Legal Options for Municipal Climate Adaptation in South Boston: An Example for Connecticut Coastal Jurisdictions

Nicole Rinke[1] and Sarah Fort[2]

Abstract: The City of Boston has been a leader in considering options to address climate change adaptation and has been working with Harvard Law School's Emmett Environmental Law & Policy Clinic (ELPC) to identify potential strategies that may be employed to address sea level rise and other climate change impacts within the City. While the legal landscape, both at the municipal and state level, differs between Massachusetts and Connecticut, Connecticut municipalities can learn and borrow from the efforts in Boston to inform their own adaptation initiatives. With permission of the ELPC, this paper borrows heavily from a white paper others at ELPC wrote for Boston in 2010/2011. The current paper discusses how several strategies the ELPC has identified for Boston could be modified and employed by jurisdictions in Connecticut.

I. Introduction

Municipalities in Connecticut, like many municipalities in other coastal states, are beginning to look seriously at their options for adapting to climate change. Climate change impacts in the northeastern United States will include sea level rise, rising temperatures, and increased storm events.[3] As municipalities in Connecticut consider their options for climate change adaptation, they can learn and borrow from the efforts of other jurisdictions.

The City of Boston has been a leader in considering measures for climate change adaptation for nearly a decade and has been working with Harvard Law School's Emmett Environmental Law and Policy Clinic (ELPC) to identify and implement a range of municipal strategies. In August 2011, the Clinic

[1] Nicole Rinke graduated from the University of California at Berkeley School of Law in 2001 and has since practiced environmental, land use, and natural resource law and policy. Between June 2011 and June 2012, Ms. Rinke was a clinical instructor/staff attorney in the Harvard Emmett Environmental Law & Policy Clinic. Prior to that, Ms. Rinke served as the General Counsel for the Tahoe Regional Planning Agency, the bi-state Congressionally approved agency responsible for the management of Lake Tahoe's environment.

[2] Sarah Fort graduated with honors from Harvard Law School in 2012. As a student, Ms. Fort focused on environmental law and local government law. During the fall of 2011, Ms. Fort was enrolled in the Harvard Emmett Environmental Law & Policy Clinic and focused her research on integrating climate change impacts into environmental impact review processes. Beginning in the fall of 2012, Ms. Fort will serve as a law clerk for the Honorable F. Dennis Saylor IV.

[3] *See generally*, THE NORTHEAST CLIMATE IMPACTS ASSESSMENT SYNTHESIS TEAM, CONFRONTING CLIMATE CHANGE IN THE U.S. NORTHEAST: SCIENCE, IMPACTS AND SOLUTIONS (2007), *available at* http://www.northeastclimateimpacts.org/pdf/confronting-climate-change-in-the-u-s-northeast.pdf.

published a paper describing legal options for municipal climate adaptation specifically for South Boston – an area of Boston that will be heavily impacted by sea level rise (the "ELPC White Paper").[4] Many of the strategies ELPC identified for Boston are replicable in Connecticut, either at the municipal or state level. By looking at these examples, Connecticut jurisdictions can begin to develop their own tools for adaptation and develop a model for how they may borrow from the strategies being employed elsewhere.

This paper will begin with an introduction to climate change adaptation in Boston. It will then discuss several of the strategies that ELPC proposed for Boston and how those strategies could be used in Connecticut municipalities including: (1) zoning and specifically the use of overlay zones; (2) the imposition of resilient building design standards via zoning; (3) development review; (4) procurement; and (5) wetlands regulations. Although this represents only a small subset of the numerous strategies ELPC identified for Boston, these examples provide a useful model for how jurisdictions might borrow from and tailor the strategies being used in other jurisdictions to adapt to climate change.

II. Climate Change Adaptation in Boston[5]

Climate change is already occurring in the Boston metropolitan region and is projected to produce increasingly serious consequences over the course of this century. The magnitude of these impacts will depend on the climate change mitigation measures adopted around the world. Even with aggressive cuts in greenhouse gas emissions, however, some changes in Boston's environment are inevitable.

Climate change is expected to cause approximately 2.5 to 5 feet of sea level rise in Boston Harbor by the end of the century.[6] This will lead to saltwater intrusion and inundation of many low-lying areas and coastal resources that currently provide flood protection. More frequent and more intense storms are likely to compound the problems caused by sea level rise and lead to greater coastal flooding and erosion.[7]

These changes are expected to affect many aspects of Boston's residential, commercial, and industrial development as well as its transportation, water, waste, and communications infrastructure. For example, large portions of the City are located on filled lands situated at low elevations that are vulnerable to sea level rise and to flooding from storm events. Similarly, the increase in stormwater runoff resulting from increased precipitation could raise pollution levels in coastal waters, affecting opportunities for public recreation at beaches and on waterways. Climate-related changes are also expected to impact public health. Water pollution will increase exposure to carcinogens and E. coli bacteria, and saturated buildings will increase exposures to mold, bacteria, and allergens.[8]

In March 2009, Mayor Menino established the Boston Climate Action Leadership Committee and Community Advisory Committee (the "Committees") to begin to address climate change adaptation.

---

[4] WENDY B. JACOBS, LEAH R. COHEN, AND JENNIFER MCGRORY, HARVARD LAW SCHOOL EMMETT ENVIRONMENTAL LAW & POLICY CLINIC, LEGAL OPTIONS FOR MUNICIPAL CLIMATE ADAPTATION IN SOUTH BOSTON (2011), *available at* http://www.law.harvard.edu/academics/clinical/elpc/publications/climate-adaptation-final_8-25-11.pdf (hereinafter ELPC WHITE PAPER).

[5] This section borrows heavily from the ELPC WHITE PAPER, *id.* at 4-6.

[6] Ellen Douglas and Chris Watson, *The Rising Tide in Boston: Sea Level Rise and Coastal Flooding due to Climate Change*, presentation at the Boston Harbor Sea Level Rise Forum (Nov. 9-10, 2010). Two and a half and five feet of sea level rise represent two different low- and high-range scenarios of sea level rise by 2100. However, the plausible range of sea level rise for Boston Harbor may be greater. *Id.*

[7] UNION OF CONCERNED SCIENTISTS, CONFRONTING CLIMATE CHANGE IN THE U.S. NORTHEAST: MASSACHUSETTS, 2-3 (2007), *available at* http://www.climatechoices.org/assets/documents/climatechoices/massachuetts_necia.pdf.

[8] *See, e.g.*, PHOEBE CHANG, THE EFFECTS OF COASTAL STORMS, SEA LEVEL RISE AND BASEMENT FLOODING IN EAST BOSTON (2010) (unpublished paper, on file with ELPC).

The Committees were charged, in part, with evaluating the risks from sea level rise and other consequences of climate change and recommending actions for the City and its residents to take to reduce these risks. The Committees issued their final report, entitled *Sparking Boston's Climate Revolution*, in April 2010.[9] The City reported on its work on those recommendations in its 2011 Climate Action Plan update, *A Climate of Progress*.[10]

In addition to publishing its paper, Harvard Law School's Emmett Environmental Law & Policy Clinic and its students (collectively, the "Clinic") are assisting the City with its ongoing efforts to adapt to the impacts of sea level rise and more frequent and more intense storms in Fort Point Channel and South Boston.[11]

III. Adaptation in Connecticut – Applying Strategies from Boston

Connecticut has also been proactive in recognizing the importance of and preparing for climate change adaptation. In December 2008, the Governor of Connecticut formed the Adaptation Subcommittee of the Governor's Steering Committee on Climate Change.[12] The subcommittee released a report in 2010 analyzing the impacts of climate change on various sectors throughout the state[13] and is in the process of developing a preparedness plan.[14]

Connecticut municipalities can learn and borrow from the strategies Boston is considering to adapt to climate change. While the framework of municipal and state law varies slightly in Connecticut from Massachusetts and specifically Boston, many of the strategies that apply in Boston can be adapted to the legal framework in Connecticut. For example, although some variations will be required, the strategies that the Clinic developed for Boston regarding (1) zoning and the use of overlay zones; (2) zoning and the imposition of resilient building design standards; (3) development review; (4) procurement; and (5) wetlands regulations, can be implemented, to some degree, in Connecticut at the state or jurisdictional level. While these are the only strategies discussed here for adoption in Connecticut, others identified by the Clinic in the ELPC White Paper may also warrant consideration. These examples, however, provide a useful starting point for exploring adaptation options in Connecticut and establishing a model for how Connecticut may be able to adapt the strategies being employed in other jurisdictions.

---

[9] BOSTON'S CLIMATE ACTION LEADERSHIP COMMITTEE AND COMMUNITY ADVISORY COMMITTEE, SPARKING BOSTON'S CLIMATE REVOLUTION (2010), *available at* http://www.cityofboston.gov/Images_Documents/Sparking%20Bostons%20Climate%20Revolution%20Summary%20Report_tcm3-16527.pdf.

[10] CITY OF BOSTON, A CLIMATE OF PROGRESS: CITY OF BOSTON CLIMATE ACTION PLAN UPDATE 2011 (2011), *available at* http://www.cityofboston.gov/Images_Documents/A%20Climate%20of%20Progress%20-%20CAP%20Update%202011_tcm3-25020.pdf.

[11] ELPC WHITE PAPER, *supra* note 4.

[12] *See* Connecticut Climate Change, http://ctclimatechange.com/index.php/adaptation/ (last visited June 11, 2012).

[13] THE ADAPTATION SUBCOMMITTEE OF THE GOVERNOR'S STEERING COMMITTEE ON CLIMATE CHANGE, IMPACTS OF CLIMATE CHANGE ON CONNECTICUT AGRICULTURE, INFRASTRUCTURE, NATURAL RESOURCES AND PUBLIC HEALTH (2010), *available at* http://ctclimatechange.com/wp-content/uploads/2010/05/Impacts-of-Climate-Change-on-CT-Ag-Infr-Nat-Res-and-Pub-Health-April-2010.pdf.

[14] *See* Connecticut Climate Change, GSC Adaptation Subcommittee, http://ctclimatechange.com/index.php/ct-happenings/gsc-adaptation-subcommittee/ (last visited June 11, 2012).

A. Zoning – Overlay Zones

Although the degree differs by state, municipalities generally have relatively strong zoning power. The Boston Zoning Enabling Act empowers Boston to zone for public health and safety.[15] Pursuant to this authority, Boston can leverage its zoning power to adapt to climate change. Specifically for South Boston, the ELPC White Paper recommends that the City expand its use of overlay zones.[16]

Overlay zones are special zoning districts that supplement traditional zoning to protect a specific resource across zones. Boston already utilizes overlay zones to protect groundwater and to promote improvements to stormwater runoff. Specifically, the City of Boston has adopted a Groundwater Conservation Overlay District (GCOD) to "prevent the deterioration of … groundwater levels" and "to reduce surface water runoff and water pollution."[17] The current overlay zone applies to several areas in Boston, but within South Boston it only applies to the Fort Point Waterfront district.[18] Given the predictions of sea level rise and increased storm events, ELPC recommended that Boston expand the scope of its groundwater protection zones to cover additional areas that are anticipated to be impacted by climate change and sea level rise.[19]

In addition, Boston could apply more rigorous standards to the Fort Point Waterfront District. Under the current standards for the GCOD, proposed projects within the Fort Point Waterfront District are subject to less stringent standards than projects proposed within other parts of the GCOD. While projects elsewhere in the GCOD must demonstrate the ability to capture at least one inch of rainfall across the covered area of the property, proposed projects in Fort Point must only demonstrate that the project results in no negative impact to groundwater levels on the project site and adjacent lots.[20]

Municipalities in Connecticut could likewise adopt overlay zones to protect groundwater and improve stormwater management. Like Boston, Connecticut municipalities enjoy traditional police powers and several towns, such as Newton and North Stonington, have already adopted overlay zones to provide for enhanced groundwater protection.[21] The use of these zones could be expanded to cover additional areas that are likely to become more susceptible to high water and to provide enhanced opportunities for infiltration and groundwater management.

Notably, Connecticut municipalities have also been specifically empowered to zone for coastal protection via the Coastal Management Act (CMA).[22] Adopted in 1980, the CMA specifically provides for the use of overlay zones to advance coastal protection.[23] Several Connecticut municipalities, such as

---

[15] An Act Authorizing the City of Boston to Limit Buildings According to Their Use or Construction to Specified Districts, 1956 Mass Acts ch. 665.
[16] ELPC WHITE PAPER, *supra* note 4, at 25.
[17] Boston, Mass., Zoning Code, Art. 32 § 1, *available at* http://www.bostonredevelopmentauthority.org/zoning/downloadZone.asp.
[18] *Id.*, Appendix A, *available at* http://www.bostonredevelopmentauthority.org/pdf/ZoningCode/Maps/groundwater_overlay_zoning.pdf .
[19] ELPC WHITE PAPER, *supra* note 4, at 25.
[20] *Id.* at 26.
[21] Campion v. Board of Aldermen of City of New Haven, 899 A.2d 542, 551 (Conn. 2006) (discussing the two potential sources of zoning authority in Connecticut); Town of North Stonington, Zoning code, Section 1104 (Aquifer Protection Overlay Area), *available at* http://www.northstoningtonct.gov/Pages/NStoningtonCT_BC/PZ/zoningregs/SECTION1100.pdf; Town of Newton, Zoning Regulations, Art. II, Sec. 1 (Aquifer Protection District), *available at* http://www.newtown-ct.gov/public_documents/newtownct_zoneregs/zoning#ARTICLE2.
[22] CONN. GEN. STAT. §§ 22a-90 – 22a-111.
[23] *Id.* § 22a-103.

Stonington and Greenwich, have already adopted coastal overlay zones.[24] These zones can be increased in extent and standards within them changed to address issues associated with climate change and sea level rise in coastal areas.

B. Zoning – Resilient Building Design Standards

Another important strategy for climate change adaptation is the imposition of resilient building design standards. Unfortunately, the effectiveness of this approach might be limited because many of the strategies municipalities might be interested in to adapt to climate change will relate to the regulation of structures rather than to the regulation of land use and, therefore, may be preempted by state building codes. In order to employ this strategy, then, local jurisdictions must carefully consider and navigate potential preemption issues.

In Massachusetts, the structural and mechanical elements of buildings are governed by the State Building Code and local jurisdictions are preempted from regulating in the same arena.[25] In the context of climate change strategies, the line between building regulations and land use regulations is not always clear. For example, freeboard, which simply refers to elevating a building above base flood elevation, is a popular adaptation strategy in coastal areas.[26] It would seem that freeboard, like provisions regarding density and massing of buildings, would be within the purview of the zoning power. However, in Massachusetts, the Attorney General's office has opined that local jurisdictions are preempted from regulating freeboard by the State Building Code.[27]

A similar tension exists in Connecticut between the building code and municipal zoning regulations. The State Building Code governs building and fire safety and applies to all municipalities throughout the state.[28] Municipalities are preempted from passing ordinances that deal with the same subject matter as the building code.[29] On the other hand, municipalities are empowered to pass zoning ordinances regulating land use including the size, height, location and density of structures.[30] Although the zoning power is broad and includes public health and safety,[31] in certain instances the scope of zoning power and the subject matter of the building code might overlap and be subject to

[24] Greenwich Municipal Code, Div. 9, Sec. 6-111 (Coastal Overlay Zone), *available at* http://greenwichct.virtualtownhall.net/Public_Documents/GreenwichCT_LandUse/regulations/pzRegsDivision09.pdf; Town of Stonington Zoning Regulation, Sec. 7.3 (Coastal Area Management Overlay District), http://www.stonington-ct.gov/Pages/StoningtonCT_Planning/regs/ZR_E23_7_1_11.pdf.

[25] Enos v. City of Brockton, 236 N.E.2d 919, 921 (Mass. 1968).

[26] *See* Storm Smart Coasts, Massachusetts, Using Freeboard to Elevate Structures Above Predicted Floodwaters, http://ma.stormsmart.org/before/regs/using-freeboard-to-elevate-structures-above-predicted-floodwaters/ (illustrating freeboard and the impact on insurance rates) (last visited June 12, 2012).

[27] *See* Letter from Thomas F. Reilly, Attorney General, to Bonnie T. Pena-Andrade, Falmouth Town Clerk, re: Falmouth Fall Annual Town Meeting of November 13, 2001 — Case # 1921 (Mar. 15, 2002), *available at* www.mass.gov/ago/docs/municipal/1000/mlu-1921.rtf.

[28] CONN. GEN. STAT. § 29-253(a); *see also* State of Connecticut Attorney General's Opinion No. 92-023 (Aug. 20, 1992), *available at* http://www.ct.gov/ag/cwp/view.asp?A=1770&Q=281352.

[29] Pisani v. Old Lyme Zoning Bd, 2002 WL 1446643, at *4 (Conn. Super. Ct. June 3, 2002).

[30] CONN. GEN. STAT. § 8-2(a).

[31] *Id.* ("Such regulations shall be designed to lessen congestion in the streets; to secure safety from fire, panic, flood and other dangers; to promote health and the general welfare; to provide adequate light and air; to prevent the overcrowding of land; to avoid undue concentration of population and to facilitate the adequate provision for transportation, water, sewerage, schools, parks and other public requirements"); *see also*, 9 Conn. Prac., Land Use Law & Prac. § 4:9 (3d ed. 2006).

preemption.[32] Municipalities in Connecticut, like municipalities in Massachusetts, will therefore have to carefully consider preemption issues when considering modifications of their zoning requirements to better account for climate change.[33]

C. Development Review

Boston reviews projects proposed within the City for compliance with the zoning code and to ensure that any impacts they may have on the environment are mitigated.[34] This allows the City to identify and address impacts that may not be squarely addressed in substantive zoning requirements, but may nevertheless pose important impacts to the surrounding environment and community.

Specifically, Article 80 of the Zoning Code requires the Boston Redevelopment Authority (BRA) to review the effect of the design of any proposed development on the surrounding community, including its impacts on the environment and tidelands.[35] Article 80 does not explicitly require consideration of sea level rise or other climate-related impacts. Nevertheless, in order to comply with the Mayor's directive, the Boston Redevelopment Authority and the Boston Environment Department have begun to address climate change impacts, particularly sea level rise, through the City's design review process.

For example, in its comments on the Seaport Square Project in 2008 the City asked the project proponent to discuss adaptation to climate change.[36] In response, the Environmental Impact Report (EIR) included a discussion of several measures incorporated into the design of the project to address climate change effects, including sea level rise, storm surge, heat waves, and droughts.[37] Similarly, the Spaulding Rehabilitation Hospital, which recently relocated to a waterfront location at the Charlestown Navy Yard, gave considerable weight to projections of sea level rise in its design decisions.[38] Spaulding's design team acknowledged the project's vulnerability to sea level rise and, as a result, raised the base elevation of the building, relocated sensitive uses from the ground floor to upper levels, and utilized

---

[32] *See, e.g.*, *Pisani*, 2002 WL 1446643 at *4 (recognizing the potential overlap between zoning and building safety and questioning whether the underlying administrative action brought the building code and the zoning regulations into conflict). *See also*, AG Opinion No. 92-023, *supra* note 28 (discussing preemption of local municipal ordinance regulating fire safety by state building code).

[33] *See e.g.,* AG Opinion No. 92-023, *supra* note 28 (State Fire Safety Code and State Building Code preempt the field and municipalities do not have the authority to require fire sprinklers).

[34] *See* Boston, Mass., Zoning Code, Article 80 (Development Review and Approval), *available at* http://www.bostonredevelopmentauthority.org/pdf/ZoningCode/Article80.pdf.

[35] BOSTON REDEVELOPMENT AUTHORITY, A CITIZEN'S GUIDE TO DEVELOPMENT REVIEW UNDER ARTICLE 80 OF THE BOSTON ZONING CODE 7 (2004), *available at* http://www.bostonredevelopmentauthority.org/PDF/Documents/A%20Citizens%20Guide%20to%20Article%2080.pdf.

[36] EPSILON ASSOCIATES, INC., SEAPORT SQUARE DRAFT PROJECT IMPACT REPORT, *Boston Environment Department Comments on the PNF and Responses to Comments* § 9.4.4 (2009), *available at* http://seaportsquare.com/PDFS/DPIR_EIR/9-ResponsetoComments.pdf.

[37] EPSILON ASSOCIATES, INC., SEAPORT SQUARE FINAL PROJECT IMPACT REPORT, § 2.7: *Climate Change/Sea Level Rise* (2010), *available at* http://seaportsquare.com/PDFS/DPIR_EIR/Submittal-FEIR-6-30-2010.pdf. The BRA approved Seaport Square in September 2010 after the project passed Article 80B Large Project Review. BRA, *Seaport Square*, http://www.bostonredevelopmentauthority.org/DevelopmentProjects/devprojects.asp?action=ViewProject&ProjectID=1305 (last visited June 12, 2012).

[38] EPSILON ASSOCIATES, INC., SPAULDING REHABILITATION HOSPITAL DRAFT ENVIRONMENTAL IMPACT REPORT/DRAFT PROJECT IMPACT REPORT, 4-84 and 4-143 (2010).

windows that could be opened rather than sealed so that rooms could be naturally ventilated in the event of a climate change-related mechanical failure.[39]

The ELPC has proposed a framework for Boston that would formalize the inclusion of adaptation issues into environmental review. Specifically, ELPC has suggested an amendment of the City's Design Review Guidelines to ask project applicants to identify climate change impacts that can be expected to affect a proposed project and in turn affect the project's impact on the surrounding environment. Many municipalities in Connecticut also have design review processes that could allow, or be amended to allow, the consideration of climate change impacts.[40] In addition, in the coastal zone, municipalities are required to conduct environmental reviews to specifically address impacts to coastal resources.[41] Pursuant to the Connecticut Coastal Management Act (CMA), all proposed projects in the coastal zone must submit a plan that includes an evaluation of beneficial and adverse impacts to the municipal board for review and approval.[42] The board can only approve a project if it makes written findings that the plan incorporates all reasonable measures to mitigate any adverse impacts of the proposed activity on coastal resources.[43] In conducting CMA reviews, municipalities can and should incorporate climate change impacts into their review of projects and the examples from Boston provide a good template for how that review might occur.

D. Procurement

Procurement policies are a powerful way for municipalities to incorporate adaptation measures into public purchasing decisions and to influence behavior in the private sector by making the market more sensitive to adaptation. In Boston, the Mayor has directed the City to incorporate climate change impacts into its procurement decisions.[44] Hence, the City mandates the use of environmentally friendly cleaning products and practices[45] and the City developed Environmentally Preferable Procurement (EPP) guidelines[46] relating to building maintenance and operations.[47] The approach provides a useful model for similarly incorporating climate change adaptation into environmental review.

The EPP guidelines state that although environmentally preferable materials may initially be more costly, departments are entitled to, and should, consider complete life-cycle costs including acquisition, warranties, operation, supplies, maintenance, insurance and other liability, and disposal.[48] EPP products often have a higher purchase price than their less efficient counterparts, but can save money over their lifetime, because they use less energy, often have a longer life, and typically incur less maintenance cost. These elements must be built into the bid to be factored in the award.[49] Each

---

[39] *Id.* at 4-143.

[40] *See e.g.* Code of the Town of Wethersfield, Article XXVII (Design Review Advisory Committee), *available at* http://wethersfieldct.com/government/code-regulations/design-review.

[41] CONN. GEN. STAT. § 22a-105.

[42] *Id.* § 22a-105(c).

[43] *Id.* § 22a-106(d).

[44] CITY OF BOSTON, AN ORDER RELATIVE TO CLIMATE ACTION, ¶ 5 (April 13, 2007), *available at* http://www.cityofboston.gov/Images_Documents/Clim_Action_Exec_Or_tcm3-3890.pdf.

[45] CITY OF BOSTON, AN ORDER RELATIVE TO GREENING CITY BUILDING MAINTENANCE & OPERATIONS 1 (July 3, 2008), *available at* http://www.cityofboston.gov/Images_Documents/EO_GreeningCityOps_tcm3-2732.pdf.

[46] CITY OF BOSTON, ENVIRONMENTALLY PREFERABLE PROCUREMENT, *available at* http://www.cityofboston.gov/Images_Documents/GreenProcurementPolicy_tcm3-14276.pdf.

[47] *See* CITY OF BOSTON, AN ORDER RELATIVE TO GREENING, *supra* note 45, at 2-3.

[48] *See* CITY OF BOSTON, ENVIRONMENTALLY PREFERABLE PROCUREMENT, *supra* note 46, at 6.

[49] *Id.* Although the purchasing of goods is centralized with Boston's Purchasing Department, procurement for services is decentralized and handled by individual departments. *Id.* at 5.

department is responsible for implementing the EPP policies and for ensuring that its procurement decisions are consistent with EPP.[50] While the City must generally award a contract to the lowest cost bidder, only the lowest cost bidder who meets the specified criteria is eligible for the contract.[51]

The ELPC has drafted a procurement policy for the City's consideration that draws on and expands the EPP. Notably, the ELPC proposal incorporates life cycle cost analysis into the process. The inclusion of life cycle costs in the City's procurement is a powerful tool for climate change adaptation because, as with environmentally preferable products, it would allow the City to account for the fact that some adaptive decisions might have higher initial costs, but may ultimately cost less over the life span of the project or contract. Connecticut jurisdictions can similarly adopt or encourage the State to adopt procurement policies to encourage the incorporation of climate change adaption into the public purchasing process.

E. Wetlands Regulations

Wetlands are an important resource in combating and adapting to climate change as they provide flood control and stormwater management. Massachusetts adopted a Wetlands Protection Act (WPA) to protect wetlands statewide.[52] Municipalities have the authority to enact their own wetlands regulations that go beyond the established level of protection at the state level.[53] Boston has not yet adopted more protective wetlands regulations, but ELPC has submitted a draft ordinance for the City's consideration. The proposed ordinance suggests that the City expand the area of wetlands protected by the WPA by expanding the definition of "land subject to coastal storm flowage," which is protected by the WPA, based on lands in the existing floodplain as well as lands that will be in the floodplain as sea level rises. It also suggests that the City consider protecting buffer zones around land subject to coastal storm flowage in order to provide additional protection for these areas.

In Connecticut, the State has exclusive jurisdiction over the permitting and regulation of development in tidal wetlands. In 1972, Connecticut adopted provisions to separately protect tidal wetlands and inland wetlands. While it provided for municipal regulation of inland wetlands, it retained exclusive state jurisdiction over the permitting of development in tidal wetlands.[54] Nevertheless, local jurisdictions may be able to indirectly exert control over coastal wetlands via their authority under the CMA.

---

[50] *Id.* at 6.

[51] In Massachusetts, a contract for services must generally be awarded via an invitation for quotes (IFQs), an invitation for bids (IFBs), or a request for proposals (RFPs). Under the IFQ and IFB processes, the contract must be awarded to the qualified vendor offering the best price. MASS. GEN. LAWS c. 30B, §§ 4(b), 5(g). If a Department utilizes the RFP process, it awards the contract to the bidder offering the most advantageous proposal, which may not represent the lowest cost. MASS GEN. LAWS. ch. 30B, § 6(g). Under either scenario, a department's discretion to reject a bid is based largely (RFPs) or entirely (IFQs, IFBs) on the criteria specified in the bid. *See generally* OFFICE OF THE INSPECTOR GENERAL, THE CHAPTER 30B MANUAL: LEGAL REQUIREMENTS, RECOMMENDED PRACTICES, AND SOURCES OF ADVICE FOR PROCURING SUPPLIES, SERVICES, AND REAL PROPERTY (6th ed., 2011), *available at* http://www.mass.gov/ig/publications/manuals/30bmanl.pdf.

[52] MASS GEN. LAWS. ch. 131, § 40.

[53] Golden v. Board of Selectmen of Falmouth, 265 N.E.2d 573, 576 (Mass. 1970); *see also*, Lovequist v. Conservation Comm'n of the Town of Dennis, 393 N.E.2d 858 (Mass. 1979) (holding that Town's wetlands bylaw imposing more stringent standards than the WPA was validly enacted pursuant to its Home Rule authority).

[54] *See* CONN. GEN. STAT. §§ 22a-30 and 32; *c.f.* CONN. GEN. STAT. § 22a-42 (expressly requiring municipal regulation of inland wetlands). *See also* Lauricella v. Planning & Zoning Bd. of Appeals of Town of Greenwich, 342 A.2d 374, 380 (Conn. Com. Pl. 1974) ("The state has preempted all authority over our tidal wetlands.").

The CMA authorizes coastal municipalities to amend their zoning regulations to provide for the enhanced protection of coastal resources and to approve site plans for proposed development within the coastal boundary. Although the State has held that it retains authority over site plans for wetlands development,[55] municipalities can supplement the level of protection provided to coastal wetlands at the state level via additional land use controls that indirectly protect tidal wetlands, such as by adopting setbacks, requiring buffers, requiring infiltration, or limiting impervious coverage near wetlands.[56] In addition, municipalities could petition the State to amend the state law governing tidal wetlands to expand the zone designated as coastal wetlands, to grant municipalities authority to enact more stringent rules, or to tighten the restrictions that apply to coastal wetlands.

IV. Conclusion

Climate change adaptation presents local jurisdictions with unique planning challenges that can only be met with equally creative solutions. Boston and municipalities within Connecticut will be facing many of the same challenges as climate change becomes an increasing reality. While certain differences exist between the legal framework in Connecticut and in Massachusetts, many of the strategies Boston has available to it may be deployed in Connecticut jurisdictions. While only providing a few suggestions, this summary provides a model for how Connecticut municipalities may be able to draw from the work in other jurisdictions as they move forward with developing their own approaches to adaptation.

[55] *See* Office of Long Island Sound Programs Fact Sheet for State and Municipal Regulatory Jurisdictions, *in* CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION, CONNECTICUT COASTAL MANAGEMENT MANUAL (2000), *available at* http://www.ct.gov/dep/lib/dep/long_island_sound/coastal_management_manual/manual_08.pdf.

[56] For a complete list of suggestions for municipal protection of wetlands, *see* Office of Long Island Sound Programs Fact Sheet for Tidal Wetlands, in CONNECTICUT COASTAL MANAGEMENT MANUAL, *supra* note 55.