

| Action # | Action Title | Action Description | Mitigation Goal | Mitigation Category | Hazard(s) Addressed | Estimated Cost | Potential Funding Source | Lead Department | Implementation Schedule | Priority | Current Status | Current Status Description/Explanation | Updated Action Title/Description (if applicable) | |
|----------|---|---|---------------------------------|-------------------------------------|--|--|--|---|---|-----------|-----------------------------------|--|--|--|
| 1 | Long Wharf Flood Protection | A structural coastal storm risk management system along the seaward embankment of I-95 including approximately 5,800 linear feet of flood wall with a top elevation of 15 feet NAVD, deployable flood gates at the on/off ramps and underpasses, and a pump station. | Flood Hazards | Structure & Infrastructure Projects | Coastal Flood; Sea Level Rise | \$130-160 million | ACOE funds, state and local bond funds | Engineering Department, Parks Department | Design 2023-2024 Construction 2025-2029 | High | Partially Completed / In Progress | Design partially complete, NEPA submissions under review | | |
| 2 | Quinnipiac River riprap repairs | Repair of existing riprap and seawall. | Flood Hazards | Structure & Infrastructure Projects | Coastal Flood | \$300,000 | Capital improvement | Parks Department | To be implemented upon completion of the Grand Avenue Bridge Rehabilitation Project | Very High | Partially Completed / In Progress | Preliminary design is complete; currently identifying funding sources for implementation upon completion of the Grand Avenue Bridge rehabilitation project | | |
| 3 | Lighthouse Point Park Carousel Building Floodproofing | Floodproof existing Carousel Building to higher elevation in park to eliminate any future flooding of building. | Flood Hazards | Structure & Infrastructure Projects | Coastal Flood | \$1- \$2 million | FEMA HMA (BRIC, HMGP, FMA); HUD CDBG-DR | Parks Department | TBD | Low | Delayed | Will be planned after the Lighthouse Point Park Carousel Building Floodproofing Study is completed. | | |
| 4 | City Point Flood Mitigation Measures Implementation | Implement recommendations of City Point flood mitigation study. | Flood Hazards | Structure & Infrastructure Projects | Coastal Flood | >\$5,000,000 | FEMA HMA (BRIC, HMGP, FMA); HUD CDBG-DR | TBD | TBD | Low | Partially Completed / In Progress | Initial stakeholder discussions ongoing | | |
| 5 | CSO Clean Water Fund projects | Several projects as identified in the 2018 plan are still to be completed, including: 3. Union Street and East Street Pump Station Upgrades 4. Yale Campus Trumbull Street Area Sewer Separation Phase 2A | Flood Hazards | Structure & Infrastructure Projects | Coastal, Riverine, and Urban Flood | \$145,200,000 (total) | Multiple: CWF/Blended Grant Loans/ Sewer Living Loans (see note above under estimated costs). | GNHWPCA | 2022-2023 | Very High | Partially Completed / In Progress | Projects #1, #2, #5, and #6 are completed. Projects #3 & #4 are in final design and moving toward implementation in 2022/23 | | |
| 6 | Mill River | Implement recommendations of the Mill River planning study that forecast storm surge and sea level rise within the Mill River Industrial District and then to assess three coastal zone management approaches: natural attenuation, intensive infrastructure investment and a balance of new infrastructure with attenuation. English Station and John Murphy Drive are highest priorities. | Flood Hazards | Structure & Infrastructure Projects | Coastal and Riverine Flood | >\$5,000,000 | FEMA, USACE, and others | Board of Alders with Engineering, Public Works, City Plan, and Economic Development | 2023-2028 | Very High | Delayed | Evaluating recommendations and seeking funding | | |
| 7 | Dam failure drill with Regional Water Authority | Work with Regional Water Authority to complete a drill of potential failures of the West River, Whitney, and Matby Dams which are all located upstream of the City. | Regional Collaboration | Emergency Preparedness | Dam Failure | Less than \$5,000 per year | Operating budget | Emergency Management | 2023-2028 | Very High | Completed + To Be Continued | Underway, continuous yearly. | | |
| 8 | Implementation of CRS Program for Public Information | The City Plan Department must ensure that the City makes progress in the many action items in the PPI. Emergency Management will coordinate and lead Public Information Meetings at public libraries within Quinnipiac, East Shore and City Point neighborhoods to review the CRS rating system, the city's flood mitigation strategies, and flood preparedness. | Public Education & Preparedness | Education & Awareness Programs | Coastal Flood; Sea Level Rise | Less than \$5,000 per year | Operating budget | City Plan and Emergency Management | 2023-2028 | Very High | Completed + To Be Continued | Underway, continuous yearly. | | |
| 9 | River Street Bulkhead | Shoreline stabilization along city property to prevent further erosion along the Quinnipiac River including sections of steel bulkhead and revetments with public access. | Flood Hazards | Structure & Infrastructure Projects | Coastal Flood; Coastal Erosion; Sea Level Rise | \$400,000 | Analysis and design budget is \$342,000; Construction budget is \$3 million (preliminary) | CDBG-DR for analysis and design/TBD for construction | Economic Development Administration | TBD | High | Delayed | Design complete; seeking funding. Ongoing litigation regarding design has stalled the project. | |
| 10 | Morris Cove Drainage Improvement Project | Redirection of existing drainage to improve conveyance of stormwater flow. | Flood Hazards | Structure & Infrastructure Projects | Coastal and Urban Flood | \$400,000 | Capital improvement | Engineering Department | 2023-2024 | High | Partially Completed / In Progress | Design is underway | Revise timeline to have end date of 12/2024 | |
| 11 | Fort Hale Park drainage outlet rehabilitation | Restoration and silt removal from an existing drainage channel. Requires access to the Armed Forces Reserve Center but would solve a drainage problem for residents near the USCG facility. | Flood Hazards | Structure & Infrastructure Projects | Coastal and Urban Flood | In kind from DEEP to dredge outlets as part of mosquito control. | Capital improvement | Parks Department | Design and implementation schedule contingent on funding source. | High | Delayed | Need identified and feasibility assessed. Design and implementation schedule contingent on funding source (to be determined). | | |
| 12 | Lighthouse Point Park Carousel Building Floodproofing Study | Conduct feasibility study to floodproof Carousel building to higher elevation in park to eliminate any future flooding of building. | Flood Hazards | Structure & Infrastructure Projects | Coastal Flood; Sea Level Rise | \$50,000 | Operating budget | Parks Department | TBD | High | Delayed | In the process of developing scope of work. | | |
| 13 | Fort Hale Park shoreline stabilization | Install riprap and other shoreline stabilization measures. | Flood Hazards | Structure & Infrastructure Projects | Coastal Flood; Coastal Erosion; Sea Level Rise | \$225,000 | Capital improvement | Parks Department | TBD | High | Delayed | In the process of determining project manager to conduct site assessment and develop scope of work. | | |
| 14 | City Point Flood Mitigation Study | A study to prepare storm surge and sea level rise model for the City Point area to assess risk and propose protection and resilience strategies. | Community Planning | Local Plans & Regulations | Coastal Flood | \$425,000 | FEMA GMA (BRIC, HMGP, FMA); HUD CDBG-DR; USACE | City Plan | TBD | High | Delayed | City Plan and Engineering are collaborating on community engagement and outreach to determine scope of the study. | | |
| 15 | Fair Haven Resiliency Study and Concept Design | Assist CIRCA with execution of the study and concept design. | Flood Hazards | Local Plans & Regulations | Coastal Flood; Coastal Erosion; Sea Level Rise | \$300,000 | CIRCA MRG; CT DEEP Climate Resilience Fund; Municipal | City Plan and Engineering | 2022-2023 | High | Completed + To Be Continued | Study & Design Complete. | | |
| 16 | Fair Haven Resiliency Study -Implementation | Pursue federal funding to implement the results of the Resilient Connecticut project for Fair Haven. | Flood Hazards | Structure & Infrastructure Projects | Coastal Flood; Coastal Erosion; Sea Level Rise | TBD | FEMA GMA (BRIC, HMGP, FMA); CT DEEP | City Plan and Engineering | 2024-2025 | High | Partially Completed / In Progress | Study & Design Complete, implementation phase underway | | |
| 17 | Port Resilience Project | Work with CIRCA to determine whether the Port resilience opportunity area identified by Resilient Connecticut should be scoped for project development. | Community Planning | Local Plans & Regulations | Coastal Flood | TBD | CIRCA MRG; CT DEEP Climate Resilience Fund; Municipal | City Plan, CIRCA | 2023-2028 | High | Delayed | In the process of developing scope of work. | | |
| 18 | East Shore Park Living Shoreline | Living Shoreline solutions are being studied, including segmented sills with low marsh fill and plantings, reducing slope at existing shoreline, removal of phragmites and improving public access to the waterfront. Construction to follow. | Flood Hazards | Natural Systems Protection | Coastal Flood; Coastal Erosion; Sea Level Rise | Approximately \$4,000,000 | Municipal Operating Budget; CIRCA MRG; CT DEEP Climate Resilience Fund; Municipal Operating Budget | Engineering Department, Parks Department | 09/2020 - 12/2025 | High | Partially Completed / In Progress | Design partially complete, NEPA submissions under review | | |
| 19 | Long Wharf Park Living Shoreline | Living Shoreline solutions are being studied, including segmented sills with low marsh fill and plantings, reducing slope at existing shoreline, removal of phragmites and improving public access to the waterfront. Construction to follow. | Flood Hazards | Natural Systems Protection | Coastal Flood; Coastal Erosion; Sea Level Rise | Approximately \$4,000,000 | Municipal Operating Budget; CT DEEP | Engineering Department, Parks Department | 09/2020 - 12/2025 | High | Partially Completed / In Progress | Design partially complete, NEPA submissions under review | | |
| 20 | Coastal Resilience Plan | Update the City's 2006 Municipal Coastal Plan; Investigate best practices in addressing and mitigating the impacts of sea level rise and climate change; Develop list of adaptation and resilience methods (i.e. infrastructure improvements; shoreline protection; adaptive reuse; flood damage prevention modifications; zoning regulations modifications; allow inland migration; improve ordinance enforcement and inspection; strengthen and consolidate flood plan coordinator role, etc.). | Flood Hazards | Natural Systems Protection | Coastal Flood; Coastal Erosion; Sea Level Rise | TBD | CIRCA MRG; CT DEEP Climate Resilience Fund; Municipal Operating Budget | City Plan, Engineering Department, Emergency Management, Building Department | 2023-2024 | High | In progress | Kicking off in June 2022 with anticipated completion in May 2023. | | |
| 21 | Green Ordinance Update | In order to more effectively implement the goals set forth in the New Haven Climate and Sustainability Framework, the City Plan Department is prioritizing updating the standards of existing "green ordinances" in the New Haven Zoning Ordinance (i.e. flood development permit, stormwater management, reflective heat impact, coastal site plan regulations, bike parking criteria, etc.) and incorporating new ordinances to encourage environmentally mindful development (LEED certification incentives; transit-oriented development districts; permitted encroachments for rain barrels, compost piles, alternative energy systems; solar power, etc.). Anticipated updates to the existing ordinance include increasing stormwater retention requirements for site plan applications. | Flood Hazards | Natural Systems Protection | Coastal Flood; Coastal Erosion; Sea Level Rise | TBD | CIRCA MRG; CT DEEP Climate Resilience Fund; Municipal Operating Budget | City Plan, Engineering Department, Food System Policy | 2022-2023 | High | In progress | Green Ordinance working group assembled; determining scope | | |
| 22 | New Haven Inland and Coastal Flood Resiliency Project | Advance preliminary design of new 10-foot diameter outfall pipe, outfall structure, and local drainage connections to final design and construct these improvements. Long Wharf Living Shoreline is part of this project as well (see Action #19). | Flood Hazards | Structure & Infrastructure Projects | Coastal Flood; Inland Flood | \$32.5 million | FEMA HMA (BRIC, HMGP), CT DOT, LOTIP, Local Capital | City Engineering | 2023 - 2026 | Very High | In progress | Have been selected for a FEMA BRIC grant to assist in funding remaining design, permitting, and construction of this project. Under review now, if granted, would have 6 months to complete design and permitting and 2.5 years for construction. Long Wharf Living Shoreline is part of this project as well. | | |
| 23 | Harbor District Dry Egress | Building off of the Long Wharf Responsible Growth Plan, making improvements to the public ROW to provide dry egress above the 100-year base flood elevation for this planned district. | Flood Hazards | Natural Systems Protection | Coastal Flood | \$8-10 million | TBD | City Engineering | 2023 | High | Delayed | Design was started and grant applications were submitted. Currently on hold. | | |
| 24 | Westville Flooding | Flooding of sanitary sewer system through manholes at West Rock Ave and Whalley. Project in initial engineering study stages to understand inflows and develop mitigation strategies. Short-term capacity improvements at intersection are needed. | Flood Hazards | Structure & Infrastructure Projects | Urban Flood | TBD | CIRCA MRG, CT DEEP | City Engineering | 2023 - 2028 | Very High | In progress | Some initial study of inflows underway. Applying for DEEP grant to advance | | |
| 25 | Westville Resilience Project | Work with CIRCA to determine whether of the Westville affordable housing resilience opportunity area identified by Resilient Connecticut should be scoped for project development. | Community Planning | Local Plans & Regulations | Urban Flood | TBD | CIRCA MRG, CT DEEP | City Plan | 2023 - 2028 | High | Delayed | No progress. | | |
| 26 | Quinnipiac Ave Culvert | Existing culvert that frequently overtopped and flooding road during storm events. Needs maintenance and repair/increase size. | Flood Hazards | Structure & Infrastructure Projects | Urban Flood | TBD | FEMA, HMA, IIA / AOP; CT DEEP, Municipal CIP | City Engineering | 2023 - 2028 | Very High | Delayed | No progress. | | |
| 27 | 2022 Long Term Control Plan (LTCP) Update | Implementation of additional Resiliency Projects identified/recommended in the 2022 LTCP Update. | Community Planning | Local Plans & Regulations | Coastal Flood; Urban Flood | Study/Update \$600,000, implementation costs to be determined. | CWF/Blended Grant Loans/FEMA | GNHWPCA | Plan to be completed 2022, Projects to be undertaken within 5 years | Very High | In progress | Study/Update contracted to 3rd party and is currently in process. | | |
| 28 | WW Pump Station Forecmain Resiliency | Build forcemain resiliency for wastewater pumping stations discharges to assure continued services during emergencies. | Flood Hazards | Structure & Infrastructure Projects | Coastal Flood; Urban Flood; Emergency Weather Events | \$30,000,000 | CWF/Blended Grant Loans/FEMA | GNHWPCA | 2024 pending funding and investigations | High | Delayed | Funding and investigations pending. | | |
| 29 | Wind Borne Debris Region Wind Retrofits | Retrofit critical wastewater facilities located in the Wind Borne Debris Region to meet latest recommendations and building codes | Community Planning | Structure & Infrastructure | Erosion | \$1,200,000 | CWF/Blended Grant Loans/FEMA | GNHWPCA | 2022 - 2024 | High | In progress | Planning. Implementation may need to be stretched pending funding | | |
| 30 | Floodplain Ordinance Update | Update floodplain ordinance to align with building code. | Community Planning | Local Plans & Regulations | Coastal Flood; Urban Flood | N/A - Staff Time | Municipal Operating Budget | City Plan | 2022 - 2024 | High | In progress | Amended version adopted and additional changes in progress. | | |