dewater (82,000 CY material @ \$14/CY) = \$1,148,000
- 2.2) Sediment Disposal
assume 10 mins. to load each truck →
6 trucks per hour x 8 hr/day = 48 trucks per day
82,000 CY. / 10 cu. yd. per truck =8,200 truck trips @ 48 trucks/day = 171 days
82,000 CY @ \$5/CY = \$451,000

SUBTOTAL: \$1,599,000

Phase 3 –/Site Restoration:

Labor:

- 1 foreman with truck \$75/hour
- 1 Excavators \$150/hour
- TOTAL \$225/hour x 8 hour/day = \$1,800/day

- 3.1) Restore Dewatering Area 10 days @ \$1,800/day = \$18,000
- 3.2) Grass Seed and Plantings \$10,000

SUBTOTAL \$28,000

Alternative 2 Project Total: \$172,000 + \$1,599,000 + \$28,000 = 1,799,000; **say \$1,800,000**

**Conventional Sediment Excavation
Estimate of Probable Costs (Conceptual Design)**

ALTERNATIVE 3 – UPPER DREDGING

Assumptions:

- No easements necessary to complete work
- Disposal within 15 minute trucking distance
- All work to be performed in the dry
- Water surface in pond can be lowered by minimum of three feet.
- Assumes clean sediment (no contamination)

Phase 1– Haul Road Construction:

Labor:

- 1 Foreman with Truck \$75/hour
- 1 Excavator \$150/hour
- 10 Tri-axle Dump Trucks (10 @\$70/hr) \$700/hour
\$925/hour x 8 hour/day = \$7,400/day

- 1.1) Mobilization 2% of project cost = \$20,000
- 1.2) Sediment and Erosion Controls 1% of project cost = \$10,000
- 1.3) Handling Water 5% of project cost = \$50,000
- 1.4) Engineering Design/Permitting 4% of project cost = \$40,000
- 1.5) Survey/Stakeout 1% of project cost = \$10,000
- 1.5) Haul Road/Water Control Berm (Assume 150LF/day) 1,500 LF/150LF/day = 10 days
days x \$7,400 /day = \$222,000
- 1.6) Import Stone for Berm Construction 1,500 LF x 15FT X 3 FT = 2,500 CY
2,500 CY x \$40/CY = \$100,000

SUBTOTAL: \$ 412,000

Phase 2–Sediment Excavation:

Labor:

- 1 foreman with truck \$75/hour
- 1 Bulldozer \$125/hour
- 2 Excavators (2 @ \$150/hr) \$300/hour
- 10 Tri-axle Dump Trucks (10 @\$70/hr) \$700/hour
\$1,200/hour x 8 hour/day = \$9,600/day

- 2.1) Sediment removal; excavate/stockpile/haul 10,000 CY material
assume 10 mins. to load each truck →
6 trucks per hour x 8 hr/day = 48 trucks per day
10,000 CY. / 10 cu. yd. per truck = 1,000 truck trips @ 48 trucks/day = 21 days
10,000 CY @ \$11/CY = \$110,000

SUBTOTAL: \$110,000

Phase 3 –Haul Road Removal/Site Restoration:

Labor:

- 1 foreman with truck \$75/hour
- 1 Excavator \$150/hour
- 5 Tri-axle Dump Trucks (5@\$70/hr) \$350/hour
\$575/hour x 8 hour/day = \$4,600/day

- 3.1) Road Removal (Assume 200 LF/day) 1,500 LF/200 LF/day = 8 days
8 days x \$4,600 /day = \$34,500

SUBTOTAL: \$34,500

Alternative 3 Project Total: \$412,000 + \$110,000 + \$34,500 = \$556,500; say \$557,000

Hydraulic Dredging Estimate of Probable Costs (Conceptual Design)

ALTERNATIVE 3 – UPPER DREDGING

Assumptions:

- No easements necessary to complete work
- Disposal within 15 minute trucking distance
- Assumes clean sediment (no contamination)

Phase 1– Sediment Dewater Area Construction

Labor:

- 1 Excavator \$150/hour
\$150/hour x 8 hour/day = \$1,200/day

- 1.1) Mobilization 3% of project cost = \$60,000
- 1.2) Sediment and Erosion Controls 2% of project cost = \$40,000
- 1.3) Survey/Stakeout 1% of project cost = \$20,000
- 1.4) Engineering Design/Permitting 4% of project cost = \$40,000
- 1.5) Construct Sediment Dewatering Area 10 days x \$1,200/day = \$12,000

SUBTOTAL: \$132,000

Phase 2–Sediment Dredging:

Labor:

- 1 Barge with Hydraulic Dredge \$100/hour
- 1 Bulldozer \$125/hour
- 1 Excavator \$150/hour
- 10 Tri-axle Dump Trucks (10 @\$70/hr) \$700/hour
\$1,075/hour x 8 hour/day = \$8,600/day

2.1) Sediment Removal and Dewater (10,000 CY material @ \$14/CY) = \$140,000

2.2) Sediment Disposal

assume 10 mins. to load each truck →

6 trucks per hour x 8 hr/day = 48 trucks per day

10,000 CY. / 10 cu. yd. per truck = 1,000 truck trips @ 48 trucks/day = 21 days

10,000 CY @ \$5/CY = \$50,000

SUBTOTAL: \$190,000

Phase 3 –/Site Restoration:

Labor:

- 1 foreman with truck \$75/hour
- 1 Excavators \$150/hour
- TOTAL \$225/hour x 8 hour/day = \$1,800/day

3.1) Restore Dewatering Area 10 days @ \$1,800/day = \$18,000

3.2) Grass Seed and Plantings \$10,000

SUBTOTAL \$28,000

Alternative 3 Project Total: \$132,000 + \$190,000 + \$28,000 = ~~1,595,000~~; say ~~\$350,000~~
350,000

**Conventional Sediment Excavation
Estimate of Probable Costs (Conceptual Design)**

ALTERNATIVE 4 -- LOWER DREDGING

Assumptions:

- No easements necessary to complete work
- Disposal within 15 minute trucking distance
- All work to be performed in the dry
- Water surface in pond can be lowered by minimum of three feet.
- Assumes clean sediment (no contamination)

Phase 1-- Haul Road Construction:

Labor:

- 1 Foreman with Truck \$75/hour
- 1 Excavator \$150/hour
- 10 Tri-axle Dump Trucks (10 @\$70/hr) \$700/hour
\$925/hour x 8 hour/day = \$7,400/day

- 1.1) Mobilization 2% of project cost = \$20,000
- 1.2) Sediment and Erosion Controls 1% of project cost = \$10,000
- 1.3) Handling Water 5% of project cost = \$50,000
- 1.4) Engineering Design/Permitting 4% of project cost = \$40,000
- 1.5) Survey/Stakeout 1% of project cost = \$10,000
- 1.5) Haul Road/Water Control Berm (Assume 150LF/day) 1,500 LF/150LF/day = 10 days
days x \$7,400 /day = \$222,000
1,500 LF x 15FT X 3 FT = 2,500 CY
2,500 CY x \$40/CY = \$100,000
- 1.6) Import Stone for Berm Construction

SUBTOTAL: \$ 412,000

Phase 2--Sediment Excavation:

Labor:

- 1 foreman with truck \$75/hour
- 1 Bulldozer \$125/hour
- 2 Excavators (2 @ \$150/hr) \$300/hour
- 10 Tri-axle Dump Trucks (10 @\$70/hr) \$700/hour
\$1,200/hour x 8 hour/day = \$9,600/day

- 2.1) Sediment removal; excavate/stockpile/haul 13,000 CY material
assume 10 mins. to load each truck →
6 trucks per hour x 8 hr/day = 48 trucks per day
13,000 CY. / 10 cu. yd. per truck =1,300 truck trips @ 48 trucks/day = 28 days
13,000 CY @ \$11/CY = \$143,000

SUBTOTAL: \$143,000

Phase 3 --Haul Road Removal/Site Restoration:

Labor:

- 1 foreman with truck \$75/hour
- 1 Excavator \$150/hour
- 5 Tri-axle Dump Trucks (5@\$70/hr) \$350/hour
\$575/hour x 8 hour/day = \$4,600/day

- 3.1) Road Removal (Assume 200 LF/day) 1,500 LF/200 LF/day = 8 days
8 days x \$4,600 /day = \$34,500

SUBTOTAL: \$34,500

Alternative 4 Project Total: \$412,000 + \$143,000 + \$34,500 = \$589,500; say \$590,000

Hydraulic Dredging Estimate of Probable Costs (Conceptual Design)

ALTERNATIVE 4 – LOWER DREDGING

Assumptions:

- No easements necessary to complete work
- Disposal within 15 minute trucking distance
- Assumes clean sediment (no contamination)

Phase 1– Sediment Dewater Area Construction

Labor:

- 1 Excavator \$150/hour
\$150/hour x 8 hour/day = \$1,200/day

- 1.1) Mobilization 3% of project cost = \$60,000
- 1.2) Sediment and Erosion Controls 2% of project cost = \$40,000
- 1.3) Survey/Stakeout 1% of project cost = \$20,000
- 1.4) Engineering Design/Permitting 4% of project cost = \$40,000
- 1.5) Construct Sediment Dewatering Area 10 days x \$1,200/day = \$12,000

SUBTOTAL: \$132,000

Phase 2–Sediment Dredging:

Labor:

- 1 Barge with Hydraulic Dredge \$100/hour
- 1 Bulldozer \$125/hour
- 1 Excavator \$150/hour
- 10 Tri-axle Dump Trucks (10 @\$70/hr) \$700/hour
\$1,075/hour x 8 hour/day = \$8,600/day

2.1) Sediment Removal and Dewater (13,000 CY material @ \$14/CY) = \$182,000

2.2) Sediment Disposal

assume 10 mins. to load each truck →

6 trucks per hour x 8 hr/day = 48 trucks per day

13,000 CY. / 10 cu. yd. per truck = 1,000 truck trips @ 48 trucks/day = 21 days

13,000 CY @ \$5/CY = \$65,000

SUBTOTAL: \$247,000

Phase 3 –/Site Restoration:

Labor:

- 1 foreman with truck \$75/hour
- 1 Excavators \$150/hour
- TOTAL \$225/hour x 8 hour/day = \$1,800/day

3.1) Restore Dewatering Area 10 days @ \$1,800/day = \$18,000

3.2) Grass Seed and Plantings \$10,000

SUBTOTAL \$28,000

Alternative 4 Project Total: \$132,000 + \$247,000 + \$28,000 = 407,000; say \$410,000

**Conventional Sediment Excavation
Estimate of Probable Costs (Conceptual Design)**

ALTERNATIVE 5 – LOWER DREDGING

Assumptions:

- No easements necessary to complete work
- Disposal within 15 minute trucking distance
- All work to be performed in the dry
- Water surface in pond can be lowered by minimum of three feet.
- Assumes clean sediment (no contamination)

Phase 1– Haul Road Construction:

Labor:

- 1 Foreman with Truck \$75/hour
- 1 Excavator \$150/hour
- 10 Tri-axle Dump Trucks (10 @\$70/hr) \$700/hour
\$925/hour x 8 hour/day = \$7,400/day

- 1.1) Mobilization 2% of project cost = \$20,000
- 1.2) Sediment and Erosion Controls 1% of project cost = \$10,000
- 1.3) Handling Water 5% of project cost = \$50,000
- 1.4) Engineering Design/Permitting 4% of project cost = \$40,000
- 1.5) Survey/Stakeout 1% of project cost = \$10,000
- 1.5) Haul Road/Water Control Berm (Assume 150LF/day) 1,500 LF/150LF/day = 10 days
days x \$7,400 /day = \$222,000
1,500 LF x 15FT X 3 FT = 2,500 CY
2,500 CY x \$40/CY = \$100,000
- 1.6) Import Stone for Berm Construction

SUBTOTAL: \$ 412,000

Phase 2–Sediment Excavation:

Labor:

- 1 foreman with truck \$75/hour
- 1 Bulldozer \$125/hour
- 2 Excavators (2 @ \$150/hr) \$300/hour
- 10 Tri-axle Dump Trucks (10 @\$70/hr) \$700/hour
\$1,200/hour x 8 hour/day = \$9,600/day

- 2.1) Sediment removal; excavate/stockpile/haul 20,000 CY material
assume 10 mins. to load each truck →
6 trucks per hour x 8 hr/day = 48 trucks per day
20,000 CY. / 10 cu. yd. per truck =2,000 truck trips @ 48 trucks/day = 42 days
20,000 CY @ \$11/CY = \$220,000

SUBTOTAL: \$220,000

Phase 3 –Haul Road Removal/Site Restoration:

Labor:

- 1 foreman with truck \$75/hour
- 1 Excavator \$150/hour
- 5 Tri-axle Dump Trucks (5@\$70/hr) \$350/hour
\$575/hour x 8 hour/day = \$4,600/day

- 3.1) Road Removal (Assume 200 LF/day) 1,500 LF/200 LF/day = 8 days
8 days x \$4,600 /day = \$34,500

SUBTOTAL: \$34,500

Alternative 5 Project Total: \$412,000 + \$220,000 + \$34,500 = \$666,500; say \$670,000

Hydraulic Dredging Estimate of Probable Costs (Conceptual Design)

ALTERNATIVE 5 – LOWER DREDGING

Assumptions:

- No easements necessary to complete work
- Disposal within 15 minute trucking distance
- Assumes clean sediment (no contamination)

Phase 1– Sediment Dewater Area Construction

Labor:

- 1 Excavator \$150/hour
\$150/hour x 8 hour/day = \$1,200/day

- 1.1) Mobilization 3% of project cost = \$60,000
- 1.2) Sediment and Erosion Controls 2% of project cost = \$40,000
- 1.3) Survey/Stakeout 1% of project cost = \$20,000
- 1.4) Engineering Design/Permitting 4% of project cost = \$40,000
- 1.5) Construct Sediment Dewatering Area 10 days x \$1,200/day = \$12,000

SUBTOTAL: \$132,000

Phase 2–Sediment Dredging:

Labor:

- 1 Barge with Hydraulic Dredge \$100/hour
- 1 Bulldozer \$125/hour
- 1 Excavator \$150/hour
- 10 Tri-axle Dump Trucks (10 @\$70/hr) \$700/hour
\$1,075/hour x 8 hour/day = \$8,600/day

2.1) Sediment Removal and Dewater (20,000 CY material @ \$14/CY) = \$280,000

2.2) Sediment Disposal

assume 10 mins. to load each truck →

6 trucks per hour x 8 hr/day = 48 trucks per day

20,000 CY. / 10 cu. yd. per truck = 2,000 truck trips @ 48 trucks/day = 42 days

20,000 CY @ \$5/CY = \$100,000

SUBTOTAL: \$380,000

Phase 3 –/Site Restoration:

Labor:

- 1 foreman with truck \$75/hour
- 1 Excavators \$150/hour
- TOTAL \$225/hour x 8 hour/day = \$1,800/day

3.1) Restore Dewatering Area 10 days @ \$1,800/day = \$18,000

3.2) Grass Seed and Plantings \$10,000

SUBTOTAL \$28,000

Alternative 5 Project Total: \$132,000 + \$380,000 + \$28,000 = 540,000; say \$550,000

Planning-Level Cost Estimates for Recommendations

	Design Costs	Permitting Costs	Permit Fees (9)	Construction Costs	Construction Observations
Water Depth Management Recommendations					
Flashboards or other structures to raise water surface elevation					
Flashboards (1)	\$10,000	\$175,000 (8)	\$7,000	\$50,000	\$5,000
Stoplogs (2)	\$10,000	\$175,000 (8)	\$7,000	\$50,000	\$5,000
Bladder dam (2)	\$100,000	\$175,000 (8)	\$7,000	\$1,500,000	\$50,000
Gate (2)	\$200,000	\$175,000 (8)	\$7,000	\$4,000,000	\$50,000
Upstream sediment removal (3)	\$25,000	\$40,000	\$7,500	\$557,000	\$50,000
Middle sediment removal (3)	\$25,000	\$40,000	\$7,500	\$590,000	\$50,000
Expanded Middle sediment removal (3)	\$25,000	\$40,000	\$7,500	\$670,000	\$50,000
Site A Recommendations					
Develop access and designated fishing area on the parcel with various amenities	\$40,000	\$24,000	\$1,000	\$380,000	\$20,000
Pedestrian bridge to center of river on old bridge abutments	\$50,000	\$39,000	\$1,000	\$4,000,000	\$50,000
Site B Recommendations (4)					
Access driveway and parking for vehicles with boats on car tops				\$170,000	\$5,000
Partial building reuse for vending, kayak storage, information, etc.				\$500,000	\$5,000
Gravel pull-off and permeable paved boat launch with fence and walls				\$200,000	\$5,000
Public restroom				\$150,000	\$2,000
Amphitheatre/ice rink	\$100,000	\$129,000 (8)	\$1,000	\$200,000	\$5,000
Dog park				\$30,000	\$3,000
Ball field				\$200,000	\$5,000
Re-align trail				\$100,000	\$5,000
Amenities (signage, trees, shrubs, privacy slats, picnic area, canoe racks, beach improvements)				\$150,000	\$10,000
Traffic and Roadway Signage Recommendations					
Textured pavement for traffic calming along Bridge Street/River Road	\$30,000	\$7,000	\$0	\$300,000	\$5,000
Signage designating Collinsville as gateway to Upper Farmington River	\$2,000	\$4,000	\$0	\$15,000	\$1,000
Wayfinding signage on Bridge Street to alert motorists of parking, river access, businesses	\$2,000	\$4,000	\$0	\$20,000	\$1,000
Signage for southbound motorists on River Road regarding entrance to Collinsville	\$2,000	\$4,000	\$0	\$15,000	\$1,000
Southbound wayfinding signage on River Road to identify parking options and river access	\$2,000	\$4,000	\$0	\$20,000	\$1,000
Town Bridge Road Recommendations					
Reorganize/formalize parking along Town Bridge Road	\$15,000	\$24,000	\$1,000	\$300,000	\$5,000
Possible beach access improvements at Town Bridge Road (5)	\$100,000	\$9,000	\$0	\$50,000	\$3,000
Other Access Recommendations					
Ordinance to regulate watercraft speed to headway speed	\$0	\$0	\$0	\$0	\$0
Canoe and kayak portage around the dam	\$25,000	\$24,000	\$1,000	\$200,000	\$10,000
Wayfinding signage downtown and along trail	\$2,000	\$4,000	\$0	\$30,000	\$1,000
Preserve hydroelectric station and convert to museum (6)	--	--	--	--	--
Design improvements for utilization of town park for events and seasonal programming	\$30,000	\$20,000	\$0	\$300,000	\$10,000
Small area of public parking across from Riverside Nursery	\$10,000	\$14,000	\$0	\$75,000	\$4,000
Fish Habitat Recommendations					
Fish habitat enhancement structures	\$5,000	\$35,000	\$7,000	\$52,000	\$5,000
Fish passage at dam	\$30,000	\$30,000	\$7,000	\$500,000	\$10,000
Preserve riffle habitat in upstream end of study area	\$0	\$0	\$0	\$0	\$0
Vegetation Recommendations					
Thin out tall vegetation on MDC strip to enhance views	\$2,000	\$7,000	\$0	\$20,000	\$2,000
Develop maintenance/management plan to control non-native vegetation along river (7)	\$4,000	\$0	\$0	\$0	\$0
Evergreen screening around the water pollution control facility	\$2,000	\$7,000	\$0	\$30,000	\$2,000

1. Cost taken from Pre-Feasibility Study for Repowering the Upper and Lower Collinsville Dams (2011) and verified by Milone & MacBroom, Inc. engineers
2. Cost taken from Pre-Feasibility Study for Repowering the Upper and Lower Collinsville Dams (2011) without verification
3. Cost for conventional excavation is provided
4. Costs not provided for relocation of the Town Garage, as alternative sites have not been identified; potential environmental remediation costs are not included
5. Design costs include legal fees
6. Recommendation lacks sufficient design to estimate costs
7. Cost provided is for the plan development
8. Permitting costs for these items include a set-aside of \$100,000 for completion of an Environmental Impact Evaluation per CEPA
9. Permit fees based on CT DEEP fee schedule for 2011; Local permits assumed waived for Town-sponsored projects