

**Greenfield Penobscot Estuary Remediation Trust LLC  
Trustee of Penobscot Estuary Mercury Remediation Trust**

**Overview of Orrington Reach Capping**



**Community Meeting  
Orrington Town Hall Annex  
July 19, 2023**

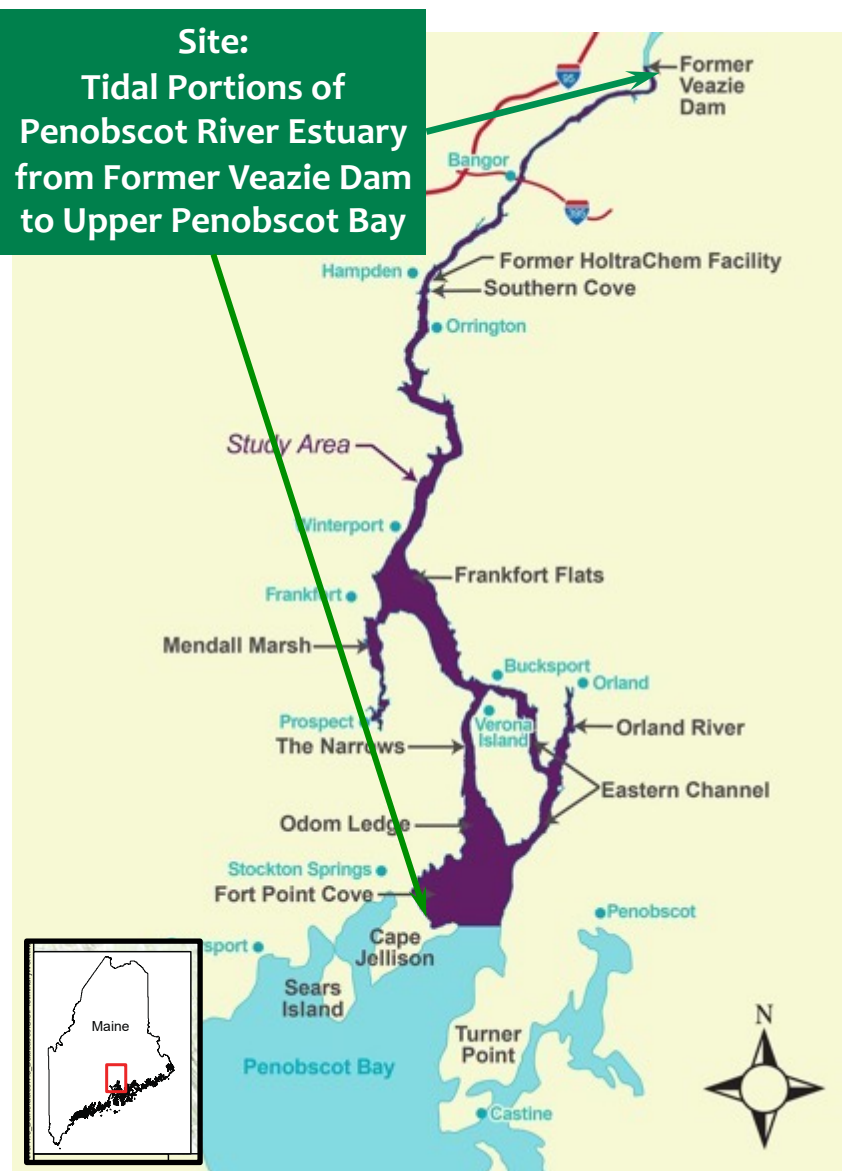


# Welcome and Introductions

- ✓ Town Officials
- ✓ Regulatory Agencies
- ✓ Trust Beneficiaries
- ✓ Media
- ✓ Remediation Trustee



# 2022 Consent Decree Specifies Remediation Activities to Accelerate Recovery of the Estuary



- ✓ Mallinckrodt to fund:
  - \$187 million for cleanup and monitoring
  - Potential for additional funding (\$80 million) if certain conditions met
  - Total funding: \$267 million
- ✓ Remedies include targeted removal, capping, beneficial projects, and long-term monitoring
- ✓ Creates two independent trusts
  - Remediation Trust
  - Beneficial Projects Trust
- ✓ Named Trust Beneficiaries: Maine People's Alliance/Natural Resources Defense Council and Mallinckrodt
- ✓ Larger Beneficiaries: Public, Citizens of Maine and the Penobscot River

# Greenfield Penobscot Estuary Remediation Trust LLC

- ✓ Purpose of Consent Decree-mandated Work: accelerate recovery of river and monitor
- ✓ Responsible for oversight, management and performance of remediation work required by the Consent Decree
- ✓ Greenfield has 30+ years experience serving as Court-approved environmental response and custodial trustee and managing complex environmental cleanups around country



# Consent Decree: Mallinckrodt Funding (Segregated Accounts)

Work Category	Scope	Committed Funding	Contingent Funding (If Triggered)	Total Funding
Orrington Reach	Cap 130 acres of intertidal sediments	\$50M	\$10M	\$60M
Mobile Sediments and Surface Deposits	Remove/dredge/backfill sediments	\$70M	\$50M	\$120M
Orland River and East Channel	Cap, dredge, or EMNA sediments	\$30M	NA	\$30M
Long-Term Monitoring	30 to 45 years tri-annual monitoring	\$10M	\$10M	\$20M
Beneficial Environmental Projects	Projects with tangible with environmental and public benefit	\$20M	NA	\$20M
Administrative Account	Remediation and Project Trusts Administration	\$7M	\$10M	\$17M
<b>Total Committed Funding:</b>		<b>\$187M</b>	Minimum Funding	
			<b>Total Contingent Funding:</b>	<b>\$80M</b> If Triggered
5	<b>Total Capped Funding:</b>			<b>\$267M</b>

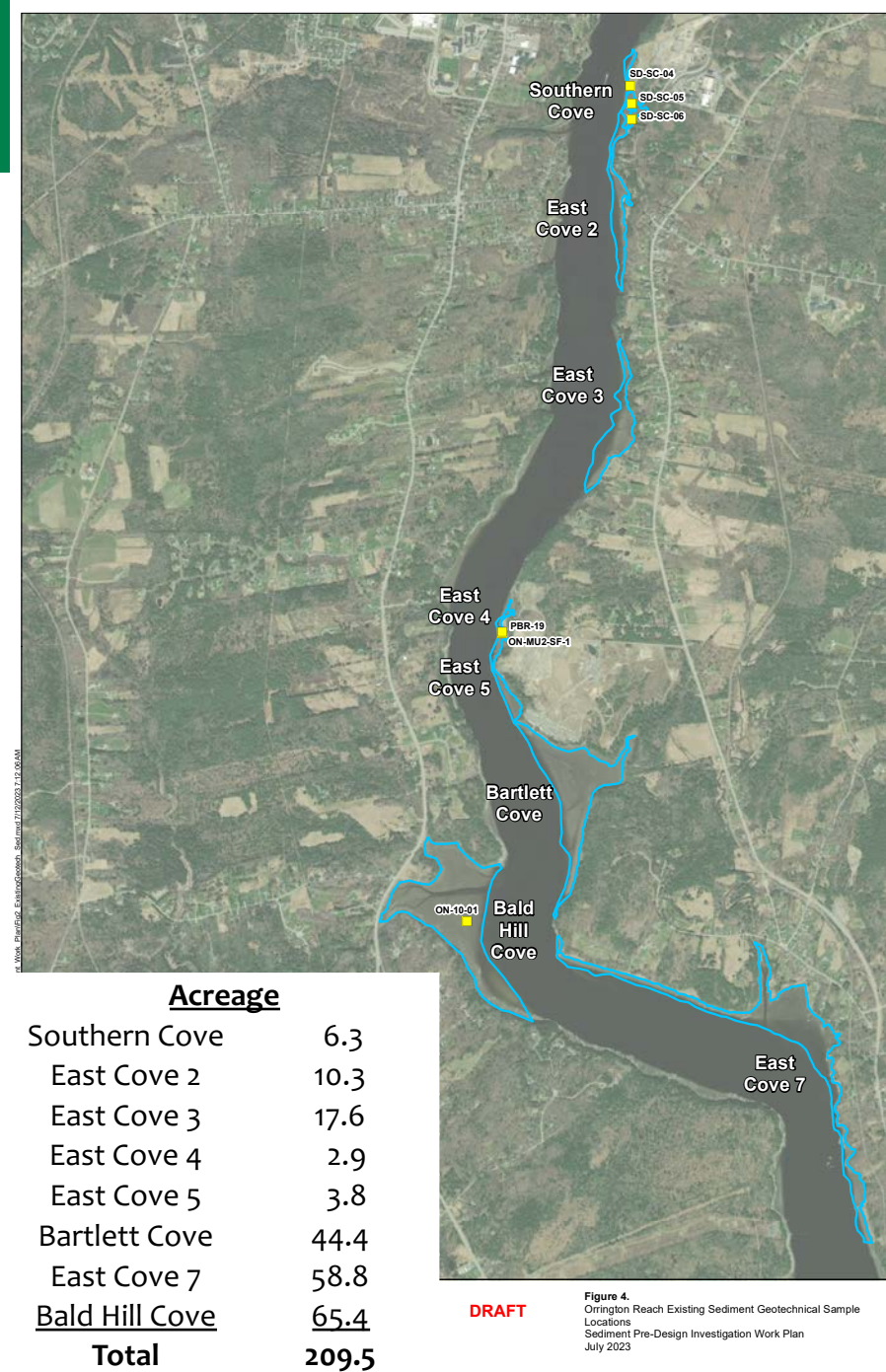
Orrington Reach

# **THIN LAYER CAP**



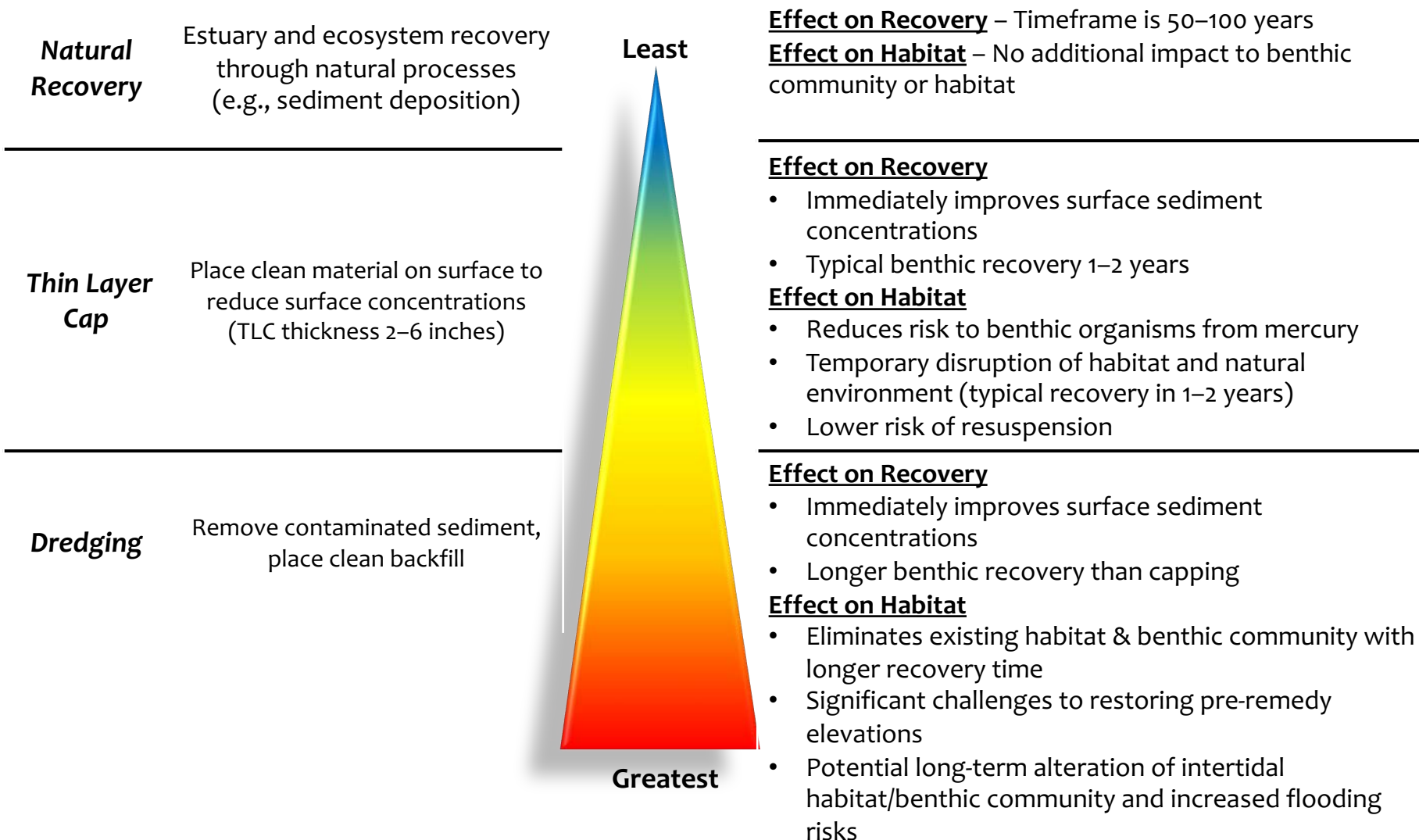
# Orrington Reach Remediation Activity – Capping

- ✓ Remediation activities specified in Consent Decree based on 20 years of independent study
  - Water, biota, and sediment sampled and analyzed throughout Estuary
  - Court and Study Panel noted it is one of most studied estuaries in U.S.
  
- ✓ Proven sediment remediation options were considered
  - Natural recovery
  - Capping
  - Dredging
  
- ✓ Consent Decree specifies capping for Orrington Reach
  - 130 acres of intertidal flats
  - Focuses on natural deposition areas closest to former HoltraChem site
  - No disturbance of deeper, more contaminated sediment



# Thin Layer Cap Accelerates Intertidal Flat Recovery With Less Habitat Disturbance

## Relative Intertidal Flat Habitat Disturbance





# Preliminary Design Evaluations Underway

- ✓ Cap thickness – 2 to 6 inches
- ✓ Cap material – sand, sand mixture
- ✓ Location and extent of areas to be capped
  - Evaluating over 200 acres
  - Target – higher mercury concentrations and lower velocities
  - Avoid high erosion areas and sensitive habitat
- ✓ Stability
  - Thin Layer Caps are not permanent
  - River flow velocity
  - Stormwater rivulets
  - Ice scour
- ✓ Potential shoreline effects
- ✓ Potential effects on important resources
  - Wetlands, habitat, fish, and wildlife
  - Cultural and historic resources
- ✓ Community support



# Thin Layer Cap Will Accelerate Natural Recovery

- ✓ Studies indicate natural recovery is slow
  - 50 years of sediment deposition from upriver
  - Surface concentrations decreasing, but still above levels protective of fish and wildlife
- ✓ Adding 2 to 6 inches of clean cap material equals 10 to 30 years of natural deposition
- ✓ New sediment will accumulate on cap over time
- ✓ Adds clean material to estuary



# Phased Approach Will Monitor Construction Methods, Habitat Protection, and Recovery

- “Adaptive Management”
- Sequenced TLC construction will reduce impact to intertidal habitats at any given time
- Monitor initial TLC area to gather information to refine the approach to evaluate
  - TLC placement technology
  - Effects of ice scour, rivulets, etc.
  - Sediment accumulation / Recontamination
  - Habitat recovery and benthos recolonization
- Modify design and construction based on observed performance



# Feasibility Assessment

- ✓ Constructability
- ✓ Performance Life
- ✓ Permits
- ✓ Property Access
- ✓ Cost



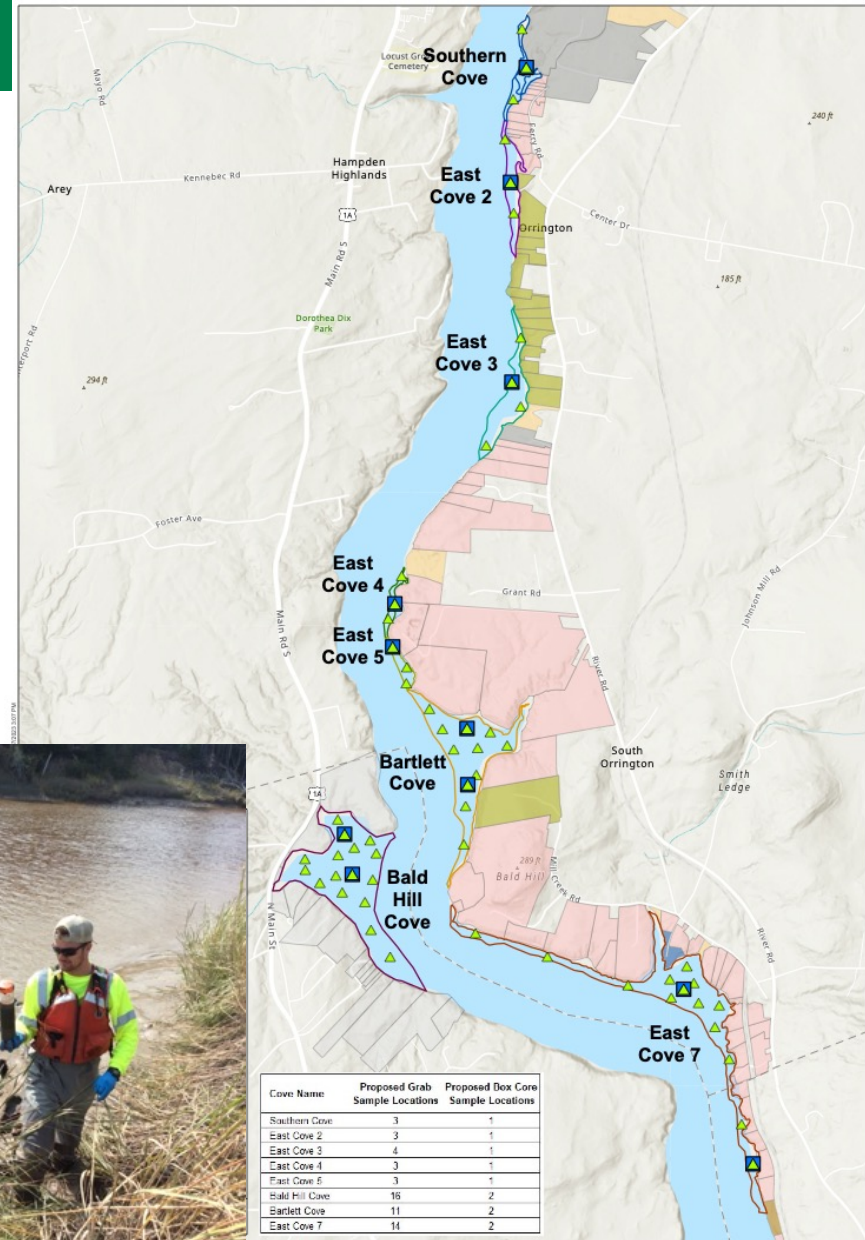
# Extensive Permitting Process Intended to Protect Natural Resources

- ✓ Maine Department of Environmental Protection (DEP)
  - Natural Resources Protection Act
  - Stormwater Management Rules
  - Solid Waste Rules, Beneficial Reuse
- ✓ Maine Department of Inland Fisheries and Wildlife
- ✓ Maine Department of Agriculture, Conservation and Forestry (Submerged Land Lease)
- ✓ US Army Corps of Engineers (USACE)
- ✓ Communities
  - Planning Board/Select Board
  - Shoreland Zoning

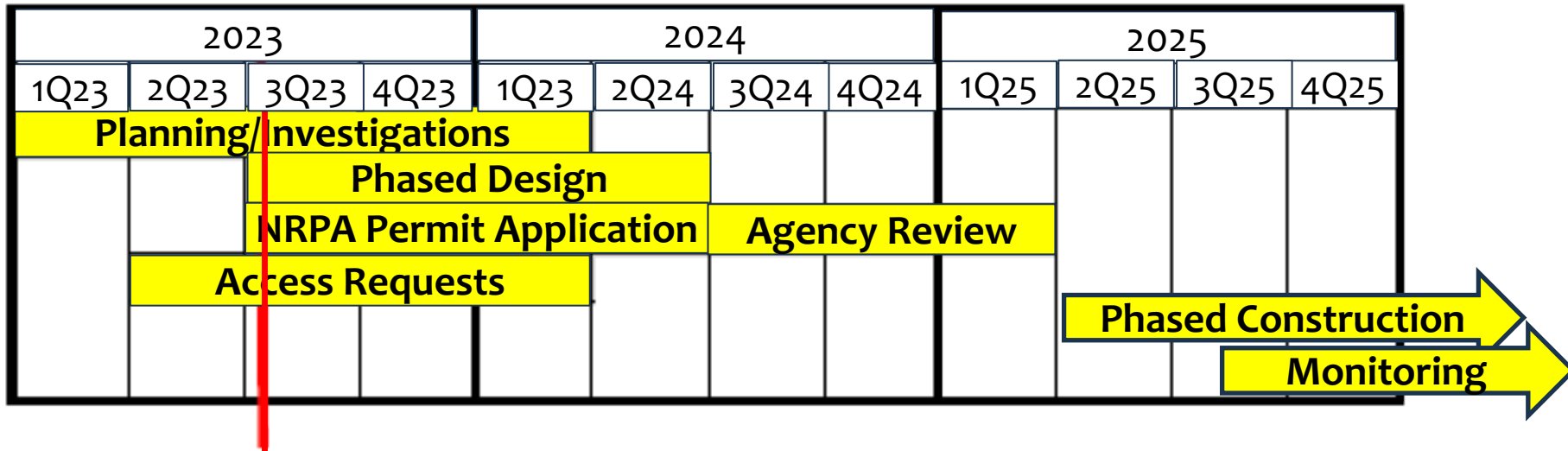


# Access to Intertidal Flats Required for Sediment Sampling and Wetlands Surveys

- ✓ Will determine Feasibility of TLC
- ✓ Current access request limited to investigations
- ✓ Intertidal flats accessed from boats
- ✓ Investigation results shared with landowners
- ✓ Landowners reserve right to grant future access for TLC



# Preliminary TLC Timeline



We are *early* in TLC design evaluation and permitting process



# Next Steps

- ✓ Evaluate Feasibility
- ✓ With access permission to intertidal flats
  - Conduct wetlands assessments
  - Collect sediment samples
- ✓ Complete preliminary design evaluations
- ✓ Draft application for Natural Resources Protection Act (NRPA) permit





# Remediation Trust Contacts

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[cb@g-etg.com](mailto:cb@g-etg.com)
- ✓ See: <https://www.penobscotriverremediation.com>





*We have the honor, and the once-in-a-generation opportunity, to accelerate the recovery of the Penobscot River Estuary...*

# Questions

