LARGE BUILDINGS AND INSTITUTIONS DRAFT				New or Existing	Status	Metrics and Milestones	Implementer
1. Buildings & Energy						**- Energy use and GHG emissions of LBI sector buildings**	
Strategy 1.1	**Maintain and expand energy efficiency programs**	**Action Title**	**Action Description**			**- Square footage enrolled in City and utility energy efficiency programs - GHG reduction in enrolled LBI buildings**	
1.11	Energy-efficiency programs in Boston are coordinated by Renew Boston, a partnership between the City, energy utilities, and service providers. Under Strategy 1.1, the City will expand upon RenewBoston's successful energy-efficiency programming by working to develop specific new incentives and connecting more buildings into efficiency programs. The City will work closely with multiple stakeholders to implement these actions, including the utilities, third-party organizations, state agencies, financing entities, and building owners. Buildings in the LBI sector will in turn benefit from targeted outreach, better connections to utility programs, new financing mechanisms, and new incentives for equipment replacement and efficiency in commercial tenant space. Together, these actions will allow buildings to take greater advantage of energy efficiency opportunities.	Expand Engagement for Targeted Efficiency	Engage third-party organizations to target opportunities for energy efficiency in LBI buildings, and communicate to utilities when permits are issued for building renovations	New	In Progress	- Implementation of a system to communicate permitting updates to utilities - LBI square footage engaged in utility efficiency programs	- ENV, ISD, business organizations, institutional networks, NStar, National Grid, Veolia
1.12		Support Financing for Energy Efficiency	Assess and address LBI energy efficiency financing needs, and, at the state level, support on-bill utility financing and C-PACE programs	New	Not Started	- LBI square footage enrolled in energy efficiency financing programs	- ENV, Commonwealth, financial institutions
1.13		Facilitate Equipment Upgrades	Work with utilities to incentivize replacement of inefficient equipment before end-of-life, and facilitate the bulk purchasing of efficient equipment	New	Not Started	- Development of an early-replacement program - Development of a bulk purchasing program	- ENV, NStar, National Grid, businesses and institutions
1.14		Develop Tenant Fit-Out Incentives	Work with utilities to identify efficiency incentives for the fit-out of commercial tenant space	New	Not Started	- Development of a tenant fit-out program	- ENV, NStar, National Grid, businesses and institutions
1.15		Develop Oil Heat Efficiency Program	Work with the Commonwealth to develop a program for oil heat efficiency, including, for example, a fuel oil surcharge to provide funding	Existing	Not Started	- Fuel oil use in the LBI sector	- ENV, Commonwealth, businesses and institutions
Strategy 1.2	**Engage and facilitate voluntary energy efficiency action**	**Action Title**	**Action Description**			**- Square footage committed to deep reduction - GHG reduction in enrolled LBI buildings**	
1.21	The City will encourage energy efficiency action in the LBI sector by recognizing deep GHG reductions and conducting targeted outreach to building stakeholders. In particular, efficiency in tenant spaces is an important area of focus. In addition, the City will help facilitate learning within sectors, so that successful examples can be communicated to peer organizations.	Expand Recognition of Deep Reductions	Use programs like the Carbon Cup to recognize organizations that achieve deep GHG reduction goals, including those that adopt Boston's climate goals as their own	New	In Progress	- Participating square footage - Square footage in LBI sector that has adopted city goal as its own - Resulting EUI reduction of participating buildings	- ENV
1.22		Engage Tenant Efficiency	Encourage and recognize efficiency in tenant spaces	New	Not Started	- Tenant square footage enrolled	- ENV, businesses
1.23		Expand Engagement for Voluntary Efficiency Actions	Encourage energy-efficient actions, such as purchasing high-efficiency equipment and nightly lighting shut-off	Existing	In Progress	- Development of a targeted messaging program	- ENV, businesses and institutions
1.24		Facilitate Peer-to-Peer Learning	Enable institutions within each sector to learn about successful efficiency work, through, pilots, workshops, and case studies	New	In Progress	- Plans for each sectoral network to conduct regular dialogue and case studies; expansion of networks	- ENV, businesses and institutions, networks in each sector
1.25		Identify Incentives for Load Shifting	Work with utilities to develop incentives for thermal and battery storage, to shift peak-hour demand	New	Not Started	- MW of load-shift projects in Boston	- ENV, NStar
1.26		Conduct Audit Outreach	Work with LBI organizations to encourage their staff and students to do home energy audits	New	Not Started	- Number of audits resulting from this outreach channel	- ENV, businesses and institutions
1.27		Lead by Example on GHG Reduction	Explore raising the 2020 municipal GHG reduction goal, and accelerate installation of efficient street lighting	New	Not Started	- Municipal greenhouse gas emissions and goals	- ENV, Public Works, Property Management
Strategy 1.3	**Pilot high performance buildings**	**Action Title**	**Action Description**			**- Number of buildings in Boston achieving high performance standards**	

1.31	Over the past few years, the City has helped pilot homes that are net-zero, meaning that they generate as much energy as they use. Looking ahead, the Commonwealth has established a vision of having all new buildings be net-zero in 2030. To lead these efforts, Boston will work to pilot net-zero buildings across different sectors. In addition, to pilot high-performance standards, the City will explore establishing climate model districts where new buildings will be required to meet advanced energy and preparedness standards.	Pilot Net-Zero Buildings	Utilize incentives, vacant City land, and current programs for pilots of net-zero buildings across different sectors	New	In Progress	- Number of net zero buildings in Boston	- BRA, ENV, developers
1.32		Explore Climate Model Districts	Examine the potential for districts with comprehensive high performance and preparedness requirements for new buildings	New	Not Started	- Designation of climate model districts, prior to site master planning	- BRA, ENV
Strategy 1.4	**Facilitate innovation in energy efficiency**	**Action Title**	**Action Description**			**- Launch of energy innovation initiatives**	
1.41	In addition to fostering the implementation of current energy efficiency solutions, Boston can also faciliate innovation in this field. Faculty at the region's many architecture and engineering schools can play an important role in researching new building technologies. In addition, the City will bring stakeholders together to test new approaches to green leasing - commercial leases in which both the landlord and tenant benefit from an energy-efficient building. Finally, the City will also identify incentives for the deployment of cool roof technologies.	Pilot New Building Technologies	Work with utilities to incentivize pilots of building technologies, and engage with Boston-area faculty on research	New	Not Started	- Development of a strategy for pilots	- ENV, NStar, National Grid, developers, universities
1.42		Explore Green Leasing	Work with LBI stakeholders to examine green leasing strategies	Existing	In Progress	- Dialogue and strategy developed with LBI stakeholders, and increased uptake of green leasing	- ENV, businesses
1.43		Identify Incentives for Cool Roofs	Incentivize cool roofs on new buildings and green roof retrofits in order to mitigate urban heat islands	Existing	In Progress	- Development of an incentives approach	- ENV, businesses and institutions
Strategy 1.5	**Implement energy codes and reporting requirements for existing buildings**	**Action Title**	**Action Description**			**- Improvements in code enforcement - Efficiency actions taken by BERDO-covered buildings**	
1.51	The Commonwealth is responsible for developing building energy codes, including the stretch code, which is a more advanced alternative that Boston has adopted. Boston needs to ensure that current codes are well-enforced, and that the next stretch code will encompass renovation and tenant fit-out, both of which would be key to improving the efficiency of existing buildings. The City also continues to implement the Building Energy Reporting and Disclosure Ordinance, and, by 2019, many buildings covered by the ordinance will be required to either conduct an energy assessment or conduct building energy upgrades. The results of these five years can help inform the need for retrofit requirements.	Ensure Implementation of Energy Codes	Improve enforcement of current codes through training of inspectors	Existing	In Progress	- Implementation of a training program for inspectors	- ENV, ISD
1.52		Work with the Commonwealth on New Stretch Code	Ensure that stretch code includes standards for building renovation and tenant fit-out	New	In Progress	- Inclusion of renovation and tenant fit-out in the new stretch code	- ENV, businesses
1.53		Connect Energy Reporting into Efficiency Programs	Continue to implement the Building Energy Reporting and Disclosure Ordinance, and connect reporting buildings with Renew Boston	Existing	In Progress	- EUI reduction by BERDO-covered buildings after five years	- ENV
1.54		Evaluate Utility of Potential Retrofit Ordinance After 2019	Study results of first five years of BERDO-required assessments and actions to evaluate if a retrofit ordinance would be useful	Existing	Not Started	- EUI reduction by BERDO-covered buildings after five years	- ENV
1.55		Retrofit Municipal Buildings	Implement all cost-effective energy efficiency measures	New	In Progress	- Municipal building energy use - Square footage of retrofitted municipal space	- ENV, BPS, Property Mgmt., others
Strategy 1.6	**Increase requirements for new buildings**	**Action Title**	**Action Description**			**- EUI of new buildings built in Boston**	
1.61	Boston's new buildings will need to use significantly less energy in order for the city to achieve emissions reduction goals. In addition to pilots of high-performance and net-zero buildings, building requirements need to set a higher standard for energy performance. This will include LEED requirements, potential performance-based requirements that are oriented towards net-zero, and solar-readiness standards. As transportation is a major	Study Expansion of Article 37 LEED Requirements	Examine lowering size threshold for LEED requirement, raising LEED standard to Silver, or both	Existing	Not Started	- Article 37 expanded in scope	- BRA
1.62		Evaluate Performance-Based Standards for Net-Zero Goals	Explore the role of energy-use intensity standards, with goal of net-zero new buildings by 2030	New	Not Started	- Evaluation of performance-based standards developed	- ENV, BRA
1.63		Require New Buildings to Be Solar-Ready	Develop specific standards requiring that new buildings can accomodate solar installation, with flexibility for site suitability	Existing	Not Started	- Enactment of a solar-readiness requirement - MW of solar in LBI sector	- ENV, BRA

1.64	component of the city's emissions, Boston's new buildings will also have to foster sustainable transportation choices for workers and residents.	Explore Increased Municipal LEED Requirements	Explore requiring new municipal buildings to achieve LEED Gold	Existing	Not Started	- Enactment of new standards	- ENV, Property Management, BPS
1.65		Require New Large Buildings to Facilitate Low-Carbon Transportation Choices	Develop requirements for new buildings to foster biking, transit, walking, and car sharing options for workers	New	Not Started	- Enactment of a standard for new large buildings	- ENV, BRA
Strategy 1.7	**Expand onsite renewable energy, district energy and CHP**	**Action Title**	**Action Description**			**- Total BTU of these energy sources**	
1.71	In addition to becoming more efficient, Boston's buildings need to transition to more renewable energy and away from the on-site combustion of oil and gas. To address this, the City will promote and lead by example on the installation of on-site renewable energy and CHP systems that provide combined on-site heat and electricity generation. In addition, many large buildings in Boston are connected to a district steam network, providing efficient, centralized heating and cooling. Expansion of these networks and the creation of new district-level energy networks can provide a significant improvement in energy use and GHG emissions.	Address Grid Issues	Work with utilities and state to address problems of interconnecting renewables into the grid, focusing on downtown grid	Existing	In Progress	- Strategy developed in conjunction with utilities	- ENV, NStar
1.72		Promote On-Site Combined Heat and Power and Renewables	Encourage commercial CHP, solar, and ground-source heat pumps	New	Not Started	- MW of renewable and CHP capacity installed on LBI buildings	- ENV, businesses and institutions
1.73		Facilitate the Expansion of District Energy	Expand district heating, cooling, and microgrids, through district-level planning and a potential requirement for new large buildings to study costs and benefits of connection	New	In Progress	- Square footage utilizing district energy - MW and kBTU of district energy generation	- ENV, BRA, Veolia, National Grid, NStar
1.74		Expand Municipal Installation of Renewables, CHP, and District Energy Connections	Evaluate feasibility for all municipal buildings, and install solar where possible	Existing	In Progress	- MW installed on city buildings	- ENV, Property Management, others
Strategy 1.8	**Move to cleaner, low-carbon fuel sources**	**Action Title**	**Action Description**			**- Emission factors for fuels and electric grid**	
1.81	The carbon emissions of Boston's energy use naturally depends on the types of fuels being used. In recent years, many LBI buildings and district steam providers have switched from fuel oil to cheaper, lower-carbon natural gas. To preserve the benefits of this fuel-switching, the City will work with state and utility partners to eliminate gas leaks and prevent spikes in the price of natural gas. Natural gas, however, remains a temporary 'bridge' towards long-term carbon neutrality, and the City will work on increasing the supply and purchasing of renewable energy, leading by example with its municipal buildings. An examination of carbon fees in other cities will also help inform the City's long-term strategy for moving towards carbon neutrality.	Support Regional Transition to Low-Carbon Fuels	Work with the Commonwealth to develop a low-carbon fuel standard and increase the supply of carbon-free energy in the region	Existing	Not Started	- Emissions factor of on-site combustion and grid	- ENV, Commonwealth
1.82		Promote Green Power Purchasing	Promote renewable energy purchasing, including buildings that have linked off-site renewable projects	Existing	In Progress	- Renewable energy purchased in Boston	- ENV, NStar, businesses and institutions
1.83		Study Solutions to Prevent Natural Gas Spikes	Support technical or regulatory solutions, to preserve the fuel-switching that has happened	New	Not Started	- Solutions advocated to Commonwealth	- ENV, National Grid, Commonwealth
1.84		Work to Expedite Gas Leak Repair	Work with utilities and the state on gas leaks, especially near critical sites	New	In Progress	- Strategy developed and advocated to Commonwealth	- ENV, National Grid, Commonwealth
1.85		Increase Municipal Green Power Purchases	Expand renewable energy purchasing and use of electricity and renewables for City fleet	Existing	In Progress	- Municipal green energy use - Municipal fleet emissions	- ENV, Fleet Management
1.86		Study Policies on Carbon Fees in Other Cities	Evaluate the potential for a municipal or regional carbon tax	New	Not Started	- Evaluation of policies	- ENV
2. Materials and Waste							
Strategy 2.1	**Expand organic waste diversion**	**Action Title**	**Action Description**			**- Organic waste diversion rate - GHGs of waste**	
2.11	Organic waste collection and composting has been piloted through farmer's markets and at events in Boston. To reduce the emissions associated with waste, Boston will expand organic waste collection across residential buildings, commercial buildings, and municipal facilities.	Develop Organics Diversion Program	Establish composting program for residential and commercial buildings	New	Not Started	- Development of a composting pilot and strategy for citywide implementation	- ENV, Public Works, businesses and institutions
2.12		Explore Requiring New Buildings to Provide Organic Waste Separation	Explore requiring large new buildings to provide facilities for disposing organics	New	Not Started	- Study of requirement	- ENV, BRA
2.13		Expand Municipal Composting	Provide composting at schools; compost organic waste from Parks Department	New	Not Started	- Organic waste diversion by City	- Public Works, Parks, BPS

Strategy 2.2	**Expand commercial recycling**	**Action Title**	**Action Description**			**- Recycling rate - GHGs of waste**	
2.21	Increasing the amount of waste that Boston recycles can reduce GHG emissions and engage citizens in an easy sustainability action. To boost recycling rates, the City will work to make recycling bins and facilities commonly available throughout Boston, by partnering with private institutions, providing facilities in municipal buildings, and exploring the need for a recycling requirement on buildings. Construction and demolition waste can be minimized through salvaging and recycling, and the City will require such waste diversion at construction sites.	Explore Requirements for Recycling and Organic Waste Collection	Examine requirements for residential buildings, commercial buildings, and public events	New	Not Started	- Enactment of requirement	- ENV, BRA
2.22		Promote Recycling at LBI Organizations	Conduct outreach in partnership with businesses, tenants, universities, and the T	New	Not Started	- Availability of recycling at major institutions	- ENV, businesses, institutions, MBTA
2.23		Require Municipal Buildings to Provide Recycling	Mandate recycling in schools, City buildings, public housing, and public spaces	Existing	In Progress	- Availability of recycling in all municipal facilities	- ENV, BPS, BHA, DND, Property Management, Parks
2.24		Examine Requirements for Recycling Construction Waste	Potentially require all waste to be recycled or salvaged	New	Not Started	- Enactment of requirement	- BRA
Strategy 2.3	**Producer responsibility**	**Action Title**	**Action Description**			**- Updated green purchasing policy**	
2.31	The City is a major purchaser of various equipment and supplies. To lead by example, the City will update its purchasing policies to expand the use of sustainable options.	Expand Municipal Green Purchasing	Update the City's green purchasing policy	Existing	Not Started	- Updated policy	- ENV, Purchasing