FORM: CRM (May 24, 2021)
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CITY OF SOMERVILLE

Inspectional Services • Planning Board • Zoning Board of Appeals

CERTIFICATION OF REQUIRED MATERIALS
BY CITY OF SOMERVILLE DEPARTMENT OF SUSTAINABILITY & ENVIRONMENT

Development Site Address: 1 McGrath Highway, Somerville, MA P&Z #21-028 Phase 1
Applicant Name: Adam Dash, dash@adamdashlaw.com

As required by the City of Somerville's Development Review Submittal Requirements, I certify that I have received and approved the following development review materials for the development proposal identified above:

☒ Sustainable & Resilient Building Questionnaire

N/A ☐ Net-Zero Ready Building: PHIUS+
- Building Resilience & Sustainability Narrative
- Copy of signed PHIUS+ Certification Contract
- Copy of signed PHIUS+ Certification Fee Receipt

N/A ☐ Net-Zero Ready Building: Zero Carbon
- Building Resilience & Sustainability Narrative
- Evidence of ILFI Premium Membership
- Evidence of ILFI New Zero Carbon Project Registration

☒ LEED Certifiability
- LEED Gold or Platinum checklist
- LEED Narrative
- Signed affidavit by LEED accredited professional

Signature: _____ Date: 7/28/22

Sustainability & Environment Representative

INTRODUCTION

This document outlines Development Review Application requirements in relation to the long-term environmental sustainability and climate resilience of buildings within Somerville. Development proposals that require Site Plan Approval by the Somerville Zoning Ordinance must include a completed Sustainable & Resilient Buildings Questionnaire (Questionnaire) with the required Development Review Application. A Development Review Application is considered incomplete unless a completed questionnaire is submitted with the application. It is strongly recommended that the development team meets with staff from the Office of Sustainability and Environment prior to submitting the Development Review Application.

The purpose of this Questionnaire is to minimize the adverse environmental impacts in the design, construction, and occupancy of buildings in Somerville and to ensure that the impacts of future climate conditions are carefully evaluated.

Please review the following documents before completing the Questionnaire:

- **Somerville Climate Change Vulnerability Assessment**
- **Carbon Neutrality Pathway Assessment**
- **Somerville Climate Forward**

PROCEDURE:

A completed Sustainable & Resilient Buildings Questionnaire must be submitted with a Development Review Application for all development proposals that require Site Plan Approval. New construction or alterations to existing structures of 25,000 square feet or more must also submit an updated Questionnaire prior to the issuance of the first Building Permit and prior to the issuance of the first Certificate of Occupancy to identify any design changes made subsequent to Site Plan Approval or additional information determined as the development process unfolds.

BACKGROUND: CARBON NEUTRALITY

Understanding the global imperative to reduce greenhouse gas emissions in order to prevent extreme changes to the climate, Mayor Joseph A. Curtatone set a goal for Somerville to become carbon neutral by the year 2050. Carbon neutrality is defined as the net-zero release of carbon dioxide and other greenhouse gases (GHG) within Somerville's municipal boundary. Reducing greenhouse gas emissions is critical to avoiding the worst impacts of climate change and to protecting the health, safety, and welfare of current and future generations. In 2017, the Somerville Board of Aldermen passed a resolution reaffirming the city's carbon neutrality goal. And In 2018, Somerville released its first community-wide climate action plan, Somerville Climate Forward.

To achieve carbon neutrality by 2050 and to minimize adverse environmental impacts, Somerville will need to drastically reduce greenhouse gas emissions from electricity, buildings, transportation, and waste disposal. To meet these goals, all buildings within the city will need to pursue net zero emissions. New development should

be designed to maximize envelope performance and energy efficiency, produce or procure renewable energy, and phase out fossil fuel use through electrification of building systems. The City of Somerville recognizes that as technology advances, incorporating design elements to mitigate carbon emissions and increase resilience may become more feasible. Applicants are asked to devise strategies that permit building systems to adapt and evolve over time to further reduce GHG emissions and to avoid path dependency that perpetuates reliance on fossil fuels.

BACKGROUND: CLIMATE CHANGE VULNERABILITY

Despite efforts to minimize greenhouse gas emissions, climate change is already impacting Somerville and changes to the climate will continue to intensify. The City of Somerville's Climate Change Vulnerability Assessment analyses vulnerabilities associated with Somerville's key climate stressors: increased precipitation, sea level rise and storm surge, and higher temperatures. The analysis recommends that new development consider these climate impacts and take appropriate measures to address the projected climatic conditions described in the assessment.

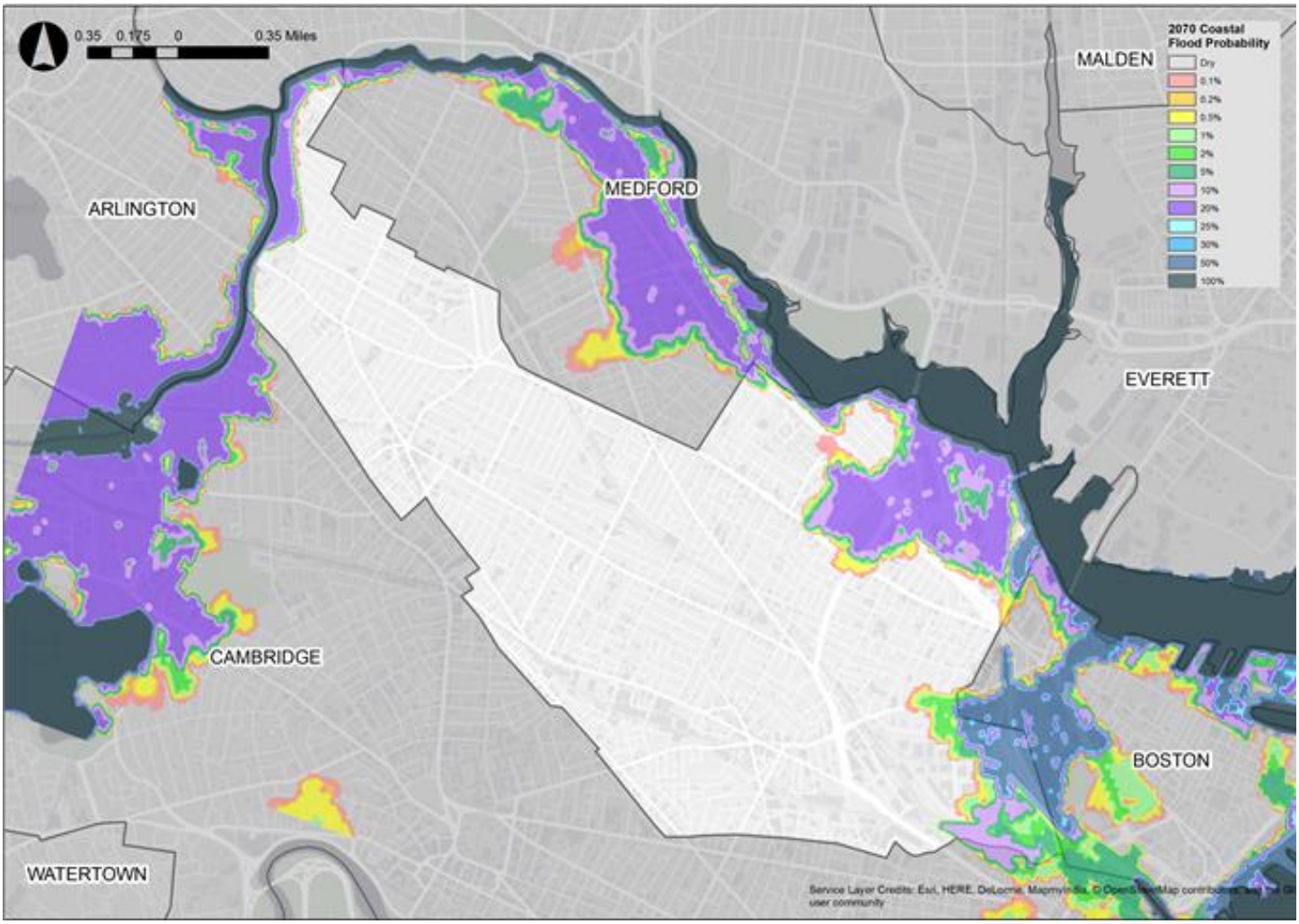
Several areas of Somerville are already prone to flooding from intense precipitation. With climate change, precipitation events will become more intense—meaning that a greater volume of rain will fall in a shorter period of time. Somerville is projected to experience more than a 30% increase in rainfall during a 100-year 24-hour event. This increase in precipitation will increase the risk of flooding in areas where the drainage system does not have sufficient capacity.

In addition to flooding from precipitation, sea level rise and storm surge are already potential concerns for areas of East Somerville and by 2035-2040 the Amelia Earhart Dam could be regularly flanked by storms, resulting in flooding for areas of Assembly Square, Ten Hills, and Winter Hill.

As the climate continues to change, average seasonal temperatures are also expected to increase and the number of days above 90 degrees Fahrenheit (historically about 10 a year) could rise to 40 days by 2030, a third of the summer, and 90 days by 2070, nearly the entire summer. In 2018 there were 23 days over 90 degrees.
As temperatures increase, Somerville will become more susceptible to the urban heat island effect which causes hotter temperatures due to paved surfaces and waste heat generated by energy use when compared to less developed areas. Increasing average temperatures can have wide-ranging impacts on human life, the built environment, and natural ecosystems. Rising temperatures and more intense heat waves present significant public health concerns and can contribute toward kidney, lung, and heart problems. Vulnerable populations are particularly susceptible to heat-induced illness and mortality. There will also be increasing demand for indoor cooling.

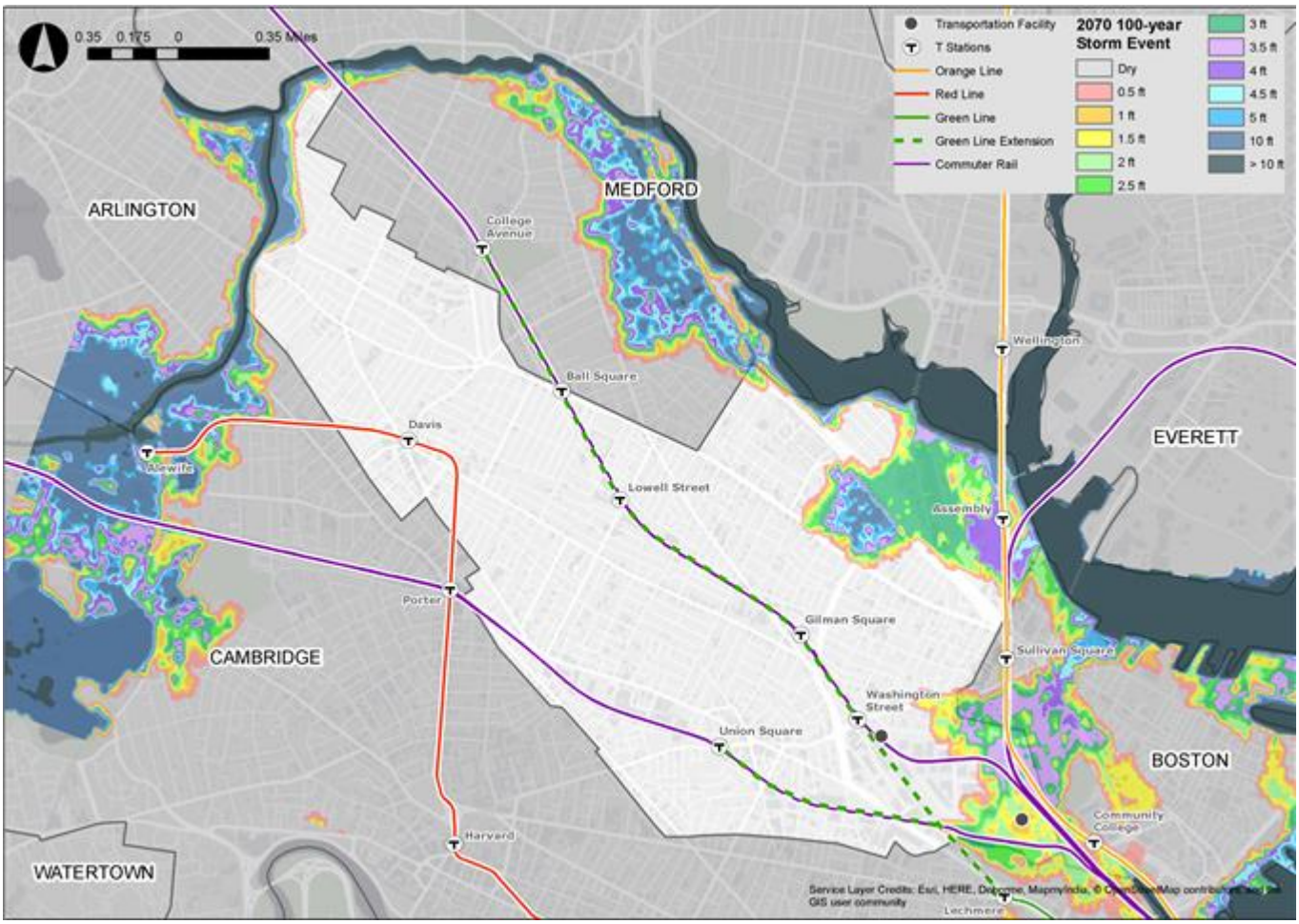
The following maps and figures provide an overview of projected climate exposure. Please review the Climate Change Vulnerability Assessment for more detailed analysis on Somerville's exposure, vulnerability, and risk to climate change. For higher resolution maps and GIS files, please contact Hannah Payne, Sustainability Coordinator, at hpayne@somervillema.gov.

2070 Coastal Flood Probability



This map shows the annual chance of flooding from coastal storm events and sea level rise in 2070. A 100% chance of flooding means that there is a nearly certain chance that the area will flood at least once in a given year, while a 50% chance means that there is an equal chance that it may or may not flood in a given year. A 1% chance of flooding corresponds with a 100-year event. A 0.1% chance corresponds with a 1000-year event. This map does not account for drainage (Somerville Climate Change Vulnerability Assessment, 2017)

2070 Coastal Flood Depth from 2070 100-year Storm Event

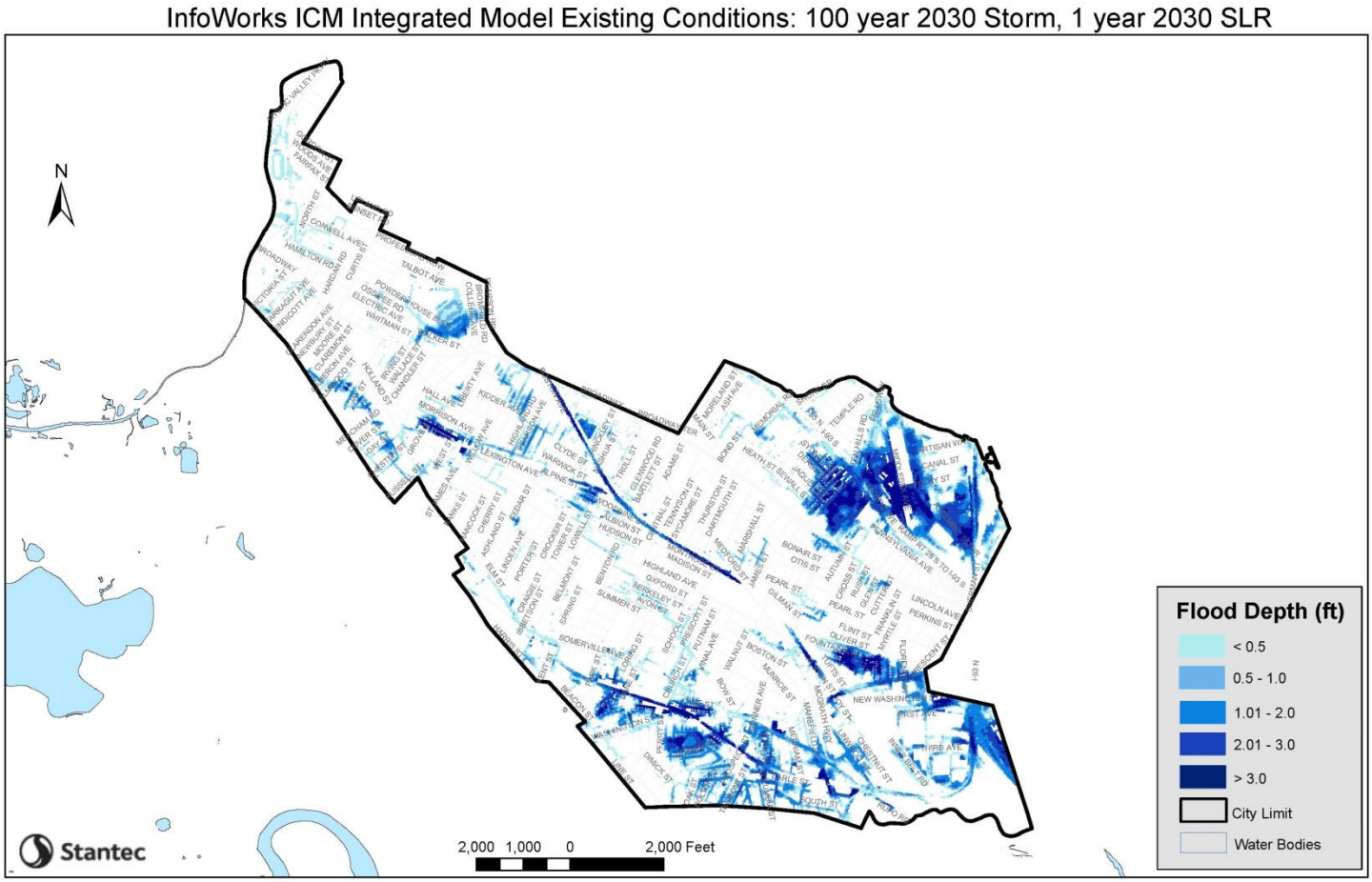


This map shows the projected flood depths of a 100-year coastal storm event in 2070 along with public transportation infrastructure assets. This map does not account for drainage (Somerville Climate Change Vulnerability Assessment, 2017)

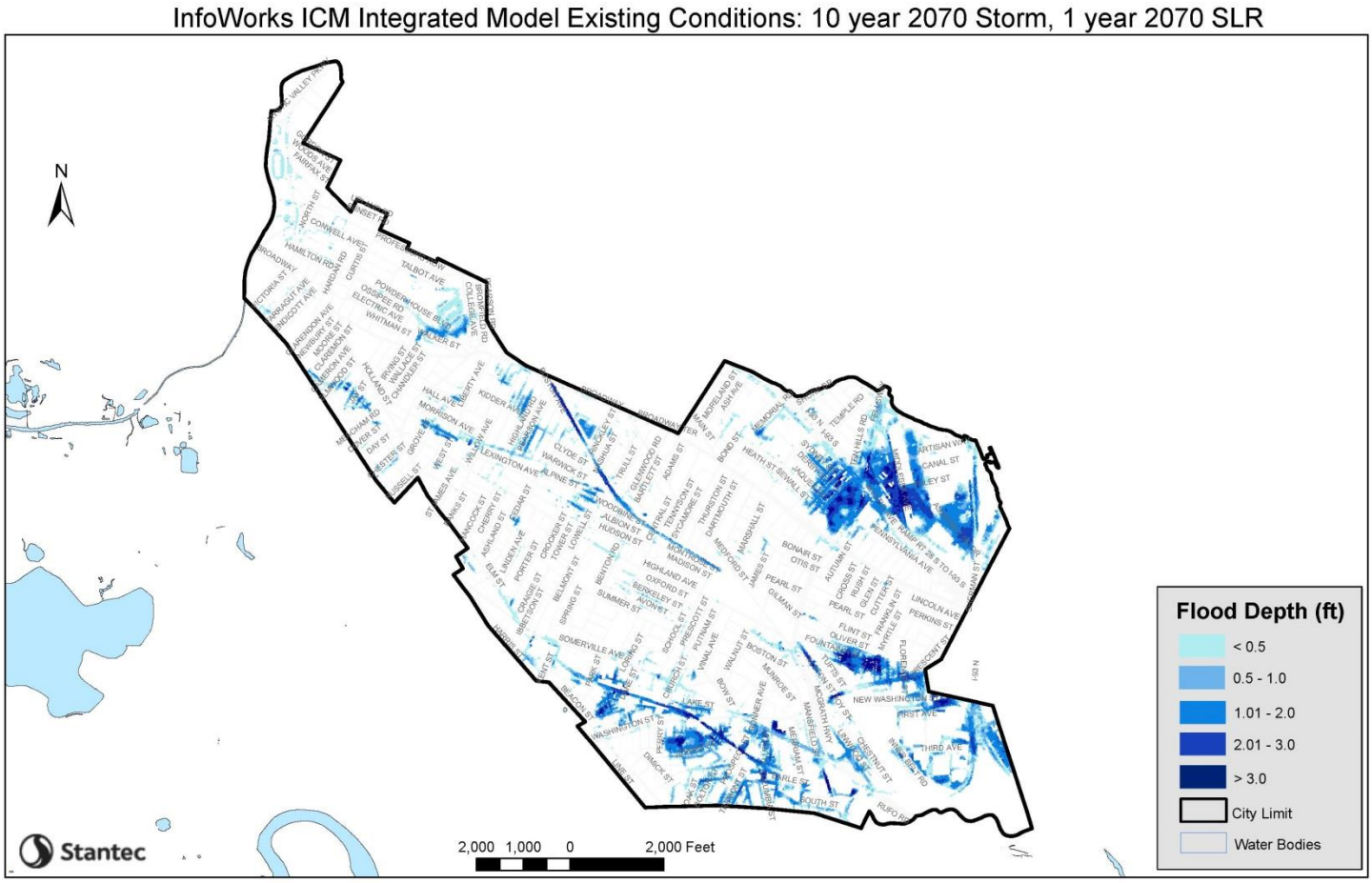
Precipitation Projections

Precipitation-based flooding is projected to increase in Somerville and is currently more of an immediate and widespread threat than sea level rise and storm surge. The intensification of both the frequency and intensity of rainfall events is likely to cause increased risk of flooding during rain events.

Storm Type	Present-day Rainfall	2030 Rainfall	2070 Rainfall
10-year (10% annual chance), 24-hour	4.9 in	5.6 in	6.4 in
100-year (1% annual chance), 24-hour	8.9 in	10.2 in	11.7 in



This map shows the impact of both precipitation-based flooding and sea level rise and storm surge. This map shows the modeled flood depths of a 100-year, 24-hour Design Storm with 1-year storm surge and sea level rise projections in 2030. Unlike the maps above, this includes modeling of the drainage system, which takes into account how water will be conveyed out of the city. The model is based on how the system is designed to function, so actual areas of flooding and depth of flooding could vary (Stantec, 2019).



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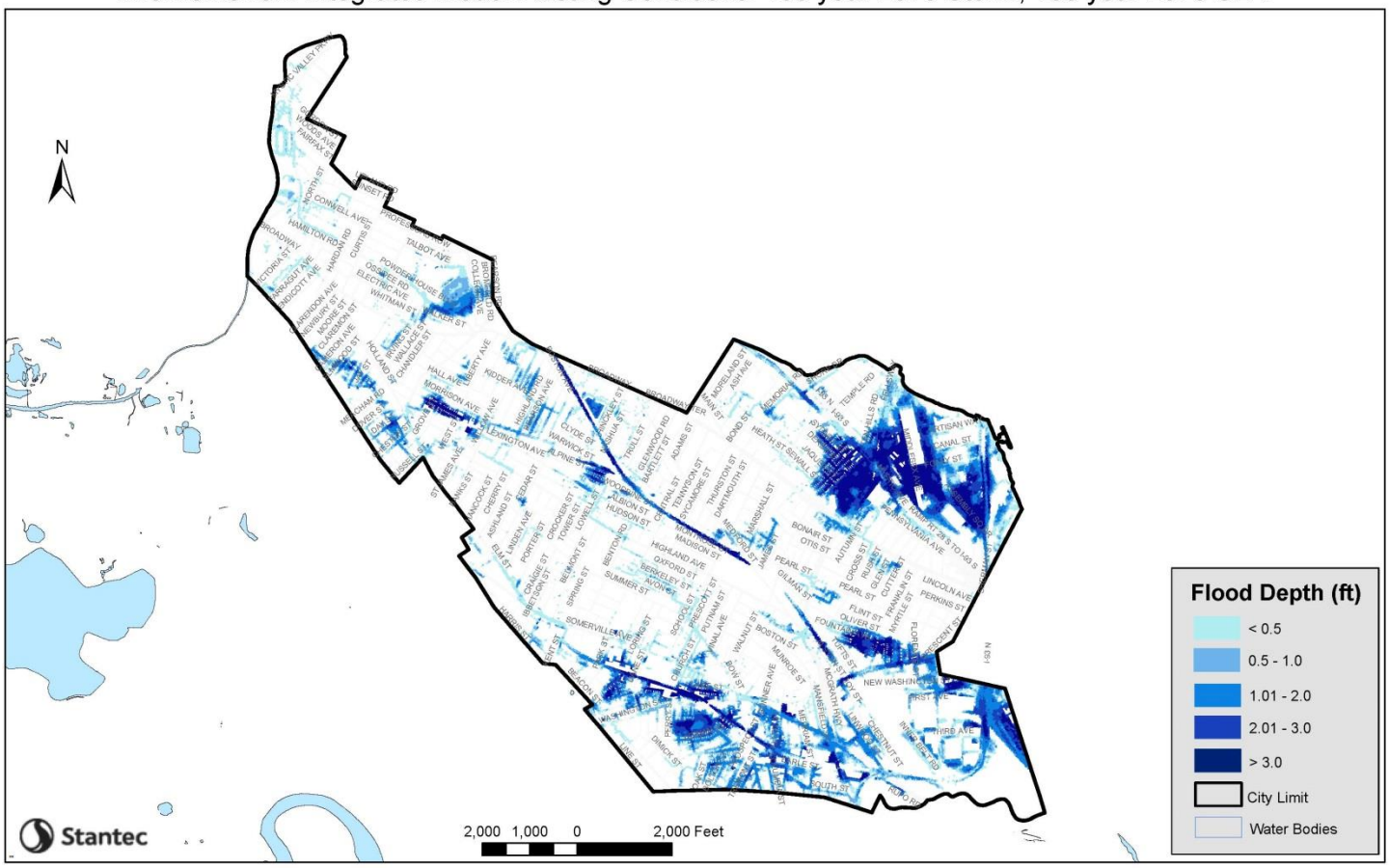
InfoWorks ICM Integrated Model Existing Conditions: 100 year 2070 Storm, 100 year 2070 SLR



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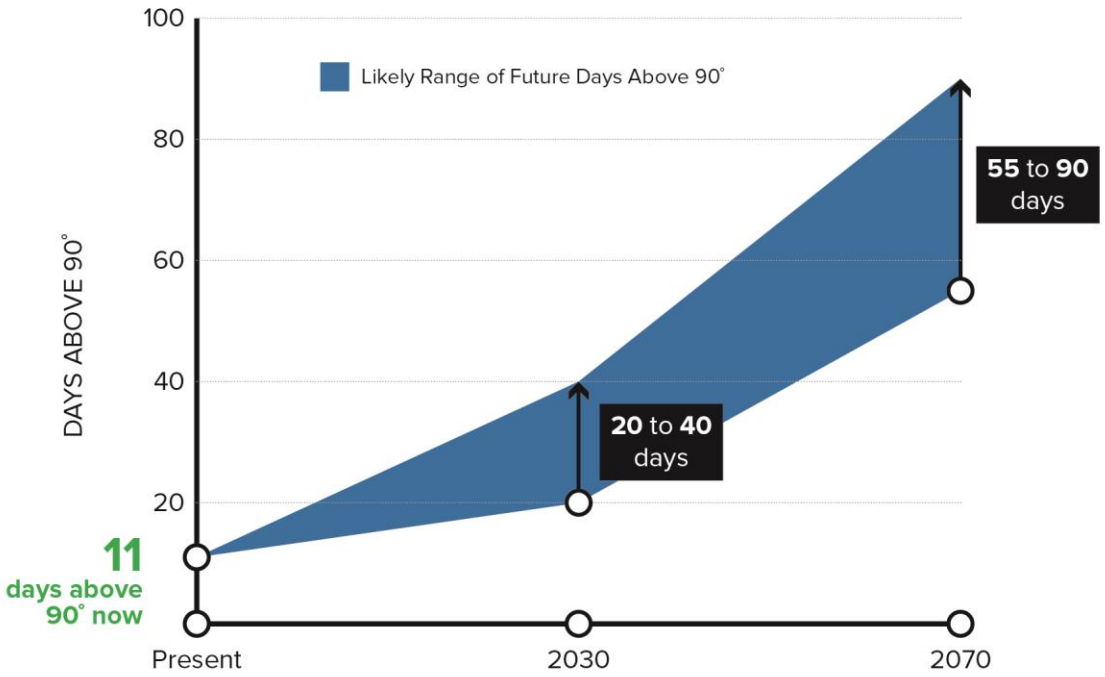
Temperature Projections



(Somerville Climate Change Vulnerability Assessment 2017)

Temperature	1971-2000 (average)	2030 (low)	2030 Avg.	2030 (high)	2070 (low)	2070 Avg.	2070 (high)
Annual	50.0º F	53.3º F		53.5º F	55.8º F		58.7º F
Summer	70.6º F	74.5º F		74.8º F	77.4º F		80.6º F
Winter	29.8º F	32.2º F		33.0º F	34.6º F		38.0º F

RESOURCES:

For information on net-zero and resilient building and site design, please review the following resources:

- **Passive House Principles**
- **Architecture 2030 Palette (Net-zero design tools)**
- **Building Resilience in Boston**
- **Enhancing Resilience in Boston**
- **A Better City's Resiliency Toolkit**
- **Ready to Respond: Strategies for Multifamily Building Resilience**

For additional information visit www.somervillema.gov/sustainaville

SUSTAINABLE & RESILIENT BUILDINGS QUESTIONNAIRE

Section 1: Proposal Information

Proposal Name	Somerbridge Hotel, LLC
Address	1 McGrath Highway, Somerville, MA 02143 263 Monsignor O'Brien Highway, Cambridge, MA 02141
Developer	XSS Hotels
Business Address	PO Box 4430 Manchester, NH 03108
Designated Contact	Christine Thomas
Telephone Number	802.249.1949
Contact's Email Address	northernsites@gmail.com
Date Submitted	11.05.2021 Revised 09.01.2022
Filing Type (Development review application, Building Permit, or CoA)	Development Review Application
Is this a revised Questionnaire?	No
Is MEPA Approval Required?	Yes/No; Why? MEPA approval is not required due to the projects not exceeding any thresholds set by MEPA

Section 2: Building & Site Details

2.1 Building Information

Building Uses	A-2 / A-3 / B / R-1
Gross Floor Area	63,560 square feet (In Somerville)
Expected Life of Building	50 Years
Expected Life of Building Systems: HVAC, electrical, boilers, plumbing, telecom, lighting, energy management.	20 Years
Type of Heating System(s)	Electric Variable Refrigerant Flow Heat Pump System
Type of Cooling System(s)	Electric Variable Refrigerant Flow Heat Pump System

2.2. Green Building

Green Building Professional(s): Name(s) and contact information	JAL Hospitality Design, LLC c/o Steve Calzini
Professional Credentials: Green Building Program Certification(s)	LEED AP, BD+C
Building LEED Rating	LEED V4 for BD+C: New Construction and Major Renovation – Platinum certifiable

Building LEED Point Score	83 (anticipated)
Will you pursue LEED certification through the USGBC?	The applicant will not be pursuing LEED certification through USGBC
Are any other green building certifications being pursued? (Passive House, Enterprise Green Communities, etc.). Please describe.	The applicant is not pursuing any other certifications at this point

2.3. Electric Vehicle Parking

The number of electric vehicles (EVs) in Somerville is expected to increase significantly over the next decade with more electric vehicles coming to market than ever before. Conservative estimates based on historical trends alone suggest 20% of personal vehicles in Somerville will be electric by 2040. Installing capacity for EV supply equipment (EVSE) has been shown to be more feasible and cost effective during construction than when retrofitting parking areas to support the installation of EVSE in the future[1]. Providing EVSE can increase the property value, become a future revenue source, and provide an amenity that more tenants and commuters will be looking for. It is recommended that parking facilities be designed to allow for the most flexibility to adapt to future needs of electric vehicles and changing mobility needs. The City of Somerville recommends 25% of spaces have installed charging access and up to 100% of spaces be "EV Ready" (everything but the station installed). Eversource currently has a program to pay the associated infrastructure costs of EV charging, including infrastructure needed to be "EV ready." Please consult with Eversource to determine if any installation costs could be covered through their Make Ready Program.

Total # of Parking Spaces	# 0 (In Somerville)
EVSE Plugs (number and voltage/ level of plugs)	# N/A
EV Ready Spaces (everything but station is installed)	# N/A
Please share any other information on your EV strategy. Have you spoken with Eversource? Are you talking with EVSE providers? Have you considered EVSE needs in	N/A

[1] http://evchargingpros.com/wp-content/uploads/2017/04/City-of-SF-PEV-Infrastructure-Cost-Effectiveness-Report-2016.pdf; https://www.richmond.ca/__shared/assets/Residential_EV_Charging_Local_Government_Guide51732.pdf

conjunction with your parking and mobility management plans?	

2.4 Key Building Efficiency Metrics
The following should be provided for each building type (office, retail, multifamily, hotel, restaurant, etc.).

Vertical Envelope Performance

Vertical Envelope	ASHRAE Reference Building			Proposed Building		
	Percent of Vertical Area	**R value** *(see note 1)*	**U value** *(see note 2)*	**Percent of Vertical Area**	**R value** *(see note 1)*	**U value** *(note 2)*
Framed, insulated Wall	60%	R13+R7.5c.i.	U-0.055	77%	R21+R10c.i	U-0.051
Opaque glass, curtain wall, shadowbox, spandrel	NA – ASHRAE reference building has no spandrel			0.5%	R3.75	U-0.267
Vision glass	40%	R3.12	U-0.32 *(note 3)*	22.5%	R4	U-0.25 *(note 3)*
	100%		***Aggregate U U-0.161***	***100%***		***Aggregate U U-0.101***
			Aggregate R R6.21			***Aggregate R R9.86***

Notes:

1. Show in format of R+R c.i. where first R is amount of discontinuous insulation and second R is amount of continuous insulation.

2. U values shall be based on indicated R+R c.i. and shall conform to Appendix A of ASHRAE 90.1 2013.

3. U value includes frame, per NRFC standard methods.

4. Aggregate U is calculated as: $(U_1\%_1 + U_2\%_2 + U_3\%_3)$ where U is the respective thermal transmittance values and $\%_1$ is the percent area of framed insulated wall; $\%_2$ is the percent area of opaque glass, curtain, or shadowbox; and $\%_3$ is the percent area of vision glass. Only areas adjacent to conditioned space are counted, areas adjacent to unconditioned spaces (e.g. parking garages, mechanical penthouses) are not counted. Aggregate R is the inverse of aggregate U. For percent areas for ASHRAE reference building, see Table G3.1.1-1 in ASHRAE 90.1 2013.

Other Performance Metrics

	ASHRAE Reference Building	Proposed Building
Air Infiltration (ACH 50)	0.25 (cfm/sf)	0.25 (cfm/sf)
Aggregate Vertical Envelope R	R6.21	R9.86
Roof R	R-30 c.i.	R-34.2 c.i.
Lowest level conditioned floor above unconditioned space (if any) R	R-30	R-34.2
Cooling End Use (kBtu/sf-yr)	4.786 (kBtu/sf-yr)	4.66 (kBtu/sf-yr)
Heating End Use (kBtu/sf-yr)	20.84 (kBtu/sf-yr)	6.046 (kBtu/sf-yr)
Peak Heating (kBtu/hr-sf)	0.21 (kBtu/hr-sf)	0.077 (kBtu/hr-sf)
Peak Cooling (kBtu/hr-sf)	0.053 (kBtu/hr-sf)	0.048 (kBtu/hr-sf)
Site EUI (kBtu/hr-sf)	77.24 (kBtu/sf-yr)	63.29 (kBtu/sf-yr)

Section 3. Planning for Net Zero Emissions and Energy Resilience

3.1. How is the building currently designed to reduce energy usage? Please describe the key design features of the building including:

A) Building envelope performance (including roof, foundation, walls, and window assemblies)
B) How has the design team integrated energy performance into the building and site design and engineering (orientation, massing, mechanical systems, envelope, etc.)?
C) Efficiency of heating and cooling systems. Will these systems be electric? Provide reasoning for selection of heating and cooling systems.

Preliminary energy modeling has been conducted based on the architectural & MEP design for the project. The selected buildings systems will be high efficiency to eliminate the reliance on fossil fuels and promote the use of clean energy production. The following design strategies have been selected for use to ensure the incorporation of energy conservation measures (ECM's) and energy efficient design strategies:

- Roof: Anticipated 12.3% better than code
- Foundations: Anticipated 25% better than code
- Walls: Anticipated 37.02% better than code
- Windows: Anticipated 15.68% better than code
- Ultra-high efficiency variable refrigerant flow HVAC systems with up to 30 SEER
- All electric hot water generation plant with additional coil for potential future solar water tempering. connection
- All fans provided with EC motors.
- Room temperature reset through automated digital controls
- Energy recovery units with total heat recovery enthalpy wheel.
- Building automation system

All lighting fixtures throughout the building will be high efficiency LED fixtures spaced to ensure an optimal layout. A lighting study is expected to maximize potential beyond minimum code requirements.

Hotel guest rooms, common areas and back of house areas heating and cooling will be provided with a total building automated control system. An all electric variable refrigerant flow (VRF) specifically selected to meet LEED prerequisites and are designed to recover heat using the buildings diversity by means of transferring energy through branch circuit controllers and refrigerant piping, this is an extremely efficient means to transfer and save energy. All the while adhering to ASHRA 15 & 34 strict refrigerant concentration limits (RCL) for occupied spaces. Hotel corridor ventilation is provided by roof mounted all electric energy recovery ventilators. The ERU's recover the energy from the guest room bathrooms by means of a desiccant enthalpy wheel effectively transferring energy from the exhaust stream to the outside air intake stream lowering energy usage. There is no gas fired equipment based selections on this project.

3.2 Will the building be a net zero carbon building? A net zero carbon building is a highly energy efficient building that does not burn fossil fuels and either produces or procures enough carbon-free electricity to meet the building's total energy demand. If the building will not be a net zero carbon building, provide a technical description of how the building's systems will be transitioned over time to achieve net zero carbon emissions, including how and when systems can be transitioned in the future to carbon-free alternatives (provide timeline including 2030, 2040, and 2050 targets). Description must include whether any remaining emissions will be offset with on-site or off-site renewables and at what quantity. Changes could include, but are not limited to, addition of on-site renewable energy generation, energy storage, additional energy efficiency measures, building electrification, or other measures that would further reduce greenhouse gas emissions.

The building is currently designed to be 100% electric and will procure 100% of it's power from grid-sourced, renewable energy technologies and carbon mitigation projects. Thus, the building is currently anticipated to be net zero.

3.3 Describe any and all incentives, rebates, grants provided by utilities, government organizations, and other organizations being pursued to maximize building efficiency and to reduce emissions. Description must include any incentives that were considered but are not being pursued, including reasoning for each decision.

The proponent has executed a Memorandum of Understanding with Mass Save for the 'Path 3: Whole Building Streamlined Path' incentive program. This program looks at Building Envelope, Unitary HVAC (RTU, AC, HP, VRF), Ultra High Efficiency Variable Refrigerant HVAC systems (VRF), Energy Recovery Ventilation, Demand Control Ventilation, Electric DHW Heaters with additional coil for potential future solar water tempering and Low Flow DHW Fixtures. Also being pursued, is the Mass Save prescriptive incentives for lighting and Variable refrigerant HVAC Systems.

3.4 Evaluate feasibility of on-site renewable generation. Please describe your analysis and findings. Analysis should consider incentives available. Will any renewable energy generation be incorporated into the project? If so, please describe (system type and capacity). If no, could it be added in the future? And will any off-site renewable energy be purchased?

On-Site renewable generation of energy is not currently being pursued by the developer. Due to the limited site and roof area, there is not sufficient space to warrant this type of generation. However, as part of the development process, the Owners have committed to purchasing off-site renewable energy that is Green-e Energy certified or equivalent.

3.5. Are any on-site energy storage systems planned? Please describe.

There is not currently any on-site energy storage systems planned for the development.

3.6 Does the electric utility's infrastructure have enough capacity to support the addition of your building's energy load? Please provide confirmation from utility.

Preliminary discussions have been had with Eversource as to the impact on the addition of the hotel to the existing grid. It appears that the existing grid will have no issue with the building's proposed energy load. Further discussions will be had as the project moves into the next phase of the design.

3.7 Will the building's roof include any sustainability features? These may include, but are not limited to, high albedo roof materials, solar panels, or vegetation. Please describe what features could be added in the future (i.e. roof will be designed to support solar or green roof installation of X size).

The building is designed to have high albedo roof materials at all flat roofs. In addition, green vegetation will be used in specified areas on the 2nd floor roof. Currently, LiveRoof tray systems are proposed. There will be a minimum of 6 species planted on the roof for a total area of ~3,142.2 square feet.

Section 4: Climate Change Risk and Vulnerability

4.1 Climate Vulnerability Exposure
(check all that apply)

- ☐ Sea Level Rise & Storm Surge
- ☐ Precipitation Induced Flooding
- X Heat
- ☐ Other(s):

4.2 How is your site vulnerable to projected climate change impacts?

According to Somerville's 2017 Climate Change Vulnerability Assessment, the parcel is not considered to be vulnerable to coastal flooding from sea level rise based on the 2070 projections. It is also not subject to vulnerability in a 100 year storm for 2030 or 2070.

Due to the projects urban location, it will be affected by Urban Heat Island Effect which will be accounted for during the Design Development phase of the project.

The next two sections ask specific questions about how the project is designed to manage climate-related risks from heat, coastal and inland flooding.

Section 5: Managing Heat Risks

5.1 Describe all building features that will keep building occupants safe and comfortable during extreme heat, including mechanical systems and non-mechanical design elements to cool building (orientation, envelope, operable windows, etc.).

The projects mechanical systems have been sized to meet ASHRAE 0.4% heating design day conditions using weather data from Logan International Airport.

In addition to individual guest room controls, all guest rooms will be equipped with operable windows allowing fresh air into the building. The upper level amenity space will also have large operable openings allowing airflow through the building.

5.2 How has increased demand for indoor cooling been factored into the building design and energy management strategy?

The mechanical design includes an additional 10% cooling/heating capacity. The nature of the VRF systems also allow for greater flexibility for capacity upsizing if required.

5.3 List any indoor spaces without cooling and their uses.

Vestibules and vertical circulation shafts will not require cooling. All other areas of the building will require cooling.

5.4 What design features will be implemented on site to minimize the site's contribution to the urban heat island effect? Please describe any and all design elements. Strategies could include, but are not be limited to, the following:

- High albedo pavement or roof materials
- Passive cooling or increased ventilation capacity
- Green roofs or walls
- Heat resistant trees and plants
- Additional landscaped areas

High albedo roofing materials will be used on all exposed roof surfaces. These will have a 3-year aged solar reflectance (SRI) of 64.

Green roofs will also be used on the 2nd floor West side low roof. Currently, an Intensive Layered Green Roof system is proposed. There will be a minimum of 2 species planted on the roof for a total area of ~860 square feet.

All landscaping throughout the site will be drought tolerant.

Section 6: Managing Flood Risks

6.1 Is the site susceptible to flooding from sea level rise and storm surge and/or rain events now or during the building's expected lifetime? Please refer to the Somerville Climate Change Vulnerability Assessment and the updated stormwater flooding maps provided in the Background section of this Questionnaire. Additional maps and data are available by request (email hpayne@somervillema.gov)

According to the Somerville Climate Change Vulnerability Assessment, the Development Site is not expected to be vulnerable to coastal flooding from sea level rise based on projections for 2070.

If you answered YES to the previous question, please complete the remainder of Section 6. Otherwise, you have completed the Questionnaire. Thank you.

6.2 Flooding Design Considerations

Proposed Site Elevation - Low	N/A (ft)	Proposed Site Elevation - High	N/A (ft)
Lowest elevation of life-safety systems	N/A (ft)	Proposed First Floor Elevation	N/A (ft)
Nearest flood elevation for the 2070 10-year storm	N/A	Nearest flood elevation for the 2070 100-year storm	N/A

6.3 What are the first floor uses of the building? Are there any below ground stories of the building? If so, what uses are located below ground?

N/A

6.4 Are there any flood-sensitive assets, utilities, mechanical equipment, or life-safety systems located in areas of the building that are at risk of flooding? What measures will protect building systems during a flood or severe storm? These might include, but may not be limited to, the following:

- Elevation of utilities and mechanical systems
- Water tight utility conduits
- Waste water back flow prevention
- Storm water back flow prevention
- Systems located above the ground floor
- Securing objects at risk of becoming dislodged

N/A

6.5. Residential and commercial buildings should be designed to maintain regular operations during a 10-year storm in 2070. **Describe how the site and building have been designed to maintain regular operations--meaning all systems will remain operational and all occupied spaces are protected from flooding--during the 2070 10-year storm.** Please refer to both the 2070 coastal flood probability map and the 2070 10-year storm and 1-year sea level rise scenario (pages 3 and 6). Resilience measures might include, but may not be limited to, the following:

- Elevation of the site
- Structural elevation of the building
- Non-structural elevation of the ground floor
- Energy storage and backup generation
- Wet flood-proofing (allowing water to flow through building envelope)
- Dry flood-proofing (preventing water from entering building)

N/A

6.6 Residential buildings should be designed to allow occupants to shelter in place during a catastrophic storm (100-year event) today and in the future, this means all life-safety systems should be above the 2070 100-year flood elevation. **How will your site and building be impacted by the 2070 100-year, 24-hour storm and how will your site and building be designed to protect against those impacts?** Please evaluate impact based on both the 2070 coastal flood depth model for the 100-year storm and the 2070 100-year, 100-

year sea level rise model (pages 4 and 7). Summarize anticipated pre- and post-event policies, strategies, and actions necessary to facilitate post-flood recovery.

N/A

6.7 Will hazardous or toxic material be stored on site? Where will it be stored? How will you protect hazardous or toxic material from flooding?

N/A

6.8 Will the site be accessible by a typical vehicle during a 10-year event (up to 6 inches of water) and by emergency vehicles (up to 12 inches of water) during a 100-year event?

N/A

LEED v4 for BD+C: New Construction and Major Renovation

Project Checklist_Feasibility

Project Name: Somerbridge
Date: 11/05/2021

Y	?	N				Responsible	Notes
1			Credit	Integrative Process	1		

16	0	0	Location and Transportation		16	Responsible	Notes
		0	Credit	LEED for Neighborhood Development Location (If pursued, below L&T credits cannot be pursued)	16		
1			Credit	Sensitive Land Protection	1		
2			Credit	High Priority Site	2		
5			Credit	Surrounding Density and Diverse Uses	5		
5			Credit	Access to Quality Transit	5		
1			Credit	Bicycle Facilities	1		
1			Credit	Reduced Parking Footprint	1		
1			Credit	Green Vehicles	1		

5	4	1	Sustainable Sites		10	Responsible	Notes
Y			Prereq	Construction Activity Pollution Prevention	Required		
1			Credit	Site Assessment	1		
2			Credit	Site Development - Protect or Restore Habitat	2		
		1	Credit	Open Space	1		
	3		Credit	Rainwater Management	3		
1	1		Credit	Heat Island Reduction	2		
1			Credit	Light Pollution Reduction	1		

9	2	0	Water Efficiency		11	Responsible	Notes
Y			Prereq	Outdoor Water Use Reduction	Required		
Y			Prereq	Indoor Water Use Reduction	Required		
Y			Prereq	Building-Level Water Metering	Required		
2			Credit	Outdoor Water Use Reduction	2		
4	2		Credit	Indoor Water Use Reduction	6		
2			Credit	Cooling Tower Water Use	2		
1			Credit	Water Metering	1		

24	5	5	Energy and Atmosphere		33	Responsible	Notes
Y			Prereq	Fundamental Commissioning and Verification	Required		
Y			Prereq	Minimum Energy Performance	Required		
Y			Prereq	Building-Level Energy Metering	Required		
Y			Prereq	Fundamental Refrigerant Management	Required		
6			Credit	Enhanced Commissioning	6		
14	4		Credit	Optimize Energy Performance	18		
1	1		Credit	Advanced Energy Metering	1		
		2	Credit	Demand Response	2		
		3	Credit	Renewable Energy Production	3		
1			Credit	Enhanced Refrigerant Management	1		
2			Credit	Green Power and Carbon Offsets	2		

5	8	0	Materials and Resources		13	Responsible	Notes
Y			Prereq	Storage and Collection of Recyclables	Required		
Y			Prereq	Construction and Demolition Waste Management Planning	Required		
	5		Credit	Building Life-Cycle Impact Reduction	5		
1	1		Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2		
1	1		Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2		
1	1		Credit	Building Product Disclosure and Optimization - Material Ingredients	2		
2			Credit	Construction and Demolition Waste Management	2		

14	2	0	Indoor Environmental Quality		16	Responsible	Notes
Y			Prereq	Minimum Indoor Air Quality Performance	Required		
Y			Prereq	Environmental Tobacco Smoke Control	Required		
2			Credit	Enhanced Indoor Air Quality Strategies	2		
3			Credit	Low-Emitting Materials	3		
1			Credit	Construction Indoor Air Quality Management Plan	1		
2			Credit	Indoor Air Quality Assessment	2		
1			Credit	Thermal Comfort	1		
2			Credit	Interior Lighting	2		
2	1		Credit	Daylight	3		
	1		Credit	Quality Views	1		
1			Credit	Acoustic Performance	1		

6	0	0	Innovation		6	Responsible	Notes
5			Credit	Innovation	5		
1			Credit	LEED Accredited Professional	1		

3	1	0	Regional Priority		4	Responsible	Notes
1			Credit	Regional Priority:	1		
1			Credit	Regional Priority:	1		
1			Credit	Regional Priority:	1		
	1		Credit	Regional Priority:	1		

83	22	6	TOTALS	Possible Points:	110

Certified: 40 to 49 points, **Silver:** 50 to 59 points, **Gold:** 60 to 79 points, **Platinum:** 80 to 110

LEED® v4.0 NARRATIVE

Project Name: Somerbridge ~ AC/Moxy Dual Brand Hotel

Owner: Somerbridge Hotel, LLC

Architect: JAL Hospitality Design, LLC

Building Type and Use: Hotel and Extended Stay Hotel

Number of units: 199 (100 AC Units and 99 Moxy Units)

Date: Revised 09/01/2022

LEED v4 for BD+C: New Construction and Major Renovation

The Project Team will incorporate sustainable principles into its design, construction, and operation of the Somerbridge AC/Moxy Hotel Project. The Project will meet its sustainability goals by following the United States Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) Building Design and Construction (BD+C) Version 4 (LEED MR) rating system. The project's intent is to meet LEED Platinum level, without obtaining the certificate, which will include the following sustainability principles:

- An integrated team, members of which will be in constant communication throughout the design and construction process;
- Environmentally friendly site design and consideration of landscaping that benefits both residents and the surrounding habitats;
- Efficient water use that minimizes waste and maximizes applicable technology;
- Energy efficiency through installation of high-efficiency equipment and a right-sized system design;
- Healthy materials and finishes throughout all interior spaces, reducing health effects on residents; and
- Effective ventilation and exhaust systems design to ensure continued health and air quality throughout the life of each building.

Please see attached for the official LEED v4 BD+C New Construction Checklist.

The project intends to meet the platinum level certification requirement achieving 83 points and 22 possible points.

Integrative Process [1 point]
Location and Transportation [16 points] [16 possible points]
Sustainable Sites [5 points] [10 possible points]
Water Efficiency [9 points] [11 possible points]
Energy and Atmosphere [24 points] [33 possible points]
Materials and Resources [5 points] [13 possible point]
Indoor Environmental Quality [14 points] [16 possible point]
Innovation and Design Process [6 points]
Regional Priority [3 points]

Total Points [83 points] [110 possible points]

NARRATIVE FOR LEED CREDITS

The narrative below details the strategies by which the AC/Moxy Dual Brand Hotel by Marriott will intend to meet all the required credits and the additional credit requirements under LEED MR rating system.

A. INTEGRATIVE PROCESS [1 point]

The design team includes an architect, mechanical engineer, and sustainable design LEED BD+C consultant. The team members have met monthly throughout the LEED planning, preliminary design, and design development stages of the planning process.

B. LOCATION AND TRANSPORTATION (LT)

LTc: LEED for Neighborhood Development Location **[0 point]**

LTc: Sensitive Land Protection **[1 point]**

Project achieves this credit by meeting the requirements for option 1. Project is being developed on land that had been previous developed.

LTc: High Priority Site **[2 points]**

Project achieves this credit by meeting the requirements for option 3. Project is located on a brownfield site with known PCB contaminants within the soils. A licensed site professional (LSP) assisted in the testing of site/soils contaminants and develop a disposal plan to meet the requirements of the U.S. EPA and the Massachusetts Department of Environmental Protection (MassDEP), and the Massachusetts Contingency Plan (MCP).

LTc: Surrounding Density and Diverse Uses **[5 points]**

Project achieves this credit by meeting the requirements for option 1 **[3 points]**. Project site is located where the combined density is ≥ 35,000 SF per acre of buildable land within 0.25 miles of the project.

Project achieves this credit by meeting the requirements for option 2 **[2 points]**. Project main entrance is within 0.5 miles walking distance to the following existing and publicly available diverse uses:

Food Retail

1. Supermarket: Star Market grocery - 0.2 miles.

Community Serving Retail

1. Pharmacy: Rite Aid - 0.2 miles.
2. Pharmacy: CHA Pharmacy - 0.3 miles.
3. Clothing Store: K&G Fashion Superstore - 0.3 miles.
4. Clothing Store: Marshalls - 0.3 miles.

Services

1. Restaurant: Curio Café - 0.2 miles.
2. Restaurant: Loyal Nine - 0.4 miles.
3. Bank: Bank of America - 0.2 miles.
4. Bank: Citizens Bank - 0.3 miles.
5. Gym Heath Club: Ever Fitness - 0.2 miles.

Civic and Community Facilities

6. Gold Star Mothers City Park - 0.3 miles.
7. St. Francis of Assisis Church - 0.3 miles.
8. United States Postal Service – 0.3 miles

Community Anchor Uses

9. Zinc Apartments - 0.2 miles.

LTc: Access to Quality Transit **[5 points]**

Project plans to achieve this credit since project is within 0.5 miles to the MBTA Lechmere Station which is a bus rapid transit and light rail public transportation system which has weekday and weekend trip exceeding the daily minimum of 360 and 216 respectively.

LTc: Bicycle Facilities **[1 point]**

Bicycle Network: Project's entry and bicycle storage is within a 200-yard walking or bicycling distance to a bicycle network that connects to a bus rapid transit stop and light rail station.

Project achieves this credit by meeting the requirements for case 1. Commercial Project. Provide short-term bicycle storage for at least 2.5% of all peak visitors, but no fewer than four storage spaces per building. Project has capacity for 10 short term bicycle storage.

Provide long-term bicycle storage for at least 5% of all regular building occupants, but no fewer than four storage spaces per building in addition to the short-term bicycle storage spaces. Project has capacity for 21 long term bicycle storage.

Provide at least one on-site shower with changing facility for the first 100 regular building occupants and one additional shower for every 150 regular building occupants thereafter. Project has a shower and changing facility within each guestroom. An additional shower and changing facility will be provided within the 1st floor BOH area for employees.

Short-term bicycle storage must be within 100 feet walking distance of any main entrance. Long-term bicycle storage must be within 100 feet walking distance of any functional entry.

LTc: Reduced Parking Footprint **[1 point]**

Project intends to meet this credit as the parking provided is below zoning requirements. One (1) parking spaces (5%) have been provided for car pool parking.

Project achieves this credit by meeting the requirements for case 2: Dense and/or Transit-Serve Location. Project's off-street parking achieves a 40% reduction from the base ratios as

recommended by the Institute of Transportation Engineers' Transportation Planning Handbook, 3rd edition.

LTc: Green Vehicles **[1 point]**

Project achieves this credit by meeting the requirements and option 1: A minimum of 5% of parking spaces (1 total), will be reserved for green vehicle parking. In addition, a minimum of 2% of all parking spaces (1 space total) will have an EVSE charging station installed. This charger will be Level 2 (208-240 volts or greater), comply with the relevant regional or local standard for electrical connectors, and be networked to be capable of participating in a demand-response program or time-of-use pricing to encourage off-peak charging.

C. SUSTAINABLE SITES (SS)

The sustainable Sites (SS) category addresses environmental issues related to landscape and site design, ensuring a seamless co-existence between the built environment and the natural environment.

SSp: Construction Activity Pollution Prevention **[Required]**

Project meets this prerequisite requirement which will include erosion and sedimentation plan that conforms to the local codes and the EPA Construction General Permit of the National Pollution Discharge Elimination System Program NPDES. And implement best engineering practices for erosion and sedimentation control on site during construction. A Storm water Pollution Prevention Plan (SWPPP) is being prepared for the site per the requirements of the United States Environmental Protection Agency National Pollutant Discharge Elimination System Construction General Permit. The SWPPP is also being used to document compliance with the Leadership in Energy and Environmental Design Sustainable Sites Prerequisite for Erosion and Sedimentation Control.

SSc: Site Assessment **[1 point]**

The site assessment survey will be documented to include topography, hydrology, climate, vegetation, soils, human uses and human health effects and demonstrate relationships between the site and the topis listed prior, and how these features influenced the overall project design.

SSc: Site Development-Protect or Restore Habitat **[2 point]**

Project achieves this credit by meeting the requirements for option 2. A contribution of $0.40 per SF of site area (32,819 SF x 0.40 = $13,127.60) shall be made to a locally recognized land trust or conservation organization.

SSc: Heat Island Reduction **[1 points]**

The project achieves this credit by meeting the requirement for option 1. **High-Reflectance Roof:** The project uses roof materials with a 3 year aged solar reflectance (SRI) of 64 as it is considered as a low-sloped-roof. This roof material with a solar reflectance index of 78 will be implemented for a minimum of 75% of the roof surface.

SSc: Light Pollution Reduction **[1 point]**

The project achieves this credit by meeting the requirement for option 2. Maximum percentage of total lumens emitted above the horizontal plane shall not exceed 3% based upon the MLO lighting zone LZ3.

D. WATER EFFICIENCY (WE)

The Water Efficiency (WE) category addresses environmental degradation related to overuse of potable water within residential use hotel buildings and irrigation systems.

WEp: Outdoor Water Use Reduction **[Required]**

The project achieves this required credit by meeting the requirement for option 1. All plants used on the site require no irrigation.

WEp: Indoor Water Use Reduction **[Required]**

The project achieves this required credit for water use reduction by using high efficient plumbing fixtures, which reduce the aggregate water consumption by 20% from the baseline water consumption indicated in Table 1. Install appliances, equipment and processes within the project that meet the requirements listed in Table 2, Standards for appliances and Table 3, Standards for Processes.

WEp: Building-Level Water Metering **[Required]**

The project achieves this required credit by installing permanent water meters that measure the total potable water use for the building and ground.

WEc: Outdoor Water Use Reduction **[2 points]**

The project achieves this required credit by use of option 1. Landscaping does not require a permanent irrigation system beyond the two-year plant establishment period.

WEc: Indoor Water Use Reduction **[4 points]**

The project achieves this credit by further reducing fixture and fitting water use by an additional 40% beyond the 20% reduction already required as part of the required Indoor Water Use Reduction credit.

WEc: Cooling Tower Water Use **[2 points]**

The project achieves this credit by achieving a minimum of 10 cycles by increasing the level of treatment in condenser or make-up water.

WEc: Water Metering **[1 point]**

The project achieves this credit by installing water meters for indoor plumbing fixtures and fittings serving at least 80% of the indoor fixtures and fitting described in WE Prerequisite Indoor Water Use Reduction, either directly or by deducting all other measured water use from the measured total water consumption of the building. And, by installing water meters for domestic hot water to meter water use of at least 80% of the installed domestic hot water heating capacity (including both tanks and on-demand heaters).

E. ENERGY & ATMOSPHERE (EA)

EAp: Fundamental Commissioning and Verification **[Required]**

The project meets this required credit by hiring a commissioning agent to review and oversee the commissioning process activities including heating, ventilating, air conditioning and refrigeration systems and associated controls, lighting and daylighting controls, domestic hot water systems, and renewable energy systems.

EAp: Minimum Energy Performance **[Required]**

The project meets this required credit utilizing option 1 demonstrating a 5% building energy improvement using total building energy simulation.

EAp: Building-Level Energy Metering **[Required]**

The project meets this required credit implementing and installing building-level energy meters, or submeters that can be aggregated to provide building-level data representing total building energy consumption (electricity, natural gas, chilled water, steam, fuel oil, propane, biomass, etc.).

EAp: Fundamental Refrigerant Management **[Required]**

The project meets this required credit by selecting and installing HVAC equipment which doesn't use any CFC based refrigerants.

EAc: Enhanced Commissioning **[6 points]**

The project will meet this credit using option1, path 1 & path 2. A commissioning authority has been designated to oversee the completion of all commissioning process activities. The CxA will conduct design review, review contractor submittals, develop a system manual, verify the requirements for training operating personnel and review the operation of the building with operations and maintenance staff and occupants.

In addition, the project will develop a monitoring-based procedure/s and identify points to be measured and evaluated to assess performance of energy- and water-consuming systems. The CxA shall include the procedures and measurement points in the commissioning plan which will address the following:

- Measurement requirements (meters, points, metering systems, data access).
- The points to be tracked, with frequency and duration for trend monitoring,
- The limits of acceptable values for tracked points and metered values.
- The elements used to evaluate performance, including conflict between systems, out-of-sequence operation of systems components, and energy and water usage profiles
- An action plan for identifying and correcting operational errors and deficiencies.
- Training to prevent errors.
- Planning for repairs needed to maintain performance.
- The frequency of analyses in the first year of occupancy (at least quarterly).

EAc: Optimize Energy Performance **[14 points]**

The project will meet this credit using option 1. The current prediction for energy reduction is greater than or equal to 35% based on the energy modeling using IES Virtual Environment. The

project achieves higher energy standard than ASHRAE 90.1-2010 for major building components such as the envelope, HVAC, lighting, and domestic hot water.

EAc: Advanced Energy Metering **[1 point]**

The project will meet this credit by installing an advanced energy metering system to meter whole-building energy sources used by the building and to individually meter energy uses which represent 10% or more of the total building's annual consumption.

EAc: Enhanced Refrigerant Management **[1 point]**

The project will meet this credit using option 1. All refrigerants will have an ozone depletion potential (ODP) of zero and a global warming potential (GWP) of less than 50.

EAc: Green Power and Carbon Offsets **[2 points]**

The project will meet this credit by providing 100% of the total energy from green power and/or carbon offsets.

F. MATERIAL & RESOURCES

MRp: Storage and Collection of Recyclables **[Required]**

The hotel project will meet this required credit by providing a dedicated recycling area and use local waste handlers to collect and recycle mixed paper, corrugated cardboard, glass, plastics, and metals.

MRp: Construction and Demolition Waste Management Planning **[Required]**

The project will meet this required credit by implementing a construction and demolition waste management plan. Waste diversion goals will identifying at least five materials (both structural and nonstructural) targeted for diversion. A report to be provided which will approximate a percentage of the overall project waste that these materials represent. Majority of the materials will be separated.

MRc: Building Product Disclosure and Optimization – Environmental Product Declarations **[1 Point]**

The hotel project meets this credit by implementing option 1 utilizing at least 20 different permanently installed products sourced from at least five different manufacturers.

MRc: Building Product Disclosure and Optimization – Sourcing of Raw Materials **[1 point]**

The hotel project meets this credit by implementing option 1 utilizing at least 20 different permanently installed products from at least five different manufacturers that have publicly released a report from their raw material suppliers, which include raw material supplier extraction locations, a commitment to long-term ecologically responsible land use, a commitment to reducing environmental harms from extraction and/or manufacturing processes, and a commitment to meeting applicable standards or programs voluntarily that address responsible sourcing criteria.

MRc: Building Product Disclosure Optimization – Material Ingredients **[1 Point]**

The hotel project meets this credit by implementing option 1 utilizing at least 20 different permanently installed products from at least five different manufacturers that use any of the following programs to demonstrate the chemical inventory of the product to at least 0.1% (1000 ppm).

- Manufacturer Inventory
- Health Product Declaration
- Cradle to Cradle
- USGBC approved program

MRc: Construction and Demolition Waste Management **[2 points]**

The project meets this credit using option 1, path 2. Provides a construction waste management plan that, at minimum, targets to divert 75% of the construction waste from landfill. This will include at least four material streams. Many of the materials used on site will be recycled or sorted on site before transporting.

G. INDOOR ENVIRONMENTAL QUALITY

IAQp: Minimum Indoor Air Quality Performance **[Required]**

The project meets this required credit by using option 1. For mechanically ventilated spaces (and for mixed-mode systems when the mechanical ventilation is activated), determine the minimum outdoor air intake flow for mechanical ventilation systems using the ventilation rate procedure from ASHRAE 62.1–2010 or a local equivalent, whichever is more stringent.

Meet the minimum requirements of ASHRAE Standard 62.1–2010, Sections 4–7, Ventilation for Acceptable Indoor Air Quality (with errata), or a local equivalent, whichever is more stringent.

IAQp: Environmental Tobacco Smoke Control **[Required]**

The project achieves this required credit by prohibiting smoking inside the building. It will also prohibit smoking outside the building except in designated smoking areas located at least 25 feet from all entries, outdoor air intakes, and operable windows. This policy will be strictly enforced.

IAQc: Enhanced Indoor Air Quality Strategies **[2 points]**

The project meets these credits utilizing opting 1 and option 2. Provide IAQ monitoring via C02 sensors. Provide for effective delivery and mixing of fresh outdoor air design system for air-change effectiveness 30% greater than ASHRAE 62.1 minimum. MERV-13 filters on all energy recovery units providing ventilation air.

IAQc: Low-Emitting Materials **[3 points]**

The project meets these credits utilizing option 1. All specified and installed adhesives , sealants, paints and coatings, flooring systems, composite wood and agrifiber products, insulation and furniture and furnishings will meet or exceed the VOC and emissions thresholds as indicated in table 1.

IAQc: Construction Indoor Air Quality Management Plan **[1 point]**

The project meets this credit by providing a management plan for the construction and preoccupancy phases of the building. The project meets all the requirements for implementation and documentation of SMACNA throughout construction.

IAQc: Indoor Air Quality Assessment **[2 points]**

The project meets this credit utilizing option2. The project will perform building air testing between end of construction and prior to building occupancy. Testing for chemical analysis of formaldehyde and VOC shall comply with ISO/IEC 17025 and the contaminants will not exceed concentration levels listed in table 1.

IAQc: Thermal Comfort **[1 point]**

The project meets this credit using option 1. The hotel is designed to comply with the Massachusetts State Building Code, IECC 2018 and ASHRAE Standard 55-2010 climate zone 5. The mechanical systems selected for the building will be designed to maintain the required thermal comfort standards as recommended by ASHRAE Standard 55. The hotel provides individual thermal comfort controls for at least 50% of individual occupant spaces and group thermal comfort controls for all shared multioccupant spaces. Thermal comfort controls allow occupants to adjust at least one of the following in their air temperature. Each guestroom has an individual thermal comfort controls.

IAQc: Interior Lighting **[2 points]**

The project meets these credits by using both option 1 and option 2.

Option 1. At least 90% of individual occupant spaces will have lighting controls to provide at least three lighting levels, i.e. on, off and a mid-level light output between 30%-70% of the maximum illumination level. All shared spaces will have multi-zone lighting control systems enabling occupants to adjust the lighting to meet group needs and preferences, with at least three lighting levels or scenes (on, off, midlevel). Lighting for any presentation or projection wall must be separately controlled. Switches or manual controls must be located in the same space as the controlled luminaires. A person operating the controls must have a direct line of sight to the controlled luminaires. Each guestroom has individual lighting controls.

Option 2. These initial four strategies will be provided to enhance the lighting quality of the project.

- For at least 75% of the total connected lighting load, use light sources that have a rated life (or L70 for LED sources) of at least 24,000 hours (at 3-hour per start, if applicable).
- For at least 90% of the regularly occupied floor area, meet or exceed the following thresholds for area-weighted average surface reflectance: 85% for ceilings, 60% for walls, and 25% for floors.
- If furniture is included in the scope of work, select furniture finishes to meet or exceed the following thresholds for area-weighted average surface reflectance: 45% for work surfaces, and 50% for movable partitions.
- For at least 75% of the regularly occupied floor area, meet a ratio of average ceiling illuminance (excluding fenestration) to work surface illuminance that does not exceed 1:10.

IAQc: Daylight **[2 points]**

The project meets this credit using option 3. The hotel is designed so that 75% of the regularly occupied spaces are meeting the illuminance levels of a minimum of 300 Lux (27.9 foot-candles)

and a maximum of 3,000 Lux (278.7 foot-candles) in a clear sky condition on the dates indicate in table 4.

IAQc: Acoustic Performance **[1 point]**

The hotel project meets this credit by creating all occupies spaces within the hotel to comply with HVAC background noise, sound isolation, reverberation time, and sound reinforcement and masking.

H. INNOVATION

Ic: Innovation **[5 points]**

The project meets these credits by using case 1, option 2 and option 3.

- Option 1: The project will meet this innovation credit by working with local community members and donating a large portion of the site to the future connection of the community path ramp connection. This ramp will be an integral connection between the Community Path Extension and the Grand Junction Path – part of a bicycle infrastructure through multiple municipalities that is critical to reducing the amount of greenhouse emissions from automobiles. Ownership has been working with a community advocacy group for no less than 5 years to assist in facilitating this infrastructure.
- Option 2: The project will meet this pilot credit by providing All-Gender Restrooms WEpc147. The project will include single occupant, all-gender restrooms at all public bathrooms
- Option 3: The project will meet the following credits.
  - Pilot: Green training for contractors, trades, operators and service workers IPpc81: The project meets these credits utilizing option 1. At least 30% of contractor and subcontractor management personnel working on the project are certificate holders. This certificate is from a qualified training program as indicated.
  - Pilot: Social equity within the project team IPpc90: The project will meet this pilot credit by addressing equity for people involved in the ownership, design and construction of the project. Option 1 will be pursued by providing prevailing wage to all construction personnel and participation in on the job training or other financial assistance for workers to attend training sessions to better their personal being.
  - Innovative: Green Vehicles: The project intends to double the requirements of the Green Vehicles credit by providing a minimum of 2 EVSE charging stations (1 pedestal with 2 chargers) (4%) and preferred parking for at least 2 green vehicles.

Ic: LEED Accredited Professional **[1 point]**

The project team will consist of at least one participant, which is a LEED Accredited Professional (AP) with a specialty appropriate for the project, BD&C.

I. REGIONAL PRIORITY

RPp: Regional Priority: High Priority Site **[1 point]**

The project achieves the regional credit as a high priority site by physically removing the existing PCBs within the soils and eliminating the need for the site to be classified as an AUL (Activity and Use Limitations) under the MassDEP guidelines.

RPp: Regional Priority: Rainwater Management **[1 point]**

The project achieves the regional credit utilizing a rainwater management system to collect and store all rain/storm water runoff on-site within an infiltration system which reduces runoff volume and stormwater pollutants to local water sheds.

RPp: Regional Priority: Indoor Water Use Reduction **[1 point]**

The project achieves the regional credit for indoor water use reduction which aligns with the MWRA water conservation and efficiency programs to help maintain the regional water demand.

LEED® v4.0 NARRATIVE

Project Name: Somerbridge ~ AC/Moxy Dual Brand Hotel

Owner: Somerbridge Hotel, LLC

Architect: JAL Hospitality Design, LLC

Building Type and Use: Hotel and Extended Stay Hotel

Number of units: 199 (100 AC Units and 99 Moxy Units)

Date: Revised 09/01/2022

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Please see attached for the official LEED v4 BD+C New Construction Checklist.

The project intends to meet the platinum level certification requirement achieving 83 points and 22 possible points.

Integrative Process [1 point]
Location and Transportation [16 points] [16 possible points]
Sustainable Sites [5 points] [10 possible points]
Water Efficiency [9 points] [11 possible points]
Energy and Atmosphere [24 points] [33 possible points]
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Total Points [83 points] [110 possible points]

NARRATIVE FOR LEED CREDITS

The narrative below details the strategies by which the AC/Moxy Dual Brand Hotel by Marriott will intend to meet all the required credits and the additional credit requirements under LEED MR rating system.

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LTc: LEED for Neighborhood Development Location **[0 point]**

LTc: Sensitive Land Protection **[1 point]**

Project achieves this credit by meeting the requirements for option 1. Project is being developed on land that had been previous developed.

LTc: High Priority Site **[2 points]**

Project achieves this credit by meeting the requirements for option 3. Project is located on a brownfield site with known PCB contaminants within the soils. A licensed site professional (LSP) assisted in the testing of site/soils contaminants and develop a disposal plan to meet the requirements of the U.S. EPA and the Massachusetts Department of Environmental Protection (MassDEP), and the Massachusetts Contingency Plan (MCP).

LTc: Surrounding Density and Diverse Uses **[5 points]**

Project achieves this credit by meeting the requirements for option 1 **[3 points]**. Project site is located where the combined density is ≥ 35,000 SF per acre of buildable land within 0.25 miles of the project.

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Project plans to achieve this credit since project is within 0.5 miles to the MBTA Lechmere Station which is a bus rapid transit and light rail public transportation system which has weekday and weekend trip exceeding the daily minimum of 360 and 216 respectively.

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Project achieves this credit by meeting the requirements for case 1. Commercial Project. Provide short-term bicycle storage for at least 2.5% of all peak visitors, but no fewer than four storage spaces per building. Project has capacity for 10 short term bicycle storage.

Provide long-term bicycle storage for at least 5% of all regular building occupants, but no fewer than four storage spaces per building in addition to the short-term bicycle storage spaces. Project has capacity for 21 long term bicycle storage.

Provide at least one on-site shower with changing facility for the first 100 regular building occupants and one additional shower for every 150 regular building occupants thereafter. Project has a shower and changing facility within each guestroom. An additional shower and changing facility will be provided within the 1st floor BOH area for employees.

Short-term bicycle storage must be within 100 feet walking distance of any main entrance. Long-term bicycle storage must be within 100 feet walking distance of any functional entry.

LTc: Reduced Parking Footprint **[1 point]**

Project intends to meet this credit as the parking provided is below zoning requirements. One (1) parking spaces (5%) have been provided for car pool parking.

Project achieves this credit by meeting the requirements for case 2: Dense and/or Transit-Serve Location. Project's off-street parking achieves a 40% reduction from the base ratios as

recommended by the Institute of Transportation Engineers' Transportation Planning Handbook, 3rd edition.

LTc: Green Vehicles **[1 point]**

Project achieves this credit by meeting the requirements and option 1: A minimum of 5% of parking spaces (1 total), will be reserved for green vehicle parking. In addition, a minimum of 2% of all parking spaces (1 space total) will have an EVSE charging station installed. This charger will be Level 2 (208-240 volts or greater), comply with the relevant regional or local standard for electrical connectors, and be networked to be capable of participating in a demand-response program or time-of-use pricing to encourage off-peak charging.

C. SUSTAINABLE SITES (SS)

The sustainable Sites (SS) category addresses environmental issues related to landscape and site design, ensuring a seamless co-existence between the built environment and the natural environment.

SSp: Construction Activity Pollution Prevention **[Required]**

Project meets this prerequisite requirement which will include erosion and sedimentation plan that conforms to the local codes and the EPA Construction General Permit of the National Pollution Discharge Elimination System Program NPDES. And implement best engineering practices for erosion and sedimentation control on site during construction. A Storm water Pollution Prevention Plan (SWPPP) is being prepared for the site per the requirements of the United States Environmental Protection Agency National Pollutant Discharge Elimination System Construction General Permit. The SWPPP is also being used to document compliance with the Leadership in Energy and Environmental Design Sustainable Sites Prerequisite for Erosion and Sedimentation Control.

SSc: Site Assessment **[1 point]**

The site assessment survey will be documented to include topography, hydrology, climate, vegetation, soils, human uses and human health effects and demonstrate relationships between the site and the topis listed prior, and how these features influenced the overall project design.

SSc: Site Development-Protect or Restore Habitat **[2 point]**

Project achieves this credit by meeting the requirements for option 2. A contribution of $0.40 per SF of site area (32,819 SF x 0.40 = $13,127.60) shall be made to a locally recognized land trust or conservation organization.

SSc: Heat Island Reduction **[1 points]**

The project achieves this credit by meeting the requirement for option 1. **High-Reflectance Roof:** The project uses roof materials with a 3 year aged solar reflectance (SRI) of 64 as it is considered as a low-sloped-roof. This roof material with a solar reflectance index of 78 will be implemented for a minimum of 75% of the roof surface.

SSc: Light Pollution Reduction **[1 point]**

The project achieves this credit by meeting the requirement for option 2. Maximum percentage of total lumens emitted above the horizontal plane shall not exceed 3% based upon the MLO lighting zone LZ3.

D. WATER EFFICIENCY (WE)

The Water Efficiency (WE) category addresses environmental degradation related to overuse of potable water within residential use hotel buildings and irrigation systems.

WEp: Outdoor Water Use Reduction **[Required]**

The project achieves this required credit by meeting the requirement for option 1. All plants used on the site require no irrigation.

WEp: Indoor Water Use Reduction **[Required]**

The project achieves this required credit for water use reduction by using high efficient plumbing fixtures, which reduce the aggregate water consumption by 20% from the baseline water consumption indicated in Table 1. Install appliances, equipment and processes within the project that meet the requirements listed in Table 2, Standards for appliances and Table 3, Standards for Processes.

WEp: Building-Level Water Metering **[Required]**

The project achieves this required credit by installing permanent water meters that measure the total potable water use for the building and ground.

WEc: Outdoor Water Use Reduction **[2 points]**

The project achieves this required credit by use of option 1. Landscaping does not require a permanent irrigation system beyond the two-year plant establishment period.

WEc: Indoor Water Use Reduction **[4 points]**

The project achieves this credit by further reducing fixture and fitting water use by an additional 40% beyond the 20% reduction already required as part of the required Indoor Water Use Reduction credit.

WEc: Cooling Tower Water Use **[2 points]**

The project achieves this credit by achieving a minimum of 10 cycles by increasing the level of treatment in condenser or make-up water.

WEc: Water Metering **[1 point]**

The project achieves this credit by installing water meters for indoor plumbing fixtures and fittings serving at least 80% of the indoor fixtures and fitting described in WE Prerequisite Indoor Water Use Reduction, either directly or by deducting all other measured water use from the measured total water consumption of the building. And, by installing water meters for domestic hot water to meter water use of at least 80% of the installed domestic hot water heating capacity (including both tanks and on-demand heaters).

E. ENERGY & ATMOSPHERE (EA)

EAp: Fundamental Commissioning and Verification **[Required]**

The project meets this required credit by hiring a commissioning agent to review and oversee the commissioning process activities including heating, ventilating, air conditioning and refrigeration systems and associated controls, lighting and daylighting controls, domestic hot water systems, and renewable energy systems.

EAp: Minimum Energy Performance **[Required]**

The project meets this required credit utilizing option 1 demonstrating a 5% building energy improvement using total building energy simulation.

EAp: Building-Level Energy Metering **[Required]**

The project meets this required credit implementing and installing building-level energy meters, or submeters that can be aggregated to provide building-level data representing total building energy consumption (electricity, natural gas, chilled water, steam, fuel oil, propane, biomass, etc.).

EAp: Fundamental Refrigerant Management **[Required]**

The project meets this required credit by selecting and installing HVAC equipment which doesn't use any CFC based refrigerants.

EAc: Enhanced Commissioning **[6 points]**

The project will meet this credit using option1, path 1 & path 2. A commissioning authority has been designated to oversee the completion of all commissioning process activities. The CxA will conduct design review, review contractor submittals, develop a system manual, verify the requirements for training operating personnel and review the operation of the building with operations and maintenance staff and occupants.

In addition, the project will develop a monitoring-based procedure/s and identify points to be measured and evaluated to assess performance of energy- and water-consuming systems. The CxA shall include the procedures and measurement points in the commissioning plan which will address the following:

- Measurement requirements (meters, points, metering systems, data access).
- The points to be tracked, with frequency and duration for trend monitoring,
- The limits of acceptable values for tracked points and metered values.
- The elements used to evaluate performance, including conflict between systems, out-of-sequence operation of systems components, and energy and water usage profiles
- An action plan for identifying and correcting operational errors and deficiencies.
- Training to prevent errors.
- Planning for repairs needed to maintain performance.
- The frequency of analyses in the first year of occupancy (at least quarterly).

EAc: Optimize Energy Performance **[14 points]**

The project will meet this credit using option 1. The current prediction for energy reduction is greater than or equal to 35% based on the energy modeling using IES Virtual Environment. The

project achieves higher energy standard than ASHRAE 90.1-2010 for major building components such as the envelope, HVAC, lighting, and domestic hot water.

EAc: Advanced Energy Metering **[1 point]**

The project will meet this credit by installing an advanced energy metering system to meter whole-building energy sources used by the building and to individually meter energy uses which represent 10% or more of the total building's annual consumption.

EAc: Enhanced Refrigerant Management **[1 point]**

The project will meet this credit using option 1. All refrigerants will have an ozone depletion potential (ODP) of zero and a global warming potential (GWP) of less than 50.

EAc: Green Power and Carbon Offsets **[2 points]**

The project will meet this credit by providing 100% of the total energy from green power and/or carbon offsets.

F. MATERIAL & RESOURCES

MRp: Storage and Collection of Recyclables **[Required]**

The hotel project will meet this required credit by providing a dedicated recycling area and use local waste handlers to collect and recycle mixed paper, corrugated cardboard, glass, plastics, and metals.

MRp: Construction and Demolition Waste Management Planning **[Required]**

The project will meet this required credit by implementing a construction and demolition waste management plan. Waste diversion goals will identifying at least five materials (both structural and nonstructural) targeted for diversion. A report to be provided which will approximate a percentage of the overall project waste that these materials represent. Majority of the materials will be separated.

MRc: Building Product Disclosure and Optimization – Environmental Product Declarations **[1 Point]**

The hotel project meets this credit by implementing option 1 utilizing at least 20 different permanently installed products sourced from at least five different manufacturers.

MRc: Building Product Disclosure and Optimization – Sourcing of Raw Materials **[1 point]**

The hotel project meets this credit by implementing option 1 utilizing at least 20 different permanently installed products from at least five different manufacturers that have publicly released a report from their raw material suppliers, which include raw material supplier extraction locations, a commitment to long-term ecologically responsible land use, a commitment to reducing environmental harms from extraction and/or manufacturing processes, and a commitment to meeting applicable standards or programs voluntarily that address responsible sourcing criteria.

MRc: Building Product Disclosure Optimization – Material Ingredients **[1 Point]**

The hotel project meets this credit by implementing option 1 utilizing at least 20 different permanently installed products from at least five different manufacturers that use any of the following programs to demonstrate the chemical inventory of the product to at least 0.1% (1000 ppm).

- Manufacturer Inventory
- Health Product Declaration
- Cradle to Cradle
- USGBC approved program

MRc: Construction and Demolition Waste Management **[2 points]**

The project meets this credit using option 1, path 2. Provides a construction waste management plan that, at minimum, targets to divert 75% of the construction waste from landfill. This will include at least four material streams. Many of the materials used on site will be recycled or sorted on site before transporting.

G. INDOOR ENVIRONMENTAL QUALITY

IAQp: Minimum Indoor Air Quality Performance **[Required]**

The project meets this required credit by using option 1. For mechanically ventilated spaces (and for mixed-mode systems when the mechanical ventilation is activated), determine the minimum outdoor air intake flow for mechanical ventilation systems using the ventilation rate procedure from ASHRAE 62.1–2010 or a local equivalent, whichever is more stringent.

Meet the minimum requirements of ASHRAE Standard 62.1–2010, Sections 4–7, Ventilation for Acceptable Indoor Air Quality (with errata), or a local equivalent, whichever is more stringent.

IAQp: Environmental Tobacco Smoke Control **[Required]**

The project achieves this required credit by prohibiting smoking inside the building. It will also prohibit smoking outside the building except in designated smoking areas located at least 25 feet from all entries, outdoor air intakes, and operable windows. This policy will be strictly enforced.

IAQc: Enhanced Indoor Air Quality Strategies **[2 points]**

The project meets these credits utilizing opting 1 and option 2. Provide IAQ monitoring via C02 sensors. Provide for effective delivery and mixing of fresh outdoor air design system for air-change effectiveness 30% greater than ASHRAE 62.1 minimum. MERV-13 filters on all energy recovery units providing ventilation air.

IAQc: Low-Emitting Materials **[3 points]**

The project meets these credits utilizing option 1. All specified and installed adhesives , sealants, paints and coatings, flooring systems, composite wood and agrifiber products, insulation and furniture and furnishings will meet or exceed the VOC and emissions thresholds as indicated in table 1.

IAQc: Construction Indoor Air Quality Management Plan **[1 point]**

The project meets this credit by providing a management plan for the construction and preoccupancy phases of the building. The project meets all the requirements for implementation and documentation of SMACNA throughout construction.

IAQc: Indoor Air Quality Assessment **[2 points]**

The project meets this credit utilizing option2. The project will perform building air testing between end of construction and prior to building occupancy. Testing for chemical analysis of formaldehyde and VOC shall comply with ISO/IEC 17025 and the contaminants will not exceed concentration levels listed in table 1.

IAQc: Thermal Comfort **[1 point]**

The project meets this credit using option 1. The hotel is designed to comply with the Massachusetts State Building Code, IECC 2018 and ASHRAE Standard 55-2010 climate zone 5. The mechanical systems selected for the building will be designed to maintain the required thermal comfort standards as recommended by ASHRAE Standard 55. The hotel provides individual thermal comfort controls for at least 50% of individual occupant spaces and group thermal comfort controls for all shared multioccupant spaces. Thermal comfort controls allow occupants to adjust at least one of the following in their air temperature. Each guestroom has an individual thermal comfort controls.

IAQc: Interior Lighting **[2 points]**

The project meets these credits by using both option 1 and option 2.

Option 1. At least 90% of individual occupant spaces will have lighting controls to provide at least three lighting levels, i.e. on, off and a mid-level light output between 30%-70% of the maximum illumination level. All shared spaces will have multi-zone lighting control systems enabling occupants to adjust the lighting to meet group needs and preferences, with at least three lighting levels or scenes (on, off, midlevel). Lighting for any presentation or projection wall must be separately controlled. Switches or manual controls must be located in the same space as the controlled luminaires. A person operating the controls must have a direct line of sight to the controlled luminaires. Each guestroom has individual lighting controls.

Option 2. These initial four strategies will be provided to enhance the lighting quality of the project.

- For at least 75% of the total connected lighting load, use light sources that have a rated life (or L70 for LED sources) of at least 24,000 hours (at 3-hour per start, if applicable).
- For at least 90% of the regularly occupied floor area, meet or exceed the following thresholds for area-weighted average surface reflectance: 85% for ceilings, 60% for walls, and 25% for floors.
- If furniture is included in the scope of work, select furniture finishes to meet or exceed the following thresholds for area-weighted average surface reflectance: 45% for work surfaces, and 50% for movable partitions.
- For at least 75% of the regularly occupied floor area, meet a ratio of average ceiling illuminance (excluding fenestration) to work surface illuminance that does not exceed 1:10.

IAQc: Daylight **[2 points]**

The project meets this credit using option 3. The hotel is designed so that 75% of the regularly occupied spaces are meeting the illuminance levels of a minimum of 300 Lux (27.9 foot-candles)

and a maximum of 3,000 Lux (278.7 foot-candles) in a clear sky condition on the dates indicate in table 4.

IAQc: Acoustic Performance **[1 point]**

The hotel project meets this credit by creating all occupies spaces within the hotel to comply with HVAC background noise, sound isolation, reverberation time, and sound reinforcement and masking.

H. INNOVATION

Ic: Innovation **[5 points]**

The project meets these credits by using case 1, option 2 and option 3.

- Option 1: The project will meet this innovation credit by working with local community members and donating a large portion of the site to the future connection of the community path ramp connection. This ramp will be an integral connection between the Community Path Extension and the Grand Junction Path – part of a bicycle infrastructure through multiple municipalities that is critical to reducing the amount of greenhouse emissions from automobiles. Ownership has been working with a community advocacy group for no less than 5 years to assist in facilitating this infrastructure.
- Option 2: The project will meet this pilot credit by providing All-Gender Restrooms WEpc147. The project will include single occupant, all-gender restrooms at all public bathrooms
- Option 3: The project will meet the following credits.
  - Pilot: Green training for contractors, trades, operators and service workers IPpc81: The project meets these credits utilizing option 1. At least 30% of contractor and subcontractor management personnel working on the project are certificate holders. This certificate is from a qualified training program as indicated.
  - Pilot: Social equity within the project team IPpc90: The project will meet this pilot credit by addressing equity for people involved in the ownership, design and construction of the project. Option 1 will be pursued by providing prevailing wage to all construction personnel and participation in on the job training or other financial assistance for workers to attend training sessions to better their personal being.
  - Innovative: Green Vehicles: The project intends to double the requirements of the Green Vehicles credit by providing a minimum of 2 EVSE charging stations (1 pedestal with 2 chargers) (4%) and preferred parking for at least 2 green vehicles.

Ic: LEED Accredited Professional **[1 point]**

The project team will consist of at least one participant, which is a LEED Accredited Professional (AP) with a specialty appropriate for the project, BD&C.

I. REGIONAL PRIORITY

RPp: Regional Priority: High Priority Site **[1 point]**

The project achieves the regional credit as a high priority site by physically removing the existing PCBs within the soils and eliminating the need for the site to be classified as an AUL (Activity and Use Limitations) under the MassDEP guidelines.

RPp: Regional Priority: Rainwater Management **[1 point]**

The project achieves the regional credit utilizing a rainwater management system to collect and store all rain/storm water runoff on-site within an infiltration system which reduces runoff volume and stormwater pollutants to local water sheds.

RPp: Regional Priority: Indoor Water Use Reduction **[1 point]**

The project achieves the regional credit for indoor water use reduction which aligns with the MWRA water conservation and efficiency programs to help maintain the regional water demand.

jal
Architecture and Engineering, P.C.
1359 Hooksett Road, #1
Hooksett, NH 03106

2022_0601

Ms. Christina Blais
Director
Mayor's Office of Sustainability and Environment
City of Somerville
50 Evergreen Avenue, Somerville, MA 02145

RE: Somerbridge Hotel, LLC **LEED Affidavit**

Ms. Blais,

I, Steve Calzini, affirm that I have thoroughly reviewed all supporting documents for LEED v4 and have confirmed to the best of my knowledge that the designed hotel at 1 McGrath Highway, Somerville, MA 02145 has the ability to meet the requirements of LEED Platinum certifiability.

The current design anticipates 83 LEED points with an additional 22 possible points. This is notated on the LEED checklist and further explained on the LEED narrative. The Sustainaville Questionnaire has also been coordinated with these documents and explains the full extent of compliance with the city of Somerville Requirements.

Shall you have any questions, or require any additional information, please do not hesitate to reach out.

Sincerely,

Steve Calzini, LEED AP, BD+C