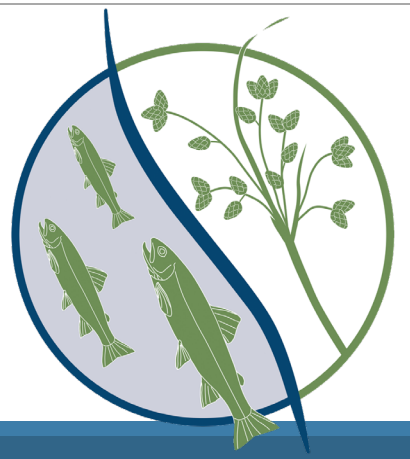
Dam Removal Scoping and

Working with Consultants

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Massachusetts Department of Fish and Game

Division *of* Ecological Restoration

Invested in Nature and Community

Agenda

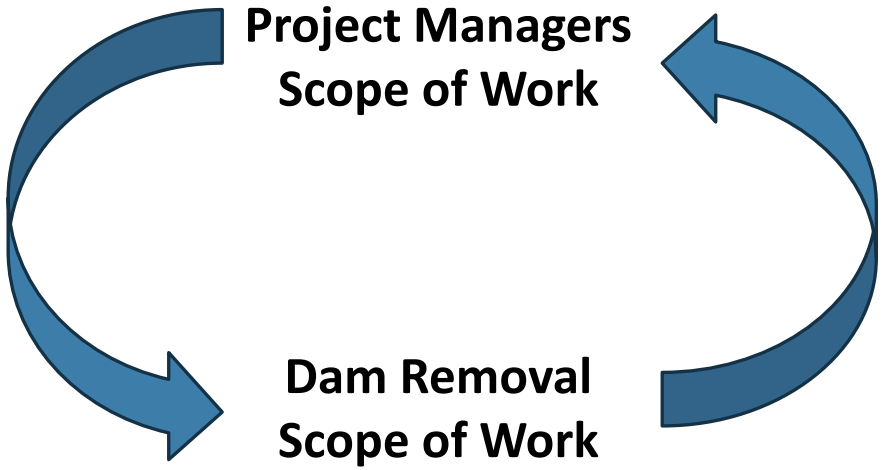
1. What is Scoping?
2. Project Managers Scope of Work
3. Dam Removal Scope of Work
4. Tips for Developing Your Scope of Work
5. Q&A



What is Scoping?

Scoping is the "to do" list of tasks needed to get your dam removal project from an idea to a restored river

	Project Manager Scope of Work	Dam Removal Scope of Work
Description	The work that the project manager does to keep things on track	The tasks and phases needed to develop, complete and evaluate the project
Component Examples	• Goal Setting • Fundraising • Managing budgets • Team building, etc.	• Data Collection, • Design, • Permitting, • Construction, etc.



The Project Manager Scope of Work



- Provide Leadership and Vision
- Team Building
- Fundraising
- Bidding and Contracting
- Managing the Budget
- Managing Consultants
- Outreach

Providing Vision and Leadership

Providing vision and leadership is a major task in the PM's Scope of Work



Leadership and Vision Tasks

- Defining the project goals
- Maintaining open and frequent communication
- Keeping an eye on the timeline
- Making sure that progress is being made on the Dam Removal Scope of Work

Assembling a Team

You don't have to do this alone… In fact, you probably shouldn't

Potential Partners

- Watershed Associations and other NGOs
- State Partners
  - Division of Ecological Restoration
  - MassWildlife
  - Department of Marine Fisheries
- Federal Partners
  - NOAA Restoration Center
  - US Fish and Wildlife Service
- Tribal Organizations
- Technical Consultants
- Construction Firms



Bidding and Contracting

Basic Bid Request Structure

- Project Background
  - Site information
  - Past work completed
- Goals
  - Project
  - Phase of work
- Scope of Work
  - Tasks
  - Deliverables
- Procurement Specifics
  - Deadlines for bids
  - Timeline to complete work
  - Procurement rules



TIPS:

1. If you're not sure what tasks are needed, describe your goals and request the bidder provide a scope of work.
2. Solicit bids from multiple firms to find a price and approach that will fit your needs.

Managing Consultants

TIPS

If you're able, select a firm based on approach and value (amount of work/$) not just total cost

Communication is Key!

- Communicate early and often
- Hold a kick-off meeting to discuss tasks, timelines, and expectations
- Consider regular check-in meetings with the project team

Establish Timelines and Deadlines

- Re-visit the timeline often and send reminders ahead of deadlines
- Make sure there is ample time for deliverable review

Don't be afraid to pump the brakes or go back out to bid if you're not happy with the way things are going



Fundraising and Managing Budgets

Funding for a dam removal is often requires assembling a patchwork of grants that each have their own requirements and constraints

- Questions PMs Should Consider When Scoping
  - How much will this project cost?
  - How far can I get with the funding I have?
  - What funding opportunities are available and what are the timelines?
  - Does my funding have constraints?
    - Types of activities it can support
    - Expiration dates and extensions
  - How will funding influence my project phasing and timeline?



Typical Dam Removal Scope of Work



Project Phases

1. Preliminary Analysis and Conceptual Design
2. Permitting Level Design
3. MEPA
4. Project Permitting
5. Final Design and Bid Phase Services
6. Construction
7. Post Construction Monitoring

Important Caveat: This is not the only way to scope a dam removal project and it is not intended to be comprehensive of every possible site-specific project need.

1. Preliminary Analysis and Conceptual Design

Task	Basemap and Impacts Data Collection	Sediment Assessment and Management Recommendation
Description	This task should include services as needed to obtain and synthesize existing information, perform field data collection, and develop a project base map	This task will include services to assess sediment quality within the impoundment, upstream and downstream reaches, assess potential risks, consider sediment management alternatives, and select a preferred approach.
Components	• Site inspection • Topographic survey of key structures • Bathymetric survey and sediment probing • Assessment of utilities • Wetland and aquatic resource area delineation • Cultural Resources Reconnaissance Survey • Endangered and Rare Species Assessment and Coordination	• Due Diligence Review (see 401 regulations) • Sediment sampling plan (its good practice to get this approved by DEP in advance) • Sample Collection • Laboratory Analysis • Sediment Management Plan
Deliverables	• Project base map • Estimated volume of total and mobile impounded sediment • Wetland delineation [Army Corps/MassDEP] data forms and flagging. regulated resource and riverfront area incorporated into base map • (If applicable) Cultural Resources MEMO summarizing findings from the reconnaissance survey	• Due diligence review incorporated into sediment sample plan • Sediment sampling plan • Chain of custody to document receipt of field samples by analytical laboratory • Field data collection and quality control procedures summarized in the sediment management plan • Laboratory results and quality control and data compiled into the DER spreadsheet • Sediment management plan

1. Preliminary Analysis and Design Cont.

Task	Hydraulic and Hydrologic Modeling	Conceptual Design Plans, Cost Estimates, Design Memo
Description	Develop hydrologic and hydraulic (H&H) numerical modeling of the site, dam impoundment, and the portion of [waterbody] affected by the dam to estimate changes in river flow conditions (e.g., depth, width, velocity, etc.) following dam removal.	This task includes services as necessary to produce Conceptual design plans for dam removal. This task includes the production of a concise Basis-of-Design memorandum summarizing key design considerations and decisions, a discussion of design alternatives, and cost estimates for project implementation

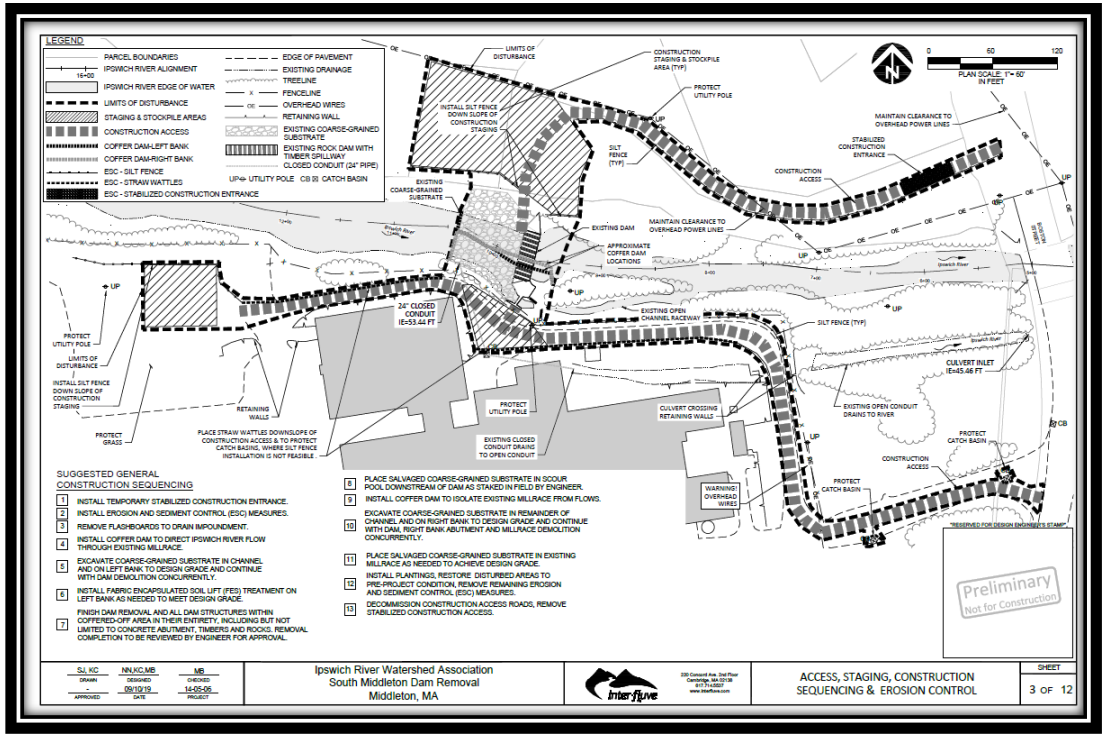
Components	A level of detail to evaluate
	• Dam removal design
	• Potential impacts from the Project on infrastructure
	• Plan for any necessary protective measures associated with dam removal
	• [if applicable] fish passage during key migration times.
	• Future impacts of climate change (RMAT)
		• Conceptual design plans
		• Basis of Design Memo
		  • Summary of key design considerations
		  • Alternatives Analysis
		  • RMAT/ climate Change Analysis
		• Cost estimate

Deliverables	• Discussion of hydrologic and hydraulic modeling and analyses incorporated into Basis-of-Design memorandum • Output summary tables	• Preliminary engineering designs • Probable Opinion of Cost • Basis-of-Design memorandum • Output report generated from the RMAT Climate Resilience Design Standards Tool

2. Permitting Level Design

Advancing the design to a level of detail appropriate for permitting

Task	Permitting Level Design
Description	This task includes services to produce a single permit-level engineering design plan set suitable for project permitting. The plan set must include all federal and state required elements and adhere to all permit required formatting
Components	• Updated regulated resource lines • Regulated resource area summary impact tables • Updated cost estimate • Project notification to Mass Historic • (If applicable) post-construction monitoring plan
Deliverables	• Permit-level engineering designs • Updated Cost Estimate • Updated Basis-of-Design memorandum • Project notification form to Mass Historic Commission (if applicable)



3. Massachusetts Environmental Policy Act (MEPA)

Project Manager Scope: Understanding the pathways so you can make an informed decision



Common MEPA Pathways/Requirements

- Notice of Ecological Restoration Project
- Expanded Environmental Notification Form (EENF) with Environmental Impact Report (EIR) Waiver Request
- EENF with SEIR
- EENF with Roll-over EIR
- Environmental Justice Coordination

4. Permitting

Project Manager Scope: Understand the permit thresholds to determine which permits your project will require



Commonly Required Permits

- 401 water quality certificate
- Chapter 91 permit/ license
- Section 404 Army Corps of Engineers pre-construction notification
- Chapter 253 dam safety permit
- Wetlands Protection Act – Order of Conditions

5. Final Design and Bid Phase Services

Task	Final Design	Bid Phase Services
Description	This task includes services as necessary to produce final design/bid-ready engineering design plans for dam removal. Final design plans should incorporate changes required from the permitting process.	This task includes multiple subtasks to provide management of the bid process and result in a signed contract for project implementation held by the dam owner. The Firm will serve as the dam owner's representative during the project bid phase.

Components	• Final plan set stamped by a PE at a level of detail appropriate for construction
	• Technical specifications at a level of detail appropriate for construction
	• Updated basis of design report based on permitting feedback
	• (If applicable) Updated H&H model based on permitting feedback
		• Bid Package
		  • Division 0: bidding requirements, contract forms, conditions
		  • Division 1: General Requirements **(incorporate requirements of any of your funding sources)**
		• Prepare and distribute solicitation
		• Facilitate and lead pre-bid meeting
		• Respond to request for information
		• Prepare addenda to clarify any issues with bid request
		• Review and tabulate bids
		• Make a recommendation
		• Contracting

Deliverables	• Engineer-sealed, final engineering design delivered to partners and permitting agencies • Technical Specifications for construction and bidding • Final Basis of design report	• Bid package • Evidence of bid solicitation and notice • Pre-bid meeting minutes • Written responses to RFI as needed • Written addenda as needed • Bid Tabulation • Final signed copy of construction contract

6. Construction

Task	Construction Oversight	As-built Drawings and Certification	Permit Close-Out	PM Scope
Description	This task includes field oversight of project implementation.	This task includes a final survey of the completed project and As-built drawings depicting the result of construction.	This task includes closing out select aspects of the project permits and authorizations	The PM holding the construction contract will manage the budget, engage in decision making, and participate in permit close out
Components	• Work Start Notification • Pre-construction meeting • Submittal Review • Invoice and change order review • On-site observation and documentation • Punch lists • Substantial completion and final acceptance • Final payment • Completion notifications	• As-built survey • As-built drawings • Letter certifying completion of project as designed	• Required submittals for all permits as described in permit documents • Certificate of compliance recorded as required in permit documents • Close out of access agreement as described in agreement documents	• Paying invoices and managing budget • Participating in construction meetings • Engaging in problem solving and decision making
Deliverables	Same as above	• As-built drawings • Final letter certifying completion of project	Same as above	

7. Post-construction Monitoring

Post-construction monitoring will be dictated by your project goals and your permitting requirements

Post-construction monitoring plans are developed during planning/permitting phases

<u>Typical Types of Monitoring</u>

- Sediment and channel formation
- Vegetation (invasive species)
- Wildlife Surveys (fish, macroinvertebrates, shellfish)

Duration: 2-5 years typically

Adaptive management actions may be needed if problems are detected by monitoring.



Photo Credit: Sterling Worrell

Tips For Developing Your Scopes of Work

- Create a project timeline and update it as the project progresses
- Break the project into phases and tasks
  - Use this presentation as a framework to understand what each phase involves
- At the end of each phase identify any new questions and assess if new scope items are needed to address them.
- Identify skills and knowledge gaps and identify partners or solicit bids from consultants who can fill those roles
- Consider how funding influences and is influenced by your scope and timeline

Scopes of Work are Living Documents that Should be Reviewed and Updated Regularly



Questions?