Boston Planning and Development Agency
Climate Change - Checklist

A.1 - Project Information

Project Name:				
Project Address:				
Project Address Additional:				
Date and Filing	*Date*		*Select (Initial, Design / Building Permit, or Construction / Certificate of Occupancy*	
Filing Contact	*Name*	*Company*	*Email*	*Phone*
Is MEPA approval required	*Yes/no*			

A.3 - Project Team

Owner / Developer:	
Architect:	
Engineer:	
Sustainability / LEED:	
Permitting:	
Construction Management:	

A.3 - Project Description and Design Conditions

List the principal Building Uses:	
List the First Floor Uses:	
List any Critical Site Infrastructure and or Building Uses:	

Site and Building:

Site Area:	*SF*	Building Area:	*SF*
Building Height:	*Ft*	Building Height:	*Stories*
Existing Site Elevation – Low:	*Ft BCB*	Existing Site Elevation – High:	*Ft BCB*
Proposed Site Elevation – Low:	*Ft BCB*	Proposed Site Elevation – High:	*Ft BCB*
Proposed First Floor Elevation:	*Ft BCB*	Below grade spaces/levels:	*#*
Building Proximity to Water:	*Ft*		

Energy Performance:

Annual Electric:	*(kWh)*	Peak Electric:	*(kW)*
Annual Heating:	*(MMbtu/hr)*	Peak Heating:	*(MMbtu)*
Annual Cooling:	*(Tons/hr)*	Peak Cooling:	*(Tons)*
Energy Use - Below ASHRAE 90.1 - 2013:	*%*	Have the electric and gas utilities reviewed the energy model?	*Yes / no*
Energy Use - Below Mass. Code:	*%*	Energy Use Intensity:	*(kBtu/SF)*

Critical System Loads (in the event of a service interruption)

Electric:	*(kW)*	Heating:	*(MMbtu/hr)*
		Cooling:	*(Tons/hr)*

Back-up / Emergency Power System

Electrical Generation:	*(kW)*	Fuel Source:	
System Type:	*(kW)*	Number of Power Units:	

B – Greenhouse Gas Reduction and Net Zero / Net Positive Carbon Building Performance

Reducing greenhouse gas emissions is critical to avoiding more extreme climate change conditions. To achieve the City's goal of carbon-neutrality by 2050 the performance of new buildings will need to progressively improve to carbon net zero and net positive.

B.1 – GHG Emissions - Design Conditions

Annual Building GHG Emissions:	*(Tons)*

B.2 - GHG Reduction - Mitigation Strategies

Describe how the building and its systems will evolve to further reduce GHG emissions and achieve annual carbon net zero and net positive performance (e.g. added efficiency measures, renewable energy, energy storage, etc.) and the timeline for meeting that goal (by 2050):

Describe specific measures to reduce building energy demands on the utilities and infrastructure including distributed energy / smart grid infrastructure and systems:

C - Extreme Heat Events

Annual average temperature in Boston increased by about 2°F in the past hundred years and will continue to rise due to

climate change. By the end of the century, the average annual temperature could be 56° (compared to 46° now) and the number of days above 90° (currently about 10 a year) could rise to 90.

C.1 – Extreme Heat - Design Conditions

Temperature Range - Low:	*Deg.*	Temperature Range - High:	*Deg.*
Annual Heating Degree Days:		Annual Cooling Degree Days	

What Extreme Heat Event characteristics will be / have been used for project planning

Days - Above 90°:	#	Days – Above 100°:	#
Number of Heatwaves / Year:	#	Average Duration of Heatwave (Days):	#

C.2 - Extreme Heat – Adaptation Strategies

Describe how the building and its systems will be adapted to efficiently manage future higher average temperatures, higher extreme temperatures, additional annual heatwaves, and longer heatwaves:

Describe all mechanical and non-mechanical strategies that will support building functionality and use during extended interruptions of utility services and infrastructure including proposed and future adaptations:

Describe all site and building measures to reduce urban heat-island effect including proposed and future adaptations:

D - Extreme Precipitation Events

From 1958 to 2010, there was a 70 percent increase in the amount of precipitation that fell on the days with the heaviest precipitation. Currently, the 10-Year, 24-Hour Design Storm precipitation level is 5.25". There is a significant probability that this will increase to at least 6" by the end of the century. Additionally, fewer, larger storms are likely to be accompanied by more frequent droughts.

D.1 – Extreme Precipitation - Design Conditions

10 Year, 24 Hour Design Storm:	*In.*

D.2 - Extreme Precipitation - Adaptation Strategies

Describe how site and building systems have been or will be adapted to efficiently accommodate more significant rain events (e.g. rainwater harvesting, on-site storm water retention, bio swales, green roofs):

E – Sea Level Rise and Storms

Under any plausible greenhouse gas emissions scenario, the sea level in Boston will continue to rise throughout the century. This will increase the number of buildings in Boston susceptible to coastal flooding and the likely frequency of flooding for those already in the floodplain.

Is any portion of the site in a FEMA SFHA?	*Yes / No*	What Zone:	A, AE, AH, AO, AR, A99, V, VE
		Current FEMA SFHA Zone Base Flood Elevation:	*Ft BCB*
Is any portion of the site in the projected One-Percent Annual Flood Area with 36 inches of Sea-Level Rise, visit: (*See Checklist Guidance for Map. This map will be replaced with an online mapping tool*)	*Yes / No*		

If you answered YES to either of the above questions, please complete the following questions.
Otherwise you have completed the questionnaire; thank you!

E.1 – Sea Level Rise and Storms – Design Conditions

Proposed projects should identify immediate and future adaptation strategies for managing at least a 1% Annual Flood with 36" of sea level rise *plus* 12" of freeboard for non-critical buildings OR *plus* 24" of freeboard for critical facilities, buildings, and infrastructure.

Building Design Flood Elevation:	*Ft BCB*	First Floor Elevation:	*Ft BCB*
Site Elevations at Building:	*Ft BCB*	Accessible Route Elevation:	*Ft BCB*

E.2 – Sea Level Rise and Storms – Adaptation Strategies

Describe how site design strategies adapt to sea level rise including building access during flood events, elevated site areas, hard and soft barriers, wave / velocity breaks, storm water systems, utility services, etc.:

Describe how the proposed Building Design Flood Elevation will be achieved including dry / wet flood proofing, critical systems protection, utility service protection, temporary flood barriers, waste and drain water back flow prevention, etc.:

Describe how occupants might shelter in place during a flooding event including any emergency power, water, and waste water provisions and the expected availability of any such measures:

Describe future site design and or infrastructure adaptation strategies for responding to sea level rise including future elevating of site areas and access routes, barriers, wave / velocity breaks, storm water systems, utility services, etc.:

Describe future building adaptation strategies for raising the Building Design Flood Elevation and further protecting critical systems, including permanent and temporary measures:

Describe any strategies that would support rapid recovery after a weather event and accommodate future building changes that respond to climate change:

Thank you for completing the Boston Climate Change Checklist!

For questions or comments about this checklist or Climate Change best practices, please contact:
John.Dalzell@boston.gov