



BOSTON
WATERFRONT
PARTNERS

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Re: Draft Boston Coastal Storm Risk Management Integrated Feasibility Report and Programmatic Environmental Assessment

Dear USACE Boston Coastal Storm Risk Management Study Team,

Thank you for the opportunity to comment on the Boston Coastal Storm Risk Management Study Draft Integrated Feasibility Report and Programmatic Environmental Assessment (“the Report”). We appreciate the continued partnership between the City of Boston and the U.S. Army Corps of Engineers (USACE) and the shared commitment to preparing Boston’s 47-mile coastline for long-term coastal flood risk. This study is a vital, forward-thinking step for protecting the future of our coastal neighborhoods, infrastructure, parkways, and open space for generations to come.

The [Boston Waterfront Partners](#) is a coalition of waterfront advocates working to advance resilient infrastructure, equitable public access, ecological health, and a thriving working waterfront. Members of our coalition live, work, recreate, and/or program throughout the Boston Harbor. Together, we bring local, regional, and statewide expertise on waterfront planning and development issues as well as community engagement and climate resilience. Our work seeks to strengthen and improve access to our waterfronts and improve the character and sustainability of our working waterfronts.

Our organizations were deeply involved in the Climate Ready Boston planning process, and we are grateful for the opportunity this federal investment has to protect our waterfront now and long into the future. Our comments reflect this excitement and focus on where we see opportunities for USACE to take the recommendations in this Draft Report from a justified concept to an implementable, optimally designed, transparent, publicly beneficial, and correctly

cost-shared plan for the future of Boston's waterfront. We highlight several opportunities for further assessment necessary to reflect our localized context when crafting the Final Report. We also list our preferred alignments and, where possible, offer suggestions to further improve these plans in a cost-effective and publicly beneficial manner. We support the Full System Comprehensive Plan, and sincerely thank USACE and the City of Boston for the hard work they have put into this study and resulting report.

The Need For a Comprehensive Implementation Plan

This Draft Report effectively describes the intense vulnerability of Boston to coastal storms, and thoroughly explains the need for a connected system of projects to address the City's most critical flood pathways. **The Boston Waterfront Partners strongly support the Full System Comprehensive Plan (Action Plan 2), with Action Plan 3 as the first element in a phased overall implementation plan.** We understand why USACE is able to begin implementation with Action Plan 3, and agree that Action Plan 3 needs to be funded. However, we want to comprehensively retain Action Plan 2 as the federal recommendation/framework and establish a pathway for each separable element to reach 35% design and authorization, knowing there are many critical areas with immense economic and life loss risks that also need to be protected. An implementation plan for Action Plan 2 would show how more actions from Action Plan 2 can move through the same USACE funding and implementation process for Action Plan 3.

Implementation of Action Plan 2 will require a multi-year roadmap, with USACE commitment to pathways of cost-sharing, to ensure that USACE, the Non Federal Sponsor, property owners, and potential funding partners have a clear timeline for sequenced funding, design, and construction of each alignment. The Final Report should provide an element-by-element implementation plan for Action Plan 2 that identifies which projects can advance immediately, which require further design or authorization, and which can be packaged into independently fundable increments without foreclosing better-performing alignments as design matures. This implementation roadmap should:

- Define a formal optimization window before 35% design so that the draft alignments do not become fixed prematurely. Before foundations, easements, real-estate limits, drainage assumptions, and Class 3 costs are effectively locked in, USACE and the City should allow a limited number of technically credible alternative and hybrid configurations to be tested against the federal base design. Those comparisons should consider equivalent flood-risk performance, lifecycle cost, constructability, public access, working-waterfront function, ecological value, and future adaptability. Where a hybrid feature improves engineering performance, reduces structural demands or mitigation needs, or produces a more cost-effective total solution, it should be evaluated as potentially integral to the federal project rather than automatically treated as a locally funded betterment. As a prime example, the Border Street/Waterfront West reach illustrates why this window is

necessary: the Draft acknowledges that an alignment previously screened because of cost, historic-resource, and DPA concerns may prove more efficient as design matures. The Final Report should preserve the ability to reconsider such alternatives before real-estate and structural decisions effectively foreclose them.

- Distinguish implementation readiness from risk priority: Advancing the Resilient Moakley Park project first should not determine the sequence of the remaining system. Its advancement reflects separability and design maturity; future elements should be ranked by risk immediacy, system dependency, economic and life-safety benefit, readiness, cost, and funding opportunity. For example, the Report identifies actions in East Boston (EB2A + EB3A) as providing “the highest net NED benefits, the highest reduction in asset damages, and the largest reduction in residual risk of all plans considered.” The Report also notes that East Boston has the largest number of lives at risk, more than 3.5 times as high as the next most vulnerable neighborhood. Its exclusion from Action Plan 3 appears to be driven principally by design maturity and available study resources rather than comparative risk or benefit.

Analyses of Costs and Benefits

The Assistant Secretary of the Army for Civil Works and USACE Guidance require that the study planning process evaluate a:

- Plan that maximizes total net benefits (TNBP),
- Plan that maximizes net benefits consistent with the study purpose, and
- Nonstructural plan.

In order to clearly identify a TNBP, we know that USACE must evaluate project costs and benefits along four P&G accounts: National Economic Development (NED), Regional Economic Development (RED), Other Social Effects (OSE), and Environmental Quality (EQ) contributions. Although the Draft Report states that benefits and effects along all four P&G accounts were considered during the plan formulation process, the neighborhood-level summaries only highlight annualized NED costs and benefits. It is unclear how RED, OSE, and EQ considerations influenced the comparison of the proposed Action Plans.

- The NED benefit-cost ratio and the TNBP are related but distinct. The Benefit Cost Ratios (BCR) measures monetized NED benefits relative to NED costs; it is not itself a composite measure of the four P&G accounts. The TNBP framework is broader, considering NED together with RED, OSE, and EQ, including benefits and costs that may be quantitative, qualitative, or not appropriately monetized within the NED account. The Draft Report itself recognizes this distinction, stating that “NED benefits are only one part of the analysis,” while identifying Action Plan 2 as the plan intended to maximize total net public benefits (§5.4.4.2).

The Final Report should therefore clearly show how each of the four P&G accounts informed plan formulation and identification of the Total Net Benefits Plan. Rather than attempting to incorporate all RED, OSE, and EQ effects into the NED BCR, USACE should quantify and monetize those effects where accepted methods allow, provide transparent quantitative or qualitative metrics where monetization is not appropriate, and explain the tradeoffs among the four accounts for each alternative. This comparison is necessary for the Non-Federal Sponsor, property owners, and potential funding partners to understand the full benefits, costs, and residual risks associated with each alignment, including the consequences of delay or inaction. In particular, the Final Report should provide greater clarity regarding:

- RED regional economic impacts, including effects on the airport, maritime economy, working waterfront, transportation systems, and other regionally significant economic activity;
- OSE impacts including preservation of life, health and public safety; community cohesion and continuity; displacement of residents, businesses, and public facilities; and other socioeconomic consequences of both action and residual risk; and
- EQ impacts including ecosystem restoration and services, water circulation and quality, natural resources and habitat, recreation and public open space, aesthetics, cultural and historic resources, and other environmental effects relevant to the NEPA analysis. cultural and historic preservation, and other factors covered by the National Environmental Policy Act (NEPA).

Recent published USACE feasibility studies from San Francisco and the New York/New Jersey Harbor (NYNJHATS) studies provide a useful example for the Boston Report. These studies follow the same USACE Planning Guidance Notebook and post-2021 Federal policies. The *San Francisco Waterfront Draft Integrated Feasibility Report and Environmental Impact Statement* (published in January 2024) identified three NED plans and then added metrics for the RED, OSE, and EQ accounts to determine a TNBP. The 2025 *New York-New Jersey Harbor and Tributaries CSRM Feasibility Study* points out that the Total Net Benefits Plan can significantly differ from the NED-maximizing plan. We request that, in a similar fashion, the Boston Final Report feature a matrix table comparing alternatives across NED, RED, OSE, and EQ accounts, a formal explanation of tradeoffs among those accounts, and descriptions of how the TNBP influenced the proposed Action Plans.

In particular, we request analysis of the costs and benefits associated with:

- The maritime port economy;
 - The Final Report must factor in annualized average losses associated with alternatives that provide no protective action for DPA parcels and other maritime industrial sites.

- Many maritime parcels along the working waterfront have buildings to protect, but also require significant lay down and loading lots to operate, and analyses should consider the value of those areas without structures.
- Large Massport-owned parcels, such as Conley Terminal, Cruiseport, and Autoport are significant for the regional economy, vital national interests, and disaster response and recovery operational needs. These residual risks should be disclosed, if not addressed, by the proposed alignments.
- The airport economy;
 - Based on Appendix A agency correspondence, one reason why Logan International Airport's risk is not addressed in the study is because "Massport requested not to be included in our study." The Draft Report should disclose this in sections pertaining to the screening decision (e.g., §2.1.2, §2.2.3.2, §5.2.3.8, §5.3.2). We know Massport is undergoing their own resilience planning process, and we request that USACE works with Massport to publicly define how the CSRM Study ties into those plans.
 - While the Draft Report indicates that airport runways are elevated above future flood levels, navigational aids and electrical systems are located at or near ground level in airfield swales which are exposed to coastal flooding, in some cases at a five-year recurrence, by 2070 based on the Massachusetts Coast Flood Risk Model. These equipment systems are required by the FAA for the airport to operate with commercial flights. The No Action Alternative, alternative plans, and sections noted above should require USACE and/or Massport to assess frequency, duration, and consequences of plausible storm-related service disruptions, including but not limited to, recurring post-storm shutdowns of the airport and the associated economic losses and diminished regional emergency response/recovery capacity. Factors like these should be accounted for in the residual risk. The Project team should refer to Massport's comments on this Draft Report for more detailed information.
- Energy impacts from fuel disruptions during coastal storm events;
 - Fuel shortages, including for aviation fuel, are a real and immediate impact of major flood disasters, and the No Action Alternative of the Final Report should evaluate and describe the risk of these impacts on Boston's energy security.
- Hazardous waste impacts from coastal fuel terminal sites
 - Based on Appendix A, "the tank farm on Chelsea St. is on its own" because "tanks have additional secondary containment berms on site that add protection." However, there is no evaluation of the structural adequacy of these berms to protect from future design storm conditions, for example by providing equivalent protection as the USACE's proposed levee or floodwall designs shown in the Draft Report Appendices. Relevant information to inform USACE's evaluation of

the containment systems' structural adequacy may be available in the USEPA Chelsea River Bulk Petroleum Storage Facilities NPDES Permits documentation online. Examples of past disasters, including Hurricane Sandy and Hurricane Ike, show that fuel spills at similar facilities are common in major coastal storm surge events due to failure of containment systems. Risks of hazardous materials releases from the tank farm are not documented in the Draft Report §1.6.1.5, §5.2.2.4, or Appendix L.

- The relevant Final Report sections and description of the No Action Alternative should consider the containment systems for existing fuel terminals, and determine the risk of those failing and the subsequent consequences, particularly on socioeconomically vulnerable populations in East Boston, where this infrastructure is concentrated.
 - The relevant Final Report sections and description of the No Action Alternative should assess the economic costs and environmental risks of hazardous waste, industrial materials, and other dangerous debris flooding into the waterways if DPA sites are not adequately protected.
- New Charles River Dam
 - The Draft Report discloses that adaptation of the dam to mitigate future coastal storms risks was screened out early in the study process due to jurisdictional considerations (a separate USACE study underway concurrently). However, the consequences of this decision, in terms of potential economic and life safety risks, are not evaluated or disclosed in the report. It would benefit the City of Boston and the public to know what is at stake in the No Action and Action Plan futures where the dam has not been adapted to RSLC and coastal storms.
 - The USACE coastal flood modeling and economic impact analysis was completed for the entire city, so it should be feasible to compute the residual risks from the upstream geography.
 - The Final Report should quantitatively describe the residual economic and life safety risks, and to the extent feasible RED and OSE impacts, in areas upstream of the New Charles River Dam. The USACE CSR team should also coordinate internally with the dam study team and externally with the Massachusetts Department of Conservation and Recreation to develop recommendations and a justification for adapting the dam to RSLC and coastal storms.
 - Hybrid, Natural, and Nature-Based Features
 - The Final Report must consider the cost of losing green space and naturalized places in areas not protected by the alignments or screened out from the report, in particular in communities where such amenities are already limited, such as East Boston and Charlestown.

- Co-benefits to public health, regional economy, and ecosystem services associated with nature-based and hybrid features should be evaluated within the applicable NED, RED, OSE, and EQ accounts, and incorporated into the NED BCR where accepted methods support monetization.
- Where it is not possible to protect open space, the Final Report must provide recommendations for federally-funded mitigation measures.
- The Final Report must consider cost-savings associated with nature-based features and hybrid solutions.

Importance of Protecting and Enhancing Open Space

There is no Boston without the waterfront—it is inherent to our identity as a city. From sailing to shipping, fishing to photography, wandering to whale-watching, our culture is intertwined with the water. Our coastal open spaces are essential to the health and wellbeing of all Bostonians. From waterfront parks to urban beaches to the Boston Harborwalk, the Boston Harbor connects our communities and is at the heart of our region's public and economic health.

Even our laws reflect this culture: our robust public trust doctrine preserves the right of the public to access the waterfront for these recreational purposes. M.G.L. Chapter 91 (Chapter 91) serves to “preserve and protect the rights in tidelands of the inhabitants of the Commonwealth . . . [and] protect the public health, safety, and general welfare as it may be affected by any project in tidelands.” 310 C.M.R. 9.01(2). These principles date back to the Colonial Ordinances of 1641-47, predating both the United States and Massachusetts as a state. To truly consider the needs of the people and public welfare in Massachusetts, therefore, any assessment of a project’s impacts on the built environment, resources, and public welfare must factor in these same principles.

We agree with the Report on the following:

- There is limited open space for recreation in most Boston neighborhoods (§2.1.2, pp 52).
- A “no action” approach will adversely impact natural resources—including open space—due to coastal flooding, erosion, storm surge, and sea level change (§ES-2.2, pp 24; §1.5, pp 40; §2.1.3.2, pp 57; §2.7.1, pp 104, etc.).
- Hybrid and nature-based features should be maximized to manage risk where practical and where land use and urban density allow (§ES-2.1, pp 23).
- Improvement of shoreline and nearshore resources in conjunction with CSRM features is a key opportunity of the study and recommended plan to maximize Total Net Benefits (§1.6.2, pp 45).
- Effectiveness, or the ability to achieve the specified opportunities (§1.6.2, pp 44-45), is a key criteria for formulating and evaluating alternative plans, as is public acceptability (§2.2.1, pp 92-93).

- Important objectives of the study include managing the impacts of coastal storms on natural resources (including waterfront open spaces) and developing management measures that work with natural resources and processes (§1.7.1.3, pp 46).
- The creation of nature-based features and the protection of open space from storm damage should be factored into the TNBP (§2.2.1, pp 92).
- Social connectedness and communal identity, access to green and communal space in dense urban environments, and others related to natural resources are key metrics connected to planning objectives in the study authority (§2.4.7-2.4.12, pp 97-100).

We are concerned that many of these areas of alignment are not substantively assessed in the Draft Report. The Comprehensive System Plan does not clearly incorporate nature-based features that will maximize CSRM while improving the shoreline and enhancing open space in alignment with community priorities. The Final Report should specify which nature-based features will be featured in the USACE base cost and benefit estimates, and where. For example, the alignments at Constitution Beach, Carson Beach, and Tenean Beach could be improved by selecting a hybrid solution that both protects existing open space and enhances the natural features of those resources. There is also limited consideration of the ability for nature-based features to manage the significant long-term coastal storm risks to critical open spaces and natural resources, and to provide other quantitative and qualitative benefits under the base design. Finally, already limited, existing open spaces, such as the Charlestown High School Athletic Fields and 102-124 Border Street, are left at risk.

If we don't invest in protecting our coastal open spaces, we will lose these irreplaceable and limited resources. For example, Charlestown High School's Athletic Fields are the largest recreational space in Charlestown, a fully built-out neighborhood with among the lowest open space per capita in the City. These fields also serve residents of the largest public housing development in the City. Yet the proposed Little Mystic Channel alignment would leave them unprotected, a departure from the preliminary alignment shared with the public in May, 2025. Open spaces, including beaches, should not be considered sacrificial landscapes subject to chronic storm damage, degradation, and loss, but as vital community resources, recreational spaces, and valuable economical assets and natural resources to be protected and integrated into the CSRM. CSRM investments should be designed not only to reduce flood risk, but also to create a framework for improved public access to and along the waterfront. We recognize that USACE may not be able to fund all of the public-realm improvements envisioned in the Climate Ready Boston plans. However, core flood protection infrastructure including berms and floodwalls should be designed and located so that elevated Harborwalks, open spaces, and other public amenities can be integrated as projects advance. Building this flexibility into the initial design will help ensure that resilience investments strengthen Boston's waterfront and will be critical to building broad public support for their implementation.

Hybrid Solutions

To maximize CSRM, improve shoreline resources, and protect existing open space, we urge USACE to consider layered, or green/gray hybrid, alternatives. Boston is a consistent national leader in coastal resilience, and implementing USACE alignments is a key opportunity to be on the cutting edge of Engineering With Nature. The local expertise and waterfront community in Boston can help USACE advance their mission of utilizing Nature and Nature Based Features (NNBF) nationwide. Featuring hybrid and NNBF solutions wherever feasible will maximize Total Net Benefits and BCRs. A high BCR does not create a discretionary spending allowance, but neither should natural or public-realm characteristics determine that a feature is a non-federal betterment. Where a green/gray feature materially contributes to CSRM performance, constructability, lifecycle efficiency, required mitigation, or cost-effectiveness, it should first be evaluated as an integral component of the federal alternative. The 65% federal share should attach to the best eligible CSRM solution identified through plan formulation, rather than presumptively to a conventional gray baseline with integrated hybrid elements separated afterward as local enhancements.

At the beaches, in particular, we encourage USACE to consider engineered beach/dune nature-based features seaward of the recommended upland structures. Prior modeling of a nourishment scenario for Tenean Beach, performed by Woods Hole Group for the City of Boston, found that maintenance of the beach was expected to be minimal and no significant renourishment requirements were expected to occur even after a storm. The same may be true for Constitution Beach or others. While storm surge is the primary hazard across the City, wave heights are particularly important at the beach alignment sites. Appendix B shows that, within the context of each neighborhood shoreline, wave heights are highest at Constitution Beach and Tenean Beach. Appendix B shows that performance of the proposed alignments at these beaches declines between 2040 and 2090 under the modeled relative sea level change (RSLC) conditions. At wave-exposed beach reaches, the Final Report should evaluate whether a seaward beach/dune or other NNBF feature would improve performance. USACE should use cross-shore wave modeling or coastal engineering calculations to evaluate the degree to which a beach/dune feature would reduce wave heights at the inland structure in the 2090 design storm.

As summarized in Table 2-7, USACE screened out these types of features based on assessment that a suitable sand source and ability to renourish beaches was lacking, and that dunes are an inefficient measure to mitigate surge risks. However, Appendix A shows that as early as January 2023, USACE considered carrying forward these types of features at locations such as Carson Beach. Appendix A also notes that nourishment has performed well with little re-nourishment requirements in other nearby areas (e.g., Revere Beach). The later decision to screen out these types of features should be revisited and, if maintained, justified with deeper analysis and documentation in the Final Report. The volume of sand required to nourish these beaches is limited relative to other areas of Massachusetts and the U.S. East Coast, suggesting that upland sand sources may be economical. In fact, Revere Beach was nourished using an

upland sand source. Similar scale nourishments using upland sand sources have been carried out in Duxbury and Marshfield, MA with state grant funding.

Thin-layer deposition should also be further considered for Belle Isle Marsh. Critically, we refer back to the Belle Isle Marsh Climate Vulnerability Assessment (Appendix D), which predicts, based on modeling, that long-term marsh drowning from RSLC will increase wave heights and that thin-layer deposition will reduce wave heights around the Orient Heights Railyard. While Table 2-7 indicates that marsh/wetland restoration/creation is carried forward, the Comprehensive System Plan description for East Boston does not describe any such proposed actions or measures. The narrative surrounding Table 2-7 appears to position the USACE to screen out this option, with a statement that “there is a scientific debate whether thin-layer deposition that does not mimic historic trends can be successful.” The Final Report should reconcile Table 2-7 with the East Boston recommended plan and explicitly state whether thin-layer deposition, marsh restoration, or other Belle Isle measures remain part of the final array. If not, it should identify the performance, uncertainty, lifecycle, vegetation-policy, or other criteria on which they were removed, including a respective bibliography and summary of peer-reviewed research that informed this decision.

Nature-based features that mitigate wave heights should have quantifiable positive performance benefits, namely higher controlling stillwater levels (SWLs) for allowable overtopping and lower mean Annual Exceedance Probabilities (AEPs) in 2090. The costs of these nature-based features could potentially be offset by savings from reducing the proposed structure crest elevations to account for lower wave heights, achieving the same level of performance as the draft proposed plan. USACE should also consider the quantitative and qualitative benefits from adding these features, namely the recreational, habitat, and aesthetic value of preserved usable open space, in the EQ account. This should include the value of endangered and threatened species habitat, such as for shore birds and the saltmarsh sparrow, which is also a Massachusetts Species of Special Concern. The Massachusetts Department of Conservation and Recreation’s (“DCR”) 2025 State Parkways Climate Change Vulnerability Assessment details the significant disruption costs of lost recreational visits to open space. For example, the largest economic impact of a flood-induced 24-hour closure of William Day Blvd. would be due to reduced access to Castle Island and Carson Beach, a loss of \$285,300 USD (§3, pp 71), while a 24-hour closure of Morrissey Blvd. would result in a \$100,500 loss from reduced access to Carson Beach, Malibu Beach, Tenean Beach, and the Harborwalk (§3, pp 132). Existing authoritative Federal methods exist for quantifying the benefits of open spaces as part of hazard mitigation BCR analyses, such as FEMA’s Ecosystem Service Value Updates (2022), which estimates a national average of dollars (2021) per acre per year for urban green open space (\$15,541), coastal beaches/dunes (aesthetic and recreation/tourism value: \$300,649), and coastal wetlands (\$8,955). USACE EWN’s report *Enhancing Benefits Evaluation for Water Resources Projects: Towards a More Comprehensive Approach for Nature-Based Solutions* provides USACE-compatible methods.

We anticipate that, given due consideration, the protection of important waterfront parks and the inclusion of nature-based and hybrid features at beaches and Belle Isle Marsh as part of the Comprehensive System Plan will be justifiable because of the increase in the TNBP and maintenance of a strong overall project BCR. We also believe this would engender stronger public acceptability and demonstrate USACE's leadership and commitment to proactive environmental considerations.

Engineering With Nature

The Final Report should clearly document where Engineering With Nature (EWN) guidance has informed plan formulation, where it has not proved feasible, and how those determinations affected the federal project. The Draft Report confirms that the Project Team partnered with an Engineer Research and Development Center's Engineering With Nature effort on a Boston-specific NBS case study (pp. 643–644), and expressly states in §2.5.5 that, where stand-alone NBS cannot adequately manage Boston's storm-surge hazard, gray-green hybrid formulation may be a suitable alternative (p. 187). It further identifies buried floodwalls and terraced seawalls as examples of hybrid approaches that combine structural foundations with natural features and processes (§2.7.1/Table 2-7, pp. 191–192). Yet, the Draft does not provide a clear EWN-to-design crosswalk for the proposed neighborhood alternatives.

In East Boston, for example, the “predominantly structural” focused-array process converted the Orient Heights living levee to an upland floodwall, moved the Wood Island living-levee concept above the high-tide line as a levee or floodwall, and replaced an engineered beach at Constitution Beach with a floodwall behind the parking lot (§5.3.4.2, pp. 271–272). In Dorchester, a living shoreline/levee along the Neponset River was screened after consideration of real estate and space constraints (§9.3.3–9.3.4.2, pp. 488–491). This draft does not transparently show the consequences and tradeoffs of replacing the hybrid concepts with structural ones. Without explanation, these decisions leave critical resources, such as MBTA rail lines, residential units, and already limited open space vulnerable to the very climate impacts that this study seeks to protect against.

We request that the Final Report maintains the same level of explanation for screening and consideration as previous Coastal Storm Risk Management Study Feasibility Reports & Environmental Impact Statements prepared by USACE. Other reports with more comprehensive screening analyses include:

- The 2022 USACE'S Charleston Peninsula CSRMS details the professional assessments made by EWN on the feasibility and impact of each of these Natural and Nature-Base Features (NNBF). (§3.1.3, p. 40–41).
- The Tentatively Selected Plan for San Francisco specifically highlighted areas around the city's coastline where nature-based features could be incorporated. The Final Report should also utilize a “combination of CFRM and NNBF to reduce risks from coastal

flood hazards across the study period” (San Francisco Waterfront Coastal Flood Study Draft Integrated Feasibility Report and Environmental Impact Statement, p. ES-10).

For each major reach, the Final Report should identify the EWN or hybrid concepts evaluated; explain whether they were incorporated, modified, or screened out and on what hydraulic, geotechnical, spatial, operational, lifecycle-cost, or other engineering basis; and state whether EWN-informed features that materially contribute to CSRM performance are included in the federal base project or, if excluded as supplemental betterments, why.

Mitigation Under NEPA

As part of NEPA review, the District Engineer “will analyze the potentially affected environment and degree of the effects of the activity,” including factors such as shoreline erosion and accretion, flood hazards and floodplain values, navigation, aesthetics, economics, and “the needs and welfare of the people.” 33 C.F.R. 333.12(b). In the Environmental Assessment (“EA”) and Environmental Impact Statement (“EIS”) the District Engineer weighs the significance of these changes to the human environment against any mitigation efforts to determine a project’s overall impact. In accordance with the information from these reports, the District Engineer issues a Finding of No Significant Impact (“FONSI”) outlining why the selected action will not have significant effects and state the authority for any adopted mitigation, together with applicable monitoring or enforcement provisions. Where a finding of no significant effects depends upon mitigation, the FONSI must identify the enforceable mitigation requirements or voluntary commitments relied upon.

The Draft FONSI submitted alongside the Report finds that the proposed alignments will have “less than significant effects” on wetlands and intertidal natural environments and cultural resource structures in the physical environment as a result of mitigation. Draft FONSI Table 1. Mitigation measures are those that “avoid, minimize, or compensate for effects caused by a proposed action or alternatives . . . and that have nexus to those effects.” 33 C.F.R. 333.61(g). Such measures may include “rectifying the impact by repairing, rehabilitating, or restoring the affected environment” or “compensating for the impact by replacing or providing substitute resources or environments.” *Id.* This mitigation is undefined in the Draft FONSI. The Draft FONSI also finds, without explanation, “less than significant effects” for resources such as recreational resources, roads, ports, and public spaces and no effect for resources such as coastal barrier resources and floodplains.

We recognize and appreciate that the proposed alignments are necessary to protect the City of Boston from coastal storm risk and predictable sea level rise, but these benefits, which are inherent to the project purpose, do not mitigate the substantial impacts that other elements of the project design will cause on the human environment. Mitigation will be necessary to rectify the inevitable impacts of coastal storm management infrastructure on existing cultural, recreational, and marine resources. Before a Final FONSI is issued, USACE and the City of

Boston must sufficiently consider the degree of effect that the planned coastal resilience infrastructure will have on the resources and public health in the affected area. *See* 33 C.F.R. 333.12(b).

Hybrid solutions are not only cost-effective, they may also support a FONSI by mitigating impacts to the human environment. At common law, and under Massachusetts Chapter 91, public access to the waterfront and tidal resources is not merely a benefit, it is a right. In Massachusetts, therefore, the ability to navigate the waterfront for recreation, aesthetic benefits, sustenance, and industry is part of the “needs and welfare of the people.” 33 C.F.R. 333.12(b)(1). Purely gray infrastructure may significantly impact these public resources that serve the welfare of the people, necessitating supplemental mitigation measures that could prove costly. On the other hand, incorporating hybrid solutions upfront provides inherent co-benefits that will maintain or restore these resources and avoid the need for costly mitigation measures. If the structural solutions presented in the Report create an effect requiring avoidance or mitigation, an integrated hybrid configuration that both performs the CSRM function and avoids or minimizes that effect, USACE must give that alternative due consideration.

State Permitting Considerations in Selecting Alignments

We wish to reiterate that state permitting requirements should not stop USACE from pursuing nature-based and hybrid projects. Under Chapter 91, the Massachusetts Department of Environmental Protection (DEP) “shall require non-structural [coastal and shoreline engineering] alternatives where feasible.” 310 CMR 9.37(3)(c). The Chapter 91 regulations also provide that “shoreline stabilization or the rehabilitation of an existing shore protection structure” qualify as a permitted water-dependent use. 310 CMR 9.32(2). Shore protection structures and associated fill are considered water-dependent uses under Chapter 91 when they are necessary to “either protect an existing structure from natural erosion or accretion, or to protect, construct, or expand a water-dependent use.” 310 CMR 9.12(2)(a)(11). Finally, pending legislative changes to Chapter 91 and the Wetlands Protection Act, as well as other proposed regulatory updates, will further facilitate the implementation of nature-based solutions. Chapter 91 should therefore not be treated as a categorical reason to screen out hybrid or nature-based configurations. The Final Report should distinguish technical infeasibility from permitting complexity and, where such alternatives perform adequately, identify the state permitting issues that would need to be resolved.

Collaboration with Other Entities

Understanding that the Draft Report does not cover many significant working waterfront areas, USACE should collaborate with Massport and waterfront industries, including fuel tank farm operators, to ensure that USACE alignments tie into separate planning processes to protect the Harbor’s port and airport economy, which delivers significant national and regional benefits. We request that USACE work closely with Massport and owners of Designated Port Area

properties to include the costs associated with annualized average losses in the Final Report's No Action Plan.

The Final Report should consider risks to inland watersheds from prospective coastal storm damage to dams on the Charles River, Mystic River, and Neponset River. Hundreds of thousands of people live, recreate, and study along these rivers, and several university campuses including Harvard, MIT, and Boston University reside along them. Coastal inundation, storm surge, and other climate impacts threaten the longevity of these dams at great risk to their abutting communities. While they may fall outside the scope of this study, these risks cannot be ignored, and we encourage USACE to continue collaborating with DCR to move towards study and design for improvements to these dams.

We understand that some design features, though cost-effective, may fall outside the scope of USACE funding. To advance funding for hybrid solutions as part of the base project design, or to address residual risks that were screened out but remain material to the National Economic Development interest or interests under other existing authorities, USACE may consider collaborating with other federal programs such as USDA Emergency Watershed Protection, FEMA, USDOT, NOAA, USDOE, and USHUD.

Preferred Alternatives

Our coalition supports the selection of the following alternatives to be included in the Final Comprehensive System Plan:

East Boston 2 (EB2)

- We strongly prefer EB2 over EB2A. EB2 protects all of Route 1A, a designated emergency route, preserving evacuation and emergency response capacity during a flood. Alternative EB2A would reduce evacuation capacity on Route 1A by half, only protecting the northbound lanes. EB2 would not preclude future improvements to Chelsea Creek waterfront public access and connectivity for East Boston's socioeconomically vulnerable residents, whereas the centerline flood wall in EB2A would impose an additional physical barrier to access. MassDOT's 2024 *Route 1A Corridor Study* established planning goals for this area, which included improvements to waterfront public access and multimodal safety and connectivity. EB2 is consistent with the flood protection alignment supported by the public in prior planning studies, including *Coastal Resilience Solutions for East Boston Phase II* (2022) and the MassDOT Corridor Study.

Downtown 3 (DT3)

- We prefer DT3 over DT3A. DT3 protects a significantly longer portion of the North End Harborwalk from long-term degradation and loss due to coastal storm damage that would otherwise occur in DT3A. As the Draft Report notes regarding the Harborwalk, "There is

substantial community support for this aesthetic and recreational linear space.” DT3 has a lower risk of failure due to fewer closures and associated mechanical and human error risks. DT3 would also have less negative aesthetic impacts and protect more residents, structures, and transportation assets.

Adjustments to Recommended Plan Components

Our coalition requests the following adjustments to recommended plan components in the Final Comprehensive System Plan:

East Boston 2 (EB2)

- Component 2: Add an engineered beach/dune at Constitution Beach, seaward of the upland vertical structure. This measure is necessary to reduce wave overtopping at the recommended upland vertical structure and improve the alignment’s performance in 2090. It is also necessary to preserve the only recreational beach in East Boston, serving socioeconomically vulnerable populations, and critical nesting habitat for protected shorebirds. Without this added component, these natural resources will be lost and degraded by coastal flooding, RSLC, and coastal erosion.
- (New) Component 4: Add a vertical structure or berm component to protect the bulk petroleum fuel storage facilities located between Chelsea Creek and Route 1A. This measure is necessary to prevent direct economic damages to the facilities; cascading economic and energy system impacts post-disaster; and catastrophic releases of hazardous petroleum products causing public health and safety impacts to socioeconomically vulnerable populations in East Boston, environmental impacts to sensitive natural resources, and navigational impacts and associated costs during spill response and cleanup.

East Boston 1 (EB1)

- (New) Component 2: Add thin-layer deposition to Belle Isle Marsh. This is necessary to reduce wave overtopping at the Orient Heights Railyard’s vertical structure and improve the alignment’s performance in 2090, as well as to preserve this limited and critical habitat for protected and migratory species and recreational open space asset for socioeconomically vulnerable populations which will otherwise be lost and degraded due to RSLC and coastal storm damage. This can be phased later in the sequence of projects in the implementation plan, allowing time for “scientific debate” regarding its efficacy to be settled.

East Boston 3A (EB3A)

- Component 5: Modify the southern end of the Border Street alignment. Instead of the adaptable vertical wall running from Maverick Street along Border Street and tying in to

meet the waterfront north of Atlantic Works, it should run from high ground on New Street and tie in to meet the waterfront north of 10 New Street (The Eddy) and then continue to the Eagle Hill Neighborhood along the waterfront. This adjustment is necessary to prevent direct economic damage to existing structures, protect the viability of working waterfront facilities which will otherwise be rendered unusable due to the high frequency of site flooding, and preserve a locally valued waterfront open space for socioeconomically vulnerable populations at 102 Border Street.

Charlestown 3 (CH3)

- Component 1: Modify the northern terminus of the Little Mystic Channel alignment. Instead of the outboard perimeter solution along the south shoreline of the Little Mystic Channel tying into an upland vertical solution northwest of the condominium complex, the outboard perimeter solution should continue around the bend of the Little Mystic Channel and tie into a vertical solution east of the Charlestown Sprouts Community Garden, then continue along Terminal Street to tie into high ground on Terminal Street near the intersection with Medford Street. This alternative is necessary to protect the emergency shelter at Charlestown Community Center as well as preserve the largest recreational open space in Charlestown which serves socioeconomically vulnerable populations in adjacent public and Section 8 housing and will otherwise be rendered unusable due to the high frequency of site flooding. The omission of the Athletic Fields in §6.2.3.6 Public Spaces should be corrected. This alternative is similar to the draft alignments shared with the Charlestown community on May 5, 2025.
- Component 3: Eliminate this component in favor of recommended changes to Component 1 above. The nonstructural component of CH2 is not compliant with the current USACE pause on nonstructural interventions. Even if it were allowed, dry floodproofing the Community Center would not have the intended benefit of preserving its use as an emergency shelter during a flood. Dry floodproofed structures must be evacuated during flood events and inspected afterwards to ensure public safety. The Draft Report, in Figure 6-10, also understates the flood risk to the Community Center based on a point-based representation of the facility rather than the building footprint. Section 3.3.5 also makes a conflicting statement that floodproofing of the Community Center is a component of CH1.

Dorchester 1 (DOR1)

- Add an engineered beach/dune at Carson Beach, seaward of Day Boulevard. This measure is necessary to reduce wave overtopping at the recommended upland vertical structure and improve the alignment's performance in 2090 and to preserve Boston's largest recreational beach, serving socioeconomically vulnerable populations in South Boston, Dorchester and city-wide, and critical nesting habitat for protected shorebirds.

Without this added component, these natural resources will be lost and degraded by coastal flooding, RSLC, and coastal erosion.

Dorchester 2 (DOR2)

- While we do not currently opine on how to adjust the alignment, we are very concerned that the Report assesses Morrissey Boulevard “not as an evacuation route . . . instead looking at those points of Morrissey Boulevard that allow floodpaths to inundate the surrounding community” (p. 487). The Draft Report further acknowledges that there is no consideration of Morrissey Boulevard as a critical evacuation route in the future. This is a significant oversight. Already, Morrissey Boulevard floods during king tides, and has had to be “partially or fully closed due to coastal flooding at least once every year since 2011.” *Boston Globe*, “If Massachusetts Can’t Fix Constant Flooding On Morrissey Blvd., How Will We Prepare for Rising Seas?” (October 28, 2025). “Dorchester is, by far, the most populous neighborhood in the study area,” (p. 483) and Morrissey Boulevard is a critical evacuation route for much of Dorchester, including Columbia Point, Savin Hill, and Neponset/Port Norfolk. Excluding it from the study will leave these residents, and others who rely on this evacuation route, stranded in an emergency storm event.

Dorchester 3 (DOR3)

- Eliminate the upland vertical wall on the West side of the MBTA salvage yard, and replace it with an upland vertical wall on the East side of the MBTA rail track and salvage yard. The new wall could be located within the footprint of the existing MBTA noise wall, with a closure/access gate to the MBTA salvage yard provided at Conley Street, avoiding permanent impacts to rail. We recognize that USACE screened out an alignment on the East side of the rail due to “tie-in locations, space constraints, as well as impacts to the rail,” however, a solution on the East side of the rail is necessary to prevent impacts to the Red Line and Commuter Rail which are not protected by DOR3. Frequent inundation of this segment of rail would render the Red Line south of JFK/UMass station and the Commuter Rail Greenbush Line south of South Station permanently inoperable.
- Add an engineered beach/dune at Tenean Beach, seaward of Conley Street. This measure is necessary to reduce wave overtopping at the upland vertical structure and raised roadway and improve the alignment’s performance in 2090. It is also necessary to preserve the only recreational beach in Dorchester, serving socioeconomically vulnerable populations, and critical nesting habitat for protected shorebirds. Without this added component, these natural resources will be lost and degraded by coastal flooding, RSLC, and coastal erosion.

Cost-Sharing Under State and Federal Regulations

Under the Draft Report's assumed Section 103 framework, eligible CSRM implementation costs are cost-shared 65% federal/35% non-federal, subject to authorization, appropriations, and the project partnership framework. The public understanding, then, is that the federal cost share for this project requires the U.S. Congress to pay up to 65% of the total project costs, with the City of Boston covering the remaining expense. In public meetings, USACE has further stated that the cost of compliance with state laws and regulations falls upon the non-federal sponsor. Many of the community-preferred resilience features, such as landscaping, green edges, and in-water plantings that attenuate wave energy, have been classified as “city betterments” not eligible for federal support. This leaves the City responsible for 35% of the gray infrastructure and 100% of any natural features, regardless of any potential mitigation under MEPA, economic benefits, or cost-savings.

As demonstrated above, we contend that hybrid designs are a cost-effective way to provide the mitigation necessary to meet the localized needs and welfare of the people of Boston and should therefore be incorporated into the 65% cost paid by USACE. Yet, the delineation of what natural features support necessary NEPA mitigation measures as opposed to fulfilling state requirements or serving as “betterments” is unclear. The final report should include a clear explanation of how USACE intends to distinguish federally eligible coastal storm risk management features from non-federal betterments, along with illustrative examples. This would improve transparency for municipalities, property owners, and potential funding partners as projects move into design and implementation.

Conclusion

The Boston Waterfront Partners commend the Project Team for their detailed analysis of Boston’s vulnerability to sea level change and coastal storms. In particular, we appreciate the Project Team’s goal of building off the past 10+ years of Climate Ready Boston planning, engagement, and design. Since the beginning of this collaboration between the City of Boston and the USACE, we have been impressed with the neighborhood level planning, attention to detail, and collaborative spirit that Jeffrey Herzog and the USACE team have brought to the study. We know that Boston will need to partner with USACE to lay out a multi-year roadmap for shovels-in-ground implementation of these coastal protection projects, and we look forward to supporting each future phase of that process.

For the reasons detailed herein, the Boston Waterfront Partners request that the Final Report includes:

- A multi-year roadmap with an element-by-element implementation plan identifying design and funding needs.
- Details on how regional economic development, social effects, and environmental quality were considered and factored into the TNBP.

- A matrix table comparing alternatives across NED, RED, OSE, and EQ accounts, with a formal explanation of tradeoffs among each account.
- Explicit consideration of the cultural, economic, and recreational importance of waterfront access to the people of Boston in both design choices and the TNBP.
- CSRM infrastructure should lay the groundwork for expanded public access to and along the water's edge. While we understand that USACE may not be able to fund the full range of betterments described in the Climate Ready Boston plans, berms and floodwalls should be designed to provide the foundation for elevated Harborwalk and other public amenities. This is essential to gaining broad support for implementation of the USACE plan.
- Exploration of hybrid solutions that incorporate natural features, in particular at beaches.
- Detailed consideration of existing open space such as the Charlestown High School Athletic Fields and East Boston parks, including explanations for why these resources cannot be protected, if there is no change to the preferred alignments between now and the final report.
- Reconsideration of protections for Belle Isle Marsh, Tenean Beach, the Charlestown Community Center and Athletic Fields, and Morrissey Boulevard.
- Identification of EWN guidance and an explanation of how this guidance was incorporated, modified, or screened out, and on what basis.
- An improved draft FONSI that fully details mitigation measures and provides explanation for any findings of “less than significant effects.”
- Detailed guidance on what elements are included in the federal base project and which are excluded as supplemental betterments, and why.
- A project-by-project cost and responsibility ledger distinguishing the federal base project, creditable non-federal work and LERRDs, locally preferred increments and betterments, companion infrastructure, and long-term OMRR&R obligations.
- Adjustments to specified components of the East Boston, Charlestown, and Dorchester alignments to better-protect existing infrastructure and resources that are critical to the health, safety, and culture of Boston and its residents.

We appreciate this opportunity to comment and look forward to ongoing collaboration to ensure durable, effective outcomes. Please reach out to Breanne Frank (bfrank@clf.org) and Jason Rundle (jrundle@bostonharbornow.org) with questions.

Sincerely,

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