CONNECTICUT DEPARTMENT OF HOUSING

RESILIENT BRIDGEPORT: NATIONAL DISASTER RESILIENCE AND REBUILD BY DESIGN PROJECTS

BRIDGEPORT, CONNECTICUT

DRAFT SCOPING DOCUMENT FOR THE ENVIRONMENTAL IMPACT STATEMENT

FEBRUARY 2018

RESILIENT BRIDGEPORT

TABLE OF CONTENTS

RESILIENT BRIDGEPORT

FIGURES

1 INTRODUCTION

1.1 OVERVIEW

The State of Connecticut's Department of Housing (CTDOH), as the recipient of the United States Department of Housing and Urban Development (HUD) grant funding and as the "Responsible Entity," as that term is defined by HUD regulations at 24 Code of Federal Regulations (CFR) Part 58.2(a)(7)(i), intends to prepare an Environmental Impact Statement (EIS) for the proposed *Resilient Bridgeport: National Disaster Resilience and Rebuild by Design* projects. The proposed projects are considered a "major federal action significantly affecting the quality of the human environment," therefore, must comply with the requirements of the National Environmental Policy Act (NEPA). CTDOH will prepare the EIS in accordance with the Council on Environmental Quality's (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 CFR Parts 1500-1508) and HUD's NEPA Regulations (24 CFR 58).

The EIS will analyze the environmental impacts of alternatives for the construction of flood risk reduction measures that will be proposed to improve coastal and social resiliency in the South End of the City of Bridgeport, Connecticut (the City). Figure 1 identifies the Study Area within Bridgeport. Such measures will be designed to reduce the impacts of flooding on the quality of the natural and built environment in the project area due to both sea level rise and storm hazards, including heavy rainfall events and intense coastal storm events. The EIS will evaluate potential impacts from the proposed action on Land Use, Zoning, and Public Policy; Socioeconomic Conditions; Environmental Justice; Historic and Cultural Resources; Urban Design and Visual Resources; Hazardous Materials; Vibration; Natural Resources; Hydrology and Flooding; Water Resources and Water Quality; Coastal Zone Management; Infrastructure; Public Services; Noise; Air Quality; Greenhouse Gas Emissions (GHG) and Climate Change; and Cumulative Effects.

The publication of a Notice of Intent (NOI) to prepare an EIS in the Federal Register on February 26, 2018 formally began the NEPA review process, initiating the public scoping period for this EIS which will run until March 28, 2018. As part of the public scoping process, this Draft Scoping Document has been prepared and made available for public review and comment. This Draft Public Scoping Document outlines, to the extent known at this early stage in the planning process, the proposed project actions, potential alternatives, and a description of areas of potential impact to be analyzed in the EIS, as well as proposed methodologies to assess impacts.

During the greater than 30-day public scoping period, comments will be sought from the public and relevant agencies both at a publicized scoping meeting and via written submittal. Substantive comments will be used to prepare the Final Public Scoping Document and inform the development of the EIS. A Community Engagement Plan (CEP) has also been developed and made available online that describes the efforts being made to engage and collaborate with the general public, including vulnerable and underserved populations, to provide timely information and solicit relevant input.

This Draft Scoping Document will be finalized to reflect substantive comments received during the public scoping period, and used as input during the development of the EIS.

1.2 WHY IS THE PROJECT NEEDED?

Located on a peninsula, surrounded by the Pequonnock River to the east, Cedar Creek / Black Rock Harbor to the west, and Long Island Sound to the south, the South End is one of the most vulnerable communities in Bridgeport, at risk of flooding from both coastal storm surge and regular rainfall events. Like much of the Connecticut coast, in October 2012 the area experienced extreme storm surge, wind damage and widespread flooding from Superstorm Sandy. Bridgeport was pummeled with sustained 70 mph gale force winds and experiencing the highest storm surge in the state, nearly 9.8 feet above normal high tide, that resulted in damages to over 570 single-family homes citywide. Within the South End, 31.2 acres containing 211 buildings were inundated resulting in over 100 FEMA Individual Assistance Household inspections completed in this area, with 89 properties affected, including critical community facilities such as the Walter's African Methodist Episcopal Zion Church, a cultural landmark, which has not reopened since Sandy. Throughout the South End, residents relayed accounts of power outages that lasted from a few hours to over a week. The United Illuminated Company, which serves the larger region, reported that over 250,000 customers experienced outages. Of the roughly 57,835 Bridgeport customers, over 41% or 23,414 still experienced outages 4 days following the onset of Sandy.

Figure 1. Resilient Bridgeport Project Area

In the South End the sewer and stormwater system infrastructure is aging. In addition to larger storms like Superstorm Sandy, flooding can also occur on a more regular basis as stormwater flows south from the higher elevation in neighborhoods to the north, flooding intersections passing under I-95 and the Northeast Corridor and hampering access and egress for residents and emergency vehicles.

The South End community faces the continued threat of future storm events and sea level rise, as well as socioeconomic challenges that hinder its resiliency from future events. Addressing the risk of storm and coastal flooding in the area creates the first layer of protection, creating opportunities to address larger economic and community efforts that support resiliency in the long term. The proposed project aims to reduce the risk of extreme storm surge as well as chronic flooding, provide access and egress during storm events, and raise awareness about climate change, sea level rise, flooding, and resiliency.

1.3 HUD RESILIENCY COMPETITIONS

In response to the extensive damage to communities in Connecticut and throughout the Northeast, the Obama administration created the Superstorm Sandy Rebuilding Task Force, chaired by HUD. As an outgrowth of the task force, in June 2013 HUD launched the Rebuild by Design (RBD) Competition, a multi-stage planning and design competition to promote innovation by developing regionally-scalable but locally-contextual solutions that increase resilience in the region. Examples of design solutions were expected to range in scope and scale – from large-scale green infrastructure to small-scale residential resiliency retrofits. The competition process aimed to strengthen understanding of regional interdependencies, fostering coordination and resilience both at the local level and across the US.

In June 2014, HUD announced the award of $930 million to seven winning RBD ideas, one of which was *Resilient Bridgeport*. Interdisciplinary teams of scientists, engineers, designers, and architects spent months understanding the major vulnerabilities of the Sandy-affected region and developing ideas to improve the region's resilience, with each winning idea comprising multiple phases. The RBD awards assist communities in developing master plans for the areas of focus. For *Resilient Bridgeport*, the master plan includes the development of an overall resilience strategy covering a study area that extends from downtown Bridgeport to Black Rock Harbor. Through *Resilient Bridgeport*, a joint urban design, architecture,

engineering, planning, and community engagement team has worked over the past several years with CTDOH, the City, and Bridgeport residents and business owners to develop the resilience strategy, as well as identify a pilot project for Bridgeport's South End and Black Rock Harbor areas, with a specific focus on the historic footprint of Marina Village. The strategy outlines an integrated approach to managing long-term risk, enabling equitable adaptation and growth, and enriching and enhancing the daily lives of Bridgeport residents.

In September 2014, HUD announced an additional round of funding through the National Disaster Resilience (NDR) Competition, a targeted effort under its Community Development Block Grant (CDBG) Program to broaden federal support for resiliency efforts in Connecticut, New Jersey, New York State, and New York City to rebuild in the wake of Superstorm Sandy and other major disasters declared in 2011, 2012, and 2013. In January 2016, HUD awarded almost $1 billion in funding for disaster recovery and long-term community resilience. Connecticut received approximately $54 million to continue the implementation of *Resilient Bridgeport* and expand its success to the regional and state scales. Approximately $42 million of the funding was allocated to the CTDOH to oversee design and construction of additional pilot projects in Bridgeport's South End focused on the eastern portion of the neighborhood.

With the RBD and NDR funding, and the support of federal, state, and local partners, Bridgeport has the opportunity to show how a comprehensive and multi-layered approach to building resilience that integrates adaptation, risk reduction, and revitalization possibilities can reduce risk and enhance quality of life along the water's edge.

1.4 OVERVIEW OF THE CEPA AND NEPA PROCESS

1.4.1 CONNECTICUT ENVIRONMENTAL POLICY ACT (CEPA)

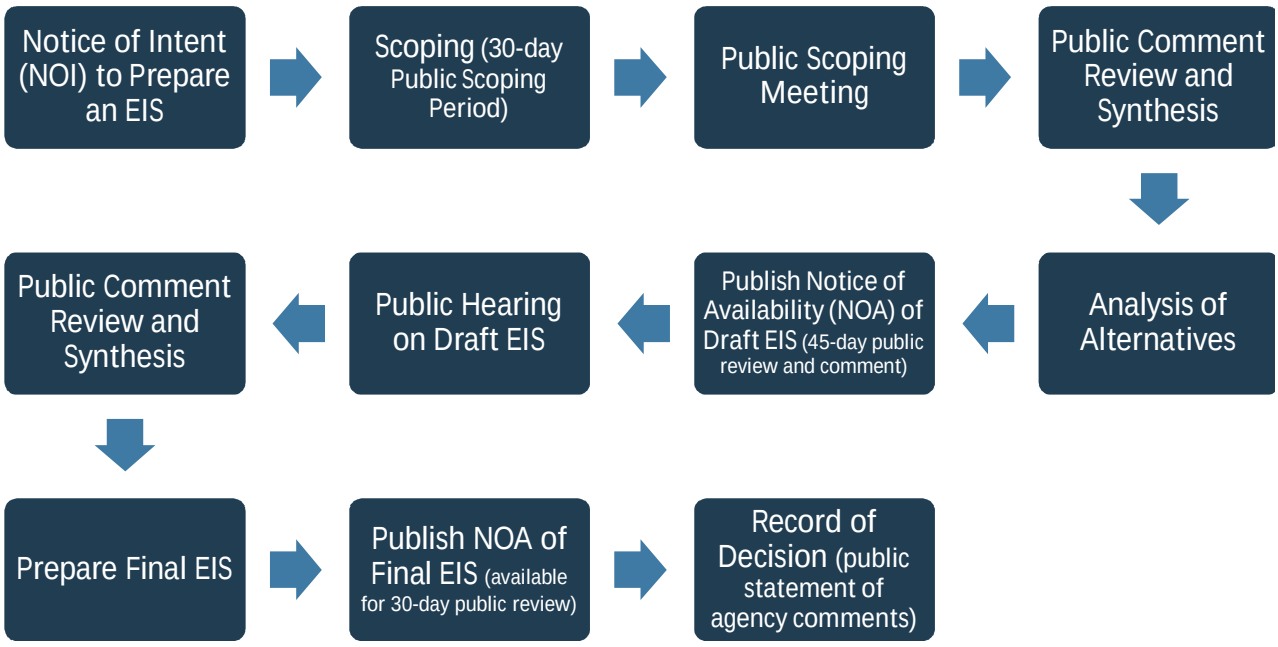
The Connecticut Environmental Policy Act (CEPA) establishes environmental policy for the State of Connecticut. It requires an Environmental Impact Evaluation (EIE) for any state action which could potentially impact the natural environment. Like the EIS required by NEPA, the EIE must include a range of alternatives along with the No Action alternative. For projects that require a federally mandated EIS, as is the case for the *Resilient Bridgeport* projects, the EIS may be submitted in lieu of an EIE to avoid unnecessary duplication of effort as long as the EIS contents meet all the requirements for an equivalent EIE. As such, the EIS to be developed will jointly serve as an EIE and will meet the requirements CEPA.

1.4.2 NEPA PROCESS

While scoping is underway, the project team will begin development of the Draft EIS, expanding existing baseline conditions, preparing base maps, completing data collection, and commencing analysis of the No Action alternative. Completion of the Final Scoping Document will mark the beginning of the detailed alternatives development and screening phase. This phase will invite input from local, state, and federal entities, as well as the community and other public stakeholders, to help develop the criteria by which the alternatives will be screened, and to evaluate the alternatives developed. The project engagement effort is a continuation of outreach, education, and the expansion of community capacity building in the City, building upon the momentum and knowledge base established during the development Bridgeport's long-term strategy for resilience. This outreach will occur primarily through periodic citizen advisory committee (CAC) meetings, technical advisory committee (TAC) meetings, and public events. The CAC is comprised of community leaders (e.g., advocates, City employees, local residents, etc.) to serve as an advisory panel representing the interests of the local community throughout NEPA as well as the design process. The TAC is comprised of state and city agencies and other key technical stakeholders that can advise and provide input towards design, and provide assistance in targeting permit requirements, critical design decisions, and policy concerns associated with potential project design elements. CAC and TAC meetings and public events will be scheduled to coincide with key project development milestones and allow for interactive dialogue to ensure significant and ongoing engagement.

The Draft EIS is the first formal step in documenting the environmental analysis of the proposed project (see Figure 2). The Draft EIS will describe the proposed project's purpose and need; discuss the alternatives analysis process and the public participation process; describe the build alternatives and the no action alternative; describe the affected natural and built environment; provide an analysis of potential impacts of build and no action alternatives; and identify potential measures to avoid, reduce, or compensate for significant impacts.

Figure 2. Overview of NEPA Process



Once completed, the Draft EIS will be made available for review and comment to the public and it will be circulated to stakeholders and government agencies that have been identified as having particular interest in, or jurisdiction over, the proposed project. As required by CEQ and HUD regulations, a Notice of Availability (NOA) of the Draft EIS will be published in the Federal Register and in local media outlets, indicating where the Draft EIS is available for review and providing instructions for how to submit comments on it. Following the publication of the NOA, there will be a 45-day public review and comment period, during which a formal public hearing will be held; the date(s), time(s) and locations(s) of the hearing will be indicated in the NOA.

At the conclusion of the 45-day Draft EIS comment period, CTDOH will incorporate substantive comments and responses to them into the document and compile the Final EIS. The Final EIS will be circulated in the same manner as the Draft EIS, including the publication of a NOA in the Federal Register and local media, and will have a review and comment period of 30 days. At that time, CTDOH will determine whether a public hearing on the Final EIS is appropriate.

If no additional substantive comments are received during the Final EIS comment period, CTDOH will prepare a Record of Decision (ROD) and Statement of Findings. The ROD will summarize the government's decision, identify the environmentally preferable alternative, select the alternative that will be implemented, and disclose the potential environmental impacts of that alternative, as well as the mitigation measures that the government will implement. If additional substantive comments are received during the Final EIS comment period, CTDOH will address these comments in the ROD.

This project-specific NEPA process will extend for approximately 10 months, from February 2018 through approximately December 2018.

1.5 OVERVIEW OF THIS DOCUMENT

Public scoping is a critical and necessary component of the NEPA process, and serves to focus the initial stage of the process on the proposed project, the purpose and need for the proposed project, potential alternatives, and environmental issues, concerns, and methods of analysis. Towards that end, the remainder of this Draft Public Scoping Document includes the following sections:

- Section 2: Proposed Action
- Section 3: Purpose and Need

- Section 4: Project Concepts and Potential Alternatives
- Section 5: Potential Regulatory Approvals
- Section 6: Draft Environmental Impact Statement Scope of Work

2 PROPOSED ACTION

The *Resilient Bridgeport* Proposed Action will consist of three projects, a combination of natural/green and fortified/grey infrastructure solutions integrated with a new, multifunctional public realm and a resilience hub to facilitate more resilient forms of inhabitation in the neighborhoods of the City most at risk from severe storms and regular flooding from rain events. The Proposed Action would be located in the South End of the City, which experienced the most significant impacts during Superstorm Sandy and has also faced acute challenges in other storms (e.g. Hurricane Irene) and chronic flooding challenges as a result of an aged and combined stormwater sewer system.

The Proposed Action area has the following approximate boundaries: Iranistan Avenue on the west, the Northeast Corridor railroad viaduct to the north, Long Island Sound to the south, and the Pequonnock River to the east. Figure 2 displays an aerial view of the project area and the major properties within the study area.

Figure 3. Study Area

2.1 FLOOD RISK REDUCTION

One project of the Proposed Action would include a combination of measures within eastern South End that would reduce the flood risk within the project area from future coastal surge and chronic rainfall events. The measures may include raised streets, floodwalls, landscaped berms, and both green and grey stormwater and internal drainage management strategies (e.g., detention/retention features, drainage structures, and pump systems). This element of the Proposed Action, to the extent practical, would provide a FEMA Certifiable level of flood risk reduction to a portion of the project area. Different routing alignments and different levels of flood risk reduction are being considered, although all alignments include elevating a section of University Avenue.

2.2 RESILIENCE HUB

Another project under the Proposed Action would fund a Resilience Hub to serve the South End community in its ongoing commitment to build a resilient Bridgeport. The site would serve as a hub for resilience activities, providing a method for dissemination of information to the community and assisting the community in future recovery efforts. The form and exact functions of the Resilience Hub are being evaluated.

2.3 RBD PILOT PROJECT AT MARINA VILLAGE

Following Superstorm Sandy, a decision was made by the Housing Authority of the City (i.e., Park City Communities) to replace the nearly 75-year old Marina Village public housing complex with more modern and resilient housing. Park City Communities selected a private development partner to lead the first several phases of redevelopment, which will ultimately result in the 405 units of Marina Village being replaced as components of privately owned and managed mixed-income (and in some instances, mixed-use) developments on multiple parcels throughout the City. Land owned by Park City Communities in the South End as well as other neighborhoods was rezoned and prepared for revitalization including the demolition of the first approximately 15 buildings of Marina Village, some of which have been vacant since 2012. The first two phases of mixed-income redevelopment (including replacement units for Marina Village) occurred in the City's East Side neighborhood with support from the State of Connecticut including CDBG-DR, Low-Income Housing Tax Credits, and state discretionary affordable housing grants and loans. Given the Marina Village parcels' proximity to downtown and employment opportunities, transit accessibility, higher educational institutions, and park amenities coupled with some residents' desire to remain in the South End neighborhood, the next phases of mixed-income redevelopment are slated for the parcels which formerly held the Marina Village public housing complex.

In response to regular flooding issues in the area, the *Rebuild By Design* Pilot Project would construct green and grey infrastructure improvements that reduce the flood risk to the Marina Village parcels in both acute and chronic flooding events. Though the project activities are limited to the area immediately adjacent to Marina Village, the project would be designed to benefit low- and moderate-income owner-occupied and rental housing in the surrounding neighborhood to the east and south as well as in the historic post-WWI, community known as Seaside Village to the west. The project would be designed to be both an infrastructure upgrade and urban amenity, composed of natural and fortified solutions to facilitate a more resilient neighborhood.

The existing Marina Village site is bounded by Park Avenue on the east, Iranistan Avenue on the west, Ridge Avenue and Johnson Street on the south and South Avenue along the northern edge. The RBD Pilot Project primarily proposes the following elements:

1. A new road, Johnson Street extension, raised to provide dry egress for the Marina Village redevelopment
2. Regrading of a portion of the existing Johnson Street
3. Regrading of a portion of Columbia Street, north and south of the new Johnson Street intersection
4. A new 2.5 acre stormwater park, to be located just south of Johnson Street Extension
5. Additional street beautification and stormwater improvements along Iranistan Avenue

The primary objective of this element of the Proposed Action is to appropriately balance implementation of grey and green infrastructure for the site as required to facilitate a more resilient neighborhood.

3 PURPOSE AND NEED

3.1 PURPOSE

The purpose of the Proposed Action is to create a more resilient South End community, support its long-term viability, and improve health and safety for the community's vulnerable populations. The principal targeted outcomes are:

- Lower the risk of acute and chronic flooding,
- Provide dry egress during emergencies, and
- Educate the public about flood risks and sea level rise.

The proposed project could deliver additional benefits to the community, potentially unlocking development or public realm opportunities, enhancing connectivity between the South End and Downtown Bridgeport, improving existing open space amenities, building up the resilience of local energy systems, and leveraging public investment in ongoing resiliency efforts through coordination with local stakeholders.

3.2 NEED

The South End area includes Seaside Park, the University of Bridgeport, residences, some industrial buildings, and several energy providers (including both electricity generators and utilities). The area has a population of over 8,000 people, including public housing residents and other vulnerable populations.

The peninsula is exposed to storm surge from coastal storms and the risk of such events is increasing due to sea level rise. During Superstorm Sandy, the area experienced a storm surge of nearly 7 feet above normal high tide, inundating over 200 buildings (including affordable and public housing) (see Figure 3 for FEMA flood zones and the areas inundated during Superstorm Sandy). Flooded buildings are susceptible to mold and other public health concerns. These buildings and other infrastructure assets in the South End remain vulnerable to future events. The areas' biggest obstacle to continued recovery and resilience is economic redevelopment. Already experiencing economic downturn, Sandy resulted in flooding in the area that shut down or relocated remaining businesses and further exacerbated vacancies in the neighborhood. The vulnerability of the area to future storm events and sea level rise has limited the opportunities for redevelopment in the area.

In addition to flooded streets and damaged residential properties, residents experienced a loss of electric power after Superstorm Sandy lasting for a period that ranged from a few hours to more than a week. Disruptions to regional supply chains and power interruptions caused serious complications for local industries. Ensuring the continuity of operations at the power district scale is critical to maintaining industrial and commercial functions in the City.

Over the next 50 years, sea levels are expected to rise significantly, which will further compound existing flooding risks in Bridgeport's South End. Much of the critical infrastructure in the area, including electricity generation, transmission, and distribution facilities and low lying stormwater and wastewater pipes, lies within the coastal floodplain and will face increasing risk of impact as sea levels rise.

In South End East, the sewer and stormwater system infrastructure is aging, including an existing outfall that runs along Singer Street in the target area and drains into Bridgeport Harbor during combined sewer overflow (CSO) events. Flooding can also occur on a more regular basis as stormwater flows south from a higher elevation at Downtown Bridgeport. There is often extensive ponding under the railroad underpasses at Lafayette Street and Myrtle Street following rain events. Due to the low-lying geography, the area experiences flooding on a regular basis from rainfall or tidal inundation. Improving the existing drainage system is important to minimize internal flooding and to manage stormwater in both high and low-frequency storm events.

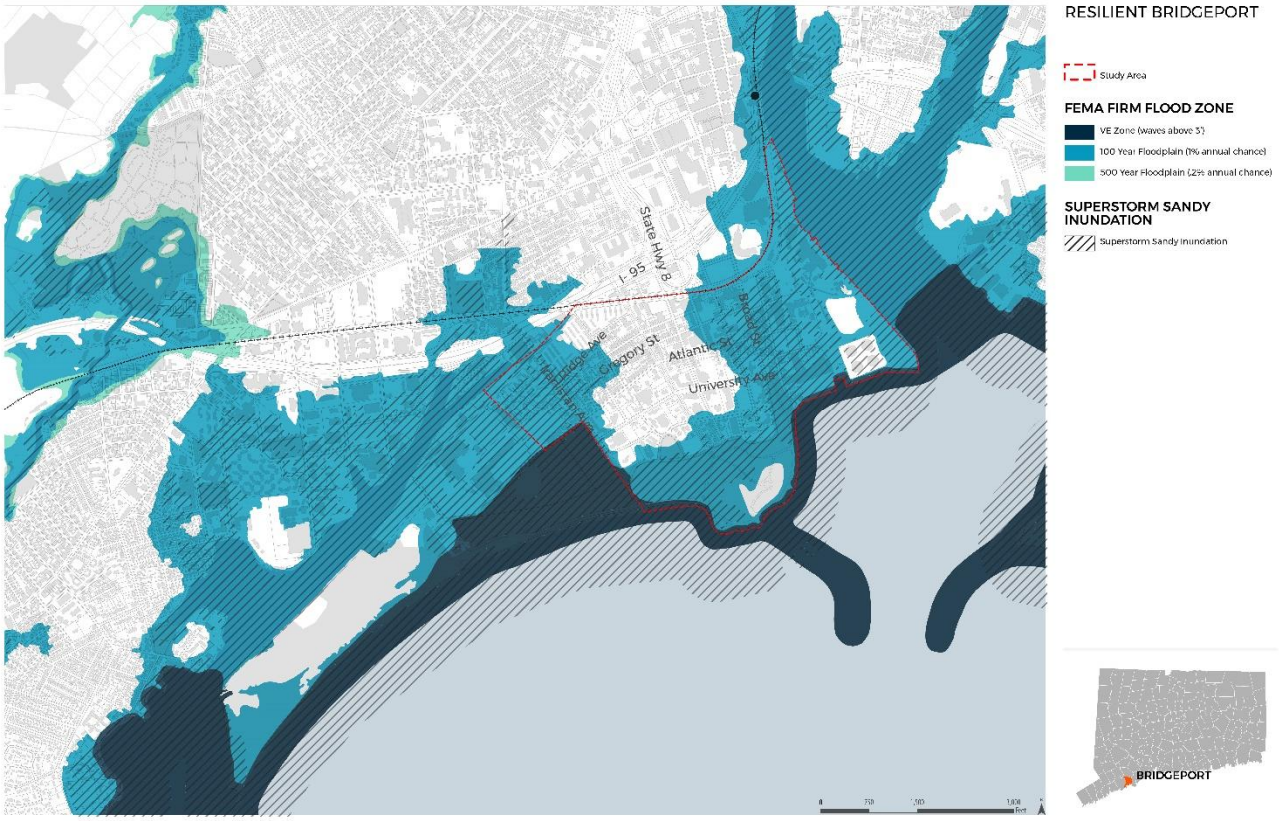
While proximate to its urban center, the South End area is isolated from the downtown by Interstate 95 and the Northeast Corridor rail line and has been physically cut-off from help by emergency responders (fire, police, medical) and others due to flooding of streets (particularly low-lying underpasses under the highway and railroad) that has prevented vehicles from accessing the area during and after storm events, causing safety concerns for the local residents. Repetitive flooding of local streets occurs in the valleys and low-lying areas due to both rainfall runoff and storm surge, making the streets impassable. Portions of the South End lack dry egress for residents, businesses and emergency vehicles when flooding occurs.

Minimizing the flooding at roadways leading into and out of the South End is vital to resident egress and emergency evacuation.

The interrelationship between storm surge from coastal storms and rainfall events contributes to the recurring flooding conditions throughout the project area. The proposed project is needed to minimize flooding, protect residents, property and infrastructure assets from future storm surge events and regular flooding from high-frequency rainfall. In addition to reducing flooding in the project area, the proposed project is needed to directly protect life, public health, and property in the project area, allowing for access/egress in emergency situations.

With the future risk of storm events and flooding damages, the isolated street network and disconnection from downtown, the community has a difficult time attracting new development in the area. Addressing the risk of storm and coastal flooding in the area creates the first layer of protection, creating opportunities to address larger economic and community efforts that support resiliency in the long term.

Figure 4. FEMA FIRM Flood Zones



3.3 GOALS AND OBJECTIVES

The following set of draft project goals have been developed that define project objectives while pushing for innovation and fulfilment of resiliency objectives. These goals will help guide the alternatives selection process and serve as the foundation to effectively measure, evaluate, and screen potential alternatives.

- Goal 1: Minimizes risks associated with acute and chronic flooding
  - Reduces flood risk for critical infrastructure
  - Reduces flood risk for vulnerable populations
  - Reduces flood risk for residents, businesses, and institutions
  - Provides dry egress for redevelopment sites

  - Provides opportunities for green infrastructure management measures
  - Provides opportunities for adaptability to future conditions reduces flood risk for the design life of the project considering sea level rise
  - Protects energy providers during storm events
  - Results in low-level of impact on existing drainage system
  - Is FEMA certifiable

- Goal 2: Integrates with plans and projects of key local stakeholders
  - Achieves stakeholder buy-in
  - Achieves utility landowner buy-in
  - Achieves community buy-in
  - Leverages investment through coordination with stakeholders
  - Maintains and/or improves access to stakeholder properties
  - Integrates with current master plans
  - Provides dry egress to future development sites

- Goal 3: Delivers co-benefits to enhance community resiliency
  - Provides a multifunctional solution
  - Provides public amenities
  - Improves connectivity to Downtown Bridgeport during flood event
  - Improves mobility within South End
  - Facilitates Transit Oriented Development (TOD)
  - Preserves and/or enhances connection to water
  - Preserves and enhances community character
  - Integrates with and repairs the urban fabric
  - Unlocks potential for future development
  - Improves public health
  - Creates and/or enhances the public realm
  - Serves as regional flood risk reduction prototype

- Goal 4: Project needs to be implementable
  - Avoids potential ROW conflicts or private property
  - Avoids significant utility obstructions/conflicts
  - Avoids known major environmental impacts
  - Avoids known unfavorable subsurface conditions
  - Considers spatial constraints
  - Is constructible within the schedule and site constraints
  - Estimated construction costs are within project budget
  - Provides relative life cycle cost benefits
  - Provides relative O+M cost benefits
  - Provides ability to meet permit requirements
  - Provides ability to meet schedule
  - Provides ability to achieve FEMA (and other relevant federal, state and local) certifications

4 PROJECT CONCEPTS AND POTENTIAL ALTERNATIVES

The Proposed Action would involve the development of flood risk reduction concepts that would address the Proposed Action's Purpose and Need. The community will be involved in the evaluation of those concepts. The concepts will then be screened against project goals and objectives, ultimately leading to the selection of concepts to be advanced forward and developed into more detailed Project Alternatives. The resulting Alternatives will then be further analyzed in greater detail as part of the environmental analysis within the EIS/EIE. DOH will incorporate public and stakeholder input to help refine and evaluate the alternatives. The process, as specified in NEPA/CEPA, ensures that all reasonable alternatives are considered, that environmental and socioeconomic impacts are fully assessed and disclosed, and the public continues to have a role in the process.

The alternatives analysis will consist of a comparison of the alternatives' impacts on the physical, natural, cultural, and socioeconomic environment pursuant to 24 CFR Part 58, as well as how well each alternative meets the Purpose of and Need for the Proposed Project. This process, which will be described in detail in the DEIS, will lead to the designation of a Preferred Alternative.

The No Action Alternative will also be evaluated in accordance with CEQ 1 regulations at 40 CFR Part 1502.14(d). The No Action Alternative represents the *status quo* or baseline conditions without implementation of any of the improvements associated with the Proposed Project.

4.1 CONCEPTS

Flooding sources, locations of flooding and appropriate flood risk reduction concepts have been identified thus far. As stated previously, the Study Area is subject to two types of flooding – coastal flooding from storm surge events and systemic inland flooding from rainfall events. The success of constructing a reliable and permanent comprehensive flood risk reduction system depends on designing project concepts that take into consideration existing infrastructure and environmental constraints. The key to the successful implementation of this project is to design the flood risk reduction system in accordance with regulatory standards while verifying that it aesthetically blends in with and enhances the existing environment. The location of existing infrastructure such as parks, roads, transit, stormwater systems, subsurface utilities, and foundation structures for various types of infrastructure are factors that will be considered in identifying the available footprint for constructing the various project elements. The size and availability of the footprint area would then then be a further consideration for the type of potential project elements that could be constructed, such as green infrastructure, earthen berms, floodwalls, street raising, etc. It is anticipated that the Propose Action's concepts may consist of the following:

4.1.1 STREET RAISING AND STREET IMPROVEMENTS

Streets in the eastern South End neighborhood would be improved and raised to create a resilient corridor network. The corridors are multipurpose, serving as complete streets that provide multimodal transportation options for residents, while protecting against future flooding from tidal waters during 50-, 100- and 500- year storms. This network would leverage the South End's existing ridge-line along Park Avenue, connecting this naturally elevated street to key lateral streets through strategically designed and landscaped street elevation. Raising sections of the east-west streets would ensure the local community has vehicular and public transit access to the Park Avenue corridor during major storm events and sets a new, higher, ground plain for future long-term development. Currently the street raising is anticipated for University Avenue, but consideration is being given to lateral street connections such as Gregory and Atlantic Streets that could also be raised up above the 100-year floodplain elevation. Public streets within this resilient corridor network would be retrofitted with green infrastructure improvements such as installing median rain gardens and bio-swales to retain and prevent damage from storm water flooding. More ambitious flood management strategies could be undertaken for University Avenue in coordination with the raising of University.

4.1.2 EARTHEN BERM OR FLOOD WALL

As part of the Resilient Bridgeport network, an earthen berm or flood wall (or some combination of the two) would be constructed to reduce flood risk at the outer edge of the South End East. The height of the structure would be dependent on the level of risk reduction desired and limiting factors such as cost and environmental impacts. Ideally, the northern section of the proposed structure would tie into the existing high ground of the rail abutment near the I-95 bridge and the southern

section of the structure would tie into existing development sites or other resiliency measures. Ongoing redevelopment plans in the area are addressing climate resilience through raising new industrial and mixed-use residential spaces above the floodplain and other protection strategies. The earthen berm could integrate with these efforts and potentially create a landscape feature for the neighborhood.

4.1.3 RESILIENCE HUB

A resilience hub located in downtown Bridgeport or the South End would unify the RBD and NDR efforts to build a resilient Bridgeport. The specific functions of the hub and how it would be integrated with the community would be determined with input from the public and stakeholders. The function will influence the choice of location. The resilience hub would provide a method for providing information about climate change and resilience to the community and assist the community in future recovery efforts.

4.2 POTENTIAL ALTERNATIVES

The EIS will examine Build Alternatives, as well as a No Action Alternative. Currently, the Build Alternatives are broadly defined and presented for discussion purposes below; these alternatives, including various sub-alternatives, will be further developed as part of the NEPA/CEPA process through the Alternatives Development and Screening process described in Section 6.1.1.and 6.1.2. The EIS/EIE will further discuss the alternatives that were considered for analysis, identify those that were eliminated from further consideration because they do not meet the stated purpose and need, and identify those that will be analyzed further. It is expected that project alternatives will continue to be developed and refined during the public scoping process, with input from the public, agencies, and other stakeholders.

4.2.1 NO ACTION ALTERNATIVE

The No Action Alternative represents the status quo or baseline conditions without implementation of any improvements associated with the proposed project. The No Action Alternative assumes that the redevelopment of the Marina Village site would progress as planned, PSEG and United Illuminating Company would continue any planned energy and resiliency projects on their properties east of Main Street, the mixed-use development at 60 Main Street would move forward, and other projects would be implemented both within and near the proposed project area through the 2022 analysis year.

4.3 BUILD ALTERNATIVES

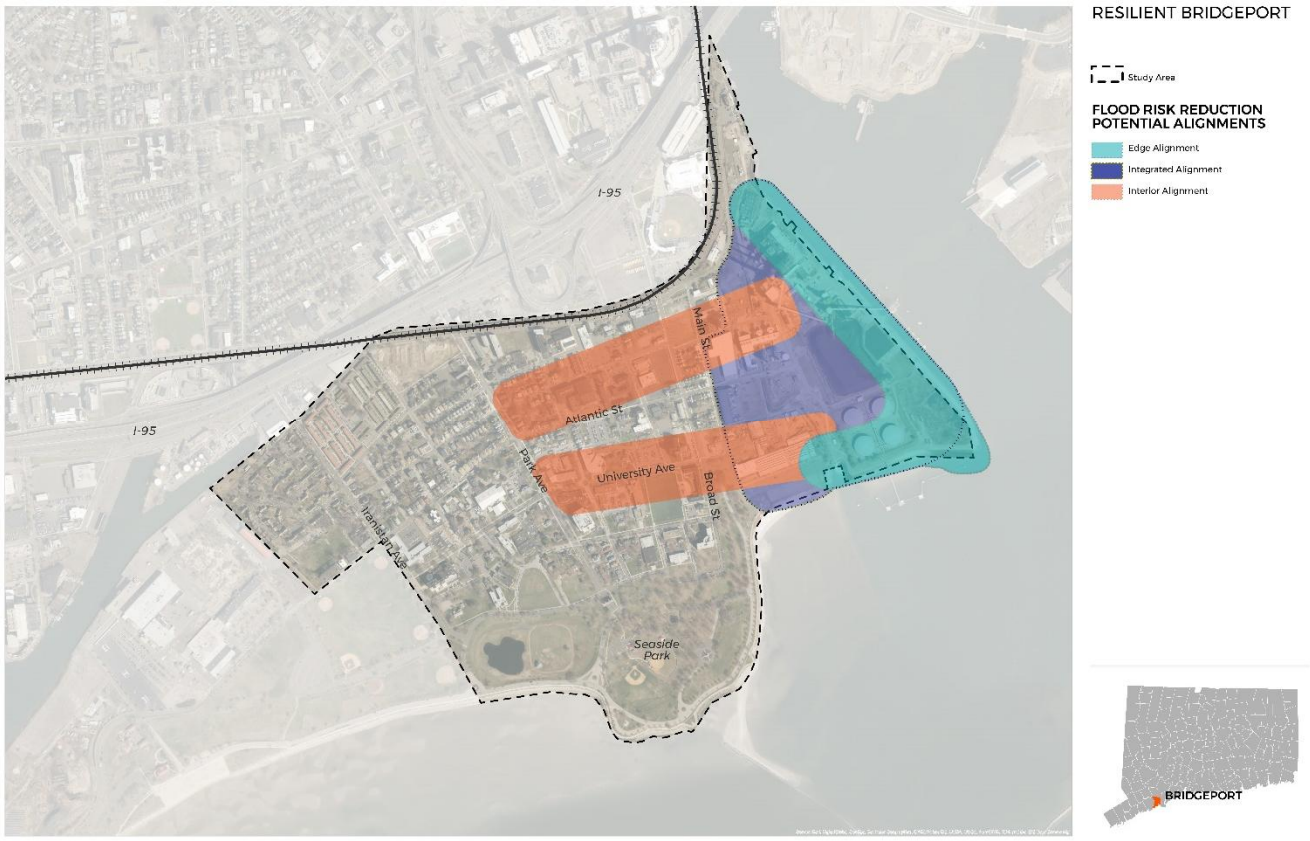
In addition to the No Action Alternative, the EIS will examine multiple “build” alternatives that would implement the Proposed Action. The Proposed Action would consist of three elements – Flood Risk Reduction, a Resilience Hub, and Stormwater Improvements and Dry Egress (at Marina Village).

4.3.1 FLOOD RISK REDUCTION

One element of the Proposed Action would include a combination of measures within eastern South End that would reduce the flood risk within the project area from future coastal surge and chronic rainfall events. The measures may include raised streets, floodwalls, landscaped berms, and both green and grey stormwater and internal drainage management strategies (e.g., detention/retention features, drainage structures, and pump systems). This element, to the extent practical, would provide a Federal Emergency Management Agency (FEMA) Certifiable level of flood protection to a portion of the project area. Different routing alignments and different levels of flood protection are being considered, although all alignments would include elevating a section of University Avenue (see Figure 4).

- **Integrated Alignment.** This alignment would be constructed in coordination with key area stakeholders and include raised streets, walls and berms that take into account plans for growth, development and risk reduction taking place within the eastern South End community.
- **Interior Alignment.** The interior alignment would identify a street or streets that could be raised to provide dry egress for future development, provide some reduction in risk from storm events and generate opportunities for storm water management that produce co-benefits for the community.
- **Edge Alignment.** This alignment would be constructed either in-water or along the outer edge of the community along the waterfront.

Figure 5. Potential Alignments for Flood Risk Reduction



4.3.2 RESILIENCE HUB

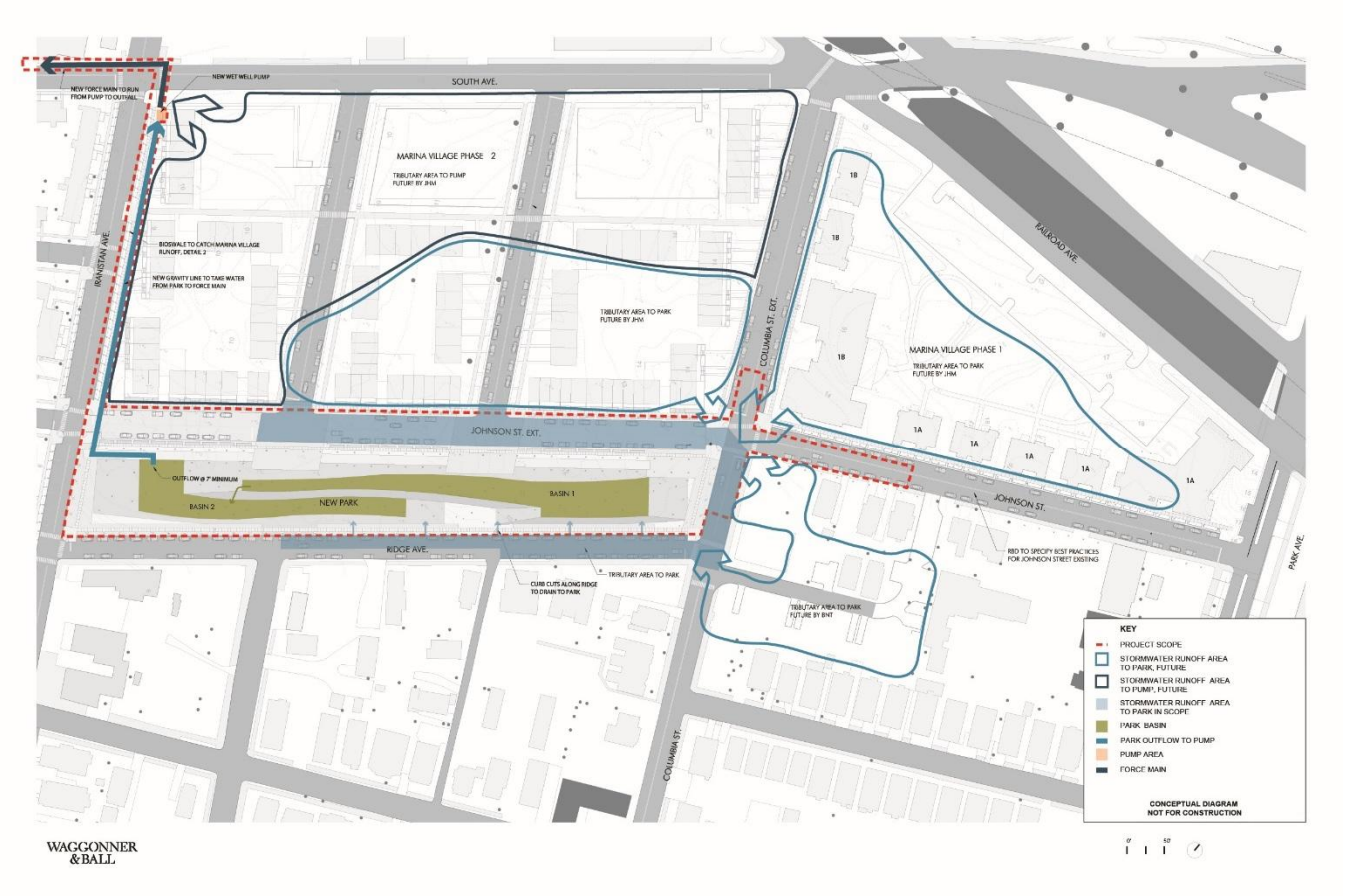
This element of the Proposed Action would fund a Resilience Hub in Bridgeport to serve the South End community in its ongoing commitment to build a resilient Bridgeport. The site would serve as a hub for resilience activities, providing a method for dissemination of information to the community and assisting the community in future recovery efforts. The form and exact function of the Resilience Hub is under consideration.

- **Resilience Hub Option 1.** This option would be a building dedicated to resilience and education. The building would be a space in all or a portion of an existing building or a new building.
- **Resilience Hub Option 2.** This option would be one or more open air sites integrated within the community that are dedicated to resilience and education. The sites would be located within the South End area, adjacent to existing community amenities.

4.3.3 ELEMENTS COMMON TO BUILD ALTERNATIVES

All Flood Risk Reduction alignments would include elevating a section of University Avenue. In addition, all Build Alternatives would include the stormwater management project and extension of Johnson Street at the Marina Village site (see Figure 5). Prior to redevelopment of the western parcel (bound by Park Avenue, Iranistan Avenue, Ridge Avenue and South Avenue) of the site, an approximately 2.5 acre stormwater park would be constructed to accept water from upland streets and adjacent parcels and to retain, delay and improve the quality of the stormwater runoff. An extension of Johnson Street (between Columbia Street and Iranistan Avenue) would provide a raised egress corridor on the southern edge of the future mixed-income redevelopment to facilitate emergency access during an acute flooding event and improve east-west neighborhood connectivity. The redevelopment of the Marina Village site is independent of the stormwater and raised egress improvements in the Proposed Action.

Figure 6. Proposed RBD Pilot Elements



5 POTENTIAL REGULATORY APPROVALS

As described in Section 1, HUD's award comes in the form of RBD and CDBG-NDR funds that require compliance with HUD's Environmental Review Procedures as outlined in 24 CFR Part 58, as well as with NEPA and the CEQ's Regulations Implementing the Procedural Provisions of NEPA at 40 CFR Parts 1500-1508. In accordance with these regulations, the proposed project also must comply with other regulatory approvals. The following is a list of potential regulatory approvals that the proposed project may require; these will be discussed in greater depth within the EIS and the list may change or increase as the NEPA analysis proceeds.

5.1 FEDERAL

- Clean Air Act (CAA) and CAA Amendments of 1990
- Federal Emergency Management Agency (FEMA): Review of proposed flood protection components will require FEMA review for any potential changes to Flood Insurance Rate Maps (FIRM).
- Executive Order 11988, Floodplain Management
- Executive Order 11990, Protection of Wetlands
- Executive Order 12898, Environmental Justice for Low Income and Minority Populations
- HUD: The project is subject to the funding disbursement and Action Plan Amendment requirements stated in 79 FR 62182, published October 16, 2014 [Docket No. FR–5696–N–11]. Practicable alternatives will be identified and evaluated, as required by EO 11988 and 11990, in accordance with HUD regulations at 24 CFR Part 55.20 Subpart C, Procedures for Making Determinations on Floodplain Management and Protection of Wetlands.
- HUD Air Quality Regulations (40 CFR Parts 6, 51, & 93)
- HUD Contaminated and Toxic Substances Regulations (24 CFR Part 50.3[i] and 24 CFR Part 19 58.5[i][2])
- National Historic Presentation Act of 1966: Section 106 of the Act states that prior to the approval of the expenditure of any federal funds an evaluation must take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register.
- U.S. Army Corps of Engineers (USACE): Permits for activities in waters of the US under USACE jurisdiction
- U.S. Fish and Wildlife Service (USFWS): Depending on project impacts to threatened/endangered species, Section 7 consultation under the Endangered Species Act (1973) may be required.
- US Environmental Protection Agency (USEPA): General Conformity relating to the Clean Air Act requirements for federal actions may be required.

5.2 STATE

- CTDEEP Land & Water Resources Division (LWRD) Flood Management Certification: requires approval of certification for all state actions in or affecting floodplains or natural or man-made storm drainage facilities.
- CTDEEP, LWRD General Permit Registration Form: required for the discharge of stormwater and dewatering wastewaters from construction activities that result in disturbances of one or more acres.
- CTDEEP LWRD, Long Island Sound, Dredging and Fill & Tidal Wetlands Permit: Construction, dredge, or fill below the mean high water line.
- CTDEEP LWRD, Long Island Sound: 401 Water Quality Certification is required for any applicant for a federal license or permit who seeks to conduct an activity that may result in any discharge into navigable waters.
- CTDEEP, Connecticut Coastal Management Act Consistency Review/Concurrence: Any action conducted by a state or federal agencies must be consistent with the Act's policies.
- CTDEEP, Air Emissions Permit: New Sources Review Stationary Sources of Air Pollution Permit Application.

- CT State Historic Preservation Office (SHPO) Review: The CTSHPO will need to be consulted for the Project's compliance with Section 106 of the National Historic Preservation Act of 1966, considering the effects of projects on historic properties.
- CT Call Before You Dig: Identification of utilities before performing any excavation.

5.3 LOCAL AND MUNICIPAL

- Bridgeport Municipal Separate Storm Sewer System (MS4): Discharge permit associated with the reactivation of the little regulator stormwater outfall to Cedar Creek may be required.
- City Building Permit: The Building Department issues permits and inspects work done to all buildings and structures.
- City Electrical/Plumbing Permit: The Building Department issues permits and inspects work done to all buildings and structures.
- City Street and Sidewalk Excavation Permit: The Public Facilities Department issues permits to perform street and sidewalk excavation.
- City Sidewalk Permit: The Public Facilities Department issues permits for sidewalks.
- City Public Right-of-Way Occupancy: The Public Facilities Department issues permits to occupy the public right-of-way.
- City Planning and Zoning Commission Approval: Project may include zoning compliance and coastal site plan review.
- City Sewer Extension Approval: Approval for extension of a proposed connection to the sewer system must comply with Sewer Extension Conditions.
- City Council: Council resolution required for street discontinuance and/or acceptance for extension.
- City Board of Police Commissioners: Commission resolution required for change of streets from one-way to two-way.

Note: Not all permits may be necessary depending on the chosen alternative and final designs.

6 DRAFT SCOPE OF WORK

Below is a discussion of the proposed sections of the EIS. The EIS document will consist of a description of the Proposed Action's purpose and need, the proposed project, alternatives development and analysis, the public involvement efforts, a description of the existing conditions and affected environment, potential environmental impacts as a result of the Build Alternatives and No Action Alternative, and appropriate mitigation measures.

6.1 ALTERNATIVES ANALYSIS

This section of the EIS will describe the technical analyses and public input that led from the initial concept designs to the selection of the Preferred Alternative.

6.1.1 ALTERNATIVES DEVELOPMENT

This section will describe the development of the Build Alternatives from the initial project concepts. It will also include a description of the concept screening process. This will include an explanation of how the screening criteria and metrics for those criteria were selected and how they were used to evaluate each of the Proposed Action's concepts, ultimately leading to the recommendation of the Build Alternatives.

6.1.2 ALTERNATIVES ANALYSIS

Similar to the Concept Screening, this section will explain the Alternatives Analysis process that led to the recommendation of the Preferred Alternative. The Alternatives Analysis will begin with a review of the Build Alternatives – as well as the No Action Alternative - and their environmental impacts (to be analyzed within the discipline studies in the EIS, pursuant to 24 CFR 58.5), as well as a comparison of the ability of each to meet the project's Purpose and Need. This section will summarize the Alternatives Screening process which, similar to Concept Screening, will consist of the evaluation of Build Alternatives within a more refined screening matrix. This screening process will lead to the recommendation of the Preferred Alternative.

6.2 PUBLIC INVOLVEMENT

Throughout the course of this NEPA and CEPA processes, the proposed project's Community Engagement Plan (CEP) will be implemented. The CEP is available on the *Resilient Bridgeport* website at www.resilientbridgeport.com. The project website also provides general information on the project and opportunities for the public to get involved in ongoing aspects of this NEPA process. The reader is referred to the website for more information on the proposed public involvement and outreach program for this proposed project. This section of the EIS will summarize relevant public involvement efforts associated with this NEPA/CEPA process.

6.3 TECHNICAL ENVIRONMENTAL STUDIES

Below is a description of the technical disciplines to be reviewed in the EIS/EIE. These sections represent the environmental analysis framework. Each technical discipline section will consist of a characterization of the affected environment, as it pertains to each discipline, followed by a detailed impact assessment for the Build Alternatives as well as the No Action Alternative. The impact assessments will identify impact intensity (i.e., no measurable impact, beneficial impact, or minor/major adverse impact) as well as direct and indirect impacts (i.e., impacts that occur as a direct result from the Proposed Action, or impacts that are caused by the Proposed Action but occur at a later time). The impact assessments will include temporary/ construction impacts as well as long-term impacts from project implementation. If impacts are identified, options for mitigation will be presented.

Detailed Technical Environmental Studies (TES's) will be prepared for disciplines as appropriate. These TES's will be provided as appendices within the EIS document. In order to provide a succinct EIS document, a summary of this technical information will be provided for each discipline discussed below.

The boundary of the Study Area is typically defined by the logical geographic termini, the project purpose and need, and the expected limits of potential impacts. Unless otherwise stated, the Study Area will be encompassed by the following

approximate boundaries: the Pequonnock River and Bridgeport Harbor to the east; the Northeast Corridor railroad to the north; Iranistan Avenue to the west; and Long Island Sound to the south.

A Secondary Study Area will also be established to adequately address potential impacts that may occur beyond the primary Study Area. For example, the Socioeconomics and Environmental Justice disciplines rely on census data, some of which are obtained from census blocks and census tracts. These geographic census data levels may include areas outside of the above-described area. In addition, a buffer of 150 feet beyond the Study Area boundary will be added for the Natural Ecosystems Study Area. This buffer is intended to cover the maximum Wetland Transition Area width associated with potential wetlands that might be identified beyond the Study Area boundary. Furthermore, depending upon the results of the flood model, the Secondary Study Area for some disciplines may be defined to include additional areas of study that may be impacted by the Project.

In addition to the Study Area and Secondary Study Area, the project area will be defined to include the limits of disturbance where work is physically proposed. The project area will be further defined during the concept development and alternatives analysis phases.

6.3.1 LAND USE, ZONING, AND PUBLIC POLICY

A brief development history and trends analysis of the project area will be presented, including a description of recent development trends, potential future growth induced by proposed new flood protections, and foreseeable development initiatives over the planning horizon. The planning horizon is typically defined as 30 years from the completion of the proposed project. Since the proposed project must be implemented by 2022, the planning horizon would extend through approximately 2050 for this analysis.

Land use and zoning in the project area will be mapped and described, and the impacts of the Build Alternatives on these land uses will be characterized. The analysis will also identify open space (local, county, state, and federal parkland) through the use of GIS data layers and field verification. The analysis will also inventory current land uses and zoning regulations. As part of this analysis, view corridors, building character, local landmarks and overall community character will be evaluated. Field reconnaissance surveys and interviews will be conducted to supplement and/or corroborate the findings of public documents, maps, and GIS data.

The EIS will describe the existing and proposed future land use and zoning within the Study Area and examine the impacts of each of the Build Alternatives. This section of the EIS will examine each alternative's consistency with the existing land uses as well as proposed land uses within the project area as described in local master plans (such as the University of Bridgeport Master Plan) and other redevelopment plans. This section will also evaluate the project alternatives' consistency with local and regional land use policies.

6.3.2 SOCIOECONOMIC CONDITIONS

The socioeconomic analysis will include a baseline assessment of current demographic and economic data to better understand the current South End neighborhood. This assessment will identify and describe data on residential populations, ages, incomes, housing types, vacancy rates, and characteristics of the local economy. The principal issues of concern regarding socioeconomics are whether the proposed project would result in significant adverse social, economic, or demographic impacts within the Study Area. Economic impacts for the No Action Alternative will also be assessed. These impacts may include operating losses, lost wages, loss of tax revenue from flooded uninhabitable buildings, and the cost to restore damaged buildings.

In addition, indirect impacts on the project area and regional economy will be assessed. Indirect impacts are those that are caused by the Proposed Action but may occur at a later point in time. Indirect impacts may result from changes in land use patterns, growth rate or population densities, or changes on the built environment from environmental resource areas.

6.3.3 ENVIRONMENTAL JUSTICE

The Environmental Justice (EJ) analysis will focus on low-income, minority, and Hispanic communities pursuant to the requirements of Executive Order (EO) 12898. Under EO 12898, federal agencies are required to determine whether proposed actions (those that are undertaken directly by the agency or are funded or approved by the agency) would have a disproportionate adverse environmental impact on EJ populations. The major steps in the assessment process are as follows:

- Identify the study area

- Compile population characteristics and identify locations with populations of concern for EJ (i.e. low-income and minorities)
- Conduct public outreach
- Identify adverse effects on populations of concern
- Evaluate each considered alternative's effects.

The analysis will evaluate the presence of EJ populations based on the U.S. Census Bureau's 2010 Census of Population and Housing, as well as data from the most recent American Community Survey. Demographic data will be aggregated on the census block, census block group and census tracts for the Study Area and will be compared to Fairfield County and Connecticut as a whole. The analysis of impacts from the Project's Build Alternatives will follow the guidance and methods within the Council on Environmental Quality's Environmental Justice Guidance under the National Environmental Policy Act. (December 1997). An analysis of disproportionately high and adverse effects for each alternative will be prepared, and measures for reducing or mitigating the severity of these impacts, if any, will be presented. If necessary, final mitigation, minimization, or avoidance strategies to address any identified EJ concerns will be developed using input from the community, as appropriate. A project with disproportionately high and adverse effects to EJ populations may only be carried out if further avoidance, minimization, and mitigation measures are deemed not practicable. In determining whether a measure is "practicable," the social, economic, and environmental effects of avoiding, minimizing or mitigating the adverse effects will be taken into account, and the rationale for findings will be documented in the EIS.

The principal focus will be the existing minority and low-income populations in the study area. If any of the Build Alternatives have geographically broader potential impacts (e.g., traffic, air quality, noise), the study area for EJ analysis will be expanded. The EJ analysis will be conducted using the results from the land use, zoning, socioeconomic, air/noise, traffic, water/natural resource, construction, and visual/aesthetic analyses to determine the degree of any direct, indirect, and cumulative impacts on EJ populations.

6.3.4 HISTORIC AND CULTURAL RESOURCES

Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800), requires federal agencies to consider the impacts of their actions on historic properties. Historic properties are defined as above-ground districts, buildings, structures, landscapes, objects, as well as archaeological sites and districts that are listed in or eligible for listing in the National Register of Historic Places (NR). Collectively, historic and archaeological properties are sometimes referred to as cultural resources. Properties identified as National Historic Landmarks (NHLs) are automatically included in the NR and so are subject to Section 106 (as well as other provisions that only apply to NHLs). Because this Project is being funded by the HUD, compliance with Section 106 must be demonstrated.

6.3.4.1 CONSULTATION

The Section 106 process includes consultation between CTDOH (as the responsible entity for the lead federal agency, HUD), and federal agencies, the Connecticut State Historic Preservation Office (CTSHPO), representatives of local governments, and federally recognized Indian tribes that have ancestral or traditional relationships with the project area (36 CFR 800.2(a)(4)). The public and other stakeholders are also included in the consulting process. Consultation documents will be prepared in conjunction with CTDOH. The consultation documents will be distributed to all identified consulting parties early in the process to ensure that all consulting parties are actively involved in the Section 106 process.

6.3.4.2 DEFINITION OF THE AREA OF POTENTIAL EFFECTS

Upon review of the Project's concepts and alternatives, an Area of Potential Effects (APE) will be established for both archaeological and historical resources. This APE will be refined through consultation with the CTSHPO upon the formulation of the Build Alternatives. The APE will include the geographical area within which the proposed Project may directly or indirectly cause changes to the character or use of historic properties. The APE for archaeological resources will be limited to the footprint of project-related ground disturbance, including access roads, construction staging areas, and geotechnical boring areas. The APE for above-ground historic resources includes actions that may result in direct and/or indirect impacts from the project, including visual impacts. The regulations implementing Section 106 require consideration of "possible historic properties not yet identified." Data gaps will be identified, including areas of where the archaeological sensitivity has yet to be assessed and above-ground properties for which NR-eligibility was not evaluated in prior studies. The specific studies to be conducted for archaeological and above-ground historic properties are summarized below.

6.3.4.3 DATA COLLECTION

As part of the data-gathering task for archaeological and historic resources, several repositories will be visited to collect and review prior studies of the Project Area. Primary and secondary sources, prior historic and architectural surveys, archaeological resource reports, environmental studies, and historical maps will be reviewed to characterize the history and archaeology of the Project Area.

The following data-gathering steps are anticipated to be conducted: documentary and site file research at the Dodd Research Center at the University of Connecticut located in Storrs; the CTSHPO, located in Hartford; the Office of the State Archaeologist (OSA), located in Storrs; review of historic maps and local histories available from the Connecticut State Library, located in Hartford; a review of files and information collected and maintained by other local libraries and repositories including the Bridgeport History Center at the Bridgeport Public Library, the Little Liberia exhibit at the Housatonic Community College; and review of online resources to inform the project's land-use history. As part of this task, data will be collected on previously identified historic properties in the Project Area. Multiple National Register-listed districts known to exist within the Project Area include the Barnum/Palliser Historic District; the Marina Park Historic District; the Seaside Village Historic District; and the William D. Bishop Cottage Development Historic District. There are 5 individual historic properties listed in the National Register of Historic Places (NR): the Freeman Houses, Park Apartments, Seaside Institute, Seaside Park, and Tongue Point Lighthouse. As part of the data gathering, studies will be conducted to provide a baseline understanding of the following contexts: precolonial Native American and early historic-period use of the Project Area (archaeological), Maritime, Commercial, Residential, Institutional, Social/Ethnic, Industrial, Houses of Worship, Parks, Lighthouses, Docks, Wharves & Landfill, and Transportation.

6.3.4.4 ARCHAEOLOGICAL (BELOW-GROUND) RESOURCES

As part of the evaluation of archaeological resources, a Phase IA Archaeological Assessment will be conducted to address whether the project construction may affect buried resources. The APE will be stratified into areas of relative archaeological sensitivity based upon previously identified archaeological resources, the cultural history of the surrounding area, and a site-specific land-use history of the Project Area. The results of the Phase IA survey will be summarized in a report that will be submitted to CTSHPO and will include recommendations for more intensive archaeological survey where warranted. The findings of this report will be summarized in the EIS/EIE.

This study will be performed in accordance with the Secretary of the Interior (SOI) Standards and Guidelines for Archaeology and Historic Preservation (48 FR 44716) and the CTSHPO's *Environmental Review Primer for Connecticut's Archaeological Resources*. All archaeological work will be conducted by and/or under the supervision of individuals who meet the SOI Professional Qualifications Standards for Archaeology (48 FR 44738-9).

As part of the Phase 1A effort, the following will be conducted:

- Synthesize background research conducted during data gathering to inform the archaeological sensitivity assessment.
- Evaluate geotechnical boring data as it becomes available, to assess subsurface conditions vis-a-vis archeological resources and identify Existing Conditions.
- Summarize contextual studies focused on both the precolonial and historic use of the Project Area.
- Conduct a pedestrian reconnaissance to visually inspect Existing Conditions in the APE for evidence of archaeological sensitivity. The pedestrian survey will also identify areas of obvious disturbance with little to no archaeological potential.
- Summarize areas of archaeological sensitivity and provide recommendations for future subsurface archaeological testing and/or monitoring in a technical report on Existing Conditions of archaeological resources and areas of archaeological sensitivity.

6.3.4.5 HISTORIC (ABOVE-GROUND) RESOURCES

The historic (above-ground) resources analysis will consider whether construction of the Project would be likely to affect historic above-ground resources within the APE, either directly through construction activities or indirectly through alteration of the physical context or setting of these resources; visual impacts will also be assessed. The following tasks will be undertaken as part of the above-ground resources analysis.

- Synthesize background research to inform assessment of above-ground resources (Maritime, Commercial, Residential, Institutional, Social/Ethnic, Industrial, Houses of Worship, Parks, Lighthouses, Docks, Wharves & Landfill, and Transportation).
- Summarize contextual studies focused on the historic use of the Project Area.
- Conduct a pedestrian reconnaissance to visually identify Existing Conditions in the APE relative to historic resources.
- Within the APE, identify and photograph extant National Register-listed properties as well as properties over 50 years of age that are potentially National Register-eligible. For purposes of this task, it is assumed that the survey may identify up to 50 properties that may be National-Register eligible, either individually or within districts. Provide sufficient information to justify a preliminary recommendation as to NR-eligibility.
- Prepare illustrated report on Existing Conditions of historic properties and potential historic properties.
- Assess potential effects of various project alternatives to National Register-listed and potential National Register-listed properties. Identification of direct and indirect adverse effects on the historic properties in the Project Area is an important part of this analysis, as avoidance, minimization, and/or mitigation of adverse effects to these resources is mandated under Section 106.
- Develop designs that are in keeping with the SOI's Standards for the Treatment of Historic Properties in order to minimize the potential for adverse effects on historic properties.
- If adverse effects are identified, potential mitigation measures will be recommended. As necessary, a memorandum of agreement (MOA) will be drafted for approval by the consulting parties.

6.3.4.6 PUBLIC OUTREACH

Public outreach will be coordinated as required under Section 106, including the distribution of reports to the CTSHPO as well as interested and consulting parties.

6.3.5 URBAN DESIGN AND VISUAL RESOURCES

The existing visual character and quality of the project area will be inventoried, described, and analyzed to establish baseline visual resources. Sensitive view corridors and visual resources within the Study Area, such as the waterfront and views of historic resources such as Seaside Park will be identified. Existing views will be used as the basis for photo-simulations.

Potential impacts the Project may have on visual resources and viewers will be analyzed. As part of this analysis, the level of impact to these resources for each of the Build Alternatives will be determined. The study will also discuss practical design mitigation and enhancement elements for each alternative, in terms of construction and design-related mitigation measures related to bulk, height, scale, and resulting shadows. The discussion will be supported with photo-simulations at various views for each Build Alternative. Potential mitigation scenarios, such as design options to reduce potential impacts on aesthetic resources in the proposed project's view shed, will be assessed and incorporated into the final photo-simulations. Given the nature of visual resource assessment, no analysis or simulation will be performed under the No Action Alternative, as no visual change would result.

6.3.6 HAZARDOUS MATERIALS

The Study Area is in a heavily developed urban setting with land uses ranging from residential to industrial. Contaminated soil is anticipated to be a concern during construction. No acquisitions of private land are anticipated as part of the Project; should it be determined that such acquisitions are required, further investigation into those properties may be warranted. No subsurface testing is included in this evaluation. The need for soil, sediment, and/or groundwater sampling will be determined based on the results of the hazardous waste screening.

A reconnaissance of relevant portions of the Project Area and vicinities will be conducted to obtain a better understanding of the potential soil and groundwater contamination concerns. Additionally, historical aerial photographs for the Project Area and historical US Geological Survey (USGS) maps, as well as Sanborn fire insurance maps for the locations of the Build Alternatives, will be reviewed to understand the history of potential contamination concerns in the Project Area. The properties identified as representing an environmental concern during the review process will be classified according to the

ASTM International's *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* Designation E 1527-13 terminology as follows:

- Recognized Environmental Condition (REC)
- Historical Recognized Environmental Condition (HREC)
- Controlled Recognized Environmental Condition (CREC)

In addition, following the guidance provided by the Connecticut Department of Transportation Division of Environmental Compliance 2010 Task Based Contaminated Soil/Groundwater Scopes, a Task 110 Corridor Land Use Evaluation will be conducted. A Corridor Land Use Evaluation is conducted to determine the potential environmental risks associated with the current and former land uses within the Project Area. This information gathered in this process helps determine the likelihood that soil or groundwater contamination will be encountered during the Project.

The Task 110 process includes a corridor windshield survey and a review of historic sources to determine the current and former uses of each parcel in the Project Area. Historic sources include Sanborn maps, aerial photographs, topographic maps, and city directories, in addition to a review of available information from the municipal assessors records and state and federal environmental databases.

Based on the information gathered, each parcel will be assigned a relative environmental risk of low, moderate, or high, considering the potential likelihood that environmental impacts to the soil and/or groundwater at each parcel may be encountered during the Proposed Project. A report will be prepared summarizing the land use information gathered during the Task 110 process and identifying the risk designation.

As the design of the project concepts and alternatives progresses and the locations and construction requirements for the project elements are further defined through the EIS process (i.e., the concepts are refined and the Build Alternatives are selected), the need for additional hazardous materials assessment, investigation, and analysis will be determined. Each Build Alternative will be evaluated relative to the identified risk levels of each parcel. The Build Alternative locations will be mapped along with the areas of potential soil and groundwater contamination. Alternative evaluation will be based on the remedial status of the parcels and the type and extent of the associated contamination. Based on the evaluation of the Build Alternatives, recommendations will be presented, potentially including additional site investigation, remediation/mitigation, alternative locations for the Build Alternatives, and Best Management Practices (BMPs), and the reasoning for the recommendations.

6.3.7 VIBRATION

With the exception of water pumps and generators to be used during emergencies only, the Proposed Action would not include improvements which would cause end-state operational vibration concerns. However, due to the heavy, though short-term construction activities related to reconstruction within the Study Area, a construction-related vibration analysis will be performed.

An appropriate vibration criteria to use for assessing construction vibration in the community would be identified. HUD does not have any vibration-related guidelines or acceptability criteria. Construction vibration approach and criteria can be found in the FTA's Transit Noise and Vibration Impact Assessment Manual (2006). Two thresholds of vibration impact are considered, the first being potential human annoyance due to building vibration, and the second being potential physical damage to buildings due to excessively high vibration levels. Vibration criteria for human annoyance are provided in decibel units of vertical vibration velocity (VdB), while criteria for potential building damage is provided in units of inches/second for the peak particle velocity (PPV).

Vibration levels in the community associated with construction of the project will be predicted (modeled) at representative receptor locations, and evaluated for acceptability against the vibration criteria limits established above. WSP's proprietary construction vibration model will be used to predict construction vibration levels in the community. The model takes into account the types and locations of heavy equipment to be used, the ground conditions between the vibration sources and the receptors, the land-use and structural integrity of the receptors, and the receptor's coupling efficiency with the ground. Using this model, vibration levels associated with the various stages/phases of construction will be predicted and evaluated for compliance.

If predicted construction vibration levels are anticipated to exceed the project's vibration limits for either human annoyance or potential building damage, then mitigation measures will be considered and recommended for inclusion in the project's construction contracts as a comprehensive performance-based Construction Vibration Control Specification. Vibration

mitigation measures could take the form of time and/or equipment restrictions, use of alternative techniques, receptor building reinforcement treatments, and a means of monitoring construction vibration levels to ensure contractor compliance.

6.3.8 NATURAL RESOURCES

6.3.8.1 FLOODPLAINS, WETLANDS AND RIPARIAN ZONES

Relevant pre-existing data on natural resources in the Project Area will be gathered and/or reviewed, including State and Federal GIS databases of freshwater and coastal wetlands, National Wetlands Inventory (NWI) maps, the best available floodplain maps from FEMA (Flood Insurance Rate Maps), geology maps, and soils maps to identify potential areas of concern and their associated constraints. The existing natural features within the Project Area, including the littoral zone, freshwater wetlands, flood hazard areas, the Mean High and Spring High Water elevations at the waterfront/shoreline and the intertidal/sub-tidal shallows zones, will be identified. Estuarine and marine wetlands are located along the edge of the project area, at Seaside Park's interface with the water.

Executive Order 11990 (Protection of Wetlands) requires federal activities to avoid adverse impacts to wetlands where practicable. Any wetlands present will be delineated along the shoreline of the Project Area and impacts, if applicable, due to a coastal flood risk reduction feature that may be proposed in the Build Alternatives. The potential impacts on natural resources will be assessed, including temporary construction effects. Consultation with CTDEEP or USACE will occur as appropriate.

Mitigation for impacts to tidal waters and any freshwater wetlands will be identified based on the size and type of impacts, available options and likelihood of success.

The projects will comply with Executive Order 11988 (Floodplain Management) and HUD's implementing regulations 24 CFR Part 55 since a portion of the study area is located within the 100-year floodplain, as identified on the FEMA FIRMs. The 8-step decision-making process (§55.20) will be followed to document noticing compliance, including identifying any alternatives to locating the Proposed Project in the floodplain, and any potential impacts associated with occupying the floodplain, along with proposed mitigation measures, as necessary (mitigation may be through project design).

6.3.8.2 TERRESTRIAL ECOLOGY

A request will be sent for a database search to the CTDEEP; the USFWS Information, Planning and Conservation (IPaC) System for records of rare/threatened & endangered (T&E)/special concern species or their habitats in the Project Area will also be reviewed. If T&E/special concern species or habitat records are identified within the Project Area, verification as to whether those resources are present while performing a field assessment of the Project Area, to the extent practicable. These initial surveys will be focused on presence of suitable habitat specific to identified species, as well as any nesting of any migratory birds (i.e., Osprey nest) within the Project Area.

Following the requirements of the Endangered Species Act (ESA), formal consultation with USFWS will be initiated and any requests for additional studies followed. If more detailed studies are required, the CTDEEP will be informed of the need for any studies. If data gaps are identified in the existing, available data, recommendations will be provided as to whether the data is critical for future analysis and how the missing information can best be obtained. The information gathered during the data review process will be included in the EIS/EIE and used in future phases, including the securing of any required permits.

The existing natural resources within the proposed Project Area will be characterized in the EIS/EIE process. These resources will include upland and wetland/in-water habitats, ecological communities, and records of wildlife in the vicinity of the waterfront/shoreline and interior areas that have the potential to be affected by the proposed Build Alternatives.

Impacts to terrestrial resources will be evaluated, such as vegetation clearing activities, as well as visual and/or noise effects on any wildlife in the Project Area. The need for state and/or federal coordination and approvals/permits will be identified, including project evaluation and compliance in terms of Executive Orders 11988 (Floodplain Management) and 11990 (Protection of Wetlands).

6.3.8.3 AQUATIC ECOLOGY

Since there would be no in-water work as part of the proposed Project, no evaluation of direct impacts to aquatic ecology is necessary. However, the Proposed Project may result in construction activities along the shoreline and altered conditions that may indirectly impact aquatic ecology. The National Marine Fisheries Service (NMFS) will be consulted and consideration will be given to potential impacts due to underwater noise exposure and increased runoff and sedimentation.

6.3.9 HYDROLOGY AND FLOODING

Existing hydrologic and hydraulic conditions of water bodies draining within or along the Project Area, as well as existing conveyance infrastructure, will be reviewed. Information from prior hydrologic and hydraulic modeling efforts; analyses; field studies performed in the waterways; and, information from previous reports, including appropriate FEMA Flood Insurance Studies and State/local flood surveys, will be used to document existing conditions.

An improved conditions analyses will be used to determine potential impacts to existing conveyance infrastructure as a result of changes (if any), changes in flood storage, and induced flooding from each of the Build Alternatives. Potential impacts to storm water management and induced flooding due to loss of storage and hydraulic changes will be assessed and documented. In these cases, mitigation measures to eliminate or limit induced flooding will be identified.

Potential coastal flooding impacts as a result of hydrodynamic changes in storm surge propagation will be assessed and documented. Potential impacts include re-direction of storm surge to other coastal areas and increased storm surge elevations.

6.3.10 WATER RESOURCES AND WATER QUALITY

Existing conditions in waterbodies in and adjacent to the project area will be reviewed, including existing water and sediment quality data, as well as sediment transport data. Information from prior mathematical modeling and field studies performed in the waterways, and information from previous reports, will be used to document existing conditions.

Water quality standards and criteria applicable to the project area will be identified, including those related to storm water quality during the construction phase, as well as the operation and maintenance phase, of the proposed project.

Construction impacts of each of the Build Alternatives will be analyzed, including those resulting from erosion and runoff and those resulting from re-suspension of sediments and changes in sediment quality and transport. The impacts of temporary and localized increases in turbidity and suspended sediment concentrations caused by construction site and staging area disturbance will be addressed. This will include application of the criteria set forth by CTDEEP, Section 404(b)(1) of the Federal Water Pollution Control Act (33 USC 1251 I), applicable water quality standards, and storm water discharge permits.

Potential impacts on water quality during construction will be analyzed using methods such as the Revised Universal Soils Loss Equation, Soil Conservation District permit requirements, and the time variable water quality model (MIKE3).

Post-construction storm water runoff water quality will be analyzed under existing and future conditions along with data on the water quality (total suspended solids, nutrients, oil and grease, metals, total organic carbon, and polycyclic aromatic hydrocarbons [PAHs], and MIKE3 model data). Construction impacts will be mitigated in accordance with a storm water management plan, which includes an Erosion and Sediment Control Plan, developed in compliance with storm water discharge permit requirements. The major components of this plan will be summarized in the EIS.

Potential effects and any beneficial impacts on water quality will be estimated, and will be considered in the context of required compliance with Storm Water Management Rules and associated adherence with runoff quality requirements, Soil Erosion and Sediment Control Standards, and storm water permitting. If mitigation is required, types of systems will be recommended for collecting storm water and removing suspended sediment and non-point source pollutants, such as oil and grease, prior to discharge. Mitigation defined Hydraulics and Flooding sections will also be considered for hydraulics and bathymetry.

6.3.11 COASTAL ZONE MANAGEMENT

This section of the EIS will include an assessment of the coastal zones in the Project Area and identify key resources. States with Federally approved coastal programs delineate a coastal zone consistent with common standards determined by the Coastal Zone Management Act of 1972. This act is administered by NOAA to promote management of the nation’s coastal resources. It encourages the management of coastal zone areas and grants funding for maintaining coastal zone areas. Potential impacts on coastal zones resulting from the Build Alternatives will be assessed and documented, and appropriate mitigation measures will be identified.

Each of the Build Alternatives will be assessed with respect to compliance with applicable policies detailed in the Connecticut Coastal Management Program, which constitute the enforceable policies of the Connecticut Coastal Management Act as approved under the Federal Coastal Zone Management Act (16 USC §§ 1451 et seq.). Mitigation requirements for unavoidable impacts to tidal wetlands and intertidal and subtidal shallows will also be addressed as part of Coastal Zone Management compliance and consultation with USACE will occur, if necessary.

6.3.12 INFRASTRUCTURE

6.3.12.1 STRUCTURES

During the course of the Project, existing structures information such as spatial location, type and other applicable features will be collected and documented in CAD basemap. Requests for information will be sent to a variety of sources such as local, state and federal agencies, utility companies, developers, the University of Bridgeport, and others. This information will be screened to ensure that the most recent datasets are included in the CAD basemap. It should be noted that due to security reasons, information on certain critical infrastructure assets that will be assessed in the Project may not be available for public use. The data inventory for the project area may include, critical infrastructure buildings/facilities; power plants; utility substations; and residential and commercial buildings. The best available FEMA mapping will be utilized to understand the flooding risks from coastal storm surge for various types of buildings.

The impacts of flooding due to precipitation and coastal flood on structures will be studied. A watershed-based analysis will be performed considering the potential for flood conditions due to precipitation within the Pequonnock River watershed and adjacent watersheds. Riverine flooding conditions will be integrated into a site-specific coastal and stormwater flood model to evaluate potential for flooding on the Pequonnock River along with coastal flooding. Flood elevations will be considered for present day, along with the future condition taking into consideration sea level rise. As new flood risk reduction measures are planned for the project, including elevated roadways, the impact of flooding to existing structures in both the base case (without flood risk reduction measures) and the conditions under the Build Alternatives will be evaluated.

6.3.12.2 UTILITIES

The availability and location of the infrastructure in the Project Area will be documented. Infrastructure and utilities to be inventoried will include water, sanitary sewer, storm sewer, combined sewers, electricity, natural gas, telecommunications, and fiber optic/cable. As the Proposed Action's engineering progresses, additional information will be incorporated into the infrastructure evaluation. This information will be supplemented by field verification. Potential impacts to local infrastructure resulting from construction and operation of each of the Build Alternatives, as well as the No Action Alternative, will be identified and discussed, including service disruption, displacement, or relocation. The discussion will also include any planned improvements or expansion of infrastructure services, as well as the adequacy and capacity of the infrastructure to support any secondary and cumulative impacts resulting from the Proposed Action. Reasonable and practicable mitigation measures to reduce or eliminate significant project-induced impacts to infrastructure will be identified and discussed.

6.3.12.3 TRANSPORTATION AND CIRCULATION

A schematic plan will be prepared for the local roads and transportation network that may be impacted by both the RBD Pilot Project at Marina Village and the flood risk reduction plans developed under this project for the east side of the South End. A network of up to ten (10) intersections, representing the roadways within the study area to be affected by the project, have been identified. The schematic plan will be a clear and simple presentation of the affected street segments and access routes used by various travel modes, including buses, pedestrians and bicycles. It will also display important city destinations that generate significant traffic demand such as parks, arenas, transportation hubs and major private and public offices.

Intersection traffic volume data for vehicles, pedestrians, and bicycles will be manually collected for a typical weekday morning, afternoon and Saturday midday peak periods at each of the study intersections. Related traffic, signal and travel data will be obtained from city staff and transit/shuttle service providers. Transit data will include public transportation services and facilities in the Study Area. Transit (fixed route) data will be collected from Greater Bridgeport Transit (GBT) and compiled. The plan will include detailed traffic data (modal volumes by direction, ridership for transit) for each of travel modes. Input will be solicited from GBT, school bus service providers, emergency service providers, Input received from these stakeholders will also be presented in the schematic plans.

Synchro/SimTraffic traffic analysis models will be prepared for the project roadway network for use in evaluating the traffic impacts that can be expected during operations of each of the Build Alternatives. A similar detailed traffic analysis will be prepared to assess traffic performance during construction staging (including mitigation measures) for the worst case Build Alternative. The Synchro model will be developed based on the collected vehicle, pedestrian and bicycle data as well as roadway configuration (existing and future conditions), intersection and traffic control data received from City staff. The model will be used to generate appropriate traffic performance measures that can inform the decision process under the Feasibility Assessment stage and the Design Development stage. Relevant data will be included in the EIS/EIE.

The development of future forecasted volumes (Future Design Year) for the Build Alternatives is essential to determining the level of service and overall impact of the proposed configuration changes. A future traffic volume network will be developed using background growth rates as per CTDOT traffic forecasting regional model and consideration for future planned development projects within the study area. The future forecasted volumes will then be imported into SYNCHRO model for traffic operational analysis. Practical roadway and traffic measures will be developed for the Build Alternatives to mitigate any traffic impacts resulting from the Proposed Project. Impacts to ingress/egress from the Study Area will also be examined as it relates to business impacts and emergency services.

Construction activities under the Proposed Project will likely require the need to close off a travel lane, a travel direction or a street segment under certain stages of construction. Such traffic impacts will affect motorized and non-motorized traffic including buses (fixed route and school buses) and commercial vehicles, and will require mitigation to the extent possible. To that end, a Transportation Management Plan will be developed to ensure that affected users, including travelling public (passenger vehicles), trucks, as well as emergency services, are informed of traffic impacts related to construction work before and during commencement of construction activities, appropriate mitigation measures including BMPs will be developed and implemented in coordination with the City of Bridgeport to minimize inconvenience and delays, and schedules of lane or street closures are reviewed and approved by local officials beforehand.

6.3.13 PUBLIC SERVICES

Community facilities and public services in the project area will be identified and described. Field reconnaissance surveys and interviews will be conducted to supplement or corroborate the findings of public documents and maps. Community facilities include schools, churches, libraries, institutional residences, hospitals, municipal buildings, senior/civic centers, and health care facilities, as well as public services such as police, ambulance, and fire stations. Any future or planned community facilities will also be identified to evaluate their potential interactions with the Build Alternatives. The potential impacts on community facilities and public services in the project area as a result of the Build Alternatives will be identified and analyzed. In addition, impacts to emergency services will also be assessed. This may include disruptions to emergency services caused by construction activities, as well as potential impacts caused by the implementation of the Proposed Action. Effects of the No Action Alternative will also be addressed. Reasonable and practicable mitigation measures to reduce or eliminate significant project-induced impacts related to community facilities and public services will be identified and discussed.

6.3.14 NOISE

Excessive noise emissions from the project could occur during the end-state operational phase but are more likely to occur during the construction phase of the project. End-state noise sources might include water pumps, generators and emergency egress traffic. These would be temporary inconveniences that are exempt from regulatory requirements due to the emergency nature. Consideration will be given to changes in noise from traffic as a result of elevating roadways.

Construction noise, however, could impact the community if not adequately assessed, controlled and managed. The construction noise approach and criteria in FHWA's Roadway Construction Noise Model (RCNM) and related handbook will be used. RCNM's approach and criteria are derived from the successful construction noise control program that was implemented during the Central Artery/Tunnel Project in Boston, more commonly known as the Big Dig. Its noise criteria limits take into account land-use, time of day/night, and existing ambient noise levels. Noise limits are further differentiated by the type of construction noise being produced, be it continuous noise assessed with the L10 noise metric, or impulsive noise assessed with Lmax noise metric.

Existing ambient noise levels will be measured simultaneously at up to five (5) representative community noise receptor locations. The measurements would involve deploying long-term automated noise monitors for a period of one week. The noise monitors would comply with calibration and accuracy requirements contained in ANSI Standard S1.4, and be programmed to measure and digitally store noise data including Leq, Lmax, Lmin, L1, L10, L50, L90 and Ldn metrics in hourly intervals expressed in A-weighted decibels (dBA). The specific locations of the receptors will be selected prior to mobilization in concurrence with project officials. The results of the ambient noise monitoring exercise will be used to establish appropriate construction noise criteria limits at the representative receptor locations.

Noise levels in the community associated with construction of the project will be predicted (modeled) at the representative receptor locations, and evaluated for acceptability against the noise criteria limits established above. The Cadna-A model, augmented with the construction equipment noise emission database from the RCNM model, will be used to predict construction noise levels in the community.

The Cadna-A model is a sophisticated, three-dimensional, acoustical ray-tracing model that implements the algorithms contained in ISO Standard 9613 for the prediction and propagation of outdoor sound levels. This method of using Cadna-A augmented with RCNM is the current state-of-the-art method for predicting construction noise. Noise levels associated with the various stages/phases of construction will be predicted and evaluated for compliance.

If predicted construction noise levels are anticipated to exceed the proposed project's noise limits, then mitigation measures will be considered and recommended for inclusion in the proposed project's construction contracts as a comprehensive performance-based Construction Noise Control Specification. Noise mitigation measures could take the form of time and/or equipment restrictions, use of alternative quieter techniques, use of noise barriers, mufflers and enclosures, installation of building soundproofing treatments, and a means of monitoring construction noise levels to ensure contractor compliance.

6.3.15 AIR QUALITY

Bridgeport is located within Fairfield County, which is an ozone (O_3) nonattainment area, as well as a maintenance area for carbon monoxide (CO) and particulate matter smaller than 2.5 microns ($PM_{2.5}$). All other criteria pollutants are in attainment within Fairfield County. Existing air quality levels documented by CTDEEP and EPA monitoring stations will be addressed within the EIS/EIE. EPA regulations relating to the Clean Air Act (CAA) require that federal actions conform to the appropriate state, tribal or federal implementation plan (SIP, TIP, or FIP) for attaining clean air (Transportation Conformity or General Conformity).

Mobile-sources of air emissions will not be created by the proposed project, although roadways will be realigned as part of the proposed project. As such, Transportation Conformity will be addressed with regards to the potential impacts of moving traffic closer to sensitive receptors (i.e., residential, commercial and institutional structures). This will include screening analyses for CO, $PM_{2.5}$, as well as an MSAT qualitative analysis. It is currently assumed that detailed micro-scale modeling will not be required for Transportation Conformity.

Furthermore, since the project will likely require federal permits, it will be subject to the General Conformity requirements. The General Conformity analysis will require that emissions of non-attainment pollutants conform to the SIP during construction and operation. The General Conformity analysis will examine potential operational emissions of the project (i.e., non-emergency stationary sources such as diesel-fueled pumps or generators), as well as the construction emissions of the project (which will be based upon construction schedule and equipment). Emission burdens will be compared to the applicable General Conformity thresholds for non-attainment pollutants (O_3 precursors, CO and $PM_{2.5}$).

6.3.16 GREENHOUSE GAS EMISSIONS (GHG) AND CLIMATE CHANGE

Global climate change is an important environmental challenge facing the world today, and human activity is one of the drivers affecting it. Research on this topic has been well-documented in reports by the United Nations Intergovernmental Panel on Climate Change (www.ipcc.ch), US Climate Change Science Program's Science Synthesis and Assessment Products, and the US Global Change Research Program. This section will discuss the potential for the Proposed Project, through GHG emissions, to affect climate change, as well as the potential implications of climate change for the environmental effects of the Proposed Project.

The Council on Environmental Quality released final GHG guidance for federal agencies on how to consider GHG in their NEPA reviews in August 2016. Although this final guidance was revoked in March 2017 by the current administration, the analysis of GHG continues to be included in many major transportation projects.

The analysis conducted in this section will be an extension of the air quality analysis performed as part of the EIS/EIE. This section will document the emission levels of GHGs associated with the Proposed Project in the form of CO_2e, or carbon dioxide equivalents. This section will estimate the CO_2e emissions from the Proposed Project. A discussion of alternatives and their ability to effect GHG emissions will be presented. The EIS will include a review and assessment of mitigation measures applicable to the Proposed Project, including calculations of the projected reduction in GHG emissions that could result from each mitigation measure.

In addition, this section of the EIS/EIE will discuss whether the Proposed Project has the potential to increase the vulnerability of the area and ecosystem to specific effects of climate change, such as increasing sea level or causing ecological changes in the future. Existing inland and tidal flood conditions will be evaluated.

6.4 CUMULATIVE IMPACTS

As required by NEPA and CEQ regulations (40 CFR Part 1508.7), the EIS analysis will include an examination of cumulative impacts associated with each of the Build Alternatives and the No Action Alternative. Cumulative impacts are incremental actions that, individually, may not represent a significant environmental impact; however, when taking into consideration with other past, current, proposed, or reasonably foreseeable actions with similar impacts at the same time and in the same space, the overall result may be significant. Often, individual actions do not result in adverse impacts; instead, adverse impacts arise from the aggregated incremental impacts of many separate actions over the course of time. The cumulative impacts analysis will identify other nearby past, current, proposed, and in-development independent projects. To determine which projects will be included in this analysis, CEQ's guidance on cumulative impacts, which identifies the following steps, will be followed:

- Step 1: Determine the significant cumulative impacts (direct and indirect) from the proposed project. For each discipline of study, determine which resources (natural as well as the built environment) would be affected.
- Step 2: Establish the geographic scope. Determine the spatial extent of the impacts identified in Step 1.
- Step 3: Establish the time frame for analysis. Determine how long the impacts identified in Step 1 would last (e.g., temporary during construction or permanent impacts).
- Step 4: Identify other actions affecting the resources, ecosystems, and human communities of concern. Identify other projects within the geographic extent identified in Step 2 that have impacts on the resources identified in Step 1, whose own impacts would occur within the same timeframe as those resources established in Step 3.

An identification of nearby past, current, proposed, and in-development independent projects will be conducted based on a desktop review of information from various online sources, such as news articles, local master plans, and planning documents, and consultation with State and local agencies, including the City of Bridgeport's Planning and Zoning Departments. In general, projects and activities within the immediate South End study area (south of I-95) would be used for the cumulative impacts analysis, as past, present, and reasonably foreseeable future projects within this area are most likely, in concert with the proposed project, to contribute to cumulative effects. The list of projects will be monitored and updated throughout the course of this NEPA process to include relevant projects that may contribute cumulative effects.

The cumulative effects analysis will consider the probable environmental impacts from other projects and evaluate them in conjunction with the anticipated direct and indirect impacts from the considered Build Alternatives and the No Action Alternative. Focus will be on potential impacts to vulnerable communities, notably including EJ areas and locations that have historically received significant amounts of flooding. The proposed project's impacts on flooding will be examined in conjunction with other independent projects' impacts on flooding patterns (identified through the steps above). Particular attention will be paid to whether adjoining areas not protected by the proposed project will be adversely impacted by the proposed project and other independent projects. The analysis will consider other independent projects to help identify and address possible impacts. Ultimately, the analysis will compare the potential cumulative effects of each Build Alternative and the No Action Alternative on each technical resource area, informing the identification of a Preferred Alternative. If adverse cumulative impacts are identified, this analysis will identify potential mitigation measures that can be employed or incorporated into the design of the specific alternative to mitigate these effects.

6.5 CONCLUSION

The EIS/EIE conclusion will consist of a summation of the findings of each of the technical studies, identifying and providing the reasoning for the recommendation of the Preferred Alternative. This recommendation will be based on the alternatives analysis conducted for each discipline, taking into consideration a balance between constraints, including environmental and community impacts identified in each discipline, the anticipated cost of each alternative, engineering feasibility, and the ability to meet the Project's Purpose and Need.