AI Reports®
Form 820.05*

Client File #:		Appraisal File #:	

Residential Green and Energy Efficient Addendum

Client:

Subject Property: 152-158 Highland St

City: Roxbury | State: MA | Zip: 02119

Additional resources to aid in the valuation of green properties and the completion of this form can be found at http://www.appraisalinstitute.org/education/green_energy_addendum.aspx

The appraiser hereby certifies that the information provided within this addendum:

- has been considered in the appraiser's development of the appraisal of the subject property only for the client and intended user(s) identified in the appraisal report and only for the intended use stated in the report.
- is not provided by the appraiser for any other purpose and should not be relied upon by parties other than those identified by the appraiser as the client or intended user(s) in the report.
- is the result of the appraiser's routine inspection of and inquiries about the subject property's green and energy efficient features. Extraordinary assumption: Data provided herein is assumed to be accurate and if found to be in error could alter the appraiser's opinions or conclusions.
- is not made as a representation or as a warranty as to the efficiency, quality, function, operability, reliability or cost savings of the reported items or of the subject property in general, and this addendum should not be relied upon for such assessments.

Green Building: The practice of creating structures and using processes that are environmentally responsible and resource-efficient throughout a building's lifecycle from siting to design, construction, operation, maintenance, renovation, and deconstruction. This practice expands and complements the classic building design concerns of economy, utility, durability, and comfort (US EPA). High Performance building and green building are often used interchangeably.

Six Elements of Green Building: A green building has attributes that fall into the six elements of green building known as (1) site, (2) water, (3) energy, (4) materials, (5) indoor environmental quality, and (6) maintenance and operation. The energy and water elements are the most measurable elements of green or high performance housing. Appraisers need savings amounts to develop an income approach to support energy efficient contributory value.

THIRD-PARTY VERIFICATIONS (See types defined in glossary).

The following verified items are considered within the appraisal analysis of the subject property:

Green Certification

Certifications attest that the home meets certain minimum thresholds.

Environmental Protection Agency (EPA):	☐ Indoor airPLUS ☐ WaterSense ☑ ENERGY STAR
Energy Department (DOE):	☐ Zero Energy Ready Home (ZERH)
Home Innovation Research Labs NGBS Home Remodel:	
Home Innovation Research Labs NGBS New Home:	☐ Bronze ☐ Silver ☐ Gold ☐ Emerald
Living Building Challenge (LBC):	☐ Living Building Certified ☐ Petal Certification
Passivhaus Standard:	☐ PHI Low Energy ☐ EnerPhit ☐ Passive House
Passive House Institute US:	☐ PHIUS+ 2015
USGBC LEED:	☐ Certified ☐ Silver ☐ Gold ☑ Platinum
Other:	

pending → Date Verified: __/__/____ | Green Certification Version: 3 | Organization URL: USGBC.org | **ABOVE VALID ONLY IF CHECKED:** ☐ Verification reviewed on site ☐ Verification attached to this report

Energy Label

Labels disclose the state of the home's energy assets.

RESNET's HERS Rating (0 to 150): ~~23~~ 10 * ~~17~~
☐ Sampling Rating
☐ Projected Rating
☐ Confirmed Rating

Estimated energy savings for this home: $*/year ____¢kWh rate dated __/__/__
Energy Savings includes electricity, heating & Cooling.
Score below 100 indicates energy costs are expected to be lower than average local code home per square foot. HERS Index Report estimates energy cost based on number of bedrooms plus one. Only a "confirmed rating" is a diagnostic test.

DOE's Home Energy Score
Score (1 to 10): _____
☐ Official Score
☐ Unofficial Score

Estimated energy savings for this home: $____/year ___¢kWh rate dated __/__/__
Energy Savings includes electricity, heating & Cooling.
Score above five indicates energy costs are expected to be lower than average local home. Home Energy Score estimates energy cost based on state average energy rates and the home's energy features.

Other Energy Score: Range (____ to ____):
_____

Estimated energy savings: $____/year __¢ kWh rate dated __/__/__
Describe energy label system:

* see attached Home Energy Rating Certificates

Date Verified: __/__/____ | Score or Rating Version: 2017 standards | Organization URL: ☑ www.resnet.us/ ☐ www.homeenergyscore.gov ☐ Other:_____ | **ABOVE VALID ONLY IF CHECKED:** ☐ Verification reviewed on site ☐ Verification attached to this report ← pending

Verified Energy Improvements

Only include improvements with verified documentation.

Explain energy-related improvements:
Cost of improvements: $_____

Date Verified: __/__/____ | Certificate of Efficiency Improvements Version: _____ | Organization URL: ☐ Other: _____ ☐ energystar.gov/homeperformance | **ABOVE VALID ONLY IF CHECKED:** ☐ Verification reviewed on site ☐ Verification attached to this report

Completed by:_____ Title:_____ Date:_____

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EFFICIENCY FEATURES (Water, Energy, and Environmental. See types defined in glossary).

The following items are considered within the appraisal analysis of the subject property:

Insulation
☐ Fiberglass Blown-In ☑ Foam Insulation ☑ Cellulose ☐ Fiberglass Batt Insulation
☑ R-Value 43.7 Wall 66.7 Ceiling ☑ Other (Describe) foundation R-20; slab R-10

Building Envelope
Envelope Tightness: _____ Unit: ☐ __CFM25 ☐ __CFM50 ☑ .5ACH50 ☐ __ ACH natural
Instructions: Insert the rating as a number that could be 0.5 to 7ACH50 or higher. The lower the number, the more air tight the envelope. Building Codes for area show maximum Envelope Tightness allowed based on the climate zone. Not all areas have adopted a building code. http://bcap-energy.org/

Windows
☑ ENERGY STAR® ☑ Low E ☐ High Impact ☐ Storm ☐ Double Pane ☑ Triple Pane ☐ Tinted ☐ Solar Shades

Day Lighting
☐ # Of Skylights: ____ ☐ # Of Solar Tubes: ____ ☐ Other (Describe): _____ (% Of lighting LEDs): 100

ENERGY STAR® Appliances
ENERGY STAR®: ☑ Dishwasher ☑ Refrigerator ☐ Washer/Dryer ☑ Other: induction range
Energy Source: ☐ Propane ☑ Electric ☐ Natural Gas ☐ Other: _____
Note: ENERGY STAR® appliances do not result in an ENERGY STAR® Home.

Water Heater
☑ ENERGY STAR® Size: 50 gallons ☐ Tankless ☐ Solar (next page) ☑ Heat Pump ☐ Coil

HVAC & Related Equipment
Describe in comments area.

☐ High Efficiency HVAC
SEER: 19
Efficiency Rating: 13.5 %
AFUE* n/a %
*Annual Fuel-Utilization Efficiency

☑ Heat Pump Efficiency Rating:
COP: 4.25
HSPF: 10
SEER: 19
EER: 13.5

Thermostat/Controllers?	☑ Yes	☐ No
Programmable Thermostat?	☑ Yes	☐ No
Auxiliary heat source?	☐ Yes	☑ No
Radiant Floor Heat?	☐ Yes	☑ No
Geothermal?	☐ Yes	☑ No
Electric Vehicle Ready? (car charger)	☑ Yes	☐ No

Indoor Environmental Quality
☑ Energy (ERV) or Heat Recovery Ventilator (HRV)
☐ Other Measured Whole-House Ventilation Device (See glossary)
☑ Humidity Monitoring Device installed
☐ Non Toxic Pest Control
☑ Radon System: ☐ Active ☑ Passive

Water Efficiency
☐ Reclaimed Water System (Describe): _____
☐ Greywater reuse system
☐ Water Saving Fixtures
☐ Rain Barrels Used in Irrigation
Cistern size: _____ gallons
Location of cistern: _____

Utility Costs *
Annual Utility Cost: $~573/year, based on: __/__/____ to __/__/____ (full year).
Includes (check all that apply): ☑ Electric ☑ Heating ☑ Water ☐ Other: _____
Of Occupants: _____

Comments
Include source for information provided in this section.

If a property is built green but not formally certified, it still deserves proper description and analysis to value the features. The market analysis is of the structure's physical, economic, and locational attributes and not an analysis of its label alone. Provide additional information that illustrates how this property exceeds local building code. This document is intended for new construction or existing homes that have been retrofit to include higher energy or green features.

* Anticipated operation/performance. See attached Home Energy Rating Certificates.

Additionally, SRECs are expected to cover a significant portion of condo fees.

Completed by: _____ Title: _____ Date: _____

The objective of this Addendum is to standardize the communication of the high performing features of residential properties. Identifying the features not found on the appraisal form provides a basis for comparable selection and analysis of the features. Builders, contractors, homeowners, and third party verifiers are encouraged to complete this Addendum and present to appraisers, agents, lenders, and homeowners. Complete the pages that apply to the property appraised and provide to appraiser prior to the completion of an appraisal. Provide the Addendum to the lender at the time of loan application to assist them in understanding the property type so an appraiser with sufficient knowledge of this property type will be engaged to provide an appraisal to meet secondary mortgage market guidelines.

Client:		Client File #:	
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Solar Panels

The following items are considered within the appraisal analysis of the subject property:

Solar Photovoltaic (Electric) System

	Array #1 152-154	Array #2 (if applicable) 156-158
Type of Ownership	☐ Leased ☑ Owned ☐* Solar Loan with UCC Filing ☐ Power Purchase Agreement (PPA) If solar loan has UCC Filing, it is considered personal property and should not be included in market value.	☐ Leased ☑ Owned ☐ Solar Loan ☐ UCC Filing ☐ Power Purchase Agreement (PPA)
Panel Specifications * Total output 39,600 96 panels	System Size: 15.84 kW (1kW = 1000 Watts) Age of Panels: 0 years Energy Production: 19,800 kWh Source of Energy Production Estimate: Manufacturer: LG Warranty on Panels: 10/25 years	System Size: 15.84 kW (1kW = 1000 Watts) Age of Panels: 0 years Energy Production: 19,800 kWh Source of Energy Production Estimate: Manufacturer: LG Warranty on Panels: 10/25 years
Array Placement Affects energy production. *Orientation	Location (roof, ground, etc.): roof ☑ Fixed Mount ☐ Tracking Mount Tilt / Slope: flush mount racking *Azimuth: parallel to building lines	Location (roof, ground, etc.): roof Tilt / Slope: flush mount racking Azimuth: parallel to building lines Orientation (direction panels face): South
Inverter Specifications	Number of Inverters per Array: 2 Age: 0 years Wattage: 12,000 watts Manufacturer: LG Warranty Term: 10/15 years	Number of Inverters per Array: 2 Age: 0 years Wattage: 12,000 watts Manufacturer: LG Warranty Term: 10/15 years
Energy Storing Batteries	Battery Type: ☐ Lithium-ion ☐ Lithium-ion Polymer ☐ Lead Acid ☐ Lead Calcium ☐ AGM ☐ GEL Manufacturer: _____ Storage Capacity: _____kWh Warranty Term: _____ years Battery age: _____	
Name of Utility Company:	Eversource	**Charge / kWh from Utility**	$ _____ / kWh

Solar Thermal Water Heating System

Type of System	Active: ☐Direct ☐ Indirect Passive: ☐ Integral collector ☐ Thermo-syphon	**Storage Tank Size**	Gallons: _____
Collector Type	☐ Flat-Plat ☐ Integral ☐ Evacuated-Tube Solar	**System Age**	Years: _____
Back-Up System	☐ Conventional Water Heater ☐ Tankless On Demand ☐ Tankless Heat Pump	**Warranty Term**	
Solar Energy Factor (SEF)	*Rating ranges 1 to 11. Higher number is more efficient.	**Manufacturer**	

Comments Discuss incentives available for new panels, condition of current panels, and any maintenance issues. If leased, provide the lease terms.

Discuss source of information and define other renewable energy sources, such as wind, hydropower, biomass power, etc.

Note: Leased solar PV systems and **Power Purchase Agreements** should not be included in the value of the real property as these systems generally are considered personal property. If a system is a lease or a PPA the terms must be provided to the appraiser for analysis. Appraisers must analyze the effect any of the terms of the lease or PPA have on the price buyers are willing to pay for the property.

Completed by: _____ Title: _____ Date: _____

Client:		Client File #:	
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Location - Site			
The following items are considered within the appraisal analysis of the subject property:			
Walk Score	Score: 58	Source: ☑ http://www.walkscore.com	☐ Other:
Public Transportation	☑ Bus Distance: .29 mi Blocks	☑ Train: Distance: .3 mi Blocks	☑ Subway Distance: .3 mi Blocks
Site	Orientation (front faces): ☑ East / West ☐ North / South	Landscaping: ☑ Water Efficient ☑ Natural ☐ Pond/Lake on site ☐ Rain Garden	
Comments	transit score: 88 - excellent bike score: 76 - "very bikeable" * storm water collection cistern		

Incentives – Amount of Incentive and Terms	
The following items are considered within the appraised value of the subject property and **based on effective date of value.**	
Federal	30% income tax credit for renewable energy
State	$1000/unit ; 80% of SREC II
Local	n/a
Comments	Incentives offset cost and should be reported and described in the cost approach section of the report. Clearly identify the incentives that offset the gross cost of construction to meet appraisal standards. Incentives are typically not a sales concession in sales comparison approach since they do not transfer with the property and are not paid by the seller. Incentives are typically for a specified period and only those available as of the date of value should be addressed in the appraisal process. Incentives may be available to offset repairs or deferred maintenance items as well. Incentives, rebates, and tax credits for most U.S. properties can be found at www.dsireusa.org

Completed by:_____ Title:_____ Date:_____

The objective of this Addendum is to standardize the communication of the high performing features of residential properties. Identifying the features not found on the appraisal form provides a basis for comparable selection and analysis of the features.

- Builders, contractors, homeowners, and third party verifiers are encouraged to complete this Addendum and present to appraisers, agents, lenders, and homeowners. Appraisers typically do not have sufficient information to complete this addendum without builder, contractor, or third party verifier documentation.
- Attach this completed document to the MLS listing to provide sufficient detail on sales and listings to assist buyers, appraisers, and real estate agents in understanding the high performance features of the property.
- Complete the pages that apply to the property appraised and provide to appraiser prior to the completion of an appraisal.
- Provide the Addendum to the lender at the time of loan application to assist them in understanding the property type so an appraiser with sufficient knowledge of this property type will be engaged to provide an appraisal to meet secondary mortgage market guidelines.

Home Energy Rating Certificate

CLEAResult

Property
E+ Solutions
152 Highland Street
Roxbury, MA 02119

HERS
Rating Type: Projected Rating
Rating Date: 4/11/2017
Registry ID:

Certified Energy Rater: Brendan Kavanagh
Rating Number:

Projected Rating: Based on Plans - Field Confirmation Required.

HERS Index: -22

General Information

Conditioned Area	1435 sq. ft.	House Type	Townhouse, end unit
Conditioned Volume	17274 cubic ft.	Foundation	Unconditioned basement
Bedrooms	3		

Mechanical Systems Features

Air-source heat pump:	Electric, Htg: 13.5 HSPF. Clg: 30.0 SEER.
Water Heating:	Heat pump, Electric, 3.24 EF, 50.0 Gal.
Duct Leakage to Outside	NA
Ventilation System	Balanced: HRV, 64 cfm, 24.0 watts.
Programmable Thermostat	Heat=Yes; Cool=Yes

Building Shell Features

Ceiling Flat	R-66.7	Slab	None
Sealed Attic	NA	Exposed Floor	R-30.0
Vaulted Ceiling	R-50.4	Window Type	U-Value: 0.180, SHGC: 0.210
Above Grade Walls	R-43.2	Infiltration Rate	Htg: 0.50 Clg: 0.50 ACH50
Foundation Walls	R-12.0	Method	Blower door test

Lights and Appliance Features

Percent Interior Lighting	100.00	Range/Oven Fuel	Electric
Percent Exterior Lighting	100.00	Clothes Dryer Fuel	Electric
Refrigerator (kWh/yr)	539	Clothes Dryer EF	3.01
Dishwasher (kWh/yr)	260	Ceiling Fan (cfm/Watt)	0.00

Estimated Annual Energy Cost

Use	MMBtu	Cost	Percent
Heating	8.2	$247	-44%
Cooling	2.8	$42	-7%
Hot Water	3.0	$146	-26%
Lights/Appliances	14.8	$652	-115%
Photovoltaics	-39.5	$-1734	305%
Service Charges		$78	-14%
Total	**-10.6**	**$-568**	**100%**

Criteria

This home meets or exceeds the minimum criteria for the following:
Massachusetts Stretch Energy Code*
* Compliance is determined by the rater.

CLEAResult
50 Washington St
Suite 3000
Westborough, MA 01581

Certified Energy Rater: _____

Home Energy Rating Certificate

CLEAResult

Property
E+ Solutions
154 Highland Street
Roxbury, MA 02119

HERS
Rating Type: Projected Rating
Rating Date: 4/11/2017
Registry ID:

Certified Energy Rater: Brendan Kavanagh
Rating Number:

Projected Rating: Based on Plans - Field Confirmation Required.

HERS Index: -22

General Information

Conditioned Area	1435 sq. ft.	House Type	Townhouse, end unit
Conditioned Volume	14374 cubic ft.	Foundation	Unconditioned basement
Bedrooms	3		

Mechanical Systems Features

Air-source heat pump:	Electric, Htg: 13.5 HSPF. Clg: 30.0 SEER.
Water Heating:	Heat pump, Electric, 3.24 EF, 50.0 Gal.
Duct Leakage to Outside	NA
Ventilation System	Balanced: HRV, 64 cfm, 24.0 watts.
Programmable Thermostat	Heat=Yes; Cool=Yes

Building Shell Features

Ceiling Flat	R-66.7	Slab	None
Sealed Attic	NA	Exposed Floor	R-30.0
Vaulted Ceiling	R-50.4	Window Type	U-Value: 0.180, SHGC: 0.210
Above Grade Walls	R-43.2	Infiltration Rate	Htg: 0.50 Clg: 0.50 ACH50
Foundation Walls	R-12.0	Method	Blower door test

Lights and Appliance Features

Percent Interior Lighting	100.00	Range/Oven Fuel	Electric
Percent Exterior Lighting	100.00	Clothes Dryer Fuel	Electric
Refrigerator (kWh/yr)	539	Clothes Dryer EF	3.01
Dishwasher (kWh/yr)	260	Ceiling Fan (cfm/Watt)	0.00

Estimated Annual Energy Cost

Use	MMBtu	Cost	Percent
Heating	8.0	$242	-42%
Cooling	2.8	$43	-7%
Hot Water	3.0	$146	-26%
Lights/Appliances	14.8	$652	-114%
Photovoltaics	-39.5	$-1734	303%
Service Charges		$78	-14%
Total	**-10.7**	**$-573**	**100%**

Criteria

This home meets or exceeds the minimum criteria for the following:
Massachusetts Stretch Energy Code*
* Compliance is determined by the rater.

CLEAResult
50 Washington St
Suite 3000
Westborough, MA 01581

Certified Energy Rater: _____

Home Energy Rating Certificate

CLEAResult

Property
E+ Solutions LLC
156 Highland Street
Roxbury, MA 02119

HERS
Rating Type: Projected Rating
Rating Date: 4/11/17
Registry ID:

Certified Energy Rater: Brendan Kavanagh
Rating Number:

Projected Rating: Based on Plans - Field Confirmation Required.

HERS Index: -23

General Information

Conditioned Area	1363 sq. ft.	House Type	Townhouse, end unit
Conditioned Volume	18896 cubic ft.	Foundation	Slab
Bedrooms	2		

Mechanical Systems Features

Air-source heat pump:	Electric, Htg: 13.5 HSPF. Clg: 30.0 SEER.
Water Heating:	Heat pump, Electric, 3.24 EF, 50.0 Gal.
Duct Leakage to Outside	NA
Ventilation System	Balanced: HRV, 64 cfm, 25.0 watts.
Programmable Thermostat	Heat=Yes; Cool=Yes

Building Shell Features

Ceiling Flat	NA	Slab	R-20.0 Edge, R-10.0 Under
Sealed Attic	R-60.0	Exposed Floor	NA
Vaulted Ceiling	NA	Window Type	U-Value: 0.180, SHGC: 0.210
Above Grade Walls	R-43.2	Infiltration Rate	Htg: 0.50 Clg: 0.50 ACH50
Foundation Walls	NA	Method	Blower door test

Lights and Appliance Features

Percent Interior Lighting	100.00	Range/Oven Fuel	Electric
Percent Exterior Lighting	100.00	Clothes Dryer Fuel	Electric
Refrigerator (kWh/yr)	539	Clothes Dryer EF	3.01
Dishwasher (kWh/yr)	260	Ceiling Fan (cfm/Watt)	0.00

Estimated Annual Energy Cost

Use	MMBtu	Cost	Percent
Heating	8.6	$250	-46%
Cooling	2.9	$44	-8%
Hot Water	2.5	$119	-22%
Lights/Appliances	13.9	$612	-112%
Photovoltaics	-37.5	$-1647	303%
Service Charges		$78	-14%
Total	**-9.6**	**$-544**	**100%**

Criteria

This home meets or exceeds the minimum criteria for the following:

CLEAResult
50 Washington St
Suite 3000
Westborough, MA 01581

Certified Energy Rater: _____

Home Energy Rating Certificate

CLEAResult

Property	HERS			
E+ Solutions LLC	Rating Type:	Projected Rating	Certified Energy Rater:	Brendan Kavanagh
158 Highland Street	Rating Date:	4/11/2017	Rating Number:	
Roxbury, MA 02119	Registry ID:			

Projected Rating: Based on Plans - Field Confirmation Required.

HERS Index: -17

General Information

Conditioned Area	914 sq. ft.	House Type	Apartment, end unit
Conditioned Volume	8226 cubic ft.	Foundation	Slab
Bedrooms	2		

Mechanical Systems Features

Air-source heat pump:	Electric, Htg: 13.5 HSPF. Clg: 30.0 SEER.
Water Heating:	Heat pump, Electric, 3.24 EF, 50.0 Gal.
Duct Leakage to Outside	NA
Ventilation System	Balanced: HRV, 64 cfm, 25.0 watts.
Programmable Thermostat	Heat=Yes; Cool=Yes

Building Shell Features

Ceiling Flat	NA	Slab	R-20.0 Edge, R-10.0 Under
Sealed Attic	NA	Exposed Floor	NA
Vaulted Ceiling	NA	Window Type	U-Value: 0.180, SHGC: 0.210
Above Grade Walls	R-43.2	Infiltration Rate	Htg: 0.50 Clg: 0.50 ACH50
Foundation Walls	NA	Method	Blower door test

Lights and Appliance Features

Percent Interior Lighting	100.00	Range/Oven Fuel	Electric
Percent Exterior Lighting	100.00	Clothes Dryer Fuel	Electric
Refrigerator (kWh/yr)	539	Clothes Dryer EF	3.01
Dishwasher (kWh/yr)	260	Ceiling Fan (cfm/Watt)	0.00

Estimated Annual Energy Cost

Use	MMBtu	Cost	Percent
Heating	3.5	$103	-38%
Cooling	2.1	$32	-12%
Hot Water	2.5	$119	-44%
Lights/Appliances	11.4	$503	-186%
Photovoltaics	-25.1	$-1105	410%
Service Charges		$78	-29%
Total	**-5.6**	**$-269**	**100%**

Criteria

This home meets or exceeds the minimum criteria for the following:

CLEAResult
50 Washington St
Suite 3000
Westborough, MA 01581

Certified Energy Rater: _____