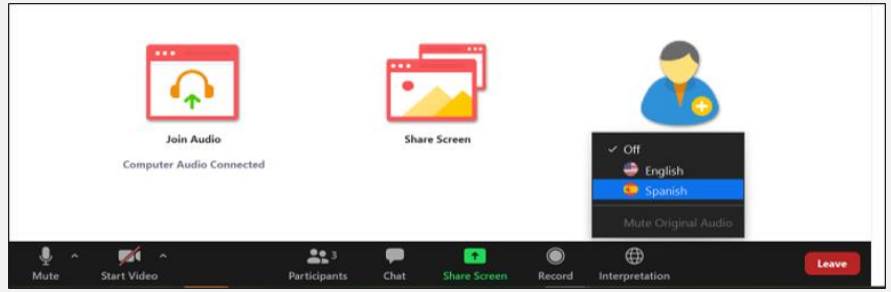
Environmental Justice Council

Meeting #18 • January 9, 2025 • 6:30 pm

LOGISTICS

- **Language Interpretation is being offered in: Español, Kreyòl ayisyen, 普通话, Kriolu, Português, Tiếng Việt, ខ្មែរ, and American Sign Language (ASL)**
  - To participate in English, click the “Interpretation” icon and select English.
  - Para entrar no canal em português, clique no ícone “Interpretation” e selecione “Portuguese”
  - Si alguien desea interpretación en español, haga clic en “Interpretation” y seleccione “Spanish”
  - Pou rantre nan chanèl kreyòl ayisyen an, klike sou ikòn “Interpretation” an epi chwazi “Haitian Creole”
  - Pa partisipa na Kriolu, klika na íkone "Intirpretason" y silisiona "Cape Verdean Kriolu".
  - 要以普通话参加会议，请单击口语图标并选择 "Chinese”.
  - Để vào kênh bằng tiếng Việt, hãy nhấp vào biểu tượng “Interpretation” và chọn “Vietnamese”.
  - ដើម្បី ចូល រួម ជា ភាសា ខ្មែរ សូម ចុច "រូបតំណាង ការ បកស្រាយ ហើយ ជ្រើស រើស ភាសា ខ្មែរ"។

- **Please speak slowly.**
- **All attendees must select a language channel, even if viewing the presentation in English.**



- **If you would like a translated version of the slides, please go to the EJC website at: https://www.mass.gov/service-details/environmental-justice-council-ejc-meetings**

THIS MEETING IS BEING RECORDED

Environmental Justice Council

Meeting #18

Thursday, January 9 2025, 6:30 pm

In Person location: Lowell, MA

University of Massachusetts, Lowell

850 Broadway St, Lowell, MA 01854

Logistics and Agenda

Logistics

- Language Interpretation is being offered in: Español, Kreyòl ayisyen, 普通话, Kriolu, Português, Tiếng Việt, ខ្មែរ, and American Sign Language (ASL)
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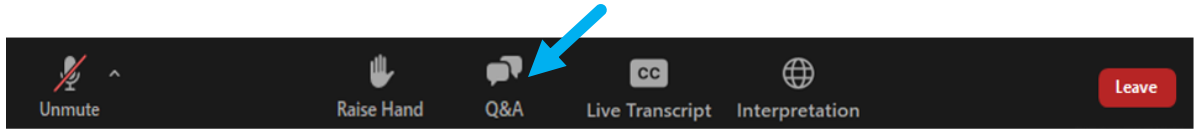
- **For a translated version of the slides, please go to the EJC website at: https://www.mass.gov/service-details/environmental-justice-council-ejc-meetings**
- **All lines will be muted during the presentations.**
- **The line will be open for oral comments after the presentations.**
- **If you have a clarifying question or a logistical or technical issue during the presentations, please type it into the Q&A box.**



- **Contact the ERG webinar lead Kecil John at meetings@erg.com with any technical issues or questions.**

THIS MEETING IS BEING RECORDED

Agenda

	Approximate Time
▪ Overview of Meeting, Logistics and Agenda	6:30 PM
▪ Roll Call and Approval of Prior EJC Meeting Minutes	6:35 PM
▪ Questions and Comments from the Public	6:40 PM
▪ ResilientCoast	6:50 pm
▪ Hydropower	7:20 PM
▪ Questions and Comments from the Public	7:50 PM
▪ Response to Comments (when appropriate)	(if time allows)
▪ Next Steps and Adjourn	8:00 PM

Approval of November 14, 2024, Meeting Minutes & Roll Call: EJ Council Members

- Kalila Barnett
- Madeline Fraser Cook
- Melissa Harding-Ferretti
- Cheryll Holley
- Caroline Hon
- Namrita Kapur
- Lydia Lowe
- Marcos Luna
- Peter Maathey
- María Belén Power
- Sofia Owen
- Jen Salinetti
- Patricia Spence
- Ari Zorn
- Miles Gresham

Public Comments and Questions

Please limit each comment to two minutes to allow time for others to speak

ResilientCoast

ResilientCoasts

Managing impacts of sea level rise & coastal storms
across the Massachusetts coast

CZM

ResilientCoasts

RESILIENTCOASTS PLAN OVERVIEW

- **Responsible for advancing:** EEA - Executive Office of Energy & Environmental Affairs & CZM - Office of Coastal Zone Management
- **Purpose:** guide state & local coastal resilience policy & and management actions
- **Process:**
  - ***Describe a vision/goals*** & metrics for a resilient coast
  - ***Map geographic zones*** of climate vulnerability - “coastal resilience districts” (long term) and "community risk hot spots" (near-term)
  - ***Evaluate current & new strategies*** and how they could be applied at different scales – local, regional/district, coast-wide
  - ***Develop recommendations*** to guide resilience action in vulnerable areas at state & local levels
- **Throughout - stakeholder engagement and coordination:**
  - Internal Agency Working Group, External Task Force
  - Public meetings, surveys, focus groups/interviews

GOALS FOR A RESILIENT COAST

GOAL 1: Improve **human health and safety**

GOAL 2: Protect and enhance the value of **natural and cultural resources**

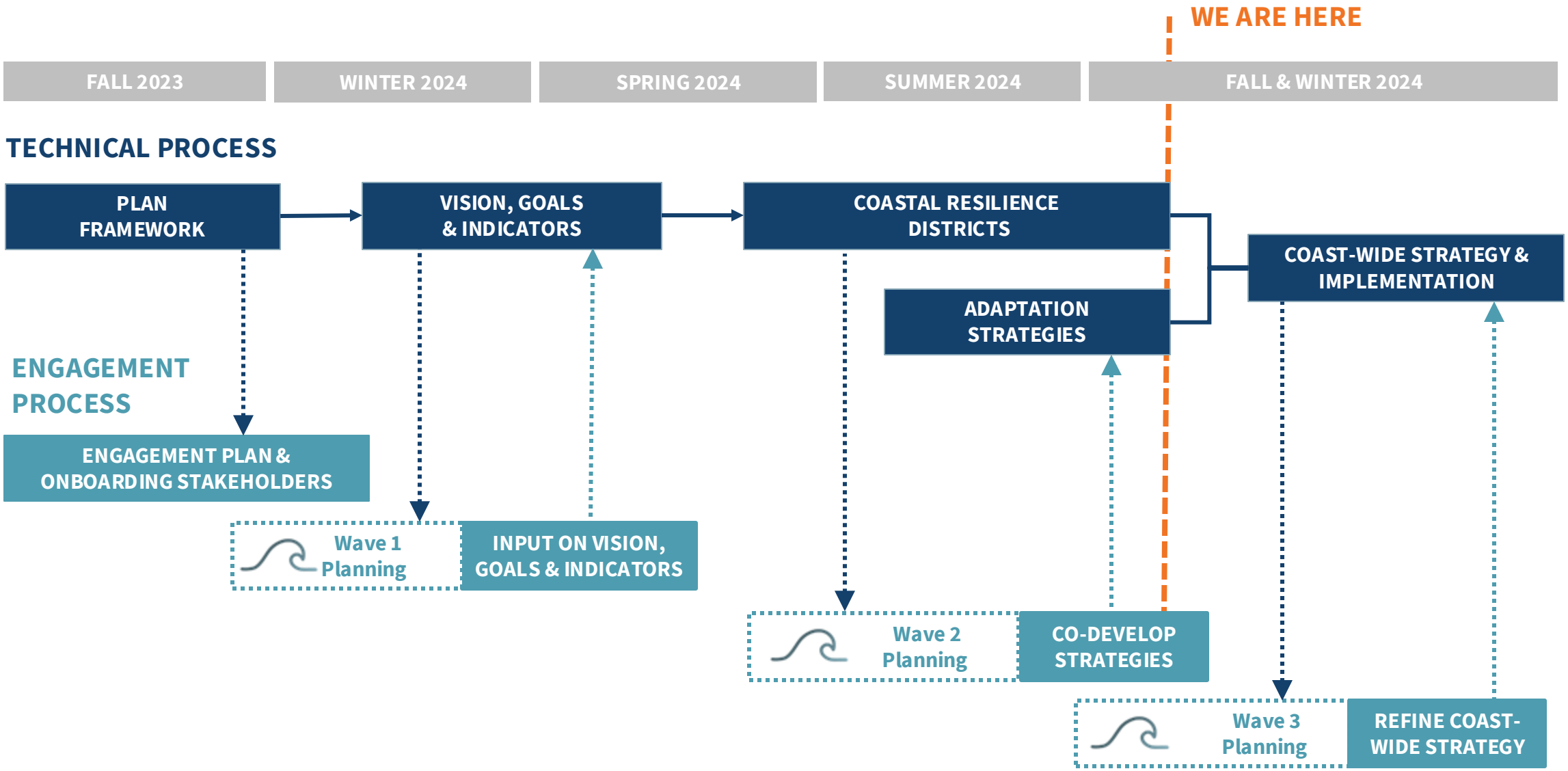
GOAL 3: Increase resiliency of **built infrastructure functions**

GOAL 4: Strengthen the **coastal economy**

GOAL 5: Advance **equity** and **environmental justice**

GOAL 6: Support the **capacity of coastal communities**

TIMELINE

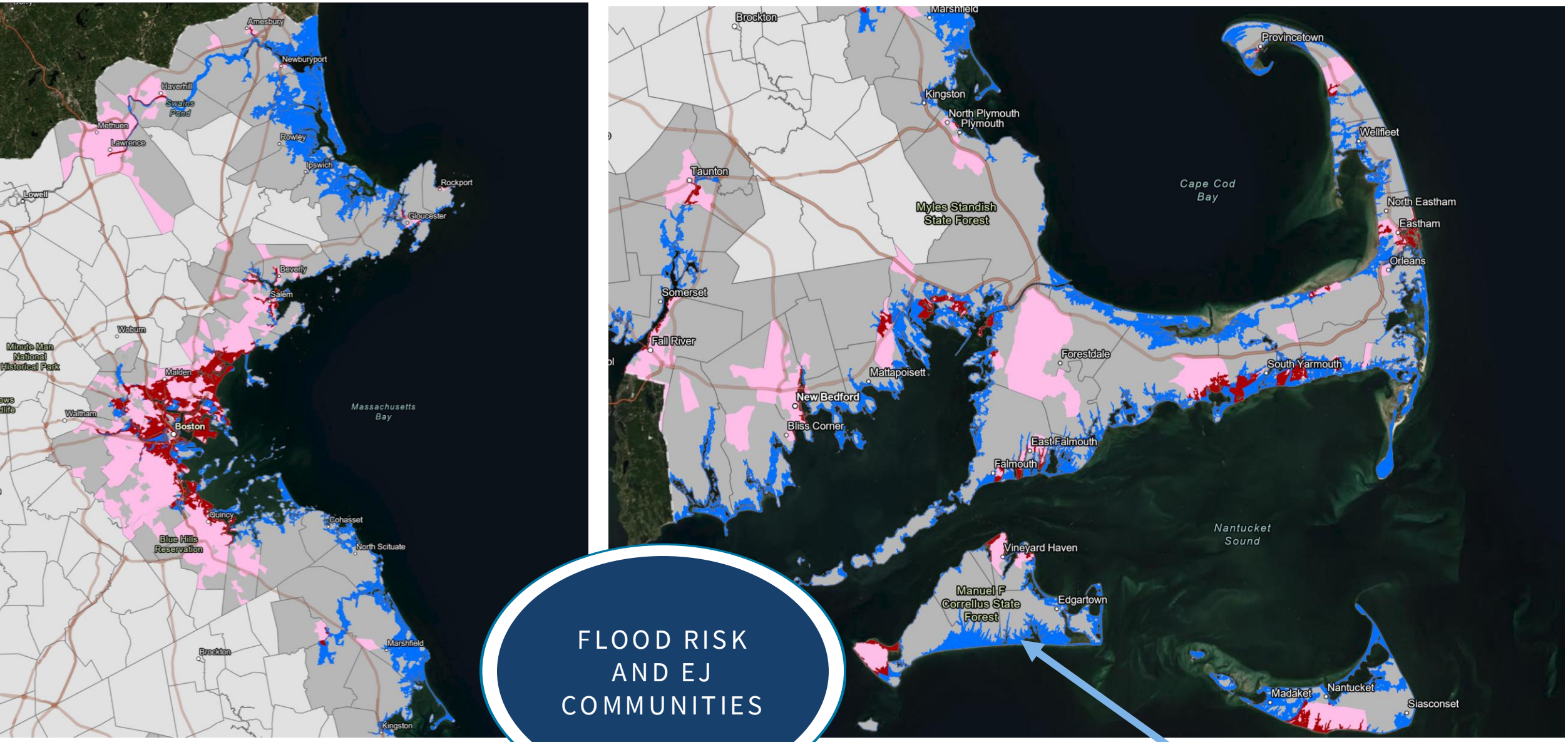

WE ARE HERE
FALL 2023
WINTER 2024
SPRING 2024
SUMMER 2024
FALL & WINTER 2024
TECHNICAL PROCESS
PLAN FRAMEWORK
VISION, GOALS & INDICATORS
COASTAL RESILIENCE DISTRICTS
COAST-WIDE STRATEGY & IMPLEMENTATION
ADAPTATION STRATEGIES
ENGAGEMENT PROCESS
ENGAGEMENT PLAN & ONBOARDING STAKEHOLDERS
Wave 1 Planning
INPUT ON VISION, GOALS & INDICATORS
Wave 2 Planning
CO-DEVELOP STRATEGIES
Wave 3 Planning
REFINE COAST-WIDE STRATEGY

COMMUNITIES WITH LONGER-TERM COASTAL FLOOD RISK

78 COASTAL COMMUNITIES + 20 ADDITIONAL ALONG RIVERS

Extent of Coastal Resilience Districts in blue

EJ COMMUNITIES WITH LONGER-TERM FLOOD RISK



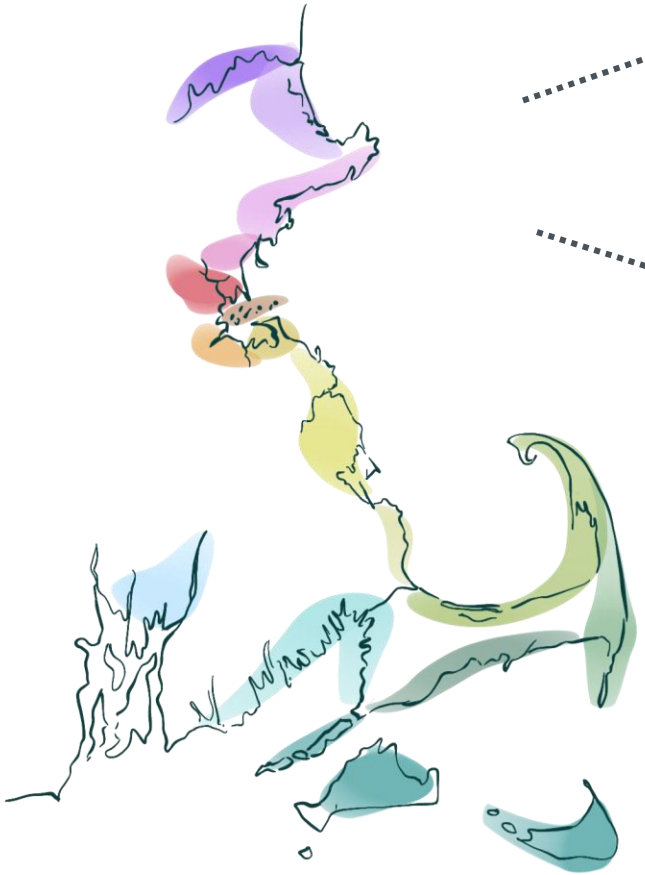
FLOOD RISK AND EJ COMMUNITIES

ResilientCoasts | EJ Council

Extent of Coastal Resilience Districts in blue

APPROACH TO THIS PLAN

COASTAL RESILIENCE DISTRICTS
(driven by natural resources, watersheds, and coastal hazards)



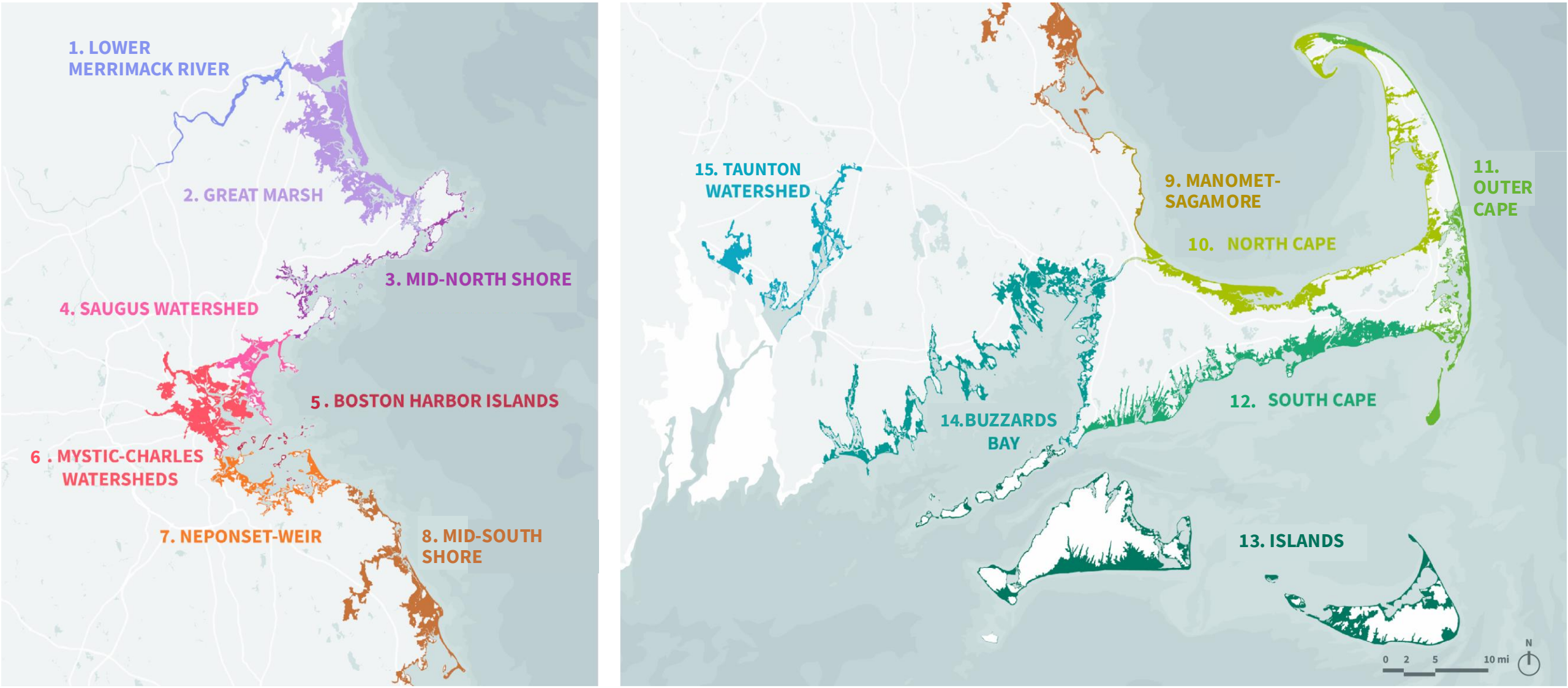
NEAR-TERM COMMUNITY RISK HOT SPOTS
(people, housing, public infrastructure, and economic resources)

COASTAL TYPOLOGIES
(different types of coastal environments, land use, and development)

COAST-WIDE STRATEGIES
(state-level policy, regulatory, financing, and other levers)

PLACE-BASED STRATEGY GUIDANCE
(suitable strategies based on coastal hazards and typology)

PROPOSED COASTAL RESILIENCE DISTRICTS



KEY COASTAL TYPOLOGIES ON THE MA COAST

COASTAL FLOODPLAINS

BARRIER BEACHES

SALT MARSHES

COASTAL BANKS

TIDAL RIVER FLOODPLAINS

BEACHES/DUNES

PORTS & WORKING WATERFRONTS

2030 Community Risk Hot Spots

COMMUNITY RISK HOT SPOTS

Maps highlighting areas with high near-term risks to people, infrastructure, and economic resources

- Identify within each Coastal Resilience District where there is a confluence of people, housing, infrastructure, and economic resources **exposed to 2030 coastal hazard risk**
- Help inform **district-level prioritization** for federal, state, local, and private resources and intervention
- **Status:** In development, drafts to be shared in coming month

PEOPLE & HOUSING

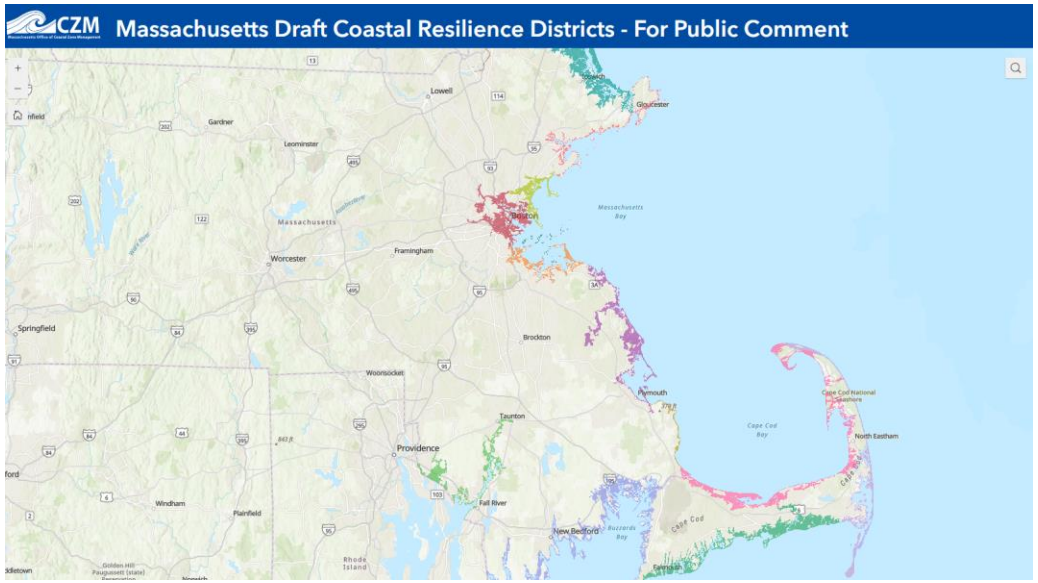
PUBLIC FACILITIES & INFRASTRUCTURE

ECONOMY

WHATS NEXT?

Future opportunities for Engagement and Draft Plan

- Public Meeting this winter to share:
  - Coastwide strategies
  - Hot spot maps
- Draft Plan for public review and comment this spring



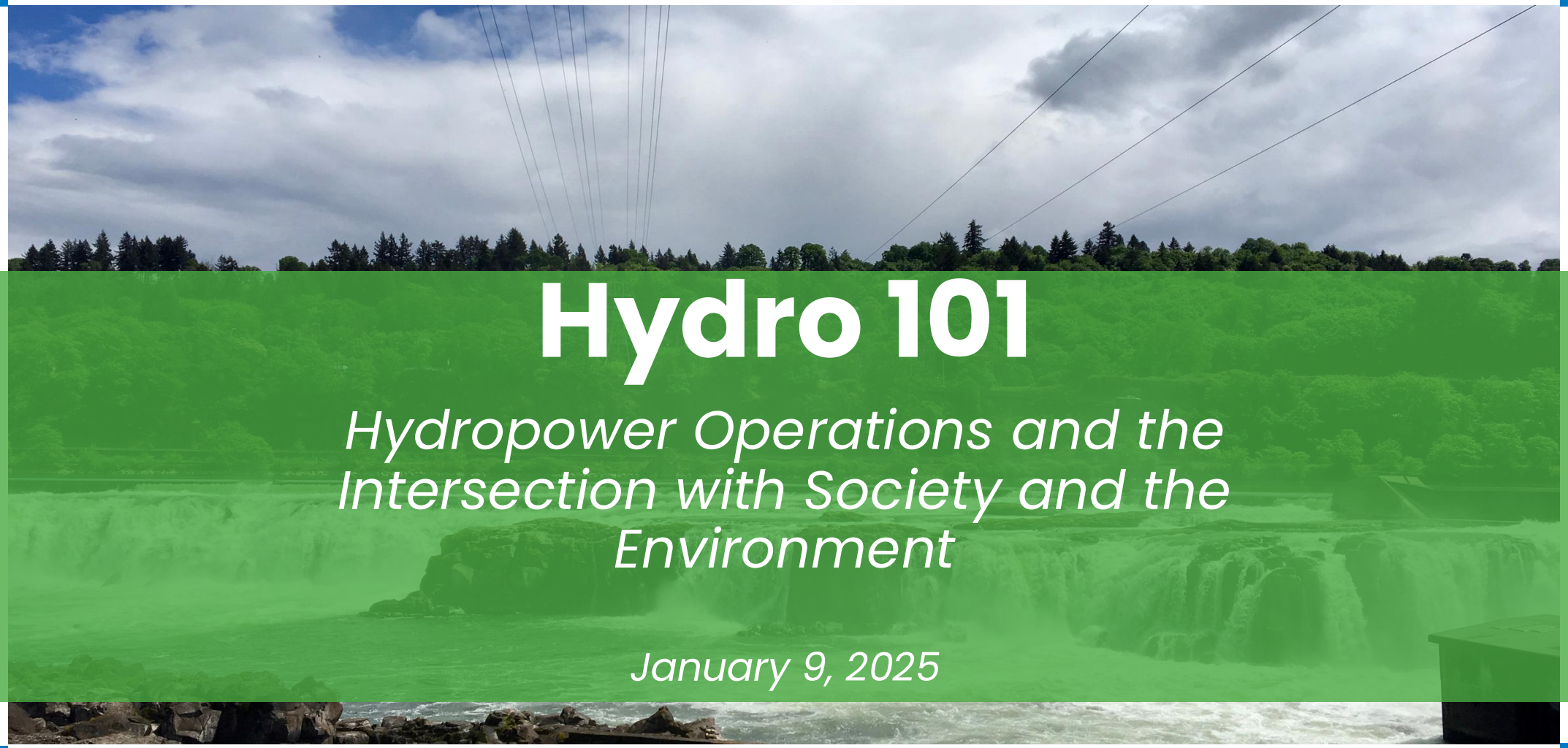
RESILIENTCOASTS WEBSITE

Questions?

Deanna Moran
Chief Coastal Resilience Officer
Deanna.moran@mass.gov

Hydropower

LOW IMPACT HYDROPOWER INSTITUTE



Hydro 101

Hydropower Operations and the Intersection with Society and the Environment

January 9, 2025

Agenda

- How hydro works
- Hydro’s intersection with society and the environment
- Renewable energy credits in New England

Hydro =

Water

+

Gravity

Conventional Hydro

- Dam or diversion weir raises river water level to create a reservoir and sufficient “head”
- Water flows downhill via a penstock through a turbine
- Turbine blades rotate converting moving water (kinetic) energy into mechanical energy
- Turbine shaft spins and converts mechanical energy to electrical energy in an electromagnetic generator
- Electricity is then transmitted onto the regional grid

Powerhouse built into the base of the dam

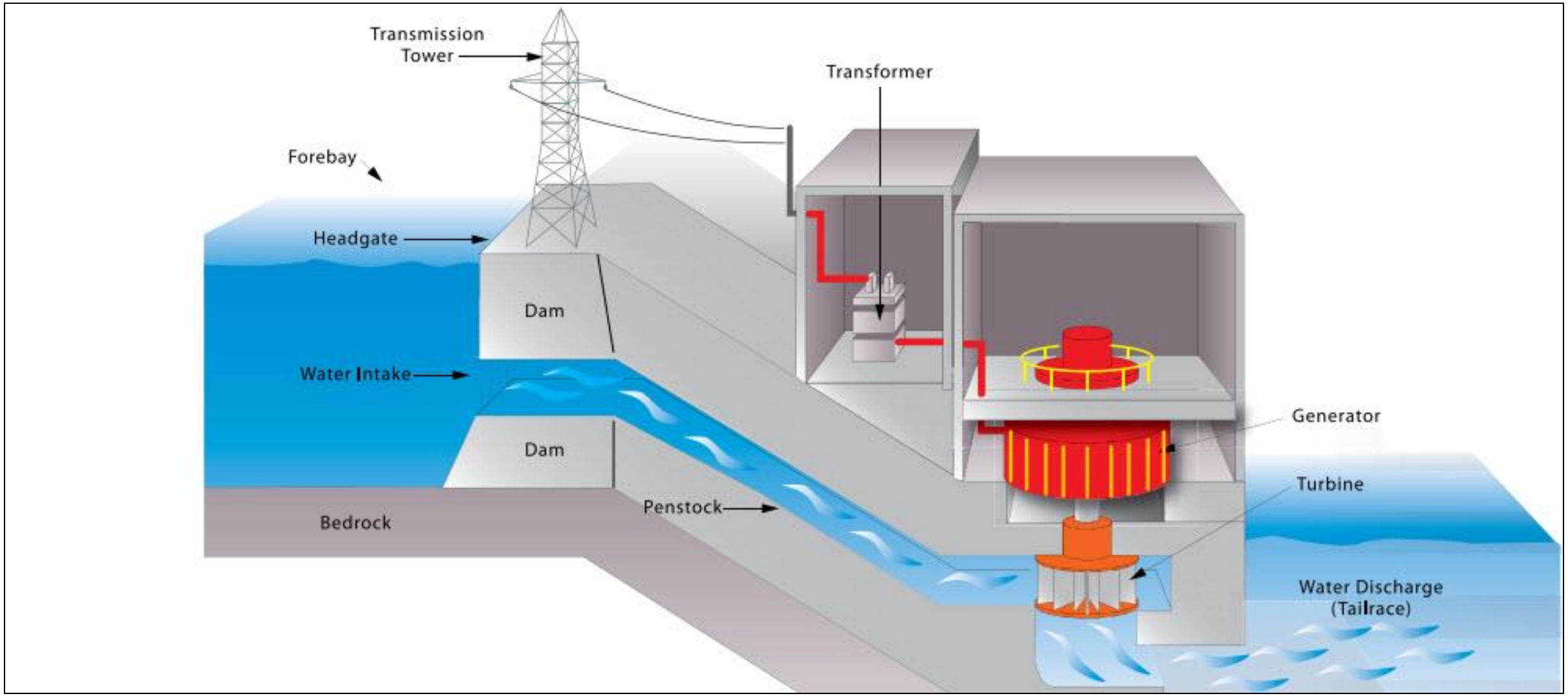
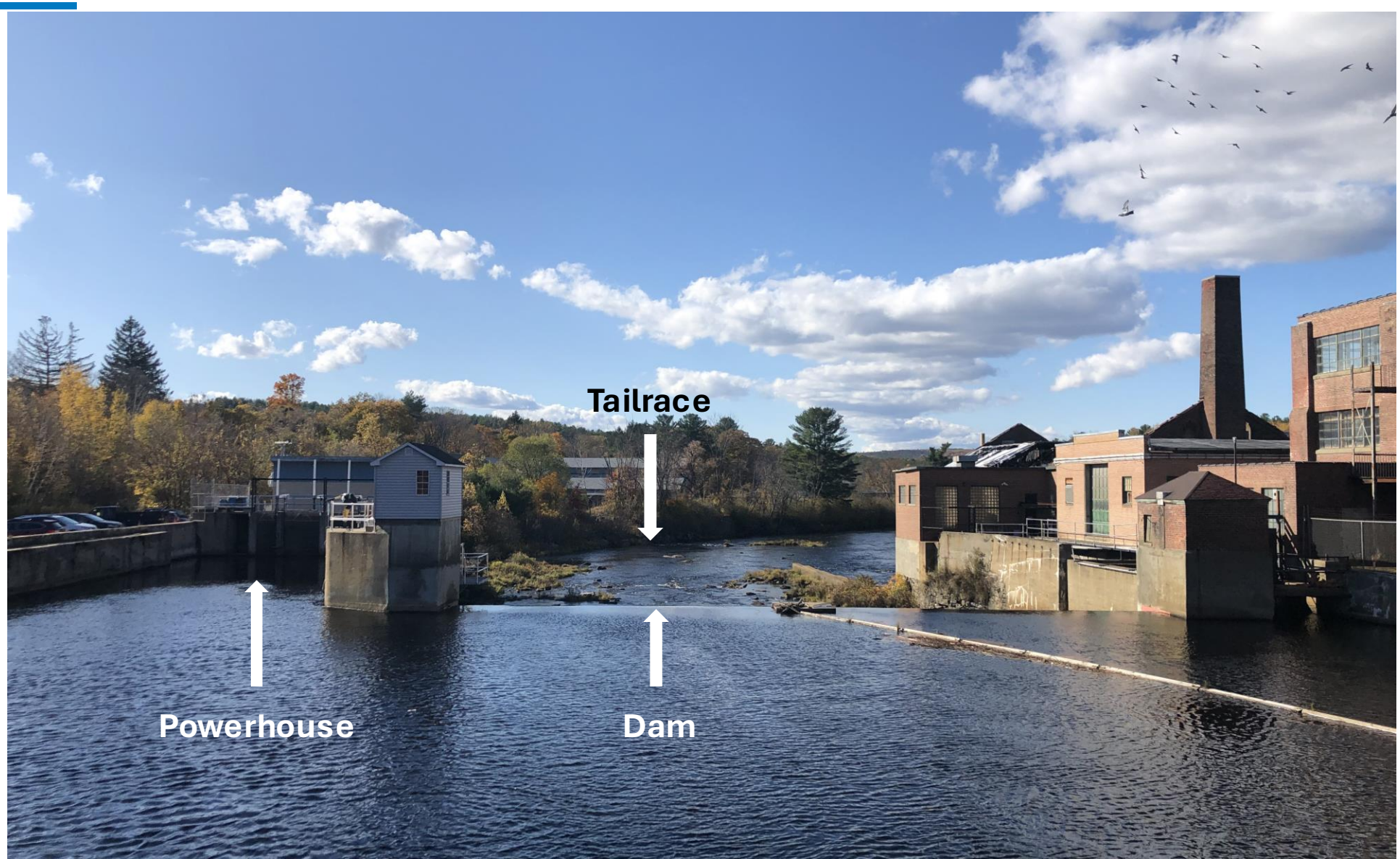


Image source: https://andrewfmiller.weebly.com/hydroelectric-energy-sources.html

New Home Dam, Orange, MA – Integrated dam & powerhouse



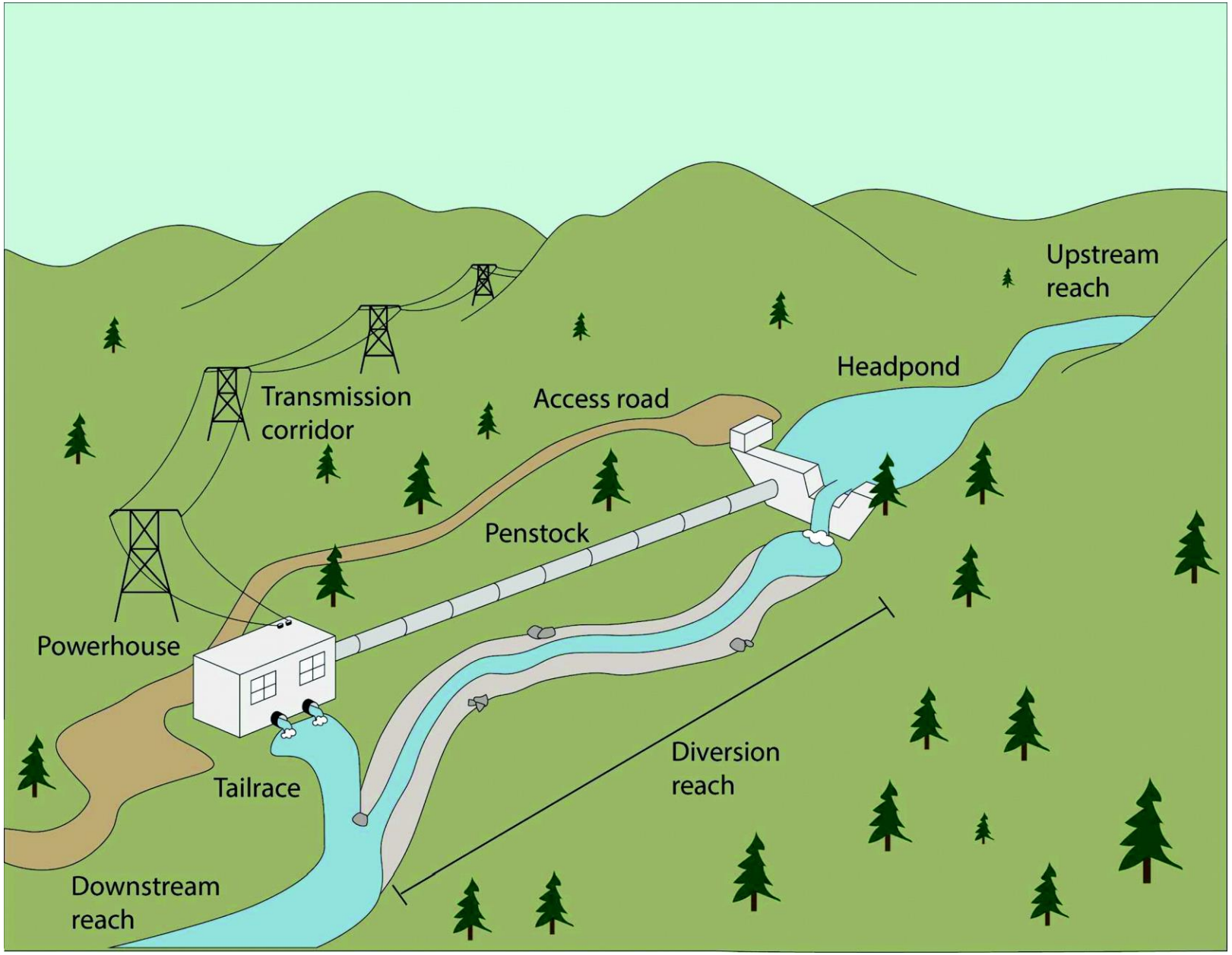
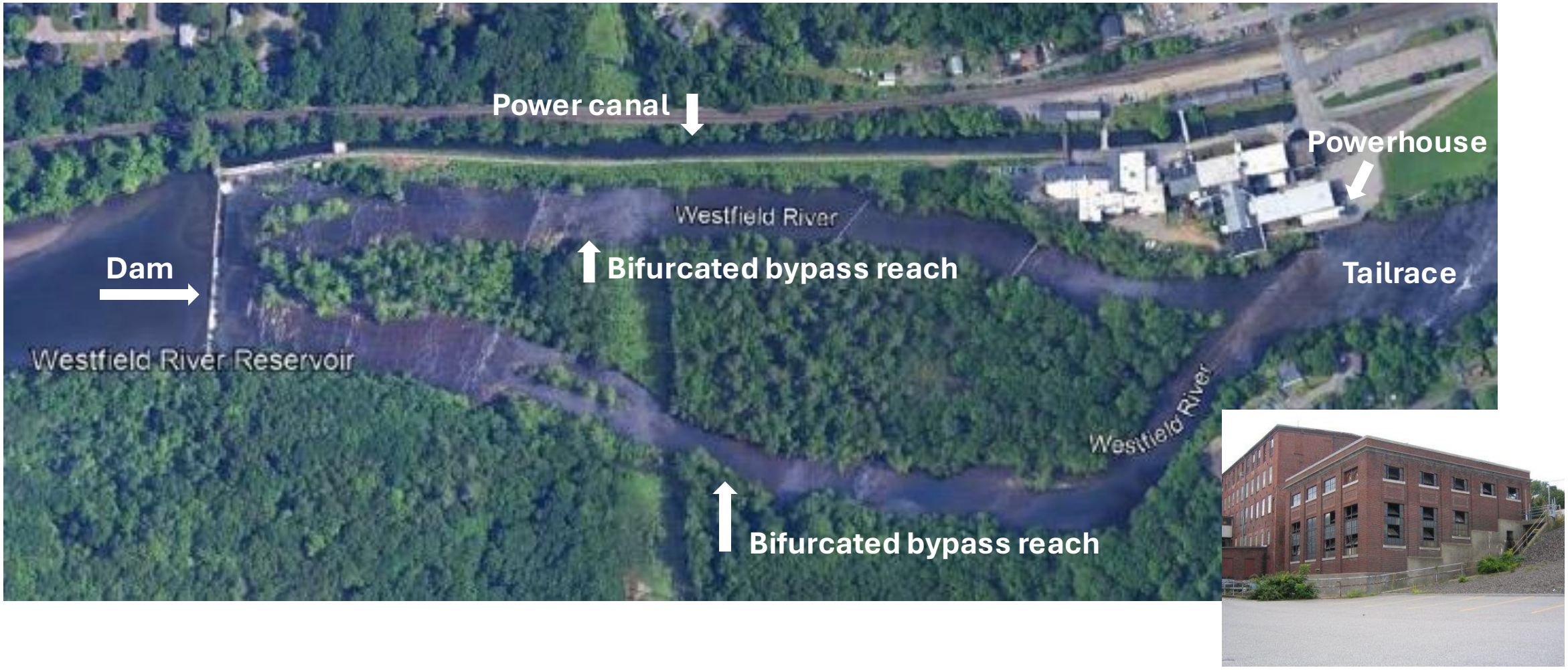


Image source: https://cdnsciencepub.com/doi/10.1139/cjfas-2016-0253

Powerhouse is separated from the dam to gain sufficient "head" which creates a bypassed reach of the natural river

West Springfield, MA – bypass reach



Related Structures

Surge Tank

Image source: https://www.aboutcivil.org/surge-tanks-functions-types.html

Spillways

Pumped Storage Hydro

- Two reservoirs at different elevations
- Water is pumped (using grid energy) to the upper reservoir for storage until needed
- Later, water is released back down when demand is high to drive turbine/generator, same as conventional hydro
- Open loop - connected to a natural water source
- Closed loop – not continuously connected
- Pumped storage is a net energy user

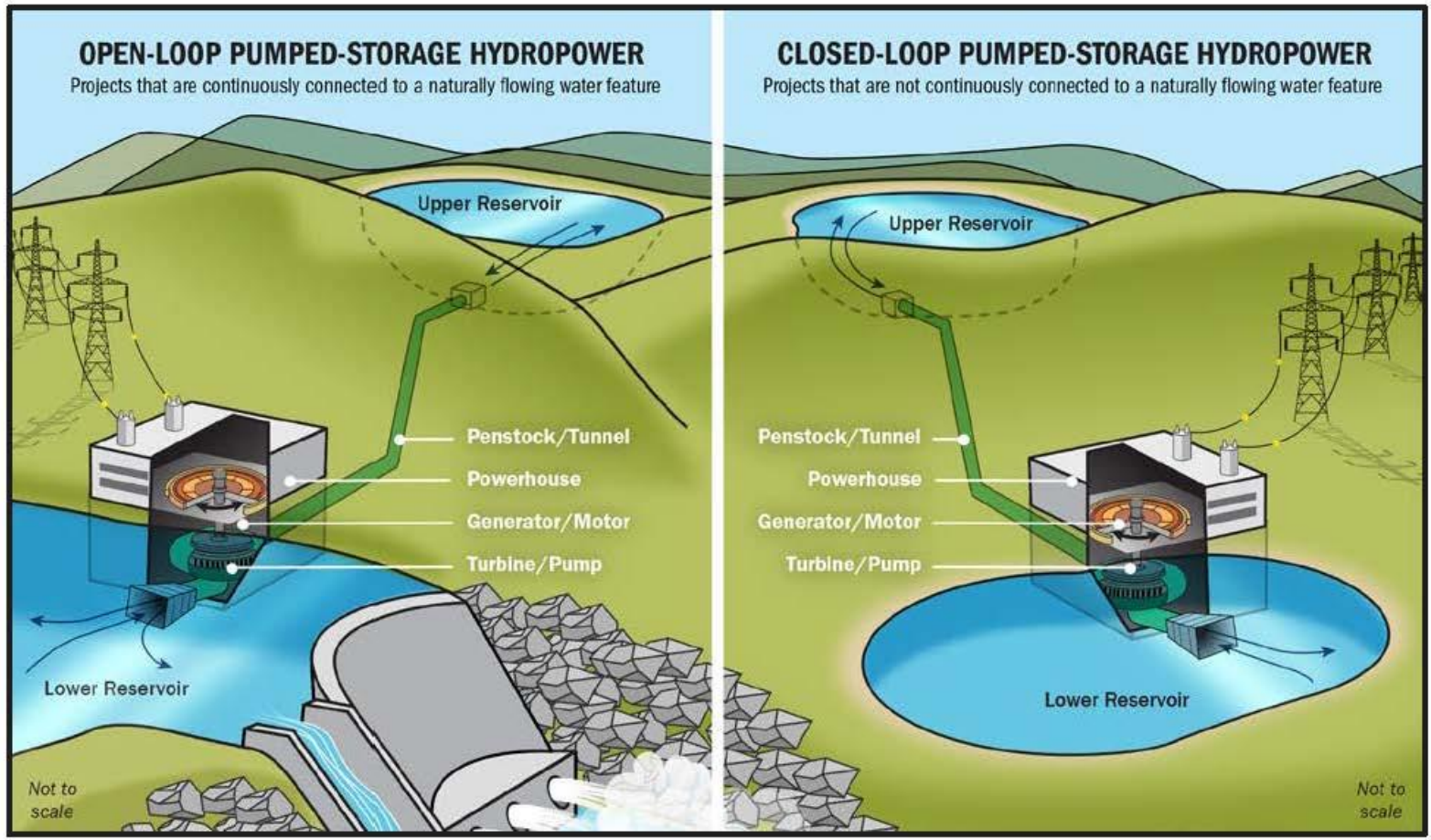


Image source: US DOE, https://www.energy.gov/eere/water/pumped-storage-hydropower

Bear Swamp Pumped Storage, Florida/Rowe MA (open loop)

Other Hydro Types

Conduit or “in-line”

(e.g., inside water delivery systems)

Image source:
https://soarhydro.com/project/bennington-turbine-installation/

Hydrokinetics

- Instream
- Marine - tidal, current, or wave

(no commercial installations to date)

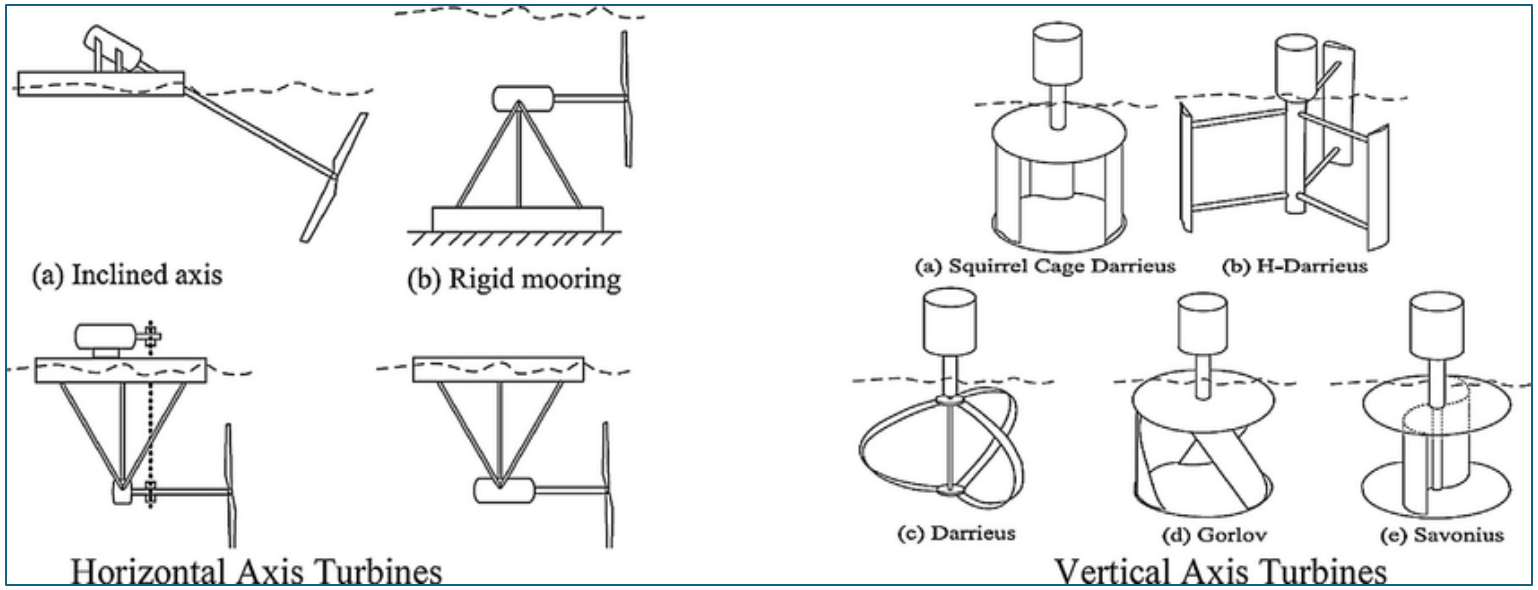


Image source:
https://www.researchgate.net/publication/326094234_Resource_assessment_and_feasibility_study_for_the_generation_of_hydrokinetic_power_in_the_tailwaters_of_selected_hydropower_stations_in_Nigeria

Environmental and Social Impacts

01 **Water-based environmental**

02 **Land-based environmental**

03 **Cultural, historic, environmental justice**

04 **Recreation, access**

Environmental impacts – Conventional Hydro

Dams and reservoirs:

- Alter watershed processes, river flows
- Affect fish migration and spawning/rearing habitats
- Affect other aquatic and littoral species and their habitats
- Change water quality, concentrate runoff contaminants
- Alter downstream sediment processes
- May generate greenhouse gas emissions

Structures, roads, and transmission lines:

- Alter riparian and terrestrial habitats
- Disrupt species behavior and movement
- Introduce non-native species
- Create noise, light pollution

Cultural, recreational, access impacts

- Dam construction can inundate sacred lands, burial grounds, traditional cultural properties
- Structures, roads, etc. alter cultural landscapes and viewsheds
  - But dams and structures themselves may be historic resources
- Safety restrictions can limit access for traditional and subsistence activities, and for recreation
- Project operations can create conflicts for existing water uses
- Project location can create or exacerbate burdens on marginalized communities

Hydro Benefits

- Can enhance grid resiliency
- Can create recreation, access, land protection, and/or educational opportunities
- Supports local tax base and provides local renewable energy
- Supports local economic development:
  - Revitalization, remediation of former industrial or abandoned sites
  - Local employment in skilled trades and management
  - Use of local contractors
  - Partnerships with local organizations

Hydro RECs in New England

- Renewable Energy Credits (RECs) are the positive environmental attributes associated with energy production
- One REC is created each time a qualified renewable energy facility generates 1 megawatt hour (MWh) of electricity
- In states with RPS programs, retail electricity suppliers must purchase a % of RECs to meet annual compliance obligations
- In states with no RPS, some hydro can participate in voluntary REC markets (e.g., Green-e)

Massachusetts RPS – higher REC prices than in other NE states

- Class I, <= 30 MW capacity after 12/31/1997, without new dam or diversion
- Class II, <= 7.5 MW capacity installed before 01/01/1998
- Requires LIHI Certification
- Allows projects that can transmit into MA to participate
- Pumped storage hydro is ineligible for RPS (however, it may participate in the MA Clean Peak Standard in some cases)

Questions?

Thank you!

LIHI CERTIFICATION HANDBOOK PROPOSED CHANGES

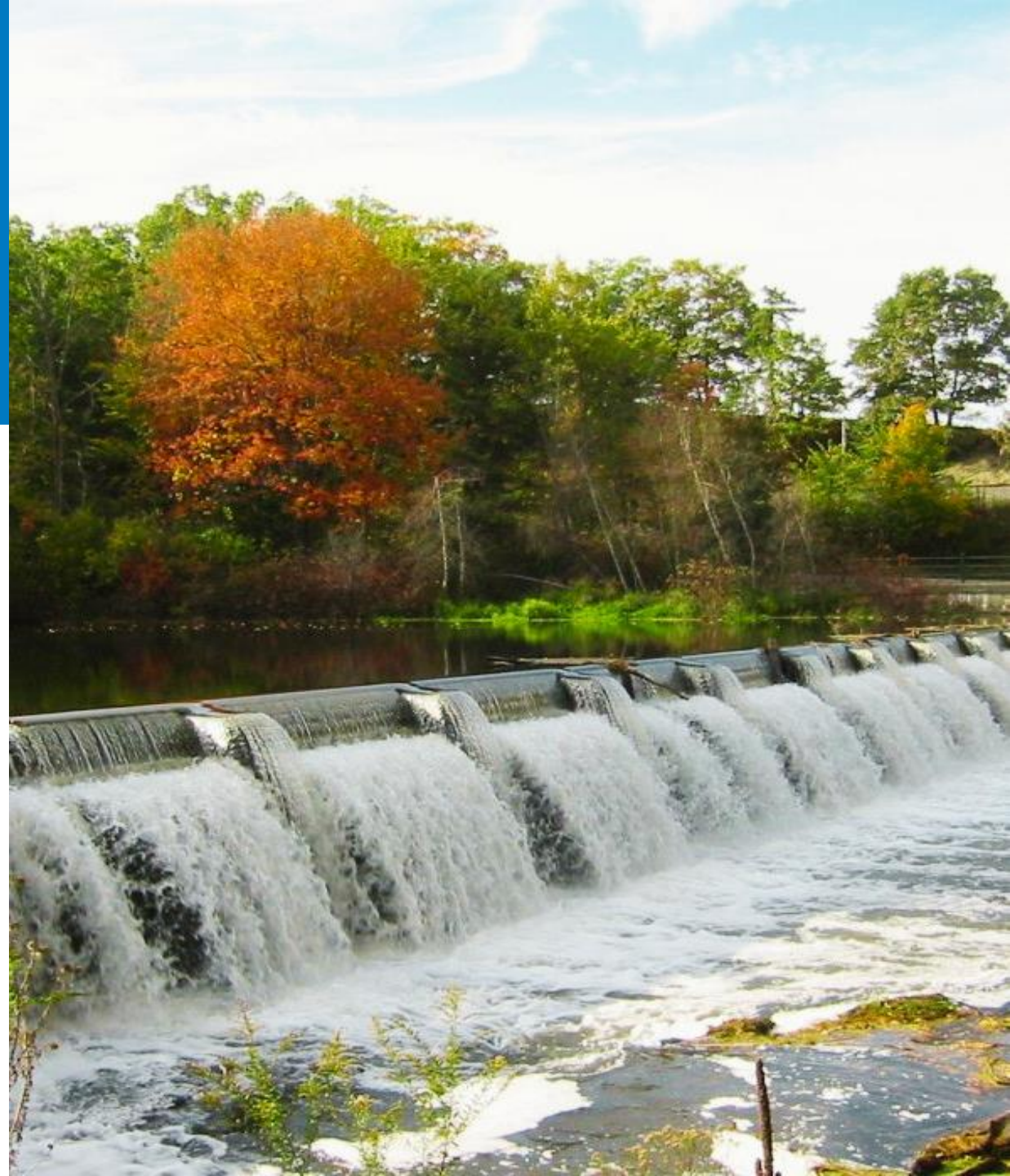
OVERVIEW

January 9, 2025

Who We Are:

- **Background:** Founded in 1999, the Low Impact Hydropower Institute (LIHI) is a national 501(c)(3) non-profit organization dedicated to reducing the impacts of hydropower generation.

- **Our Mission:** Recognize and support hydropower that prioritizes environmental, recreational, historical, and cultural resource protection.

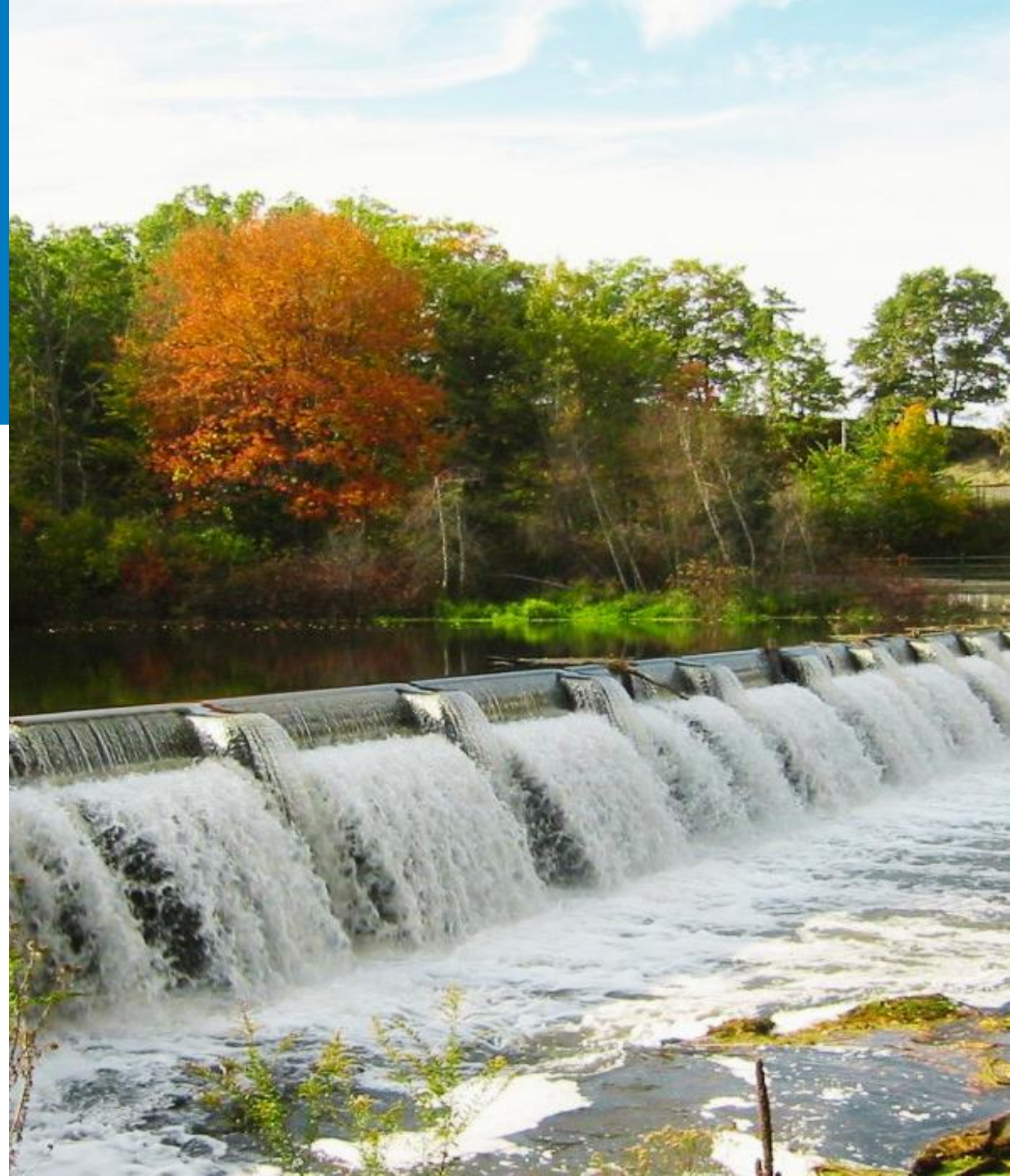


What We Do:

- **Low Impact Certification Program:** Nation's only program that can certify hydropower as "low-impact" if it can demonstrate meeting eight science-based criteria.

- LIHI Certification is an eligibility requirement for hydropower to participate in various voluntary and state renewable programs (including Massachusetts RPS program).

- LIHI's Certification Handbook governs the Low Impact Certification Program.



Why revise the Certification Handbook now?

01 **Bylaws:** “The Governing Board will annually review the Low Impact Hydropower Certification Program to ensure that it meets its goals and objectives.”

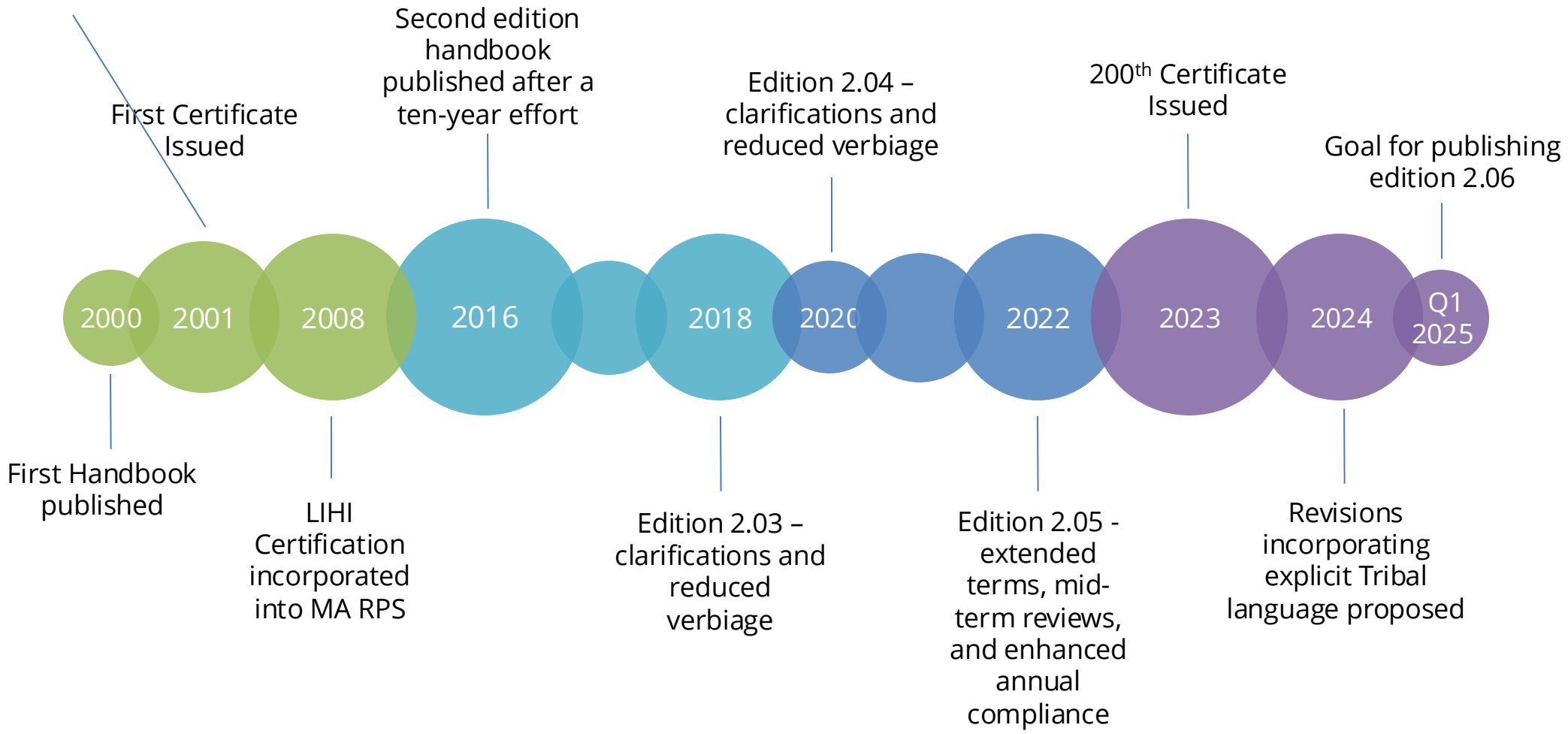
02 **Vision:** “We envision a world where hydropower puts people and the environment first.”

03 **2024 Strategic Plan:** “Edit the Handbook to clarify Tribal engagement and consideration.”

Handbook Revision Goal: Include language that more comprehensively and clearly states how Tribal input is requested and how Tribal rights and interests are incorporated in the LIHI application reviews.

LIHI's Commitment to Iteratively Revising the Certification Handbook

Since the first major update, which was completed in 2016, LIHI has committed to continual evaluation and partial, focused updates.



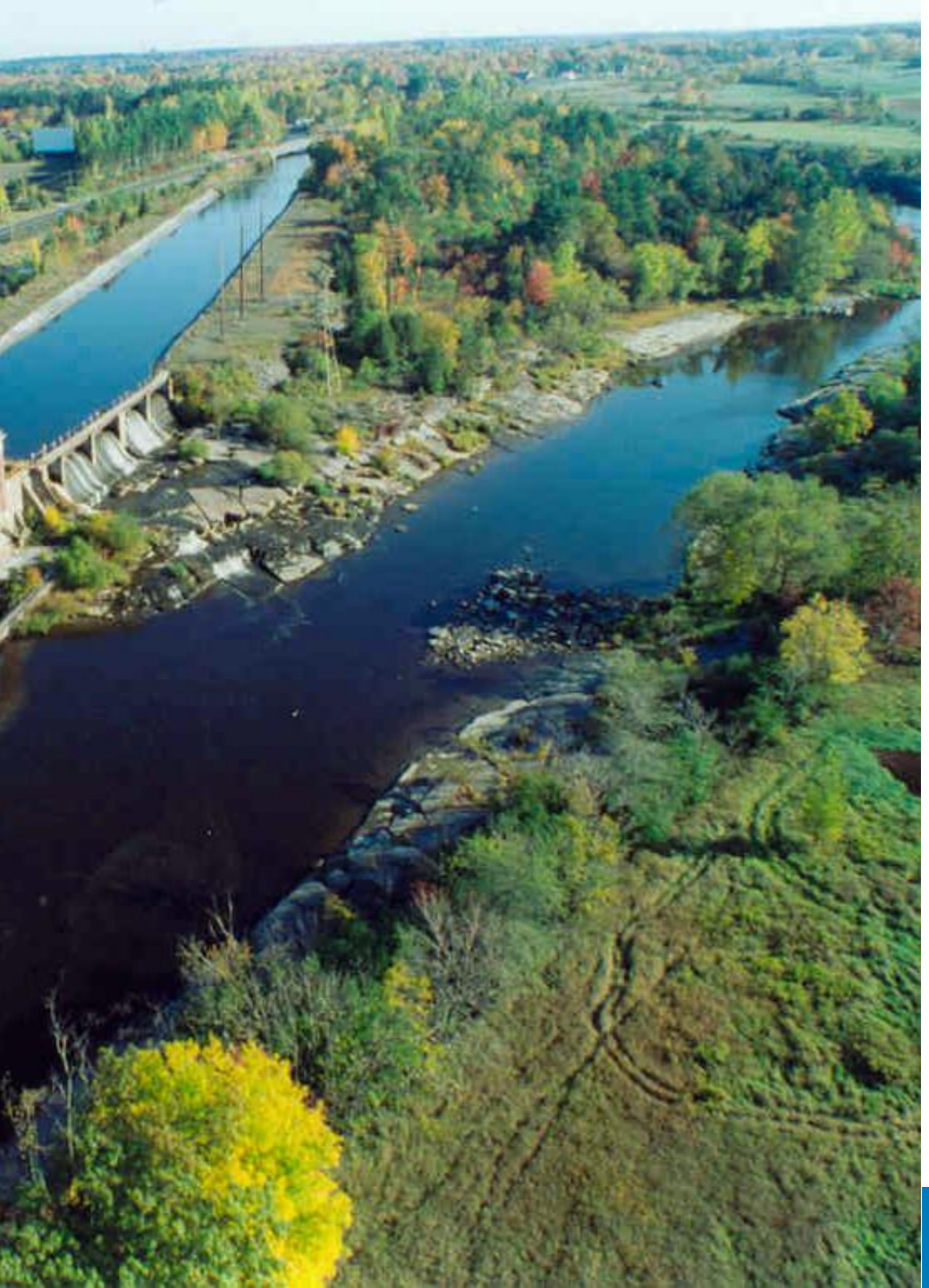
2024 Certification Handbook Update Review Process to date:

- Staff research and 1st draft of proposed changes
- Technical Committee review
- Tribal expert input
- 1st Public comment period
- 2nd draft proposed changes
- 2nd Technical Committee and tribal expert review
- 2nd public comment period
- 3rd Technical Committee review
- **Final Draft public comment period – open as of 11/18/24 (Comments accepted through 1/15/25)**
- Board approval of the final draft (pending, likely in February 2025)
- Final version will be shared with the public

Key Changes:

- Newly defined terms, including those related to Indigenous Knowledge, Tribal Nations, and various tribal interests and resources (Appendix A)
- Modified and expanded the use and treatment of “science-based” and “Indigenous Knowledge based” information and “resource agency and tribal recommendations” (Appendix A)
- Expanded and clarified the scope of tribal considerations, interests, and engagement (entire Handbook)

All proposed changes are highlighted in yellow throughout the Handbook.



Definition of Tribal Nation

Tribal Nation (or Tribe): As used in this Handbook, any state or federally recognized American Indian Tribe, Alaska Native entity, or Native Hawaiian organization.

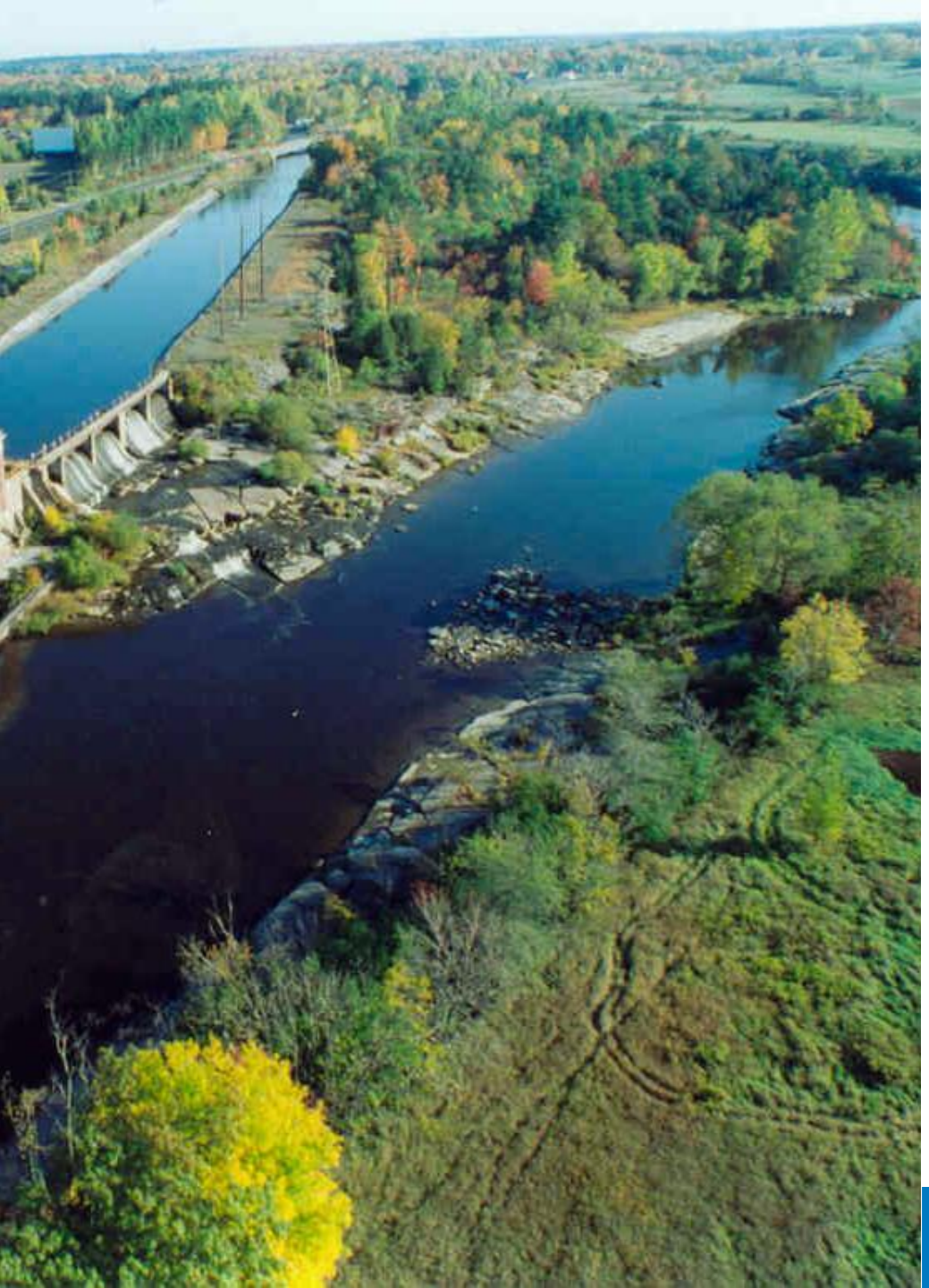
NOTE: Tribes and Tribal Nations that are not federally or state recognized, as well as other historic tribal groups having interests in the facility area must still be included in the tribal government and tribal resource agency contact list of a LIHI application and their comments and recommendations will be considered in Certification decisions.

Resource Agency and Tribal Recommendations:

Formal recommendations, permits, authorizations, or other conditions for facility operation, maintenance, or construction that are issued by local, state, or federal agencies or by Tribal Nations affected by the facility or its operations. Resource agency and tribal recommendations considered in LIHI Certification shall be:

- Formally issued
- Recent
- Most stringent
- Consistent with and supportive of resource management goals and objectives

Hierarchical procedure to resolve conflicting recommendations (Appendix A).



Consideration of Tribal Perspectives

Tribal Recommendations can be based on Indigenous Knowledge (including Traditional Knowledge and Traditional Ecological Knowledge).

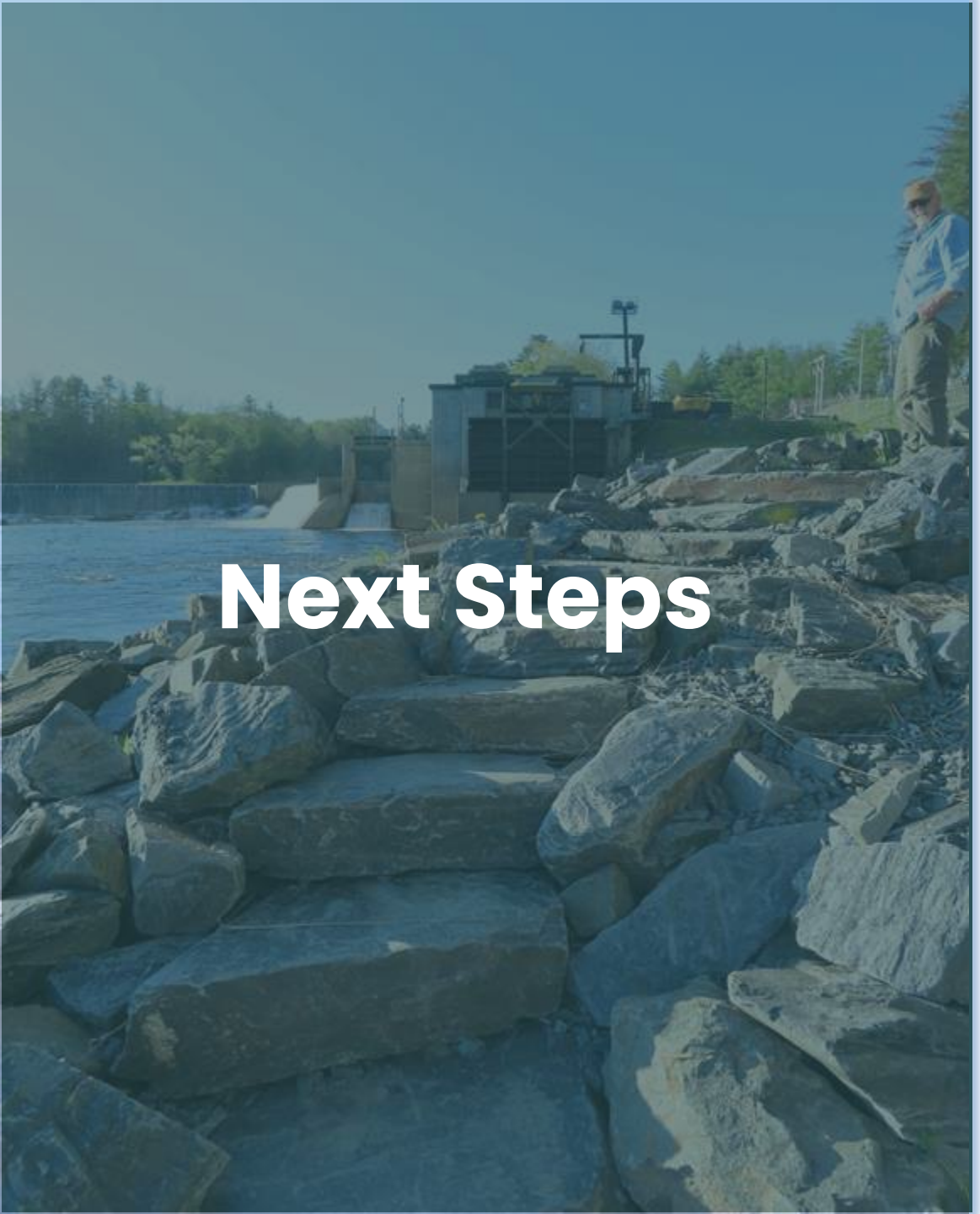
Resource impact considerations may include impacts to:

- Tribal Trust Resources
- Tribal Trust Species
- Traditional (or Tribal or Indigenous) Cultural Landscape
- Traditional Cultural Property

(Underlined terms have been defined and vetted by Tribal experts)

Other Changes:

- Simplified criterion names
- Added definitions for undefined terms (e.g., base flow, ramping rate)
- Clarified dam removal recommendation language
- Clarified that a facility must satisfy both a numbered standard and the criterion goal in each Zone of Effect
- Expanded definition of measures eligible for PLUS consideration for the Shorelines and Watershed criterion
- Clarified that impoundments not owned or controlled by the applicant must still be included in the application as a Zone of Effect
- Clarified LIHI application and annual fees for special circumstances



Next Steps

- Comments accepted through January 15, 2025, via https://lowimpacthydro.org/publiccommentsforhandbook/
- All comments and a comment summary will be posted on LIHI's website
- All comments will be considered and incorporated into a final, revised proposal

Board approval required to publish final changes – Estimated date of vote is Feb 20, 2025

Once approved, final version will be shared with the public on LIHI's website

Comments & Feedback?


THANK YOU!

Public Comments and Questions

Please limit each comment to two minutes to allow time for others to speak

Next Steps & Adjourn

Information on the EJC and its meetings can be found at https://www.mass.gov/orgs/environmental-justice-council-ejc