EBC Dam Management Program
Funding & Permitting Your Dam Removal & Repair Project
Welcome

Christopher D. Haker, P.E.

Chair, EBC Dam Management Committee

Principal Engineer, Tighe & Bond
Welcome to Bowditch & Dewey, LLP

Robert D. Cox, Jr.

Managing Partner

Bowditch & Dewey, LLP
Introduction and Program Overview

Andrea Judge, P.E.

Program Chair and Moderator

Project Manager

Fuss & O’Neill, Inc.
What You Will Learn
There is a Dam Problem in Massachusetts

Massachusetts Has 40 Problem Dams, AP Finds

By Michael Casey/Associated Press

Removing old dams in Mass. even more urgent with stress of climate change

By: Bob Dumas, Jason Brewer
Updated: Jan 17, 2019 - 9:59 AM

Removing old dams in Massachusetts even more urgent with stress of climate change

2 minutes left
Condition Ratings of Dams Across the Commonwealth
Funding Sources

• Funding is a critical component to implementing a dam repair or removal

• Agencies represented today:
  – Executive Office of Energy and Environmental Affairs
  – Massachusetts Emergency Management Agency
  – Division of Ecological Restoration
EBC Dam Management Program

Funding & Permitting your Dam Removal & Repair Project

Tuesday, November 19, 2019
Today’s Presentation

• Very brief history
• Dam and Seawall Program
• Municipal Vulnerability Preparedness Program
• Questions

Photo: Mass DER
In Massachusetts

~ 1,400 state-regulated dams

~ 1,400 non-jurisdictional dams

85 federally regulated dams

2,950 total dams

~ 920 high and significant hazard classification dams regulated by DCR

~ 200 of these in poor or unsafe condition

2018 data
South of Boston, Wary Officials Watch a Weakened Dam

By Pam Belluck

Oct. 19, 2005
Freetown, Massachusetts 2010

Freetown's Forge Pond Dam faces demolition
State cites neglect, rising water levels for its decision

Officials cross fingers while monitoring overwhelmed Forge Pond Dam

By NICK TAVARES
Posted Feb 25, 2010 at 10:56 AM
Updated Feb 26, 2010 at 2:11 PM

Selectman Lawrence Ashley stood by sandbags atop a collapsing dam at Forge Pond yesterday. (George Ruizer for the Boston Globe)

By MARIE SZANISZLO | marie.szaniszlo@bostonherald.com | Boston Herald
PUBLISHED: February 25, 2010 at 12:00 am | UPDATED: November 18, 2018 at 12:00 am
Recommendation 4

The Legislature should establish a multi-year program of incentive financing to target resources for remediation of the 100 municipal critical dams on a schedule prioritized by level of risk. The Legislature should provide for a program of revolving loans to finance remediation of the critical 100 dams on a targeted basis, as was recommended by the Senate Committee on Post Audit and Oversight for privately owned dams. to provide a program of revolving loans to finance the projected $60 million cost for remediation of the critical 100 dams on a targeted basis. Offering loans at no interest would provide strong incentive to initiate repair or removal of dangerous dams sooner rather than later. The goal should be to initiate at least 10 remediation projects per year, because even this ambitious schedule would span 10 years to completion. As explained earlier, every year of deferred remediation increases the cost, due to continued deterioration of the structure and inflation in the construction industry. As repayments accumulate, the funds should be earmarked for ongoing remedial efforts.
Chapter 448, Acts of 2012
AN ACT FURTHER REGULATING DAM SAFETY, REPAIR AND REMOVAL

SECTION 3. Chapter 29 of the General Laws is hereby amended by inserting after section 2HHHH the following section:-
Section 2IIII. (a) There shall be established and set upon the books of the commonwealth a separate fund to be known as the Dam and Seawall Repair or Removal Fund into which shall be deposited amounts credited or transferred to the fund by the general court or any other source including, without limitation, federal grants; loan repayments; investment earnings on monies in the fund; and any other amounts required to be credited to the fund by operation of law, resolution or agreement entered into by the department of conservation and recreation. The fund shall be administered by the secretary of energy and environmental affairs. Monies deposited into the fund that are unexpended at the end of the fiscal year shall not revert to the General Fund and shall be available for expenditure in the subsequent fiscal year.
November 10, 2019

AP finds nearly 40 problematic dams in Massachusetts
By MICHAEL CASEY  November 10, 2019

Scores of US dams found in poor condition, endangering thousands of people: analysis
By JUSTINE COLEMAN  November 10, 2019

New report shines light on distressed dams in Southeastern New England
By BRAN CONWAY, NBC 10 NEW  Monday, November 11, 2019

Dozens of New England dams a safety risk, in need of repair
By N.J. Newcomer, THE ASSOCIATED PRESS  Monday, November 11, 2019
Dam and Seawall priorities for dams:

**High and Significant Hazard Classification Structures**

**Poor or Unsafe physical condition**

MGL Chapter 29, §2IILL:

“... priority shall be given to projects that are owned or operated by cities, towns and charitable organizations which are tax-exempt; and (i) have been classified by the department of conservation and recreation as a high hazard or significant hazard dam; ...”

301 CMR 15.06: Priority System for the Approval of Projects

(1) **Funding Priorities Specified in the Act:** Subject to the fifty percent (50%) split of funds provided in 301 CMR 15.03, first priority for funding shall be given to projects that are owned or operated by cities, towns and Charitable Organizations and that meet one or more of the following applicable criteria:

(a) The structure has been classified by DCR as a High Hazard or Significant Hazard Dam in poor or unsafe condition;

Ecological benefit is an important consideration, but secondary to legislative directive.
(2) **Other Funding Priorities for Dams:** Further evaluation of projects shall be based on consideration (in no particular order of preference), as applicable, of whether or the extent to which such projects:

(a) Result in improvement to public health and/or safety;
(b) Result in the protection of public property;
(c) Have design plans that recognize the potential impact of climate change and improves resilience;
(d) Are part of a water supply system;
(e) Have obtained all applicable permits required to implement the project;
(f) Will improve or expand the functions of naturally occurring systems;
(g) Will reduce or eliminate a threat to native animal, and naturally occurring plant and resident or migratory fish species habitat or movement;
**Environmental Bond Bill**

Ch. 209, Acts of 2018

For the design, construction, reconstruction, rehabilitation, retrofitting, repair or removal of municipally-owned dams, publicly owned dams and other dams for which emergency action or statewide hazard mitigation is required...

provided, that the secretary of energy and environmental affairs shall give priority to dams and flood control projects that pose the greatest risk to public health or safety or to the environment; ... 

provided further, that the secretary may provide guidance for planning, prioritization, selection and implementation of projects in furtherance of the goals of climate change mitigation and adaptation and consistent with the integrated state hazard mitigation and climate change adaptation plan;
Repair vs. Removal

The statute, the regulations, and EEA do not mandate dam repair or dam removal

The owner of the dam makes that decision

We are looking for the best projects to address safety with taxpayer funds

Priorities in regulations do encourage removals

Public purpose of the dam is a consideration. Aesthetics, recreation, and historic preservation are lower ranked public uses. Water supply and protection of public infrastructure are higher ranked public uses.

Claims of flood control need to be backed up by H&H study.

Retaining an impoundment does not qualify as an ecological benefit.

(f) Will improve or expand the functions of naturally occurring systems
IT'S A POND!!

It's an impoundment.
Ultimately dam removal projects can be very competitive applications:

• Removals are permanent, no further taxpayer investment will be required

• Removals eliminate safety concern. No further risk from structure

• Removal projects score ecological benefit points in evaluation
  • Even if ecological benefit is not primary project goal
  • Movement of water, sediment, nutrients, biota

• Removal renders structure non-jurisdictional. No further inspections. No further ODS involvement.

• No maintenance required
Elm Street Dam, Kingston, MA

Significant Hazard Classification
Holmes Playground Dam, Plymouth, MA

High Hazard Classification

Photos: W. Hinkley
Grants for Design and Permit activities
   Up to $250,000 per structure

Grants for Construction
   Up to $1,000,000 per structure

Loans for Construction
   Variable based on project

Over $8 million for dam removal projects since FY2014
Municipal and nonprofit applicants. Not authorized to make awards to private owners.

Can work with municipalities and nonprofits as partners of the owner.

Public benefits must outweigh any private benefit. Easier to demonstrate this in removal projects.

Mill Street (Tel-Electric) Dam
Pittsfield
To begin 2019

High Street Dam
Bridgewater
2022??
**Keys to Success:**

Permits in hand
- MEPA Certificate
- Ch. 253 Dam Safety Permit
- Chapter 91
- Section 106
- Water Quality Certification
- USACOE 404
- Local Order of Conditions

Priority Hazard Classification and Condition

Additional benefits as shown in regulations

Permitting can be lengthy
Certain permits can have timelines of 18 months
Primary reason that good projects don’t get funded:

Uncertainty over timeline

• The primary constraint for program managers is TIME
• The budget is known ahead of time.
• The fiscal year drives everything
• If there is uncertainty on the project timeline or budget, it will score lower – even if the project may have better potential outcomes
• When we get extension requests or budget adjustment, we could lose that money twice – once if we cannot spend in the current fiscal year and again when it comes out of next year’s budget
• Time is also an internal constraint based on announcement of awards

If we have funds unspent at the end of the fiscal year, it is the equivalent of taking a cash advance on your credit card and just putting it in your pocket. You pay interest on the funds but for no result. This makes financial staff very unhappy.
Section 3. The Secretary of Energy and Environmental Affairs and the Secretary of Public Safety shall coordinate efforts across the Commonwealth to strengthen the resilience of our communities, prepare for the impacts of climate change, and to prepare for and mitigate damage from extreme weather events.

3. within one year of this Order, establish a framework for each City and Town in the Commonwealth to assess its vulnerability to climate change and extreme weather events, and to identify adaptation options for its assets;

4. provide technical assistance to Cities and Towns to complete vulnerability assessments, identify adaptation strategies, and begin implementation of these strategies;
Municipal Vulnerability Preparedness Program (MVP)

Environmental Bond Bill

Ch. 209, Acts of 2018

For the municipal vulnerability preparedness grant program to support and provide technical assistance for cities and towns to complete climate-related vulnerability assessments, develop action-oriented resiliency plans and complete integrated climate change adaptation plans and local hazard mitigation plans and to implement local and regional adaptation solutions identified through such plans, including changes to policies, bylaws and plans, municipal infrastructure improvements, repairs to address vulnerability and improve resiliency and nature-based climate adaptation strategies that are defined as strategies that conserve, restore and employ the natural resources of the commonwealth to enhance climate adaptation, build resilience and support mitigation.
Municipal Vulnerability Preparedness Program (MVP)

A community-led, accessible process that

- Employs local knowledge and buy-in
- Utilizes partnerships and leverages existing efforts
- Is based in best available climate projections and data
- Incorporates principles of nature-based solutions
- Demonstrates pilot potential and is proactive
- Reaches and responds to risks faced by EJ communities and vulnerable populations
Three Years of MVP

MVP Designations
71% of the Commonwealth
249 communities

Action Grant Projects
FY 18: 37
FY 19: 36

Total Awards
$17M+ in planning and action grants to date

Over $17 million in planning and action grants have been awarded to date
2 Types of MVP Grants

MVP Planning Grant

- RFR open, rolling until 1/15/20
- $15,000 - $100,000 per plan, completed by 6/30/2020
- Some expanded scopes
- $1M available

MVP Action Grant

- RFR closed, next round expected Spring 2020
- Open to MVP communities
- $25,000 - $2M per project
- $10M available annually

https://www.mass.gov/municipal-vulnerability-preparedness-mvp-program
Define and characterize hazards using latest science and data
Identify existing and future community vulnerabilities and strengths
Develop and prioritize community adaptation actions
Determine overall priority actions
Receive MVP designation

MVP Planning Grant

Implement priority adaptation actions identified through planning process

COMMUNITY RESILIENCE BUILDING WORKSHOP(S)

MVP Process/Grant Types
MVP Planning Grants

Standard Grant Award Amount

• $15,000-$100,000 per plan, completed by 6/30/2020
• Some expanded scopes, including local hazard mitigation plan
• $1M available
• EEA determines award amount
  o population of the municipality,
  o number of municipalities applying to work together
  o whether or not municipalities plan to incorporate this process into ongoing planning
  o the geography of the municipality, the need for additional data or modeling support
  o the status of the local HMP and commitment to complete a new or updated draft plan
  o Environmental Justice status and committed additional outreach efforts, expanded scope requests,
  o and other considerations.

Funding must be used to pay for planning services from a certified MVP provider, off of a state MVP provider list

Rolling basis, no later than 4pm, Wednesday January 15, 2020
MVP Action Grants: Project Types

- Detailed Vulnerability and Risk Assessment
- Community Outreach and Education
- Local Bylaws, Ordinances, Plans, and Other Management Measures
- Redesigns and Retrofits
- **Nature-Based Flood Protection, Drought Mitigation, Water Quality, and Water Infiltration Techniques**
- Nature-Based, Infrastructure and Technology Solutions to Reduce Vulnerability to Extreme Heat and Poor Air Quality
- **Nature-Based Solutions to Reduce Vulnerability to other Climate Change Impacts**
- Ecological Restoration and Habitat Management to Increase Resiliency

NEW IN 2019
- Energy Resilience
- Chemical Safety
- Land Acquisition for Resilience
- Subsidized Low-Income Housing Resilience Strategies
This program prioritizes nature based solutions and resiliency

Dam repair is NOT likely to be a competitive scope for MVP Action Grants

Inclusion of dam maintenance or repair in municipal plan does not automatically qualify it for the program

Dam removal MAY be a competitive scope if it is part of plan

Applications need to define how projects will reduce vulnerability to hazards and improve community resiliency
Contact

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www.mass.gov/eea
Whittenton Dam, Taunton 2013
Dam Removal Funding Through the DER – The Priority Project Process

Nick Wildman, CERP

Ecological Restoration Specialist
Massachusetts Department of Ecological Restoration
Dam Removal Funding Through the DER – The Priority Projects Process

Nick Wildman, CERP

November 19, 2019

Environmental Business Council
Framingham, MA
DER Priority Projects

- Salt marshes
- Stream flow
- Freshwater wetlands
- Cranberry
## MA Dam Removal Projects

<table>
<thead>
<tr>
<th>Completed</th>
<th>In planning</th>
</tr>
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<tbody>
<tr>
<td>Plymouth</td>
<td>Pittsfield</td>
</tr>
<tr>
<td>Taunton</td>
<td>Kingston</td>
</tr>
<tr>
<td>Middleton</td>
<td>Barre</td>
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<td>Athol</td>
<td>Assonet</td>
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<td>Becket</td>
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<td>Cheshire</td>
<td>Rowley</td>
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<td>Clarksburg</td>
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<td>Pelham</td>
<td>Lancaster</td>
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<tr>
<td>Wareham</td>
<td>Sturbridge</td>
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<tr>
<td>Gill</td>
<td>Northampton</td>
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<tr>
<td>E. Bridgewater</td>
<td>Pepperell</td>
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<tr>
<td>Andover</td>
<td>Dalton</td>
</tr>
<tr>
<td>Pittsfield</td>
<td>Hanover / Norwell</td>
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<tr>
<td>Hanover / Norwell</td>
<td>Ipswich</td>
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<tr>
<td>Middleton</td>
<td>Middleton</td>
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<tr>
<td>Bridgewater</td>
<td>Duxbury</td>
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<tr>
<td>Mt. Washington</td>
<td>Pepperell</td>
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<tr>
<td>Norwood</td>
<td>Norwood</td>
</tr>
<tr>
<td>Southampton</td>
<td>Mt. Washington</td>
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<tr>
<td>Oakdale</td>
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</table>
This is not a grant

- Priority Projects
  - Project planning & coordination
  - Stakeholder communication
  - Funding & fund-raising
  - Technical support
- Owner & team support
- Practice advancement
DER Project Managers...

- Provide leadership
- Coordinate project tasks
- Delegate to project partners (if applicable) and consultants
- Serve as point of contact
- Track progress
- Call on experts
- Build partnerships
- Are flexible!
Project Phases

- Problem ID
- Concept Design
- Design
- Permitting
- Implementation
- Monitoring

3-5 years, or more
But also some funding...

- Funding varies by project and year.
- Intended to be matching
- Grant
  - To landowner
  - To partner
  - Used for construction funding
- Fee for service
  - Pre-qualified contractors (preferred)
  - State-wide RFRs
Dam Removal Cost

- Costs vary widely based on:
  - site complexity
    - Contaminated sediment
    - Associated infrastructure
    - Access
  - project goals
- Feasibility Study: $20,000 - $150,000
- Design & Permitting: $50,000 - $250,000
- Implementation: $50,000 - $4 MM
- Compliance and monitoring: $50,000+
Diversify!

- Dam and Seawall Repair & Removal Program
- Municipal Vulnerability Preparedness Program

THINK: Who’s got the money?
Who can apply?

- Municipalities
- State agencies
- NGOs
- Watershed Associations
- Landowners

SORRY: No for-profit companies
RFR Process

- **Pre-RFR**
  - Lets talk!
  - Usually 4 weeks

- **Full RFR**
  - Cone of silence!
  - 4 – 6 weeks
  - May be focused
    - Regionally
    - Practice Area

**TIP:** Bigger is better!

**LOOK AROUND:** Other problems nearby?
Early Work

- Understand site constraints.
  - Identify impacts to surrounding infrastructure.
  - Consider site access.
  - Confirm land ownership.
- Determine impoundment uses.
- Think about watershed context.
- Refer to EEA 2007 guidance:
Application

- Made to be easy!
- What do you already know?
- Who do you already know?
- Paper or digital….

**REMEMBER:**
Landowner Support Letter

**TIP:**
Look for synergy
Evaluation

- Ecological & Community Benefits
- Local Leadership
- Likelihood of Success

**TIP:**
Tell us what **you** will do!
Thank you

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Dam Removal Practice Lead
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617-626-1527
Dam Upgrade and Major Flood Control through FEMA Hazard Mitigation Grant Programs (HMGP, PDM, FMA)

Sarah J. White
State Hazard Mitigation Officer
Massachusetts Emergency Management Agency
FEMA HAZARD MITIGATION ASSISTANCE (HMA) GRANTS

PDM • FMA • HMGP

Sarah White
Massachusetts Emergency Management Agency
Hazard Mitigation
Saving Lives, Infrastructure, and Money

- **Hazard Mitigation**: Any sustained actions taken to reduce or eliminate long-term risk to people and property from hazards and their effects.

- Natural Hazard Mitigation is:
  - adapting to natural hazards
  - protecting people and structures from future hazards
  - maintaining consistency with resiliency and sustainability principles
  - a way of minimizing the costs of disaster response and recovery

FEMA’s Hazard Mitigation Assistance Programs are **not** intended as a source of funding for repair, replacement or deferred maintenance activities (rehabilitation). Projects should provide an increased level of protection, that will ultimately reduce, or eliminate risk to people and property from the effects of natural hazards.
Pre-Disaster Mitigation (PDM)

- Nationally-competitive grant program
- PDM funds available for all-hazard
- $250,000,000 available nationwide ($575,000 Fed share State set-aside)
- Planning, Advance Assistance, Resilient Infrastructure, Regular Projects
- Eligible sub-applicants are States, local governments, and tribes
- There is a 25% non-Federal cost share required on all grant awards
- $4,000,000 limit on project budgets (federal share)
- 36-month maximum period of performance (from acceptance of award)
- Each state is limited to a total of nine (9) competitive project sub-applications
- Application period is currently CLOSED
Flood Mitigation Assistance (FMA)

- Nationally-competitive grant program
- FMA funds available for “flood related” hazards only, with an emphasis on Repetitive Loss and Severe Repetitive Loss Properties
- The Flood Mitigation Assistance (FMA) program is authorized by the National Flood Insurance Reform Act (NFIRA) of 1994 with the goal of reducing or eliminating claims under the NFIP.
- $160,000,000 available nationwide
- Eligible sub-applicants are States, local governments, and Tribes
  - Homeowners must apply though the local government for FMA grants
- There is the possibility for a Federal share greater than 75% (RL & SRL)
- 36-month maximum period of performance (from acceptance of award)
- Application period is currently CLOSED
Hazard Mitigation Grant Program (HMGP)

- Available only After a Presidential (aka Federally Declared) Disaster
- Available Statewide – not just in declared counties
- HMGP funds available for all-hazard
- There is no minimum or maximum project/planning grant award amount (within availability of funds)
- There is a 25% non-Federal share required on all grant awards

- Certain Private Non-Profit organizations are eligible for HMGP grants
- Authorized by Section 404 of Stafford Act
- 36-month maximum period of performance (beginning 1 year after declaration date) (HMA 2015)*
- Application period is currently CLOSED for HMGP

*Extensions to this program are allowed, per HMA Guidance, Part VI, D.4.1
Eligible Mitigation Project Activities

<table>
<thead>
<tr>
<th>Property Acquisition and Demolition (or relocation)</th>
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<tbody>
<tr>
<td>Structure Elevation</td>
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<tr>
<td>Dry Floodproofing (Historic &amp; Non-residential Structures)</td>
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<tr>
<td>Flood Risk Reduction Projects (i.e. Culvert &amp; Drainage Upgrades)</td>
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<tr>
<td>Non-localized Flood Risk Reduction Projects (i.e. Dam &amp; Seawall Upgrades)</td>
</tr>
<tr>
<td>Structural &amp; Non-Structural Retrofitting of Existing Buildings</td>
</tr>
<tr>
<td>Infrastructure Retrofit (i.e. Utility Systems &amp; Road Upgrades)</td>
</tr>
<tr>
<td>Soil Stabilization</td>
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<tr>
<td>Safe Room Construction</td>
</tr>
<tr>
<td>Wildfire Mitigation</td>
</tr>
<tr>
<td>Generators for Critical Facilities</td>
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<tr>
<td>Advance Assistance</td>
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</tbody>
</table>
Non-Localized Flood Risk Reduction Projects

- Must have demonstrated flood reduction
- construction, demolition, or upgrade of dams;
- construction or modification of dikes, levees, floodwalls, seawalls, groins, jetties, breakwaters, and stabilized sand dunes;
- large-scale channelization of a waterway.
- cannot:
  - constitute only repairs or restoration.
  - constitute a section of a larger flood control system.
  - duplicate the flood prevention activities of other Federal agencies on the same site.
This funding is an opportunity to advance capital projects on a community level, ready for investment that will reduce risks, prevent loss of life and lead to significant savings by reducing damage from future disasters and lowering flood insurance premiums.

Eligible activities include, but are not limited to:

- Infrastructure protective measures (including hazard-specific retrofit projects), Utility protective measures (including hazard-specific retrofit projects), Water and sanitary sewer system protective measures, Localized flood control to protect critical facilities, **Floodwater storage and diversion**, and more…

- Under PDM only; 1 project per state; up to $10 million Federal cost share maximum.
What Projects are Ineligible?

- Projects that do not reduce the risk to people, structures, or infrastructure.
- Projects that are dependent on another action to be effective and/or feasible.

- **Projects which are repair or replacement, deferred maintenance, replacement of existing infrastructure (e.g. replacement of obsolete utility systems [pumps, generators, etc.]). considered regular pre-scheduled, or damage-induced maintenance.**

- Projects for which actual physical work has occurred.
- Projects located in Coastal Barrier Resources System (CBRS) Units or in otherwise protected areas (OPAs), other than property acquisition.
- Projects that involve land that is contaminated with hazardous waste.
- Projects that primarily address ecological or agricultural issues.

_for complete details see HMA Guidance, Part III, Section E.2 (page 42-44)_
For more information....

We strongly encourage interested sub-applicants meet with mitigation staff one-on-one to discuss project proposals, application process, general mitigation issues, etc...

➢ To schedule an appointment email: mitigation@mass.gov

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Dave Woodbury
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Check the Mitigation Program and Grants section of the MEMA website for more information and grant resources (under Resources for Public Officials)
https://www.mass.gov/hazard-mitigation-assistance-grant-programs

Very Important
☐ MEMA is conduit for applications and funding
☐ The process can take several months to a year (or longer)
☐ It is the sub-applicant’s responsibility ...
  o to maintain local hazard mitigation plan
  o finish on time
  o ensure that proper procurement
  o follow all environmental laws stick to the approved scope of work
Leesville Pond Dam Repairs – Reducing the Risk at a Poor Condition Dam through the Dam and Seawall Program

Shawn King, EIT

*Project Engineer*

*Fuss & O’Neill, Inc.*
Leesville Pond Dam Repairs

Reducing the Risk at a Poor Condition Dam through the Dam and Seawall Program

Shawn King, EIT
Project Engineer – Fuss & O’Neill, Inc.
Overview of Dam
Project Purpose & Need
Recent Investigations
Primary Deficiencies, Risks, and Hazards
Funding through Dam and Seawall Program
Design & Permitting
Construction & Primary Repairs
Questions
Overview of Dam

Leesville Pond Dam (MA00141)

Owner/Operator: Town of Auburn
Location: Worcester, MA
Impoundment: Leesville Pond
Intermediate Size
Significant Hazard Potential
Recreational Use

Leesville Pond Dam (Pictometry, 2008)
Overview of Dam

- Overview of Primary Spillway
- Stone Masonry Face
- Auxiliary Spillway Weir
- Primary Spillway Weir
- Stilling Basin
- Abandoned Low-Level Outlet
- Auxiliary Spillway Channel
Project Purpose & Need

**Dam Safety Order Issued**
- Significant Hazard Potential
- Poor Condition Rating
- Phase II Investigation Required (2017)

**Prioritization of Repairs**
- Available/Potential Funding
- Future Repairs
- Operability & Maintenance
Recent Investigations

2001 Study of Leesville Pond Dam
• 2012 Phase I Inspection/Evaluation

• Tighe & Bond, 2012

Phase II Investigations
• 2017 Design & Permitting
• 2017-2019 Follow Up Inspections
• 2019 Dam Repairs

• Fuss & O’Neill, 2017
Primary Deficiencies, Risks, and Hazards

Trees and brush
- Erosion/sloughing on embankment
- Debris

Concrete deficiencies
- Stone masonry deficiencies
- Miscellaneous
Primary Deficiencies, Risks, and Hazards

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Primary Deficiencies, Risks, and Hazards

Trees and brush
• Erosion/sloughing on embankment
• Debris

Concrete deficiencies
• Stone masonry deficiencies
• Miscellaneous
Funding through Dam and Seawall Program

Dam, Levee, and Coastal Infrastructure Repair and Removal Program
(ENV 19 DS 02 – Construction Finance Application)

- Executive Office of Energy and Environmental Affairs (EEA)
- Funds for Construction of Repairs & Construction Administration Services
- Funds Requested: 75% of Estimated Project Budget (25% Matching Town Funds)
- Funding under Category 1 – Dams and similar unregulated impoundments

Cost of project
- Initial Project Cost: $164,000
- To Date Cost: $186,000
Design & Permitting

Design Goals
- Compliance with Dam Safety Regulations
- Reduce Hazards & Risks
- Raise Condition Rating of Dam
- Prioritize Repairs
- Other Improvement Opportunities

Permitting
- “Permitting Your Dam Repair or Removal Projects”
  Andrea Judge, PE, Project Manager, Fuss & O’Neill

logos: NCSHPO, MassDEP, Town of Auburn, Massachusetts, Leesville Pond Dam Repair Plan
Construction & Primary Repairs

- Trees and brush
  - Erosion/sloughing on embankment
  - Debris

- Concrete deficiencies
  - Stone masonry deficiencies
  - Miscellaneous
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Leesville Pond Dam Repairs

Reducing the Risk at a Poor Condition Dam through the Dam and Seawall Program

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Permitting Your Dam Repair or Removal Projects

Andrea Judge, P.E.

Program Chair and Moderator

Project Manager
Fuss & O’Neill, Inc.
Permitting your Dam Repair or Removal Project

Andrea Judge, PE  
Project Manager- Fuss & O'Neill, Inc.
Potential Additional Sources of Funding

• Other funding sources are very limited!

• Rehabilitation of High Hazard Potential Dam Grant Program
  – FEMA was appropriated $10M in FY’19 for planning and pre-construction activities that lead to repair or removal of high hazard dams
  – Not clear how this program will be implemented in MA yet

• Natural Resources Conservation Service
  – Funding is through a project sponsor
  – Small Watershed Rehabilitation grants
  – Other funding options for fish passage

• Non-Governmental Organizations (Nature Conservancy, Trout Unlimited, American Rivers) - Removal
I DON'T ALWAYS WORK AROUND DAMS

BUT WHEN I DO, I CHECK WHAT PERMITS I NEED
Permitting Do’s

• Have a pre-application meeting with regulatory agencies

• Engage stakeholders

• Obtain permits as early as possible in the process

• Plan sufficient time to complete all the necessary consultations and regulatory processes. Permitting usually takes longer than you expect.

• Budget a contingency for additional permit requirements or coordination with regulators
After you get your permits

• Review them in detail

• Finalize the design and Contract Documents

• Execute agreements with Contractor

• Contractor is required to have a copy onsite

• Record them at the Registry of Deeds

• Comply!

• Keep in touch with regulators and let them know of any changes to the construction
• Your engineer or permitting consultant can walk you through the compliance pathways
Local Permits

• Wetlands Protection Act, Local Conservation Commissions
• Other local permits or coordination may be required such as building and zoning review
State and Federal Permits

- Office of Dam Safety - Ch. 253 Permit or Jurisdictional Determination
- Massachusetts Department of Environmental Protection (DEP) - 401 Water Quality Certification, Chapter 91 Waterways License, Application for Beneficial Use of Solid Waste Permit
- Massachusetts Historic Commission - Sec. 106 Historical Certificate
- Massachusetts Environmental Policy Act (MEPA) Office -
- US Army Corps of Engineers (USACE) - Clean Water Act, Section 404
- Environmental Protection Agency - National Pollutant Discharge Elimination System (NPDES)
Additional Notification/Coordination

- State Tribal and Historic Preservation Offices
- Massachusetts Department of Transportation
- Massachusetts Coastal Zone Management Office
- Mass. Department of Fish and Game
Permitting your Dam Repair or Removal Project
Moderated Discussion


Panelists:

- William Hinkley, *Mass EOEEA*
- Sarah J. White, *MEMA*
- Nick Wildman, *MassDER*