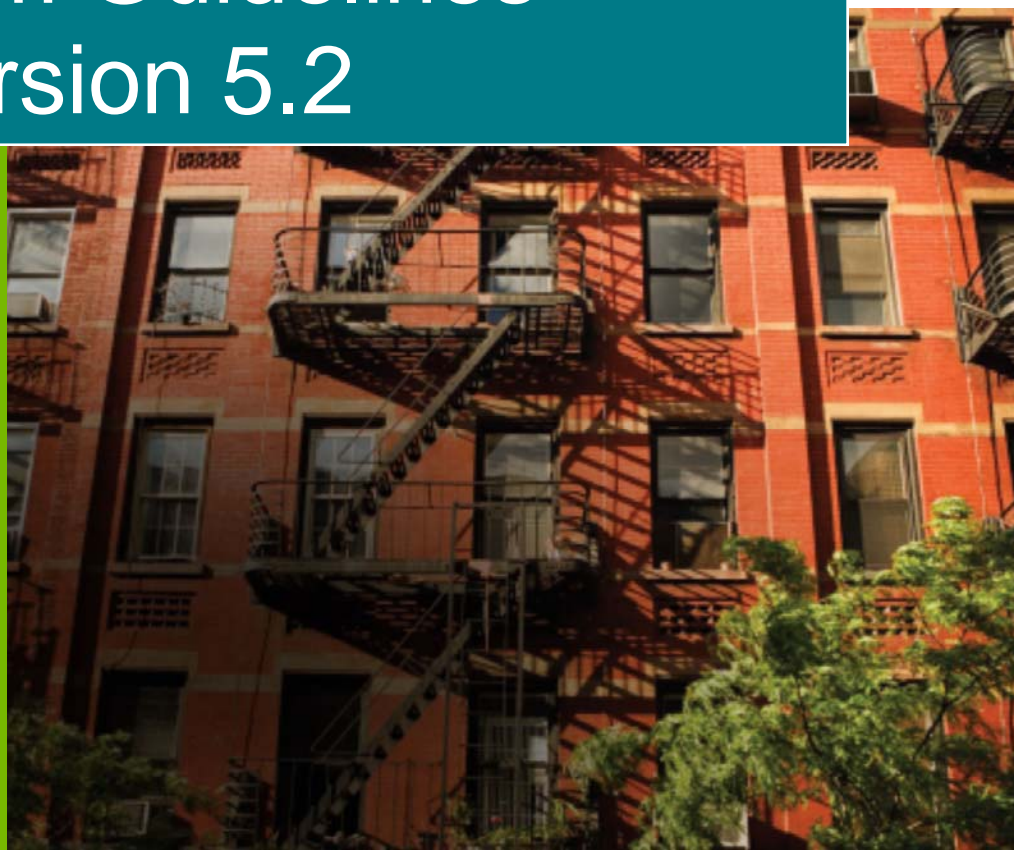


# Existing Buildings

## Program Guidelines Version 5.2



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Albany, NY 12203  
[www.nyserda.ny.gov](http://www.nyserda.ny.gov)



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# Existing Buildings Program Guidelines

## MULTIFAMILY PERFORMANCE PROGRAM

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# 1 MULTIFAMILY ENERGY PERFORMANCE PORTFOLIO OVERVIEW

NYSERDA's Multifamily Energy Performance Portfolio (MEPP) consists of three (3) programs; the Multifamily Performance Program, the Electric Reduction in Master Metered Buildings Program, and the Multifamily Financing Program. These programs are designed to provide technical and financial assistance to multifamily building owners, managers, and developers to improve the energy performance of their multifamily buildings. Buildings that consist of five (5) or more units (apartments) are typically eligible to participate in these programs. Some programs require participants to contribute to the NYS System Benefits Charge fund on either their electric or gas utility bill. These participants are customers of the six (6) investor-owned utilities in New York. Other programs (or certain elements of some programs) are available to multifamily buildings throughout the entire state.

## Multifamily Performance Program

The Multifamily Performance Program is NYSERDA's flagship multifamily program. MPP serves both new construction and existing buildings and both market rate and affordable housing. The two main components of the program – the New Construction and Existing Building components – provide significant financial incentives and technical assistance to help participants achieve energy savings of at least 15% throughout their entire building. The other component – Benchmarking – provides modest financial incentives to building owners who want to explore energy efficiency in their building and may not be currently ready to pursue improvements throughout their whole building. This document pertains specifically to the Multifamily Performance Program – Existing Buildings Component (MPP EB) and presents the Program Rules for participation in this component.

MPP Participants select and work with a technical service provider, which has been qualified by NYSERDA as a Multifamily Performance Partner (Partner). Participants choose the Partner with whom they want to work. Partners shepherd projects through the Program from beginning to end, performing or overseeing the performance of all of the program's technical service requirements.

MPP EB focuses on improving the energy usage of existing multifamily buildings. MPP EB projects follow a three-stage process:

- Plan - The building owner works with a Partner to benchmark the energy performance of their building and conduct an ASHRAE Level II audit that serves as the basis for an energy model. That model is then used to identify cost effective improvements that will reduce the building's source energy consumption by at least 15%. Building owners can choose which improvements they would like to install as long as the overall work scope is cost-effective and meets or exceeds the program's savings target. The results of this planning phase are submitted to NYSERDA as the project's Energy Reduction Plan.
- Install - The building owner works with their Partner, who provides limited construction oversight and inspection services, to install the improvements identified in their approved work scope. The Partner is not responsible for installing the measures, but is responsible for ensuring that installation is properly completed by whomever the owner chooses to do the work.

- **Measure** – One year after construction completion, the Partner evaluates the project's energy performance and submits their analysis to NYSERDA. If actual performance meets or exceeds the program's target, building owners are eligible to receive a final Performance Payment incentive.

MPP EB provides Partners with detailed guidance on auditing, building modeling, and overseeing the proper installation of energy efficiency measures.

MPP EB has two paths to completion – the Standard Path and Fast Track. The Fast Track is only available to projects of 5 to 49 units.

## Multifamily Performance Program At-A-Glance Standard Path

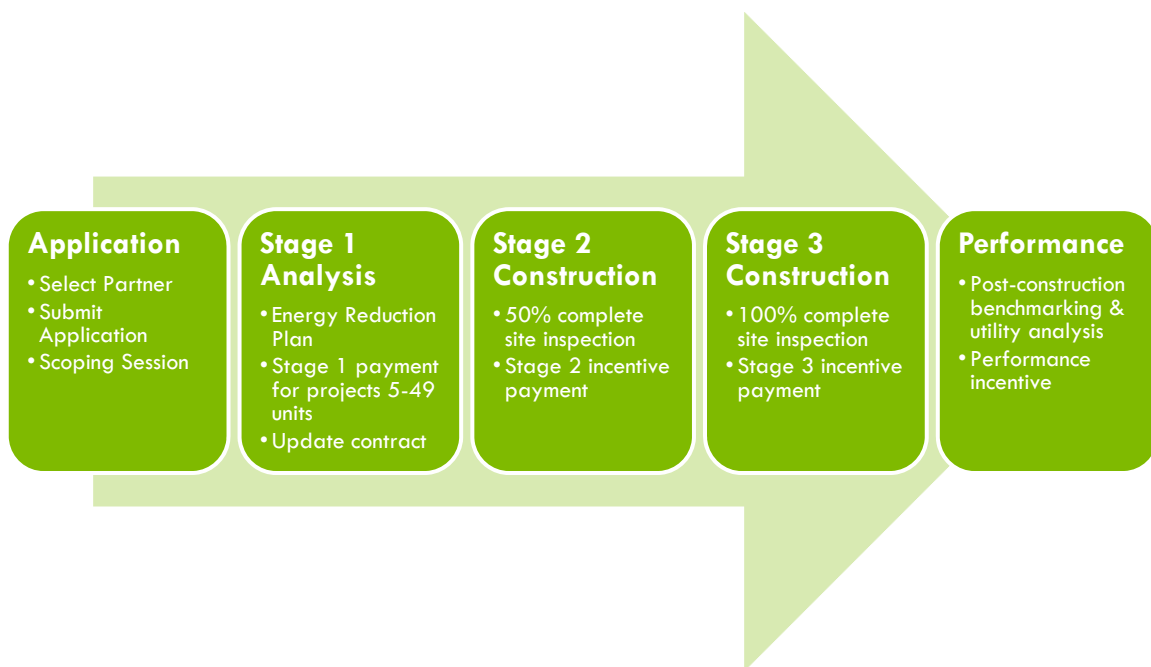


FIGURE 1-1

## Multifamily Performance Program At-A-Glance Fast Track

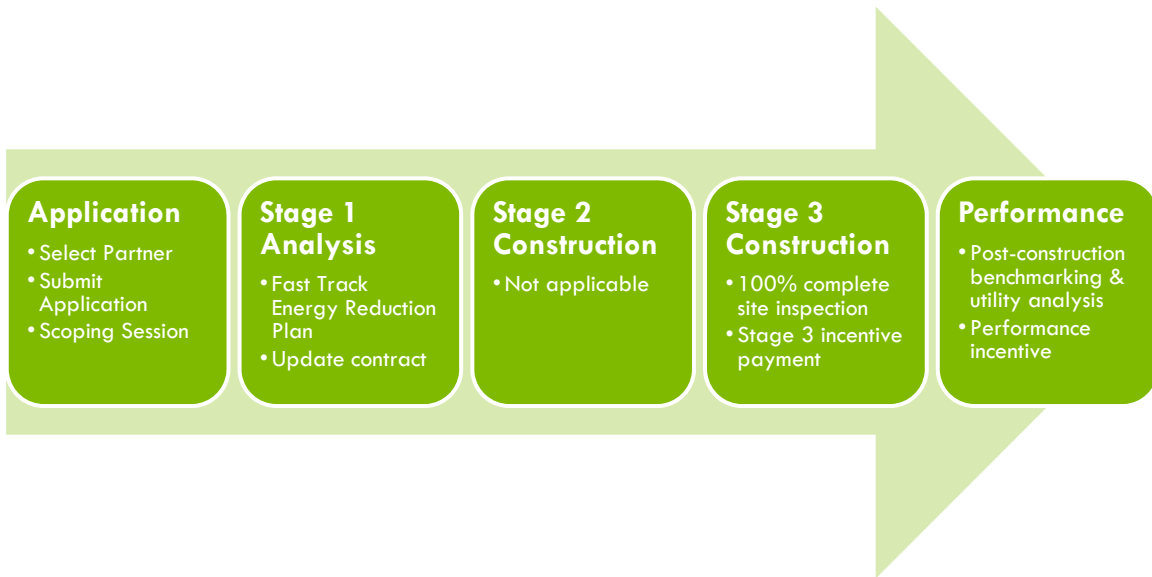


FIGURE 1-2

## 2 ELIGIBILITY

### 2.1 Eligibility Requirements

At the onset of their relationship with a potential Program Participant, Partners should determine whether a property is eligible for the Program and which incentive is applicable (affordable vs. market rate). This section provides the requirements for establishing a project and defining its market status.

This is not a comprehensive list of property types that are eligible for the Program. Special circumstances may be reviewed on a case-by-case basis. Please contact NYSERDA at:

**MultifamilyPrograms@nyserda.ny.gov**

#### 2.1.1 Project Size & Building Characteristics

- ✓ The project must be a multifamily, residential building(s) with five (5) or more units.
- ✓ Projects larger than 500 units require pre-approval from NYSERDA. See Section 2.1.7 for instructions.
- ✓ The Fast Track option is available for projects of 5 – 49 units. Projects 50 units and larger must follow the Standard Path.

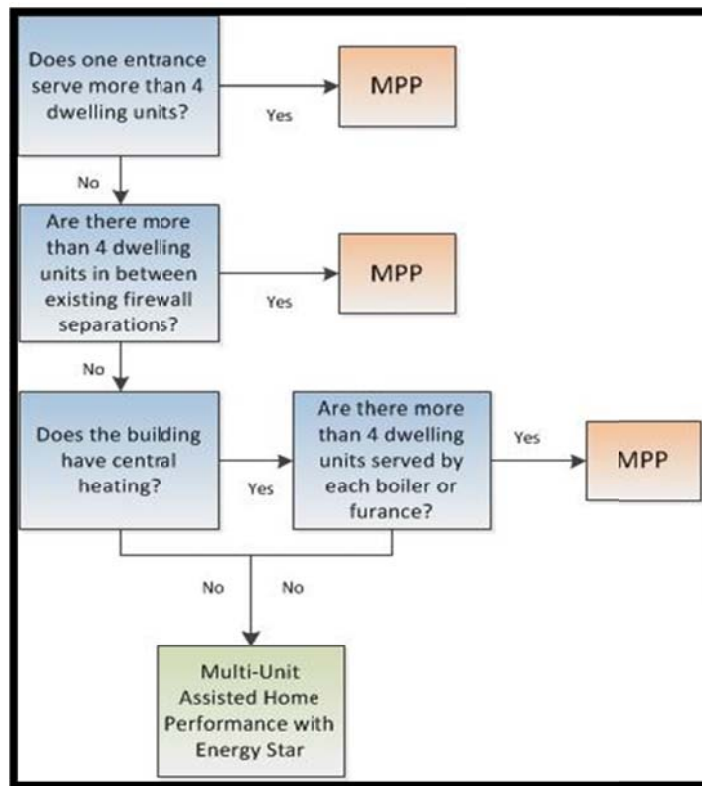
#### 2.1.2 Construction Type

Buildings may contain non-residential commercial space if that space does not consist of more than 50% of the gross heated square footage of the entire building.

#### 2.1.3 Low-Rise Construction (<4 stories)

Buildings under four (4) stories may be eligible for either MPP or NYSERDA's *Home Performance with Energy Star®* programs.

Figure 2-1 below details the conditions that determine eligibility for either MPP or Home Performance.



**2.1.4 Market Type (Affordable v. Market Rate)**

NYSERDA defines Affordable Housing as projects in which at least 25% of the units are, or are expected to be, occupied by households earning not more than 80% of the State Median Income. All other properties are considered Market Rate.

Affordable Housing

Affordable housing documentation must be submitted with the application package. There are three ways to qualify a project for Affordable Housing incentives:

1. Proxy – NYSERDA allows certain proxies to represent compliance with this definition. Please see the table below for a list of eligible proxies and supporting documentation.

Eligibility Proxy	Details	Documentation Required
A. HUD-Regulated Affordable Housing	Properties receiving one of the following subsidies from HUD <ul style="list-style-type: none"> <li>• Section 8 Contract</li> <li>• Sections 202, 236, 811</li> <li>• Public Housing Authorities</li> </ul>	HUD contract or contract award notice

Eligibility Proxy	Details	Documentation Required
B. DHCR-Regulated Affordable Housing	Buildings with subsidized mortgages or contracts that place them under the regulatory control of NYSDHCR	NYSDHCR contract or contract award notice
C. Low Income Housing Tax Credits	Properties that receive tax credits for at least 50% of its units.	Tax credit award notice from NYSDHCR or NYCHPD.
D. NYCHPD-Regulated Affordable Housing (or other local housing agency)	Properties with loans, mortgages, or deeds of purchase (HDFC incorporation) from NYCHPD or other local housing agencies	Documentation of current mortgage, loan closing, HDFC incorporation or deeds
E. SONYMA mortgage insurance	Properties subsidized for low- to moderate-income multi-family residents with SONYMA subsidized financing through the HFA	Loan closing/mortgage insurance award documents
F. Weatherization Assistance Program	Properties that have fulfilled the eligibility requirements for the Weatherization Assistance Program	Letter from the Weatherization Agency confirming the project's income eligibility
G. HFA's 80/20 Program	Properties that have been accepted into the Housing Finance Agency's 80/20 Program	Award letter or HFA contract documents
H. NYCHDC's 80/20 or Mixed Income Programs	Properties that have been accepted into the NYC Housing Development Corporation's 80/20 Program or Mixed Income Program	Award letter or HDC contract documents
I. Mitchell Lama	Mitchell Lama properties cannot qualify via proxy.	None

2. Rent Roll – This type of qualification may be used by projects that do not meet the proxy requirements or Resident Income requirements. The Rent Roll method may not be combined with the Resident Income method.

Applications must include the annual rent, size, and occupancy for each apartment in the property. Twenty-five percent of the units must have a calculated household income no more than 80 percent of the State Median Income, based on the assumption that 30 percent of household income is applied to housing costs (i.e. rent). A calculation spreadsheet tool is available on the Partner Portal for determining Rent Roll income eligibility. The Rent Roll method may not be combined with the Resident Income method.

3. Resident Income – This type of qualification may be used by projects that do not meet the proxy or Rent Roll requirements. This method requires the submission of signed *Resident Income Certification* forms with supporting documentation for 25% of a project's units. See

the *Resident Income Certification Instructions* & related forms (available on the Partner Portal). The Resident Income method may not be combined with the Rent Roll method.

### Market Rate Housing

Projects that do not qualify for Affordable Housing incentives as outlined above are considered Market Rate. Projects that are eligible for Affordable Housing incentives may apply to the Program as Affordable Housing or Market Rate.

#### **2.1.5 Extent of Renovation**

- ✓ The Existing Buildings component will accept renovations to existing structures defined as changes, additions, or deletions to any system or process that impacts an existing building's energy consumption and/or cost not defined as NEW CONSTRUCTION or SUBSTANTIAL RENOVATIONS.
  
- ✓ **Substantial Renovations (gut rehabs)** are not eligible for the Existing Buildings component. These types of projects are eligible for the New Construction component only. Substantial Renovations are defined as one of the following types of projects where a licensed professional architect or engineer has prepared and certified the building plans:
  - Change of use and reconstruction of an existing building or space within;
  - Construction work of a nature requiring that the building or space within be out of service for at least 30 consecutive days;
  - Reconstruction of a vacant structure or space within.

#### **2.1.6 Intended Use**

The intended use of the building must be for residential purposes. Commercial facilities, such as motels/hotels, group homes, dormitories, shelters, monasteries, nunneries, assisted living facilities, and nursing homes are typically not eligible for the Program. Supportive housing, Single Room Occupancy (SRO) facilities and senior living residences that do not include nursing or hospitalization amenities are typically eligible for the Program. Supportive Housing is defined as residences that are owned and operated by non-profit organizations. Tenants are individuals and families who require both affordable permanent housing and support services, have lease agreements, pay rent (often times a percentage of their income) and abide by the terms of their lease. This includes people who have been homeless, have histories of substance abuse, are coping with mental illness, have chronic illnesses like HIV/AIDS, are young adults aging out of foster care, are homeless veterans, are grandparents raising grandchildren.

### **2.1.7 Large Projects (500+ units)**

Projects over 500 units require NYSERDA pre-approval before applying to MPP. Partners considering large projects should send an email to [multifamilyprograms@nyserda.ny.gov](mailto:multifamilyprograms@nyserda.ny.gov) containing the following information:

- Project Name
- Project Address or Utility Territory
- Gas Rate Classification
- Number of Buildings
- Number of Units
- Heating Fuel
- Market Status

NYSERDA will review the information and determine potentially available funding based on the size of the project. NYSERDA will then contact the Partner regarding how to move forward.

### **2.1.8 Utility Participation**

Projects that received any utility program incentive for a program funded through the System Benefits Charge within one (1) year prior to the date of application to this program are not eligible to participate in this program. Additionally, any project that is eligible to receive a Performance Payment under this program agrees to NOT pursue any utility program incentive for a program funded through the System Benefits Charge within one (1) year following their application for their Stage 3 payment. Any project that is found to have received a utility program incentive during this timeframe, even for improvements not included in the NYSERDA Project Work, will automatically forfeit their Performance Payment.

## 2.2 Firm Gas Funding

To be eligible for firm gas incentives, **all** buildings within a project must pay into the System Benefits Charge fund through a firm gas heating rate as defined by the Participant's utility for their primary space heating fuel. Firm gas heating rates for various utilities are shown below:

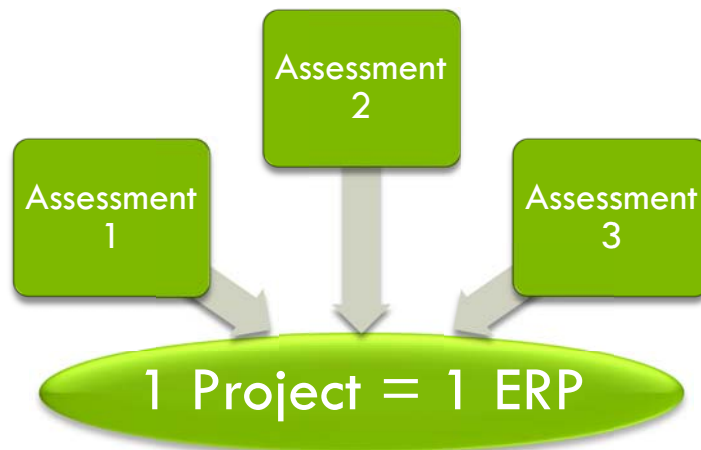
Utility	Rate Class		Note
Central Hudson	1	12	
	2	13	
	6	15	
	11	16	
Corning	1		
Con Edison	1	9**	**SBC charge applies only to firm transportation customers.
	2	13	
	3		
KEDLI	1A	1B-DG	3B
	1AR	2A	5
	1B	2B	15
	1BR	3A	16
KEDNY (BUG)	1A	3	17-CTS 1BI
	1AR	4A	17-CTS 1B-DG
	1B	4B	17-CTS 2-1
	1BR	7	17-CTS 2-2
	1BI	17-CTS 1A	17-CTS 3
	1B-DG	17-CTS 1AR	17-CTS 4A
	2-1	17-CTS 1B	17-CTS 4B
2-2	17-CTS 1BR	17-CTS 7	
National Fuel Gas	1	7	TC 1.0
	2	8	TC 1.1
	2A	9SC	TC 2.0
	3	13M	TC 3.0
	4	13D	7C 4.0
	5	23	TC 4.1
National Grid	1	5	
	2	7	
	3	8	
NYSEG (87)	1	9	
	2	10	
	5	11	
NYSEG (88)	1	14	
	5	16	
	13	19	
Orange & Rockland	1	6***	***SBC charge applies only to SC 6 residential customers.
Rochester Gas & Electric *RG&E)	1	6	
	3	7	
	4	8	
	5	9	
St. Lawrence	To be determined		

## 2.3 Definition of a Project

An Existing Buildings project is defined as a building or group of buildings where energy assessments are to be performed by a Partner for a single Program Participant. The Partner will develop one Energy Reduction Plan per project.

One project can include multiple buildings with multiple energy assessments.

- ✓ Project can consist of multiple buildings.
- ✓ One program Application is allowed per project.
- ✓ One Energy Reduction Plan is allowed per project.
- ✓ One Energy Reduction Plan can include multiple buildings.
- ✓ One Energy Reduction Plan can include multiple energy assessments.
- ✓ One Benchmarking Report is allowed per project.



## 2.4 Coordination with other NYSERDA Programs

### 2.4.1 AMP, ResTech & GEPP

Projects formerly participating in NYSERDA's Assisted Multifamily Program (AMP) and Residential Technical Assistance (ResTech) and MPP Versions 1 – 3 are eligible to participate in the Multifamily Performance Program. They must meet all current Program rules and requirements.

### 2.4.2 MPP Existing Buildings Version 4

Projects that have participated in MPP EB Version 4 and received funding must fulfill their contract in Version 4 before applying to Version 5. Projects participating in Version 4 that have not received funding may terminate their contract in Version 4 and reapply to Version 5. These re-application projects will not retain their Version 4 funding, but will be applying anew for Version 5 funding.

### 2.4.3 MEPP Advanced Submetering Program (ASP) (Previously the Electric Reduction in Master-Metered Buildings Program – ERMM)

MPP EB projects may also participate in ASP. The measures completed in ASP may not contribute to the 15% minimum energy savings target or the Performance Payment. The baseline shall be set prior to the installation of any measures, and the energy savings associated with ASP removed from calculations for both the energy savings target and performance payment results.

### 2.4.4 EmPower

Projects that have received EmPower funding are ineligible for MPP until at least one year after completing the EmPower scope of work. For such projects, the MPP baseline shall be a 12-month period of usage AFTER installation of the measures funded with EmPower incentives

## 2.5 Contact Information

Specific procedures are in place to field questions regarding all aspects of the Program. Please see below for contact information.

### 2.5.1 Eligibility, Intake and Application Inquiries

A team of individuals review Applications and respond to Application-, eligibility- and intake-related inquiries. These types of inquiries should be directed to NYSERDA at:

MultifamilyPrograms@nyserda.ny.gov

### 2.5.2 Project Inquiries

The NYSERDA Project Manager coordinates all project-related responsibilities and is assigned upon application approval. All correspondence about a project after an Application Approval Letter has been received must be directed to the project's NYSERDA Project Manager. Contact information will be provided upon assignment.

### 3 INCENTIVES

#### 3.1 Base Incentives

Projects are eligible to receive financial assistance through a schedule of Incentives. Incentives are divided into Affordable Housing or Market Rate Housing levels. Projects that meet the Affordable Housing criteria are eligible for the Affordable Housing incentive. All other projects are eligible for the Market Rate Housing schedule.

Table 3-1 Existing Buildings - Maximum Incentives*			
Affordable		Market Rate	
Firm Gas (per unit)	Non-Firm Gas (per unit)	Firm Gas (per unit)	Non-Firm Gas (per unit)
\$1,000	\$800	\$700	\$500

\*A project's incentive may be reduced based on the cost and/or cost-effectiveness of the recommended upgrades.

In order to receive the “Affordable” incentives, a project must qualify as “affordable housing” by meeting the documentation requirements and the Participant must certify that the project meets the requirements for an affordable project in accordance with section 2.1.4. Additionally, the Participant must include in the project’s Energy Reduction Plan all in-unit (apartment level) improvements that are deemed cost-effective (defined as a Total Resource Cost ratio greater than or equal to 1.0). These in-unit improvements must be installed during the construction phase of the project. Projects that fail to include all cost-effective in-unit improvements or fail to install any of them during construction will be eligible for only the market rate maximum incentive.

NYSERDA will provide incentives upon successful achievement of the milestones outlined on table 3-2 in accordance with these Program Guidelines. Incentives are distributed via the following schedule of payments:

<b>Table 3-2 Existing Buildings - Incentive Payment Schedule</b>						
<b>Stage 1*</b>		<b>Stage 2</b>		<b>Stage 3</b>		
Upon approval of the Energy Reduction Plan		Upon inspection of at least 50% of the installed upgrades		Upon inspection of 100% of the installed upgrades		
Firm Gas (per unit)	Non-Firm Gas (per unit)	Firm Gas (per unit)	Non-Firm Gas (per unit)	Firm Gas (per unit)	Non-Firm Gas (per unit)	
<b>Affordable</b>						
Fast Track 5-49 units	N/A	N/A	N/A	N/A	\$1,000	\$800
Standard Path 5-49 units	\$100	\$80	\$400	\$320	\$500	\$400
Standard Path 50 units & up	N/A	N/A	\$500	\$400	\$500	\$400
<b>Market Rate</b>						
Fast Track 5-49 units	N/A	N/A	N/A	N/A	\$700	\$500
Standard Path 5-49 units	\$70	\$50	\$280	\$200	\$350	\$250
Standard Path 50 units & up	N/A	N/A	\$350	\$250	\$350	\$250

\*If the NYSERDA-approved Energy Reduction Plan indicates that there are insufficient opportunities in the project to achieve the minimum performance target, the participant will be paid the lesser of the Stage 1 payment (if there is one) OR 25% of the cost of the ERP services provided by the Multifamily Performance Partner as documented in the executed contract between the Partner and the participant OR \$5,000.

### 3.2 Performance Payment

Projects that project at least a 20% energy reduction as indicated by their NYSERDA-approved Energy Reduction Plan are eligible to receive a Performance Payment as identified in Table 3-3 in addition to the Base Incentive indicated above. The projected energy reduction from the Energy Reduction Plan shall determine the project’s Performance Payment tier in accordance with the table below. If a project’s one-year post-construction analysis demonstrates an actual energy reduction within the project’s original tier, the project will receive a Performance Payment equal to that tier’s amount. If the analysis demonstrates actual savings greater than the project’s original tier, the Performance Payment will be at the original tier’s amount. If the analysis demonstrates actual savings less than the project’s original tier, but at least 20%, the Performance Payment will be at the new tier’s amount. If the analysis demonstrates actual savings less than 20%, the project will not receive a Performance Payment.

<b>Table 3-3</b> <b>Existing Buildings – Performance Payment</b>	
Upon achievement of the project’s minimum energy performance target of 20%. (per unit)	
Tier #1 - 20%-22%	\$150
Tier #2 - 23%-25%	\$200
Tier #3 - 26%-28%	\$250
Tier #4 - 29%+	\$300

The one-year post-construction analysis period begins when the Partner submits the 100% Site Inspection Report, even if NYSERDA’s inspection of the Project Work indicates deficiencies that must be corrected, and ends twelve months later. The consumption analysis must include the first full month of metered consumption following submittal of the 100% Site Inspection Report and include twelve consecutive months of consumption data. Should the one-year performance analysis indicate that the project did not achieve at least a 20% savings, the Partner may request a six-month extension. The new one-year post-construction analysis period will then include the first full month of metered consumption starting six months from the submittal of the 100% Site Inspection Report extending twelve months. The time period for any consumption analysis period shall not exceed twelve months. If the initial consumption analysis demonstrates savings of at least 20%, even if less than the projected savings, the project will not be eligible to request a second analysis period and the Participant will receive the Performance Payment appropriate for the demonstrated savings.

The Performance Payment does not differentiate between Firm Gas and Non-Firm Gas projects.

### 3.3 Incentive Cap

In no case shall NYSERDA incentives exceed 100% of the total costs of eligible measures, as defined by Program Rule #1 (Section 4). The total project cost includes the Partner fees for delivering the Program's required services, design and construction management fees, plus the total cost of the improvements in the proposed Energy Reduction Plan not installed prior to the execution of the Terms and Conditions.

### 3.4 Incentive #1 Addendum

The Incentive #1 Addendum (available for MPP Version 1-4 projects) is no longer in use. The incentive schedule above lists the whole of incentives available to Existing Building projects

## 4 GENERAL REQUIREMENTS (“THE RULES”)

### 4.1 The Rules

The following Program Rules must be adhered to by all projects accepted into the Program. This list focuses on programmatic requirements and is not intended to cover all Program eligibility requirements as listed in the remainder of this document, the Terms and Conditions, and/or the Partnership Agreement.

All references to the “performance target” refer to the minimum percent reduction required by the Program, typically 15%.

1. When assembling a scope of work in the Energy Reduction Plan, the following criteria must be met:

a. Performance Target:

- i. The Energy Reduction Plan shall identify a scope of work that will achieve a minimum **15%** source energy reduction for the project.
- ii. To be eligible for the performance payment (post-construction) the Energy Reduction Plan shall identify a scope of work that will achieve a minimum **20%** energy reduction in the project.
- iii. If the NYSERDA-approved Energy Reduction Plan indicates that there are insufficient opportunities in the project to achieve the minimum performance target, the participant will be paid the Stage 1 payment, if there is one, OR 25% of the cost of the ERP services provided by the Multifamily Performance Partner as documented in the executed contract between the Partner and the participant OR \$5,000, whichever is less.

b. Total Resource Cost Test:

- i. Only improvements that pass the Total Resource Cost (TRC) test with a ratio of 1.0 or greater may receive Energy Efficiency Portfolio Standard (EEPS) funding and;
- ii. The total scope of EEPS-eligible improvements must also pass the TRC test when program costs are added (\$0.30 per EEPS Incentive \$).

c. Savings-To-Investment Ratio:

The entire scope of work shall have a Saving-to-investment ratio (SIR) of  $\geq 1.0$ . The cost of the scope used in this cost-effectiveness evaluation must include the fees charged by the Partner to provide the Program services, the costs of the proposed measures, any associated feasibility study, and/or design fees. Measures that are not cost effective individually may be included in the project scope of work if the overall SIR  $\geq 1.0$ .

2. An improvement analysis, including cost and savings projections, must be performed with approved modeling software so as to form a whole-building analysis on (at a minimum) all measures listed in *Measures that Must Be Evaluated* table in Section 6.4.5 of this document. If a measure listed is not evaluated, the Partner must note the reason for exclusion.
  - a. The pre-construction energy use baseline must be established using 12 consecutive months of utility bill data up to two years prior to the *Notice to Proceed to Energy Reduction Plan* issued by NYSERDA.
  - b. Energy efficiency measures installed within one year (12 months) prior to NYSERDA's *Notice to Proceed to Energy Reduction Plan* may be included in the *Energy Reduction Plan* to contribute to the 15% performance target. The cost of these previously installed measures shall be excluded from the incentive cap that limits NYSERDA's incentives under the Multifamily Performance Program.
  - c. The work scope for projects receiving Affordable Housing incentives must include all cost-effective ( $TRC \geq 1.0$ ) in-unit measures listed in the *Measures that Must Be Evaluated* table, as analyzed by the comprehensive assessment. This requirement applies regardless of whether the project is master-metered or individually metered and applies only to those measures owned by the building. For apartments within co-ops and condos where the in-unit measures are owned by the individual shareholder, an effort must be made by the Partner and Participant to offer energy efficient replacements.
  - d. Behavioral measures shall not be included in the scope of work. Behavioral measures include those where existing equipment is adjusted to improve performance or change energy use. Behavioral measures may include, but not be limited to boiler clean & tune, commissioning of existing equipment, thermostat adjustment, or air conditioner removal.
3. Milestones:
  - a. Stage 1 deliverables (*Energy Reduction Plan*) shall be submitted within 90 calendar days (three months) of NYSERDA's *Notice to Proceed*. Projects which do not meet this deadline will be terminated from the program and unpaid incentives forfeited.
  - b. Stage 3 deliverables shall be submitted within 2 years of the NYSERDA *Notice to Proceed to Energy Reduction Plan*. Projects which do not meet this deadline will be terminated from the program and unpaid incentives forfeited.
  - c. Performance Payment submittals are due within 14 months of Stage 3 submittal to NYSERDA. Projects which do not meet this deadline will be terminated from the program and unpaid incentives forfeited.
  - d. The deadlines in (a) and (b) above can only be extended by a request by the Partner to NYSERDA in writing or via email and upon written or emailed approval from NYSERDA. There are no extensions allowed for the deadline in (c) above for any reason.

4. Any changes to the approved work scope that alter the project's percent savings reduction or adds or removes measures must be submitted as a revision to the *Energy Reduction Plan*. The project shall continue to meet the minimum performance target of 15% and cost effectiveness requirements.
5. Maximum incentives may be capped based on the specific sources of funding for which the project and its improvements are eligible.
  - a. EEPS sources of funding are limited by the total cost of the measures that pass the TRC test. EEPS electric funds are limited to electric measures that pass the Total Resource Cost test. EEPS gas funds are limited to gas measures that pass the TRC test.
  - b. System Benefits Charge (SBC) and Regional Greenhouse Gas Initiative (RGGI) funding is limited to measures that are part of a scope of work that collectively have an SIR of 1.0 or greater.
6. The comprehensive building assessment must be completed by a Building Performance Institute certified Multifamily Building Analyst (BPI MFBA). This individual may be directly employed by, or a subcontractor to, the Partner firm responsible for the project. At any time, NYSERDA or its agents may request proof that the auditor is certified by BPI.
7. All recommended and installed improvements shall comply with the Program's *Minimum Performance Standards*.

## 4.2 Deadline Standards

Partner performance is tracked to determine rate of compliance with program deadlines. NYSERDA expects projects to meet the following guidelines for deliverables. The Partner is responsible for assuring that their projects move through Stages 1, 2 and 3 in a timely manner to assure that the 2 year construction completion deadline is met.

1. **Energy Reduction Plan Revisions** should be submitted to NYSERDA within one month (30 days) following the meeting with the Partner and Participant regarding ERP corrections.
2. **Energy Reduction Plan Revisions** are expected to be limited to one (1) revision per project.

Partner performance tracking reports include statistics regarding a Partner's ability to move projects to completion.

## 5 APPLICATION

Before submitting an Application Package to NYSERDA, Partners should work with the potential Participant to determine eligibility and potential incentives as outlined in Sections 2 and 3. The Partner is expected to take the leading role in this process.

### 5.1 Application Documents & Processing

Upon identifying an eligible project, the Partner (in consultation with the Participant) should submit an Application to the Program. The Application Package consists of the following deliverables:

Project Information Form	Use this form to help gather basic information about the project. Do not upload this form to CRIS.
Terms and Conditions	This is the contract where the Program Participant accepts the rules and requirements of the program.
W-9	Establishes the Federal Tax Identification Number of the Participant.
Electronic Funds Transfer (EFT) Form	Establishes payment routing information for the project.
Affordable Housing Documentation	Required for projects requesting the Affordable level of incentives. Not required for Market Rate projects.

#### 5.1.1 Application Submittal

NYSERDA uses an on-line application submittal system – CRIS (Comprehensive Residential Information System) – see Figures 5-1 and 5-2. Partners receive a CRIS login and password upon entering MPP.

#### 5.1.2 Terms & Conditions

Partners are required to keep an original signed copy of the Terms and Conditions for seven (7) years for each project. Signed originals need not be sent to NYSERDA, but Partners shall keep them on file.



FIGURE 5-1  
CRIS LOGIN SCREEN

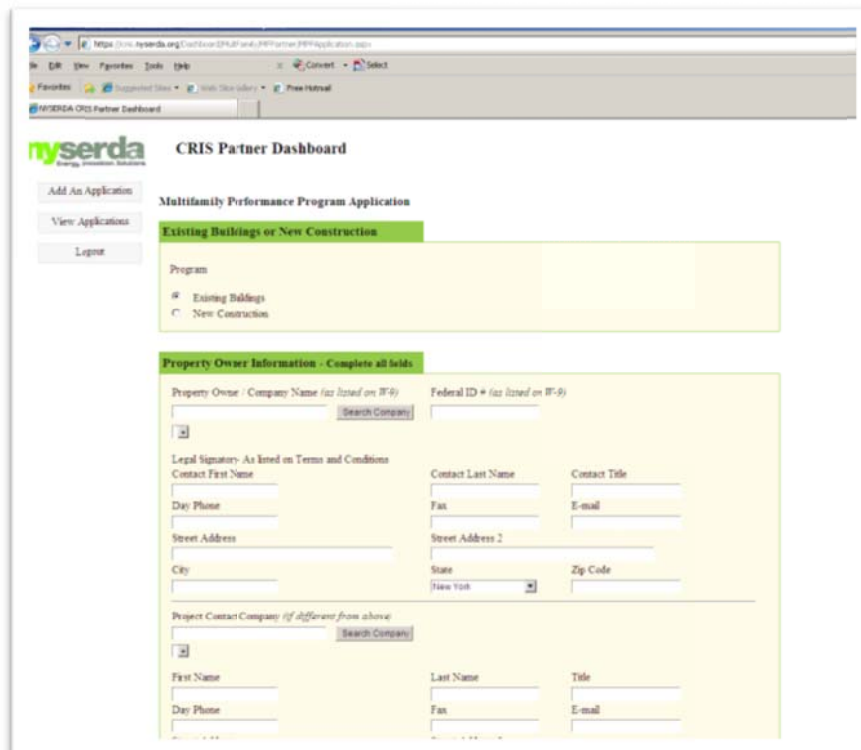


FIGURE 5-2  
CRIS PARTNER DASHBOARD & APPLICATION DATA ENTRY SCREEN

## 5.2 Scoping Session

Upon application acceptance, the NYSERDA Project Manager will schedule a scoping session with the Participant and Partner. The intent of the Scoping Session is to establish Participant interest, identify likely energy efficiency measures, review program requirements and responsibilities, and determine sources of potential funding.

Knowledgeable representatives from both the Partner and Participant are required to attend the scoping session.

## 5.3 Notice to Proceed

Upon completion of a successful scoping session, the NYSERDA Project Manager issues a *Notice to Proceed to Energy Reduction Plan* to the Partner and Participant. The Notice to Proceed is an email that contains the Incentive Award letter and Terms & Conditions as attachments. Proceeding with development of the Energy Reduction Plan prior to receipt of this notice to proceed may result in the termination of the project's Terms and Conditions and/or loss of all incentives.

## 6 ENERGY REDUCTION PLAN DEVELOPMENT

### 6.1 Utility Bill Analysis

The collection and analysis of common area and resident utility data is required for all projects. The energy consumption should be analyzed and reviewed prior to the scoping session and any other site visit to determine any anomalies that might warrant further investigation or inquiry during the audit. This consumption data is also used in the modeling process to true-up the building model. Additionally, the Partner shall confirm that the utility billing history and building consumption data provided by the Participant is both valid and sufficient to complete the building assessment(s).

#### 6.1.1 Utility Data Analysis Tool

The [ERP Tool](#) Utility Data tabs must be used for all projects, whether Master or Direct-Metered.

This spreadsheet also estimates the energy use for a direct-metered building based on a sample of apartments. Ten percent (10%) of each type of apartment should be sampled. Apartments are considered of the same type if they have the same number of bedrooms and similar square footage. For example, different apartment types could be: studio, 1-bedroom, 1-bedroom with den, 2-bedroom. A minimum of five units must be sampled for each project.

#### 6.1.2 General Requirements

1. Use one year (365 days +/- 4) of usage data for electricity and for each fuel used on site.
2. The pre-construction energy use baseline must be established using 12 consecutive months of utility bill data up to two years prior to the *Notice to Proceed to Energy Reduction Plan* issued by NYSERDA.

#### 6.1.3 Selecting a Billing Year

Avoid billing years with many consecutive estimated bills or that show atypical energy usage for the site. Information regarding selecting a billing year has been separated by fuel type below.

1. Metered fuels (e.g. electricity, natural gas, district steam):
  - a. Use the most recent available billing year that has  $365 \pm 4$  days between actual meter readings.
  - b. Of these 361–369 days, the earliest date of usage shall be the day after an actual meter reading date, and the latest date of usage shall be an actual meter reading date.
  - c. An actual meter reading date is a date on which the meter was read by the utility company.
  - d. The billing year chosen shall contain at least five actual meter readings.
  - e. The same billing year should be used for all energy uses in the project.

2. Trucked fuels (e.g. fuel oil, propane):
  - a. Display all deliveries that span at least 361 days of usage.
  - b. The earliest date in the table shall be the day after an actual delivery, and the latest date in the table shall be an actual delivery date that is at least 361 days after the earliest date.
  - c. The Partner is encouraged to review more than one year of delivery data and to select a year that has the most delivery dates within one year.
  - d. The data shall be recent enough to be relevant to current site conditions.
3. When the above conditions cannot be met:
  - a. **If billed consumption data cannot be obtained for a billing year that demonstrates 365 ± 4 days of usage**, include a table that covers at least 365 days of the most recent usage and an estimate of the total consumption that would have occurred during a specific 365-day period within the billing data shown. The assumed start and end dates for this 365-day period must be stated.
  - b. This calculated estimate of annual usage is used as part of the total annual energy consumption. The pre-retrofit heating degree days and/or cooling degree days must be for the 365 days of adjusted usage data.
  - c. For any data that has been normalized to 365 days and that is different from the actual consumption and actual dates of usage as shown on the utility bills, include an explanation of the method for adjusting the data.

#### 6.1.4 Selecting Dates for HDD and CDD Data

The pre-retrofit heating degree days reported in the [ERP Tool](#) shall be based on the analysis period dates for the primary heating fuel. The pre-retrofit cooling degree days shall be based on the analysis period dates for the fuel used for the majority of cooling equipment.

The [Weather Lookup Tool](#) provides daily weather data for weather stations in or around New York State. This spreadsheet is updated quarterly and available on the Partner Portal.

#### 6.1.5 Additional Information Required

The [ERP Tool](#) details additional utility information required for each project, including:

1. All meters and the locations served by each meter
2. Quantity of individual apartment meters, and identifying who pays the utility costs on those meters (residents or owner)
3. Utility company serving the meter, and identifying any third party suppliers
4. Rate class on each meter
5. Billing party for each meter

6. Marginal rate of electricity for the common area meters, and for the residential meters (if not the same marginal rate), use the rate that is used for the energy cost savings analysis for those areas of the building (the marginal rate on the residential meters may be different than the meter serving the common areas).

#### **6.1.6 Data Release Authorization Forms**

Data Release Authorization Forms (DRAFTs) must be completed and signed by the building owner or manager and at least 10% of direct-metered apartments (minimum of 5). These forms provide the account numbers for common area and apartment accounts and permission for NYSERDA and its contractors to view and compile the utility data for the purposes of the Program. For master-metered buildings, only Data Release Authorization Forms from the Participant or management are required. Data Release Authorization forms are a Stage 1 deliverable. They are required for all projects.

#### **6.1.7 Consolidated Edison Aggregated Data**

Projects using Consolidated Edison (ConEd) electric service may request a building-level data retrieval. To obtain aggregated data refer to the ConEd website.

## 6.2 Benchmarking

NYSERDA, in collaboration with Oak Ridge National Laboratory and the U.S. Environmental Protection Agency, developed a benchmarking tool based on a database of approximately 500 multifamily buildings from across the United States. This tool is used to establish the starting point, or baseline, and performance target for projects in the Multifamily Performance Program.

After completing a comprehensive building assessment, the Partner will collaborate with the Participant and NYSERDA to develop an energy efficiency work scope. The Partner will use the [ERP Tool](#) to determine whether the proposed work scope meets the minimum energy reduction performance target. If so, the Partner will work with the Participant to develop a financing plan and construction plan.

If the proposed work scope does not meet the required performance target, the Partner will assess the measures included in the proposed work scope and determine whether additional energy savings can be achieved through additional measures or more efficient systems.

Projects that do not meet the performance target are not eligible for further MPP EB incentives, with the exception of NYSERDA's Green Jobs - Green New York Loan Fund Program, and then only for cost-effective measures or packages of measures.

## 6.3 Auditing Requirements

This section describes the requirements for completing a comprehensive building assessment of an Existing Buildings – Standard Path project. The requirements in this section must be followed for the Energy Reduction Plan to be approved.

The comprehensive building assessment(s) is (are) to be conducted or supervised by a Building Performance Institute (BPI) certified Multifamily Building Analyst. The Building Analyst is required to follow the standards established by BPI in accordance with their certification and to be trained in related systems inspection, testing, and modeling protocols. Any instrumented testing must use equipment that is built for the tolerances required and is accurate and verified in calibration.

The Partner may conduct the audit directly or use a subcontractor to perform the audit on the Partner firm's behalf. All requirements outlined in this section must be adhered to by Partners and their subcontractors. It is the Partner's responsibility to oversee their subcontractors and ensure their compliance with all Program rules.

### 6.3.1 BPI Standards

The Standards for auditing provided by the Building Performance Institute must be followed for all comprehensive energy assessments performed for the purposes of this Program. Updates can be found on the BPI website at [www.bpi.org](http://www.bpi.org).

### 6.3.2 Documentation and data entry

All building information collected via on-site observation, surveys, and performance testing, shall be documented and serve as a reference for data entry into an energy analysis tool. It is recommended that the building analyst who performs the on-site assessment be responsible for entering building data into the analysis tool, as much of the data entry requires interpretation of occupant/management responses to queries, visual indicators of systems performance, and analytical performance testing. As an example: the overall efficiency of the distribution system is based on occupant comfort, system design and controls, insulation levels, and system leakage. In cases where field staff and modelers are distinct functions, it is important for the field auditor to take detailed notes so that this interpretative information can be transferred.

Photo Documentation is a required part of ERP Documentation and must consist of a representative sample of the existing conditions of the project. It is important to include photo documentation of existing conditions that will be updated through the scope of work or that diverge from what would be expected in a normal building. As an example: if a baseline assumption of a building model shows a very high infiltration rate that will be reduced with air sealing, a photo would be required to document the source of such high baseline infiltration.

## 6.4 Work Scope Development

The scope of work, as presented in the [ERP Tool](#), must meet all Program rules and requirements in order to be eligible for all Program incentives. The recommended scope of work should be developed in consultation with the Participant and should meet the owner's financial and implementation goals for the property.

### 6.4.1 Consumption and Rate Analysis

When determining cost savings from the recommended scope of work, the Partner should use a marginal rate analysis that includes consideration of demand charges and ratchet clauses, where applicable. Projects subject to a block rate structure by their local utility will realize cost savings based upon the block within which the energy savings occur. As a result, a marginal rate analysis produces more accurate cost savings projections, and therefore more accurate SIR calculations, than a straight blended rate analysis and is therefore preferred when preparing the [ERP Tool](#).

There are situations when using a blended rate is more appropriate than using the marginal rate. The Program makes no requirements on the use of a specific rate analysis, but does require that whenever a blended rate is used, its application is clearly presented and explained in the [ERP Tool](#). The Program also requires that for any claims of cost savings based on a blended rate, it is noted in the Plan that they may not accurately reflect the true cost savings.

### 6.4.2 Cost Estimation

The projected cost of installed measures relies on estimates that are based on previous experience and knowledge of current pricing of building materials, equipment and labor. Although there are likely other costs associated with installing measures, these can usually be aggregated into a simple percent increase above the estimated cost of materials and labor.

The [ERP Tool](#) quality control features will flag measures falling outside the range of typical measures costs, based on previous multifamily installations.

Below is a list of items to consider when estimating costs.

1. Use the ENERGY STAR® Quantity Quotes service ([www.quantityquotes.net](http://www.quantityquotes.net)) where purchasers can register to instantly contact suppliers of ENERGY STAR® qualified products. These ENERGY STAR® qualified products are available through the web site: light bulbs, light fixtures, clothes washers, dehumidifiers, dishwashers, refrigerators, and room air conditioners.
2. Assess the quantities of items needed and the estimated hours of labor to accomplish installations.
3. Use previous contacts to help itemize local prices of labor and materials. Develop accepted pricing ranges based on evaluation of completed projects. Build a database of unit pricing from this information and keep it current.

4. Contact contractors and vendors for information on unit pricing and labor costs.
5. Consult straight materials and labor costs from R.S. Means handbook or other industry standard estimating guide. Include overhead and profit (O&P) as appropriate. Means should be no more than two years old. Add 3% per year out of date. Be sure to use City Indices, as geographic differences can be large.
6. Use recognized equipment catalogs for retail equipment prices.
7. Include bulk pricing initiatives or schedules where available.
8. Account for associated demolition, construction, and finishing work that may be required for installations.
9. Include all “hidden costs” (i.e. asbestos and/or lead abatement, sidewalk bridges and scaffolding for window repair/replacement).
10. Unless in-house labor is proposed and qualified to perform the work, assume all installations will be performed by an outside contractor who will charge competitive rates.
11. Design, analysis, and construction management costs must be included, to the extent reasonable, in the cost of the measures for which they are associated. For example, if design of a new heating system is required, the cost of this design must be included as part of the cost of the heating system. This allows for the cost effectiveness of measures to be more fairly assessed.
12. Construction Management costs are generally not associated with specific measures, but must be included in the overall project cost.
13. Partner Fees are not associated with specific measures, but must be included in the overall project cost. Partner Fees must be separated into ERP, construction, and post-construction costs.

### **6.4.3 Performance Target**

The scope of work (as presented in the [ERP Tool](#)) should achieve a minimum 15% source energy reduction for the project. If, after completing a whole-building analysis, a project cannot reach a 15% projected performance target, the Partner should submit an Energy Reduction Plan which presents a realistic scope of work that the Participant intends to install.

To be eligible for the Performance Payment, the [ERP Tool](#) should identify a scope of work that will achieve a minimum 20% source energy reduction for the project.

## 6.4.4 Cost Effectiveness of the Work Scope

### 1. Total Resource Cost (TRC) Test

The Total Resource Cost (TRC) test measures the overall economic efficiency of a demand-side management (DSM) program from the point of view of the utility and its ratepayers as a whole. The TRC test is the most commonly used measure of DSM cost effectiveness since it provides an indication of whether the total costs to both the utility and the ratepayer are being reduced. A program, such as the Multifamily Performance Program, is cost-effective if the benefits exceed the total costs incurred by both the utility and the ratepayer.

The TRC test calculation is built into the [ERP Tool](#). The test uses the predicted energy savings, measure lifetime, and projections of avoided consumption and emission costs to calculate the present value of energy and demand savings. It divides the total net present value of savings by the measure cost to calculate the TRC Benefit/Cost Ratio. Only measures with a TRC of 1.0 or greater will be eligible to receive EEPS funding.

Measures that pass the TRC test individually are summed to develop a project-level TRC test. In this project-level TRC screening, program administrative costs are added to the measure cost and the project must have a TRC test of 1.0 or greater.

### 2. Savings-to-Investment Ratio (SIR)

Work scope decisions are based on the value of proposed measures to reduce the building's energy use. The cost of completing a measure, when compared to the energy savings accrued by a measure, determines the length of time for simple payback on the investment. The present value of the lifetime dollar savings for a measure divided by the cost of the installed measure yields a Savings-to-Investment Ratio (SIR). Energy efficiency recommendations should be based on calculated SIR, with larger SIRs receiving higher priority. Proposed energy work scopes can include measures with a calculated SIR of less than 1.0 provided that the package of measures has an overall SIR of 1.0 or greater.

In some cases, it may be advantageous to include measures that are marginally cost effective in order to maintain consistency of equipment inventory (i.e., T-8 lighting throughout a building). However, the overall project must always have an SIR of 1.0 or greater.

The Savings-to-Investment Ratio for a specific measure is not intuitive, and it is always a good idea to let the software analysis be the guide. When the analysis does not affirm an SIR that exceeds 1.0, consider options to reduce costs. With building envelope insulation, for example, there are diminishing returns for levels that exceed a certain amount; the first R-19 will have more value than the addition of another R-19 for the same cost.

Often, high performance features with higher costs can offer a better SIR because an incremental cost increase buys a substantially higher performance product. This is the case with window replacements that may reduce heat loss by 50% at a relatively high cost per sq. ft. But by adding argon gas between the glazing, the performance may increase by another

30%, while the cost increases by only 10%. Again, this analysis is not always intuitive, so let the modeling software provide the cost/benefit analysis. Accurately modeled buildings and accurately valued upgrades yield realistic SIRs.

**3. Service Lives of Measures**

To determine the Total Resource Cost Test and Savings to Investment Ratio, all projects must use the standard measure life assumptions, as included in the [ERP Tool](#).

**4. Discount Rate**

Partners must use the discount rates included in the [ERP Tool](#) to calculate the Savings to Investment Ratio and Total Resource Cost test. NYSERDA may update these tables with a revised discount rate as necessary. The discount rate generally follows that set by the U.S. General Services Administration’s Federal Energy Management Program.

**6.4.5 Measures to Evaluate**

In general, an improvement analysis should be performed on any building component, appliance, or building characteristic not meeting an established minimum energy efficiency standard (NYS Energy Conservation Construction Code or MPP Existing Building Minimum Performance Standards). High performance improvements should always be considered, along with the associated costs of materials/equipment, installation, demolition, fireproofing and finishing work.

The list below will be reviewed for applicability and appropriateness during the Scoping Session to determine the most appropriate strategy for performing the energy assessment. Depending on the results of the Scoping Session, some of these measures could be required for evaluation by NYSERDA. But all of these measures should be considered, regardless of whether it is required on a particular project.

Material, equipment and installation costs vary from project to project, as does the cost of energy, so results are not predictable and will only be determined by a customized analysis.

<b>Measures That Must Be Evaluated</b>	
<b>Envelope</b>	Air Sealing (including weather stripping)
	Insulation - Roof Deck or Attic
	Windows - High Efficiency Windows and/or Storm Windows (when single-pane windows are present)
<b>HVAC</b>	Electric to Gas Conversion - Heating System
	Electric to Gas Conversion - DHW System
	Boiler - Replace Steam with Hydronic

	Boiler - Install High Efficiency Boilers (ENERGY STAR where available)
	Boiler - Separate DHW Direct-fired Boiler (condensing if gas)
	Furnace - Install High Efficiency (ENERGY STAR where available)
	Controls - Outdoor Reset Controls for Boilers
	Controls - Roof Fan Timers (new timers only; per code requirements)
	Controls - Thermostatic Radiator Valves
	Distribution - Insulate All Hot Surfaces (condensate tank, steam & HW piping)
<b>Lighting</b>	Common Area - LED Exit Signs
	Common Area - ENERGY STAR CFL Hardwired or Linear Fluorescent Fixtures (including fixtures operating for 24 hours/day)
	Common Area - Bi-level Lighting
	Common Area - Occupancy Sensors for Select Areas (i.e., laundry room)
	Common Area Lighting - Exterior Lighting, incl. controls
<b>Appliances</b>	Electric to Gas Conversion - Dryers
	ENERGY STAR Clothes Washers (commercial)
	ENERGY STAR Refrigerators (not in-unit)
<b>In-Unit</b>	ENERGY STAR Refrigerators
	ENERGY STAR Dishwashers
	ENERGY STAR CFL Hardwired or Linear Fluorescent Fixtures
	ENERGY STAR Room and Thru-the-Wall Air Conditioners
<b>Other</b>	Motors - Install High Efficiency Motors (if over 1 HP and run for more than 4 hours/day)
	Motors - Variable Speed Drives (on variable flow motors over 1 HP and run more than 4 hours/day)
	DHW - Low-flow Showerheads and Sink Aerators

**6.4.6 Health and Safety Measures**

It is the intent of this Program to ensure that energy-related health and safety measures are addressed, even if they do not lead to fuel, electricity, or monetary savings. Where health and safety issues are identified through the building assessment process, the Partner has an obligation to inform the building Participant and to encourage them to address these issues prior to the completion of the specified work scope. Special attention should be paid to situations where building code violations are uncovered.

**6.4.7 Interaction with NYC Greener, Greater Buildings Plan (PlaNYC) and Local Law 87 of 2009**

Some projects may be subject to the requirements of the City of New York’s requirements of the Greener, Greater Buildings Plan and its associated Local Law 87 of 2009. The table below lists retro-commissioning measures that may be required by Local Law 87, and whether or not they are eligible for the MPP scope of work.

Measures marked as Not Eligible may not contribute to the 15% energy savings target in the Energy Reduction Plan. Typically, measures have been deemed ineligible because they fall under the category of “behavioral measures.” Measures marked as eligible may contribute to the 15% energy savings target in the Energy Reduction Plan.

NYSERDA does not review Energy Reduction Plans or deliverables for compliance with the NYC Greener, Greater Buildings Plan requirements.

Eligible?	Measure
1. Operating protocols, calibration, and sequencing:	
N	HVAC temperature and humidity set points and setbacks are appropriate and operating schedules reflect major space occupancy patterns and the current facility requirements.
N	HVAC sensors are properly calibrated
N	HVAC controls are functioning and control sequences are appropriate for the current facility requirements.
N	Loads are distributed equally across equipment when appropriate (i.e. fans, boilers, pumps, etc. that run in parallel).
N	Ventilation rates are appropriate for the current facility requirements.
N	System automatic reset functions are functioning appropriately, if applicable.
N	Adjustments have been made to compensate for oversized or undersized equipment so that it is functioning as efficiently as possible.
N	Simultaneous heating and cooling does not occur unless intended.
N	HVAC system economizer controls are properly functioning, if applicable.
N	The HVAC distribution systems, both air and water side, are balanced.
N	Light levels are appropriate to the task.
N	Lighting sensors and controls are functioning properly according to occupancy, schedule, and/or available daylight, where applicable.
N	Domestic hot water systems have been checked to ensure proper temperature settings.
N	Water pumps are functioning as designed.
Y (dhw only)	System water leaks have been identified and repaired.

Eligible?	Measure
2. Cleaning and repair:	
N	HVAC equipment (vents, ducts, coils, valves, soot bin, etc.) is clean.
N	Filters are clean and protocols are in place to replace, as appropriate.
N	Light fixtures are clean
N	Motors, fans, and pumps, including components such as belts, pulleys, and bearings, are in good operating condition.
Y	Steam traps have been replaced as required to maintain efficient operation, if applicable.
N	Manual overrides on existing equipment have been remediated.
N	Boilers have been tuned for optimal efficiency, if applicable
Y	Exposed hot and chilled water and steam pipes three (3) inches or greater in diameter with associated control valves are insulated in accordance with the standards of the New York city energy conservation code as in effect for new systems installed on or after July 1, 2010.
Y	In all easily accessible locations, sealants and weather stripping are installed where appropriate and are in good condition

**6.4.8 On-site Generation Improvements**

Geothermal systems may contribute to the 15% energy reduction target.

On-site generation improvements are those that generate electricity or re-allocate electricity use, including, but not limited to, cogeneration, photovoltaics, wind, and submetering. These improvements shall not contribute to the 15% energy reduction target or the performance payment energy savings analysis. Partners are encouraged to direct customers interested in these types of improvements to NYSERDA’s various clean and renewable energy programs.

**6.4.9 Combining MPP EB Project with other NYSERDA On-Site Generation Programs.**

Existing Buildings Version 5 projects participating in either the Fast Track or Standard Path may participate in both MPP and one or several of the PONs listed below (collectively referred to herein as “Renewable Programs”).

- CHP Acceleration Program (PON 2568)
- Combined Heat & Power Performance Program (PON 2701)
- Solar PV Program Financial Incentives (PON 2112)
- Solar Thermal Incentive (PON 2149)

Version 5 of MPP EB contains a post-construction performance element. This guidance addresses a methodology to avoid over-estimation of energy savings or over-payment of incentives for measures

installed under a combination of programs. The intent is to separate reporting of energy savings for MPP measures from the Renewable Programs measures.

**1. Application**

If you know you will be participating in Renewables Programs at the time of Application, indicate that in the Notes section of the Application.

**2. Scoping Session**

If you know you will be participating in Renewables Programs at the time of the Scoping Session, let your Project Manager know during the Scoping Session.

**3. Energy Reduction Plan Tool & Model (Stage 1)**

Renewable Program measures' energy savings may NOT contribute to the 15% minimum savings target for MPP.

Do not include Renewable Program measures in the MPP Energy Reduction Plan's Detailed Measures Tab or the model (Standard Path Projects only).

Consider using the ERP Template's blank areas to discuss the project's Renewable Program participation, to provide an all-inclusive document for your client.

**4. Construction Period (Stages 2-3)**

Renewable Program measures need not be reported on site inspection requests. MPP site inspections will not address Renewable Program measures. Use the Renewable Program requirements to determine how to handle site inspections for those measures.

**5. Post-Construction (Stage 4)**

MPP compares one year of pre-construction energy use to one year of post-construction energy use to determine eligibility for Stage 4 payment. The energy savings generated from Renewable Program measures must be removed from this calculation to provide a true comparison of pre-to-post energy savings for only MPP measures.

Each Renewable Program has a monitoring and verification (M&V) period ranging from 2-3 years after installation. Refer to individual Renewable Program guidance for specific requirements. MPP Stage 4 submittals must include documentation of actual Renewable Program energy savings, and those savings must be subtracted from the MPP savings developed in the Utility Data Analysis Tabs of the Energy Reduction Plan Tool.

M&V Documentation available will differ between the Renewable Programs. The Stage 4 submittal should include the most recent Renewable Program M&V documentation (as defined by that Program's requirements) for both electric and gas usage/savings (as appropriate) for the post-construction period. Future guidance will refine the process for obtaining Renewable Programs data, depending on program and source of data.

It is understood that each project has its own timeline for installation of MPP and Renewable Program measures. Consult with your Project Manager early to discuss installation schedules and how they will affect the Stage 4 requirements.

MPP projects with Energy Reduction Plans predicting 15% - 19% energy savings are ineligible for Stage 4 payment. These projects need not submit Renewable Program M&V data because these projects have no Stage 4. These projects complete participation in MPP at the close of Stage 3.

#### **6.4.10 Building Operator Training and Certification**

The MPP does not offer incentives for Building Operator Training or Certification. Building operation and maintenance practices play a valuable role in achieving improved energy performance target. Partners and Participants may wish to evaluate Building Operator Training and certification as part of an overall set of recommendations for the project. The Building Performance Institute maintains a network of affiliate trainers offering Building Operator Training. Refer to [www.bpi.org](http://www.bpi.org) for more information. NYSERDA's Workforce Development programs may provide support directly to building owners and staff who attend this and other types of training.

#### **6.4.11 Owner's Manual**

The Program does not offer incentives for an Owner's Manual. Partners and Participants may wish to evaluate the development of an Owner's Manual as part of an overall set of recommendations for the project. Appendix B details typical contents of an Owner's Manual.

#### **6.4.12 Interactive Energy Savings**

Individual measures aggregated into a proposed work scope will often interact with each other and impact the anticipated savings performance. For instance, analysis may indicate that installing new windows in an existing building might save 50 MMBtu/year. Or, installing a new boiler in the same building might save 25 MMBtu/year. However, if you install the boiler first, careful analysis will show that the windows, installed second, might save only 40 MMBtu/year. Conversely, you could install the windows first, saving 50 MMBtu/year, but then the boiler would only save 15 MMBtu/year, since in either case the boiler/window combination must correspond to the same savings, 65 MMBtu/year.

The savings attributable to a package are almost always less than the sum of the savings each measure would produce if implemented in the original building. These interactive effects must be included when estimating the savings for a recommended package of measures. However, there may be peripheral benefit from a measure that augments the energy savings of another measure. As an example, reducing the heating/cooling load of a building reduces the distribution cycling time, which, in turn, reduces the number of hours that distribution losses occur and therefore the amount of electricity required to drive distribution.

#### **6.4.13 Non-Energy Savings**

Non-Energy savings may not be included in MPP scope of work (e.g. toilets, emergency lighting, carbon monoxide detectors).

#### 6.4.14 Water & Sewer Savings

A reduction in water consumption can be associated with some common building improvements, including, but not limited to:

ENERGY STAR clothes washers
ENERGY STAR dishwashers
Low-flow aerators and showerheads

Low volume or dual flush toilets are not an eligible measure and should not be included in the NYSERDA scope of work.

In order to quantify the water savings associated with these and potentially other measures, Partners should develop straightforward, spreadsheet-based calculations using field measurements, manufacturers' data, and ASHRAE guidelines, as appropriate. Consumption savings can then be applied to the delivered cost of water and sewer for the project to determine the cost savings. Due to the nature of water rate structures, it is very important that marginal rates be analyzed as opposed to simply using the historical delivered cost of water and sewer. This will typically involve a review of the rate structure to determine whether the estimated level of savings will reduce consumption below a minimum rate threshold.

When including water and sewer savings in the proposed work scope, savings calculations and water and sewer consumption data must be included as an Outside Calculation.

#### 6.4.15 Operation and Maintenance (O&M) Savings

Cost savings associated with reduced O&M expense can be difficult to predict and quantify and should be claimed only in cases where solid documentation can be provided to substantiate the savings estimate.

An example might involve the removal of a central boiler plant and replacement with building-based boilers. If the central plant involved underground distribution of heated water or steam and the underground piping was in a deteriorated condition, annual repairs could be regular and expensive. In such a case, it may be reasonable to quantify the savings associated with no longer needing to maintain the underground distribution piping based on historical costs for such maintenance and repair.

If O&M savings are claimed, calculations and documentation must be included in the [ERP Tool](#) as an Outside Calculation.

#### **6.4.16 Minimum Performance Standards**

All recommended improvements shall comply with the Minimum Performance Standards where applicable.

It is the responsibility of the Partner to ensure that all performance assumptions made in the comprehensive energy assessment are translated into bid and construction documents. A work scope should contain performance specifications or references to the specifications for the materials and equipment to be installed. Additionally, the work scope should include enough information about installation standards to ensure that competitive bidding is fair in scope and pricing and that potential contractors understand the importance of performance contracting.

The Minimum Performance Standards (version 5.0) are included in the pages that follow.

# Multifamily Performance Program V5

## Minimum Performance Standards for Existing Buildings - Standard Path & Fast Track

**Purpose:**

These Minimum Performance Standards establish the measure-by-measure parameters which apply only to those building components or systems for which recommended improvements are being proposed. For projects where one of the specific components listed below is recommended within the proposed energy efficiency work scope, this component must at least meet the indicated performance requirements.

These Minimum Performance Standards are also intended:

- 1) To ensure that buildings are built to the requirements of specific, applicable codes.
- 2) To provide a reference for Partners to describe to owners what will be required to participate in the Program.
- 3) To promote the installation of ENERGY STAR appliances, lighting, and equipment where available.

<u>RECOMMENDED MEASURE</u>	<u>MINIMUM PERFORMANCE STANDARD</u>
	Recommended measures shall AT LEAST meet each of these requirements for each indicated measure or system, including BPI, Inc. Technical Standards for MFBA or applicable Local, State or National codes, whichever is more stringent. For building components or systems not addressed in this document, the recommended measure must meet or exceed applicable Local, State, or National codes.
<b>APPLIANCES</b>	Appliances shall be ENERGY STAR labeled when available. Refrigerators and air conditioning units must be removed and decommissioned in compliance with EPA Clean Air Act and other relevant NY State regulations.
<b>DOMESTIC HOT WATER</b>	
Domestic Hot Water Boiler System	All hot water piping in mechanical room and accessible piping in unconditioned spaces shall be insulated to ECCC NYS-10 503.2.8.
Domestic Hot Water Boiler System	Replacement domestic hot water heating plant(s) shall be ENERGY STAR labeled, where applicable. For all other systems where the ENERGY STAR label is not available, the specified heating plant(s) shall have a minimum rated efficiency no less than that required by the ECCC NYS-10 504.2.
Domestic Hot Water Temperature	The temperature of the stored DHW shall be just sufficient to deliver DHW to the apartments when measured at the tap to within a temperature range of 110° - 125°F.
<b>ENVELOPE</b>	
Building Envelope Sealing	Projects with air sealing shall consider and evaluate infiltration reduction via stack effect, wind effect, and bypasses when applying product. Fast Track Projects (required): Fast Track projects up to and including 3 stores shall provide blower door test results for pre-installation and post-installation conditions in all buildings.
Windows & Exterior doors	Specified windows & doors shall be ENERGY STAR rated where available, and comply with ECCC NYS-10 502.3.

HEATING & COOLING	
Boiler & Furnace Systems	<p>Atmospherically vented gas furnaces and boilers shall not be specified.</p> <p>All hot water piping in mechanical room and accessible piping in unconditioned spaces shall be insulated to ECCC NYS-10 503.2.8.</p>
Heating System Efficiency	<p>Replacement heating plant(s) shall be ENERGY STAR labeled, where applicable. Boiler systems (hot water and steam) larger than 300,000 Btuh input shall have a thermal efficiency of <math>\geq 80\%</math>. Exception: steam systems with input capacities between 300,000 Btuh and 2.5 MBtuh shall have a thermal efficiency of <math>\geq 79\%</math>. For all other systems where the ENERGY STAR label is not available, the specified heating plant(s) shall have a minimum rated efficiency no less than that required by the ECCC NYS-10 503.2.3.</p>
Start-up Testing	<p>Provide System Functional Performance Testing checklist verification and start-up reports/checklists in typical replacement HVAC systems &amp; equipment. Replacement condensing boilers shall provide at a minimum in the start-up report efficiency testing for high and low fire. For replacement condensing boiler(s), provide system in optimal performance (per the design) or operating conditions to minimize return water temperature.</p>
Condensing Boilers	<p>Condensing boiler systems shall be designed, installed and operated in a manner to minimize return water temperature.</p>
Owner's Manual	<p>When replacing HVAC systems &amp; equipment provide an Owner's Manual that contains (at a minimum) the following:</p> <ul style="list-style-type: none"> <li>Equipment start-up reports and/or checklists; condensing boilers shall provide a minimum of efficiency testing for high and low fire;</li> <li>As-built equipment and controls cut sheets;</li> <li>Statement of the system's Sequence of Operations.</li> </ul>
Heat Pumps	<p>Equipment shall be ENERGY STAR labeled where appropriate for size of equipment. Where sizing does not allow ENERGY STAR labeling, equipment shall comply with ECCC NYS minimum efficiencies.</p>
Heating System Supply Air Intake	<p>When replacing heating systems, provide motorized damper control of outside air damper.</p>
Distribution System Replacements	<p>When replacing existing distribution systems or installing new systems, terminal heating &amp; cooling distribution equipment serving an apartment shall be controlled by a thermostat(s) located within the same apartment as per ECCC NYS 503.2.4. Such terminal heating &amp; cooling distribution equipment must be separated from the riser or distribution loop by a control valve, or terminal distribution pump, so that heated or cooled fluid is not delivered to the apartment distribution equipment when there is no call from the apartment thermostats.</p>
Cooling - Room Air Conditioners	<p>Room air conditioners shall be ENERGY STAR labeled (for all model sizes covered by the ENERGY STAR label). Air conditioning units must be removed and decommissioned in compliance with EPA Clean Air Act and other relevant NY State regulations.</p>
Packaged Terminal Air Conditioners	<p>Equipment shall be ENERGY STAR labeled where appropriate for size of equipment. Where sizing does not allow ENERGY STAR labeling, equipment shall comply with ECCC NYS minimum efficiencies.</p>
Cooling - Chillers	<p>Equipment shall meet the requirements of ECCC NYS.</p>

MPP Existing Buildings Program Guidelines V5.2

<b>LIGHTING</b>	Removed fluorescent lamps and ballasts must be disposed of in an environmentally sensitive manner, adhering to all relevant Local, State, and National codes.
Lighting Controls	When replacing or upgrading lighting in frequently unoccupied areas, i.e. storage closets, compactor rooms, etc., provide occupancy controls where cost-effective.
Linear Fluorescent Lighting	Linear fluorescent systems shall have the following minimum efficacies: 2-foot - 75 lumens per watt 4-foot (including U-lamps) - 79 lumens per watt
Compact Fluorescent Lighting	Compact fluorescent fixtures shall be ENERGY STAR qualified. Screw-in compact fluorescent lamps are not eligible.
LED Lighting (general illumination)	Solid State Lighting products must be listed by either ENERGY STAR® or DesignLights™ Consortium's Qualified Products List (DLC QPL). If neither ENERGY STAR® nor DesignLights™ certifies the type of solid state lighting in question installed, the following must be submitted: LM-79 test data (for the entire luminaire); LM-80 test data (for the LED device or module package); and an unconditional 3-year manufacturer's warranty.
Emergency Lighting	All exit signs shall be specified as LED (not to exceed 5W per face) or photo-luminescent and shall conform to local building code; fixtures located above stairwell doors and other forms of egress shall contain a battery back-up feature.
Outdoor, Security & Decorative lighting	Exterior lighting shall have an efficacy of greater than or equal to 60 lumens/watt per ECCC NYS 505.6.1. Fixtures must include automatic switching on timers or photocell controls except fixtures intended for 24-hour operation, required for security, or located on apartment balconies.
<b>MOTORS</b>	All replaced or newly installed three motors 1 HP or larger shall be NEMA Premium efficiency or greater. Motors that are packaged as an integral component of mechanical equipment are exempt from this requirement.
<b>WATER CONSUMPTION</b>	Common area and in-unit faucets and showerheads must not exceed 2.0 gallons per minute (GPM).

## 6.5 Quality Control

Partners must conduct a comprehensive review of their deliverables prior to submittal. Partners are responsible for the accuracy, timeliness and completeness of submittals. Partners who repeatedly provide false, inaccurate, or incomplete information to the Program will be subject to the Program's Partner Status Designation Policy per their Partnership Agreement with NYSERDA.

## 6.6 Simulation Guidelines

The [Simulation Guidelines](#) is a separate document that contains a methodology for energy simulation and model calibration. The document should be used to evaluate energy reduction measures and to calculate the projected savings and cost effectiveness of recommendations included in the [ERP Tool](#).

The [Simulation Guidelines](#) serve as a resource to ensure that:

- Consistent simulation methodology is used from Partner to Partner and from building to building;
- Energy simulation and model calibration best practices are followed;
- Modeling assumptions are within reasonable ranges; and
- Savings projections are realistic.

Refer to the current [Simulation Guidelines](#) for requirements regarding modeling, as this document is updated as new information becomes available.

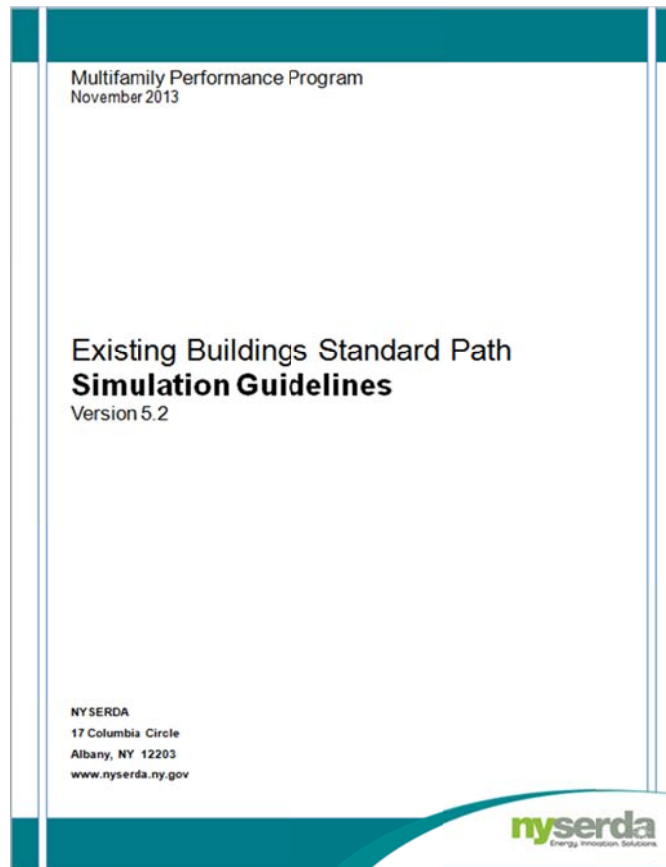


FIGURE 6-1  
SIMULATION GUIDELINES

## 7 STAGE 1 – STANDARD PATH

### 7.1 Overview

Upon application approval, the Partner works with the Participant to develop the Energy Reduction Plan. The Energy Reduction Plan consists of billing analysis, initial benchmarking, a comprehensive audit, work scope development, modeling, and finally, presenting the Energy Reduction Plan to and negotiating with the Participant. This final step is imperative in the successful implementation of the Energy Reduction Plan.

This section describes the requirements for developing a successful Energy Reduction Plan (ERP), under the Standard Path, which include:

- Establishing energy use baseline and benchmarking the building(s)
- Completing a comprehensive energy audit
- Developing a whole-building software model of existing conditions
- Modeling proposed energy improvements
- Completing the Energy Reduction Plan Tables
- Energy Conservation Measures evaluation

The following tools are provided for the purpose of developing the ERP Standard Path project:

- *Energy Reduction Plan Tool<sup>1</sup> (aka ERP Tool)*
- *Data Release Authorization Forms (aka DRAF)*
- *Weather Lookup Tool (optional)*
- *Model Calibration Tool (optional - only needed for use with modeling software that does not calibrate the model to utility bills)*
- *Photo Documentation*

See Figure 7-7-1 for information on step-by-step ERP development.

The Energy Reduction Plan summarizes the results of a comprehensive building assessment and represents the work scope that the Participant is willing to undertake.

A building assessment is a necessary first step, but is only one component of the Energy Reduction Plan. After the energy audit is complete, a work scope is developed that incorporates the Participant's financial and contracting abilities. These post-audit components of the Energy Reduction Plan are critically important and must be developed in close consultation with the Participant in order to ensure that the project moves through to construction.

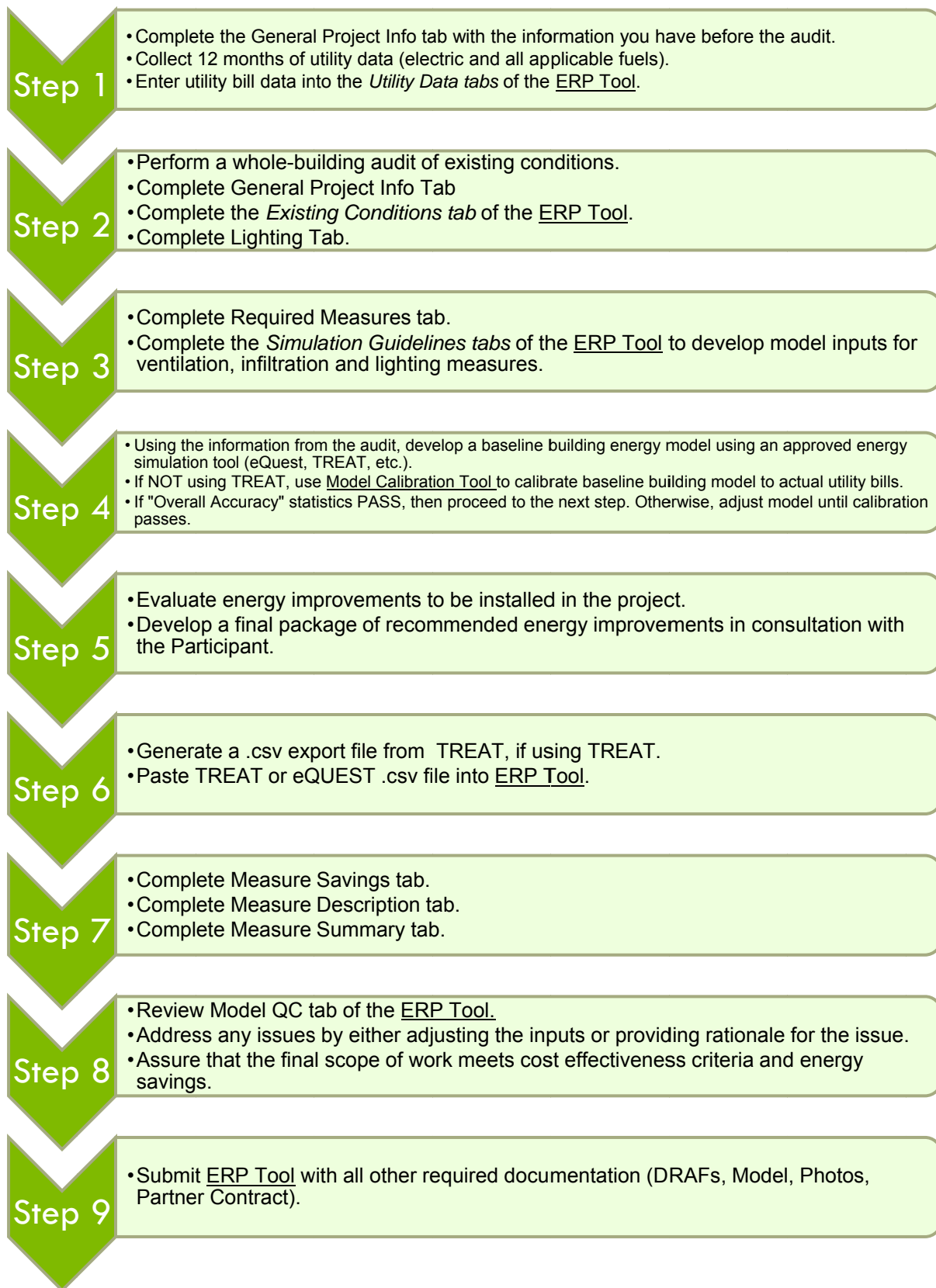
Most importantly, the Energy Reduction Plan serves as a tool for educating both the Participant and NYSERDA. The use of a Program-developed tool allows for the standardization of information, data, and documentation across the entire Program and from Partner to Partner.

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<sup>1</sup> Requires Microsoft Excel 2007 or higher.

The [ERP Tool](#) includes the following components:

- ✓ Analysis of utility data
- ✓ Benchmarking of existing and post-retrofit building energy use
- ✓ Existing Conditions
- ✓ Evaluated measures, including complete package of energy improvements
- ✓ Description of modeling approach
- ✓ Additional tools and/or spreadsheets used to calculate measures
- ✓ Quality Control of improvements and models.



**FIGURE 7-7-1  
ENERGY REDUCTION PLAN DEVELOPMENT STEP-BY-STEP**

## 7.2 Modeling Protocols

This section outlines the requirements of the modeling software and/or tools used in the Program, as well as the methodology for modeling different types of buildings. Refer to NYSERDA’s Partner Portal for a current list of tools that are approved for use in the Program.

New analytical tools may apply to the program by submitting an application to the Program Implementer describing tool capabilities and demonstrating compliance with the listed program requirements. Based on Program review, the tool may be accepted for use on one or several pre-approved pilot projects. After successful completion of the pilot project(s), the tool will be included in the list of approved software.

Contact the Program Implementer for more information about submitting a modeling tool application.

Deliverables for projects that are not identified as pilot projects prior to preparing the comprehensive energy assessment and that utilize software not approved for use in the Program will not be accepted.

### 7.2.1 Building Analysis Tools

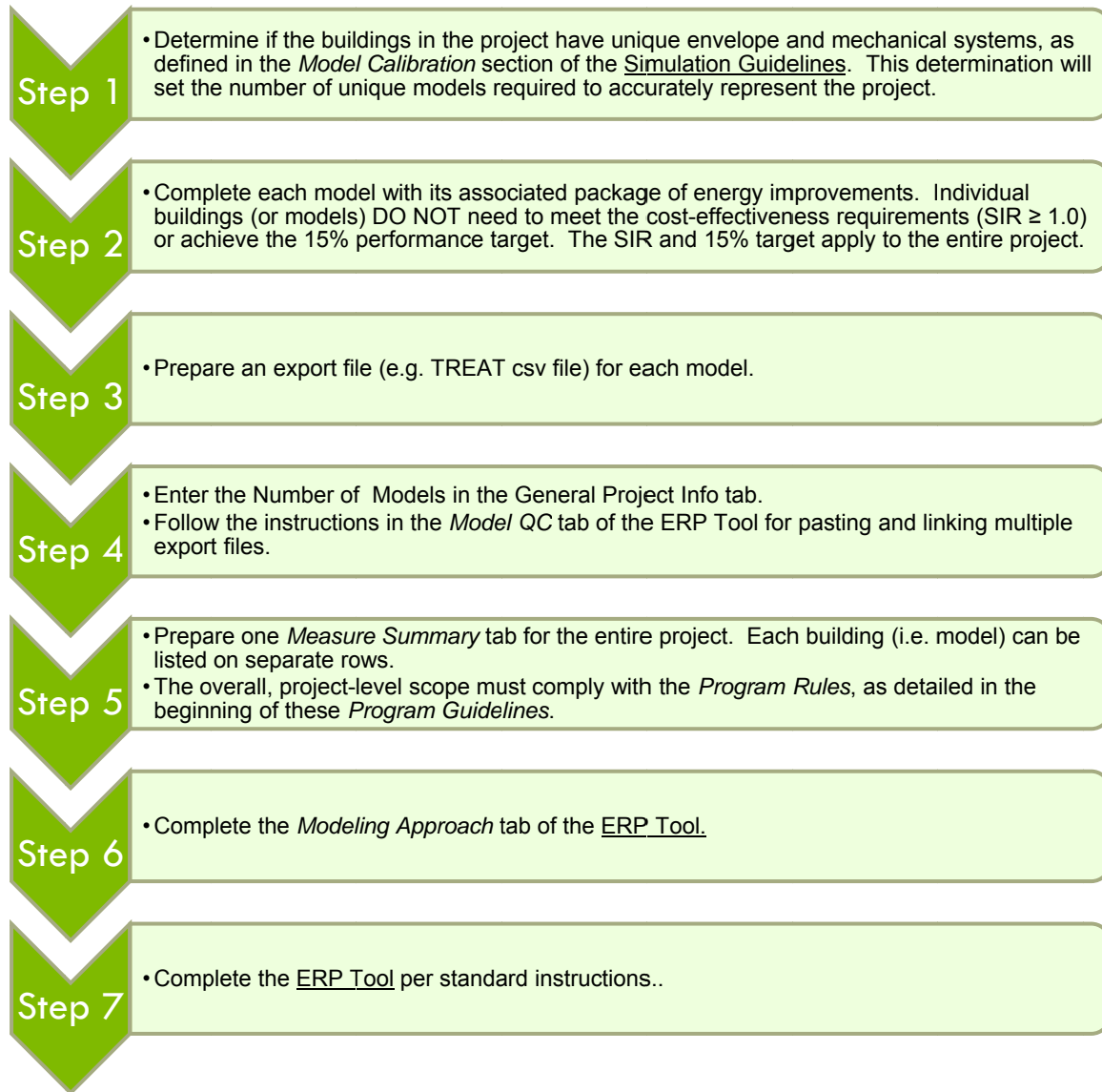
Only analytical tools that satisfy the requirements outlined in the *Analytical Tool Requirements* table below may be used to conduct the comprehensive building assessment underlying the *Energy Reduction Plan*.

#### **Analytical Tool Requirements**

<p>1. Compliance with ASHRAE 90.1 Appendix G simulation and documentation requirements; OR</p> <p>Approval for EAct Federal Tax Deductions (see <a href="http://www.eere.energy.gov/buildings/info/qualified_software/">http://www.eere.energy.gov/buildings/info/qualified_software/</a>); OR</p> <p>DOE approval for use in Weatherization Assistance Program for multifamily buildings.</p>
<p>2. Support of systems and configurations that are typical for multifamily buildings in the northeastern United States.</p>
<p>3. Support of Multifamily Performance Program business process and reporting requirements.</p>
<p>4. Availability of technical support, training, and/or user manual and documentation. NYSERDA Multifamily Performance Program staff will not provide assistance with software-related questions or model troubleshooting.</p>
<p>5. Built-in troubleshooting tools and errors/warnings reports.</p>
<p>6. Integrated support for evaluation of design alternatives (improvements).</p>

### 7.2.2 Modeling Multiple Buildings Types

In projects consisting of multiple buildings, the Partner is expected to follow these requirements in developing and reporting the project’s scope of work.



**FIGURE 7-7-2  
STEP-BY-STEP FOR MODELING MULTIPLE BUILDINGS**

## 7.3 Side Calculations

The modeling software must be used to calculate savings for all measures that can be simulated by that software. Some energy improvements cannot be calculated by the modeling software. For such measures, Partners may perform side calculations to analyze those improvements.

**Example:** Building A has rooftop fans providing corridor ventilation. The Partner is using TREAT to model the building and its improvements. The proposed improvement is the installation of fan timers.

TREAT can calculate the effects of reduced ventilation in the building, but does not calculate the reduced electrical usage for the newly-controlled fan motors.

**Solution:** The Partner uses a standard electrical savings calculation spreadsheet to determine the energy savings for reduced motor hours of operation. The electrical savings are then modeled as an appliance in TREAT. The Partner adds the motor calculation spreadsheet to the [ERP Tool](#) on the *Outside Calculation* tab or as a separate attachment.

## 7.4 Stage 1 - Energy Reduction Plan Approval

### 7.4.1 Stage 1 Deliverables

Stage 1 submittals are due within 90 calendar days following *Notice to Proceed to Energy Reduction Plan* after the Scoping Session. The Participant and Partner are notified of this date when the Notice to Proceed is issued.

Required deliverables include:

- ✓ Energy Reduction Plan Tables
- ✓ Modeling software file
- ✓ Partner Contract
- ✓ Data Release Authorization Form(s)
- ✓ Photographs

**Incomplete submittals will be returned without review.**

**The File Name Convention must be followed.** With the volume of projects participating in the Program and documents required, strict adherence to the File Name Convention is required. It allows NYSEDA to manage document revisions and maintain accurate project files. Partners are urged to develop a similar requirement internally that aligns with the requirements set forth for this Program.

File submissions that do not adhere to the File Name Convention will be returned to the Partner without review.

Document	File Name Convention	Example
Energy Reduction Plan Tables	Project Name – ERP_rev0.xls	NY Apts – ERP_rev0.PDF
Modeling Software File	Project Name – Model_rev0.xxx	NY Apts – Model_rev0.xxx
For projects with multiple models:	Project Name – Site Name1_rev0.xxx Project Name – Site Name2_rev0.xxx	NY Apts – Bldg A_rev0.xxx NY Apts – Bldg B_rev0.xxx
Partner-Participant Contract	Project Name – Partner Contract.PDF	NY Apts – Partner Contract.pdf
Data Release Authorization Form(s)	Project name – DRAF.pdf	NY Apts – DRAF.pdf
Photographs (using Template)	Project Name – Photos.pdf	NY Apts – Photos.pdf

Upon resubmission of project documents, the next revision number shall be applied to all deliverables (e.g. Rev0 becomes Rev1). See Appendix C for a complete list of deliverables.

## 7.4.2 Stage 1 Approval

The procedure detailed below explains each step of the Energy Reduction Plan approval process. **The Energy Reduction Plan must be approved before continuing to Stage 2.**

1. The Partner submits Stage 1 Deliverables and all associated files to NYSERDA for review.
2. The NYSERDA Project Manager reviews the submittals to ensure that it complies with the Scoping Session and is fundable.
  - a. If, upon initial review, the proposed project appears to meet program requirements and funding capabilities, the submittal then receives an in-depth technical and financial review.
  - b. If, upon initial review, the proposed project does not appear to meet program requirements and funding capabilities, the project will not receive further review. The project will be rejected and its participation in the Program will be terminated.
3. NYSERDA completes an in-depth technical and financial review with three options for response:
  - a. Approved as Noted: Stage 1 Deliverables are accepted as proposed.
  - b. Revise and Submit: The project is not ready to be accepted as proposed. Comments are returned to the Partner and Participant, with direction to resubmit. Resubmittal (aka Rev1) is expected to occur within one month (30 days).
    - If the resubmittal meets program requirements and addresses comments, the project is accepted as proposed and the Energy Reduction Plan approved.
    - If the resubmittal does not present an approvable project as directed in the review comments, it will be returned to the Partner for correction and the Partner's performance file will be noted.
  - c. Rejected: Deliverables contain serious deficiencies and do not meet Program requirements.
    - The NYSERDA Project Manager will notify the Participant & Partner to seek mutually acceptable terms for a fundable project. This discussion occurs primarily with Participant with input from the Partner. NYSERDA may choose to allow resubmittal of the Stage 1 deliverables as a result of this discussion.
    - If no agreement is reached the project is rejected and its participation in the program is terminated.
4. Once the Stage 1 deliverables are approved, NYSERDA issues a *Notice to Proceed to Construction*.
  - a. For projects where the [ERP Tool](#) predicts 15-19% energy savings – The *Notice to Proceed* is simply an email that the ERP has been received and approved and that the project may now proceed to installation of the improvements detailed in the ERP.

- b. For projects where the [ERP Tool](#) exceeds 20+% energy savings – The *Notice to Proceed* will include an email that the ERP has been received and approved and that the project may now proceed to installation of the improvements detailed in the ERP. The email will also include a Supplemental Incentive Award letter specifying the project’s maximum performance payment.

**After Stage 1 approval, the project moves into construction.**

## 8 STAGE 1 – FAST TRACK

### 8.1 Overview

The Fast Track is available for projects of 5-49 units. This component was developed to allow for quicker progression through MPP. Upon application approval, the Partner works with the Participant to develop the Energy Reduction Plan. This section describes the requirements for developing a successful Energy Reduction Plan (ERP), under the Fast Track which include:

- Establishing energy use baseline and benchmarking the building(s)
- Completing a comprehensive energy audit
- Completing the Energy Reduction Plan Tables
- Energy Conservation Measures evaluation

The following tools are provided for the purpose of developing a Fast Track project:

- Fast Track Energy Reduction Plan Tool<sup>2</sup> (aka [ERP Tool](#))
- Data Release Authorization Forms (aka DRAFs)
- Photos Documentation

See Figure 8-8-1 for information on step-by-step ERP development



*Fast Track projects do not complete a simulation model.*

The Energy Reduction Plan summarizes the results of a comprehensive building assessment and represents the work scope that the Participant is willing to undertake.

A building assessment is a necessary first step, but is only one component of the Energy Reduction Plan. After the energy audit is complete, a work scope is developed that incorporates the Participant's financial and contracting abilities. These post-audit components of the Energy Reduction Plan are critically important and must be developed in close consultation with the Participant in order to ensure that the project moves through to construction.

The Energy Reduction Plan serves as a tool for educating both the Participant and NYSERDA. The use of a Program-developed template and the requirements discussed in this section allows for the standardization of information, data, and documentation across the entire Program and from Partner to Partner.

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<sup>2</sup> Requires Microsoft Excel 2007 or higher.

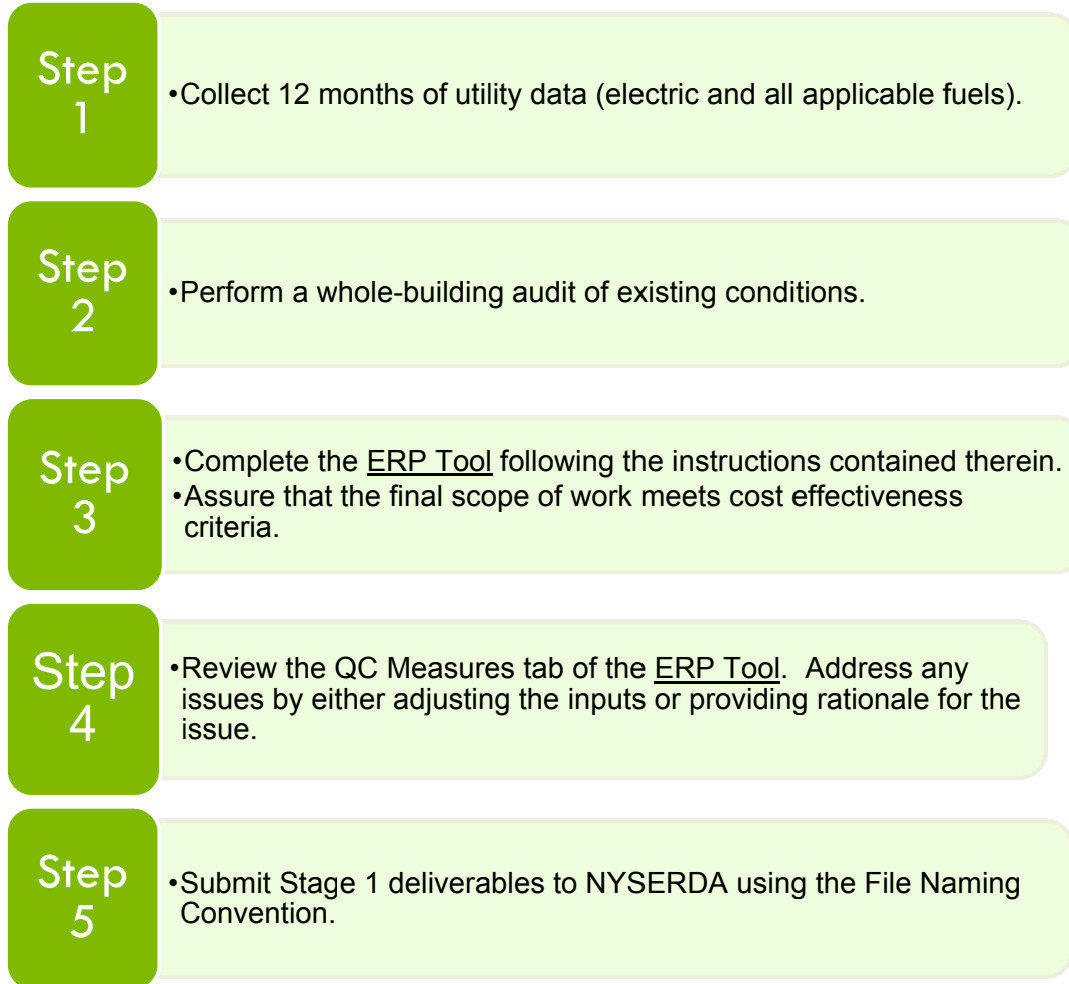
An Energy Reduction Plan includes the following components:

- ✓ Analysis of utility data
- ✓ Existing Conditions
- ✓ Evaluated measures, including complete package of energy improvements
- ✓ Additional tools and/or spreadsheets used to calculate measures
- ✓ Quality Control of improvements and models.

## 8.2 Calculation Requirements

The following requirements are in place for Fast Track projects:

1. No more than 50% of energy savings may result from improvements calculated outside the [ERP Tool](#).
2. All measures that can be calculated by the ERP Tool MUST be calculated by the tool. The calculations in the [ERP Tool](#) are based upon *the Energy Efficiency Portfolio Standard Techmarket Manual* and must be used.
  - i. If a project's scope of work cannot be calculated in the [ERP Tool](#), the Standard Path may be a better fit.
3. If a large measure (>50% of savings) cannot be calculated in the [ERP Tool](#) OR in a model, contact your Project Manager to help determine the best approach. This should be discussed at the Scoping Session.



**FIGURE 8-8-1**  
**FAST TRACK ENERGY REDUCTION PLAN DEVELOPMENT STEP-BY-STEP**

## 8.3 Stage 1 - Energy Reduction Plan Approval (Fast Track)

### 8.3.1 Stage 1 Deliverables

The following are the basic requirements for submission. Stage 1 deliverables should be submitted within 90 calendar days following *Notice to Proceed to Energy Reduction Plan* (after the Scoping Session). The Participant and Partner are notified of this date when the Notice to Proceed is issued.

Required deliverables include:

- ✓ Fast Track Energy Reduction Plan
- ✓ Partner Contract
- ✓ Data Release Authorization Form(s)
- ✓ Photographs
- ✓ Additional materials as appropriate

**Incomplete submittals will be returned without review.**

The File Name Convention must be followed. File submissions that do not adhere to the File Name Convention will be returned to the Partner without review.

Document	File Name Convention	Example
Fast Track Energy Reduction Plan	Project Name – ERP_rev0.xls	NY Apts – ERP_rev0.PDF
Partner-Participant Contract	Project Name – Partner Contract.PDF	NY Apts – Partner Contract.pdf
Data Release Authorization Form(s)	Project Name – DRAF.pdf	NY Apts – DRAF.pdf
Photographs (Using Template)	Project Name – Photos.pdf	NY Apts – Photos.pdf

### 8.3.2 Stage 1 Approval

The procedure detailed below explains each step of the Energy Reduction Plan approval process. **Stage 1 deliverables must be approved before continuing to Stage 2.**

1. The Partner submits the Stage 1 deliverables to NYSERDA.
2. The NYSERDA Project Manager reviews the submittals to ensure that it complies with the Scoping Session and is fundable.
  - a. If, upon initial review, the proposed project appears to meet program requirements and funding capabilities, the submittal then receives an in-depth technical and financial review.
  - b. If, upon initial review, the proposed project does not appear to meet program requirements and funding capabilities, the project will not receive further review. The project will be rejected and its participation in the Program will be terminated.
3. NYSERDA completes an in-depth technical and financial review with three options for response:
  - a. Approved as Noted: The Energy Reduction Plan is accepted as proposed.
  - b. Revise and Submit: The project is not ready to be accepted as proposed. Comments are returned to the Partner and Participant, with direction to resubmit. Resubmittal (aka Rev1) is expected to occur within one month (30 calendar days).
    - If the resubmittal meets program requirements and addresses comments, the project is accepted as proposed and the Energy Reduction Plan approved. The project is then expected to move forward into construction.
    - If the resubmittal does not present an approvable project as directed in the review comments, it will be returned to the Partner for correction and the Partner's performance file will be noted.
  - c. Rejected: The project, as presented, contains serious deficiencies and does not meet program requirements.
    - The NYSERDA Project Manager will notify the Participant & Partner to seek mutually acceptable terms for a fundable project. This discussion occurs primarily with Participant with input from the Partner. NYSERDA may choose to allow resubmittal of the Stage 1 deliverables as a result of this discussion.
    - If no agreement is reached the project is rejected and its participation in the program terminated.
4. Once the Energy Reduction Plan is approved, NYSERDA issues a *Notice to Proceed to Construction*.
  - For projects where the [ERP Tool](#) predicts 15-19% energy savings – The *Notice to Proceed* is simply an email that the ERP has been received and approved and

that the project may now proceed to installation of the improvements detailed in the ERP.

- For projects where the [ERP Tool](#) exceeds 20+% energy savings – The *Notice to Proceed* will include an email that the ERP has been received and approved and that the project may now proceed to installation of the improvements detailed in the ERP and a Supplemental Incentive Award letter specifying the project's maximum performance payment.

**After Stage 1 approval, the project moves into construction.**

## 9 STAGES 2 & 3 | CONSTRUCTION PHASE

Projects in both the Standard Path and Fast Track shall be implemented per the approved *Energy Reduction Plan*. Partners shall remain engaged with the project through the implementation phase. The responsibilities of the Partner are listed below.

Partners are expected to maintain a high level of interaction with the Participant during the development of the scope and implementation to ensure that the scope of work is installed on-schedule and in accordance with the intent of the Energy Reduction Plan.

### 9.1 Changes to the Scope of Work

Any changes in the approved work scope that affect the overall project savings or the measures identified in the approved *Energy Reduction Plan* must be communicated to the NYSERDA Project Manager.

Scope Changes may occur at any time after the approval of the Energy Reduction Plan. The revised scope of work must meet all Program rules and requirements, including cost effectiveness and energy savings targets.

If a change to the scope of work results in a project not meeting all program rules and requirements, the project will be terminated and any unpaid incentives shall be forfeited.

The project may proceed with the original scope prior to receiving approval from NYSERDA, but the Participant cannot start/continue work on the revised measure(s) until they receive approval from NYSERDA.

#### 9.1.1 Scope Change Document Submission

The following documents are required for consideration of scope changes:

1. Scope Change Cover Sheet
2. Revised [ERP Tool](#)
3. Revised simulation model (Standard Path only)

The File Name Convention must be followed:

Document	File Name Convention	Example
Scope Change Cover Sheet	Project Name – Scope Change #.pdf	NY Apts – Scope Change 1.pdf
ERP Tool	Project Name – ERP_rev#.xls	NY Apts – ERP_rev3.xls
Simulation Model(s)	Project Name – Model_rev#.xxx	NY Apts – Model Rev3.tpg

## 9.2 Stage 2: 50% Complete (Standard Path Only)

Fifty percent (50%) Complete is defined as the point at which 50% of the energy savings projected by the approved Energy Reduction Plan are installed per Program Guidelines (including the Minimum Performance Standards) and saving energy.

### 9.2.1 Stage 2 Deliverables

Stage 2 deliverables for Standard Path projects shall be submitted to NYSERDA after the Partner has verified completion of energy improvements, in accordance with the intent of the Energy Reduction Plan. The following deliverables are required for approval of the Stage 2 milestone

- ✓ Inspection Request Workbook
- ✓ Photo Documentation
- ✓ Additional measure documentation as required by Section 10 Site Inspection Protocols

*There is no Stage 2 for Fast Track projects (see Section 3: Incentives).*

*Fast Track projects do not submit Stage 2 deliverables.*

The File Name Convention must be followed.

Document	File Name Convention	Example
Inspection Request	Project Name – 50% Inspection.xls	NY Apts – 50% Inspection_rev0.xls
Photo Documentation	Project Name – Photos _50%.pdf	NY Apts – Photos_50%.pdf
Measure documentation:	Project Name - * (per Site Inspection Protocols)	NY Apts – Boiler cut sheets.pdf NY Apts – Blower Door Tests.pdf

### 9.2.2 Stage 2 Submittal

The procedure detailed below explains each step of the Stage 2 Incentive.

1. Partner prepares the Stage 2 submittals:
  - a. Perform the 50% complete site visit to verify the completion of work.
  - b. Complete the Site Inspection Workbook per the conditions at the site.
  - c. Complete the Photo Documentation file to document conditions at the site.
  - d. Collect and compile documentation of measures installed to date per Section 10 Site Inspection Protocols.
2. Partner submits the Stage 2 deliverables to NYSERDA for review.
3. NYSERDA reviews the documents and, if complete, schedules a site inspection. The Site Inspector may be a staff member of the Program Implementer, Quality Assurance Contractor, or NYSERDA.
4. The Programmatic Site Inspection occurs.

5. The Site Inspector reviews results of Site Inspection with the Partner and determines whether project has achieved the implementation milestone.
6. If the milestone has been achieved, NYSERDA approves the Stage 2 incentive.
7. Upon NYSERDA approval of the Stage 2 Incentive, NYSERDA sends an invoice to the partner and owner for signature.
8. The Participant and Partner sign the invoice and submit the form to [invoices@nyserda.ny.gov](mailto:invoices@nyserda.ny.gov). Payment can be expected in accordance with NYSERDA's Prompt Payment Policy.
9. If the milestone has not been achieved, notification is sent to the Partner and Participant with instructions for completing the milestone (e.g. punchlist items).

**Partners shall verify measure completion before requesting a site inspection request. If a project is found to be incomplete by the MPP site inspector, a note shall be made in the Partner's file for consideration in accordance with the Partner Status Designation Policy.**

## 9.3 Stage 3: 100% Complete

Stage 3 milestone is 100% complete, where all of the energy improvements have been installed and are generating energy savings. This means that all of the energy improvements are installed and functional (or capable of functioning) to the intent of the Energy Reduction Plan.

There is no verification of savings (i.e. utility bill analysis) associated with 100% Completion.

This section provides information regarding the submission process of the documents required for Stage 3 approval. Incomplete submissions will be returned to the Partner without review.

### 9.3.1 Stage 3 Deliverables

Stage 3 deliverables shall be submitted to NYSERDA after the Partner has verified completion of energy improvements, in accordance with the intent of the Energy Reduction Plan. The following deliverables are required for approval of the Stage 3 milestone:

- ✓ Inspection Request workbook
- ✓ Photo documentation
- ✓ Additional measure documentation as required by Section 10 Site Inspection Protocols

**The documents required for Stage 3 must be submitted after all of the energy improvements have been installed.** An improvement is considered “installed” when it adheres to the American Institute of Architects definition of Substantial Completion, which is the “stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with Contract Documents so that the Owner can occupy or utilize the Work for its intended use.” For energy savings measures, the “intended use” is to generate the proposed level of energy savings. All measures must be installed per *Program Guidelines*, including the *Minimum Performance Standards*, as outlined by the approved *Energy Reduction Plan*.

The *File Name Convention* must be followed.

Document	File Name Convention	Example
Inspection Request	Project Name – 100% Inspection.xls	NY Apts – 100% Inspection_rev0.xls
Photo Documentation	Project Name – Photos _100%.pdf	NY Apts – Photos_50%.pdf
Measure documentation:	Project Name - * (per Site Inspection Protocols)	NY Apts – Boiler cut sheets.pdf NY Apts – Blower Door Tests.pdf

### 9.3.2 Stage 3 Submittal

The procedure detailed below explains each step of the Stage 3 Incentive.

1. Partner prepares the Stage 3 submittals:
  - a. Perform the 100% complete site visit to verify the completion of work.
  - b. Complete the Site Inspection Workbook per the conditions at the site.
  - c. Complete the Photo Documentation file to document conditions at the site.
  - d. Collect and compile documentation of measures installed to date per Section 10 Site Inspection Protocols
2. Partner submits the Stage 3 deliverables to NYSERDA for review.
3. NYSERDA reviews the documents and, if complete, schedules a site inspection. The Site Inspector may be a staff member of the Program Implementer, Quality Assurance Contractor, or NYSERDA.
4. The Programmatic Site Inspection occurs.
5. The Site Inspector reviews results of Site Inspection with the Partner and determines whether project has achieved the implementation milestone.
6. If the milestone has been achieved, NYSERDA approves the Stage 3 incentive.
7. Upon NYSERDA approval of the Stage 3 Incentive, NYSERDA sends an invoice to the partner and owner for signature.
8. The Participant and Partner sign the invoice and submit the form to [invoices@nyserda.ny.gov](mailto:invoices@nyserda.ny.gov). Payment can be expected in accordance with NYSERDA's *Prompt Payment Policy*.
9. If the milestone has not been achieved, notification is sent to the Partner and Participant with instructions for how to achieve the milestone (e.g. punchlist items).

**Partners shall verify measure completion before requesting a site inspection request. If a project is found to be incomplete by the MPP site inspector, a note shall be made in the Partner's file for consideration in accordance with the Partner Status Designation Policy.**

## 10 SITE INSPECTION PROTOCOLS

### 10.1 Partner Responsibilities

The *Site Inspection Protocols* for Existing Buildings are intended to reinforce the *Terms and Conditions* of the Partnership Agreement and to ensure that work performed generates the level of energy savings anticipated in the Energy Reduction Plan. The Partner is responsible for confirming that work is installed according to the scope of work included in the approved *Energy Reduction Plan*. Partners are required to verify the installation of measures by:

- A. Performing an inspection of installed measures
- OR
- B. Obtaining a *Statement of Substantial Completion* from the installation contractor or other qualified representative.

When the Partner finds problems during the course of their inspections with a portion of an installation, such as when inspecting a sample of apartments to verify that windows were installed properly, the Partner should conduct additional inspections to determine the full extent of the problems and whether the problems are systemic.

A *Statement of Substantial Completion* or approved proxy may be submitted to establish completion of the work. A *Statement of Substantial Completion* is to be completed by the installation contractor or other qualified representative. When submitting a signed *Statement of Substantial Completion*, the Partner is still responsible for performing the necessary due diligence to ensure that the *Statement of Substantial Completion* is accurate and complete. However, Statements of Completion that include extensive details and backup documentation (such as field notes and checklists) will require less checking than those projects that lack such documentation. The exact steps taken to gain this assurance will depend on the measure installed and the Partner's experience working with the installation contractor. Suggestions for performing due diligence on specific energy efficiency measures are given in the sections below:

1. Randomly sample a percentage of the installation to ensure that the statements made in the signed *Statement of Substantial Completion* are accurate. Compare results of inspection to the results given in the *Statement of Substantial Completion*. Note discrepancies.
2. Interview the installing contractor and ask detailed questions about the installation and about their quality control techniques to elicit answers that demonstrate that the contractor installed everything in accordance with the signed *Statement of Substantial Completion*.
3. If not submitted as part of the *Statement of Substantial Completion*, request to see field notes and checklists used by contractor as part of their QC procedures.

## 10.2 Design Submittal Review

Partner should review equipment submittals from installing contractors before construction begins to ensure that the installed work meets the intent of the Energy Reduction Plan. Submittals may consist of equipment cut sheets, product literature, etc., specifying make/model and energy-related characteristics (for example, kWh/year for refrigerators). Ideally, the submittal should also reference the *Energy Reduction Plan* requirements for the equipment and compare to the proposed equipment to be installed.

Partners should work with Participants and design engineers to develop specifications and contracts that address the documentation needs of the Program. For example, a contract for insulation contractors may include a requirement for photo-documentation at various stages of installation.

## 10.3 System Testing

System testing can be performed by the installing contractor, the Program Partner, the Participant (i.e. owner), or third parties. The individual conducting the specific testing shall be appropriately qualified and trained in the test or have proven experience and expertise. If completion is documented by someone other than the Multifamily Performance Program Partner, the Partner shall submit a *Statement of Substantial Completion* signed by the individual who performed the system testing.

## 10.4 Statement of Substantial Completion

For the purposes of this section, a signed *Statement of Substantial Completion* is defined as a written and signed statement from the installing contractor, the owner's general contractor, the commissioning agent, or another third party inspector. The *Statement of Substantial Completion* must confirm that the specified measures are fully installed and fulfilling its intended use. For the purpose of energy efficiency measures, the "intended use" is to generate the proposed level of energy savings.

Unless based on industry-standard document such as AIA's G702, this Statement must be on the contractor's letterhead. The Statement must include all of the information described in the table below and must cover 100% of the installation. The Partner is encouraged to obtain signed Statements of Completion whenever possible, as this documentation can assist in holding contractors accountable for quality installations and may reduce the burden on the Partner for verification.

### **1. Information Required in the *Statement of Substantial Completion***

- i. Statement must be made on Contractor/agent's letterhead
- ii. Statement must contain the name and address of the project
- iii. Statement must contain the name and contact information of the individual completing the statement
- iv. Statement must confirm that all fixtures and equipment have been installed and tested to demonstrate confirmation with all construction specifications
- v. Individual's signature and date signed

In some cases, there may be documents already in use by the contractors or Participant that satisfy some or all of the requirements of the signed *Statement of Substantial Completion*. In such cases, it is sufficient to submit a copy of such documents in lieu of a separate *Statement of Substantial Completion*. If there are specific submission requirements for the *Statement of Substantial Completion* that are not included in the proxy documents, such as are listed in the measure-specific documentation requirements elsewhere in this document, then additional documentation should be submitted with the proxy documents as attachments.

### **2. Approved Proxy Documents for *Statement of Substantial Completion***

- i. AIA Documents G702 (Application and Certification for Payment) and G703 (Application and Certification for Payment Continuation Sheet)

If the Partner is aware of documents currently in use for a particular project that are not on the list of approved proxy documents above, but which the Partner believes satisfy some or all of the requirements of the signed *Statement of Substantial Completion*, the Partner should contact the NYSEDA Project Manager to discuss the acceptability of the document as a proxy.

## 10.5 Documentation Requirements

<b>APPLIANCES</b>	<b>ENERGY STAR® Appliances</b>
<b>Equipment Covered</b>	Refrigerators, dishwashers and compactors, etc.
<b>Partner Requirements</b>	<p>Prepare Inspection documentation as required or ensure that the signed <i>Statement of Substantial Completion</i> is accurate and complete.</p> <p>Confirm that the appliance is ENERGY STAR® labeled. If a label is not present, the following website can be used to check for an ENERGY STAR® rating for a particular make/model:  <a href="http://www.energystar.gov/index.cfm?c=appliances.pr_appliances">http://www.energystar.gov/index.cfm?c=appliances.pr_appliances</a></p> <p>Compare the consumption data of the appliances to the assumptions made in the ERP and note conformance/deviation.</p>
<b>Option 1: Statement of Substantial Completion</b>	
<b>Statement of Substantial Completion</b>	<p>A signed <i>Statement of Substantial Completion</i> from installing contractor or commissioning agent may reduce the Partner sampling requirements provided it meets at least the stated documentation requirements for 100% of the installed appliances.</p> <p>Partner should be satisfied that the signed <i>Statement of Substantial Completion</i> is thorough and accurate. See description of signed Statements of Completion in the introduction of this section.</p>
<b>Required Attachments</b>	<p>Record make, model number, and count of all appliances.</p> <p>Record location (for example, an apartment number) and serial number for each appliance inspected.</p> <p>Photograph one representative appliance and ENERGY STAR® label, if visible, of each type of appliance being inspected.</p>
<b>Option 2: Partner Sampling</b>	
<b>Partner Sampling Requirements</b>	<p>Inspect 10% of appliances of each type and size, but no fewer than five (5) appliances of each type. Sample must be random and statistically representative.</p> <p>Problems with installations found during random inspections will require an expanded sample to determine extent of problem.</p>
<b>Required Attachments</b>	<p>Record make, model number, and count of inspected appliances.</p> <p>Record location (for example, an apartment number) and serial number for each appliance inspected.</p> <p>Photograph one representative appliance and ENERGY STAR® label, if visible, of each type of appliance inspected.</p>

<b>LIGHTING</b>	<b>Common Area, Apartment and Exterior Lighting</b>
<b>Equipment Covered</b>	Common Area (hallway, stairwells, lobby, etc.), In-Unit, Exterior decorative and security lighting LED (solid state) lighting is covered in a separate section.
<b>Partner Requirements</b>	<p>Prepare Inspection documentation as required or ensure that the signed <i>Statement of Substantial Completion</i> is accurate and complete.</p> <p>Compare the quantities and wattages of the lamps and fixtures to the assumptions made in the ERP and note conformance/deviation.</p> <p>For retrofitted fixtures, due diligence should include confirmation of electronic ballasts using ballast checker.</p>
<b>Option 1: Statement of Substantial Completion</b>	
<b>Statement of Substantial Completion</b>	<p>A signed <i>Statement of Substantial Completion</i> from lighting contractor or commissioning agent may reduce the Partner sampling requirements provided it meets at least the stated documentation requirements for 100% of the installed lighting.</p> <p>Partner should be satisfied that signed <i>Statement of Substantial Completion</i> is thorough and accurate. See description of signed Statements of Completion in the introduction of this section.</p>
<b>Required Attachments</b>	<p>Record quantities, locations, types, and wattages for all lamps and fixtures. Record make/model information on all in-unit lighting to confirm ENERGY STAR<sup>®</sup> label.</p> <p>Photograph one sample of each fixture type (with ENERGY STAR<sup>®</sup> label affixed, if visible).</p>
<b>Option 2: Partner Sampling</b>	
<b>Partner Sampling Requirements</b>	<p>Inspect all unique common areas (basements, lobbies) and a representative 20% sample (minimum five (5)) of similar, or repetitive, areas (stairwells and stairwell landings, corridors, trash chute rooms, etc.).</p> <p>Inspect 10% of apartments to include, at a minimum, one representative apartment from each line. A minimum of five (5) apartments must be visited.</p> <p>Problems with installations found during random inspections will require an expanded sample to determine extent of problem.</p>
<b>Required Attachments</b>	<p>Record quantities, locations, types, and wattages for inspected lamps and fixtures.</p> <p>Record make/model information on all inspected in-unit lighting to confirm ENERGY STAR<sup>®</sup> label.</p> <p>Photograph one sample of each fixture type inspected (with ENERGY STAR<sup>®</sup> label affixed, if visible).</p>

<b>LIGHTING</b>	<b>Exit Signs and Emergency Lighting</b>
<b>Equipment Covered</b>	Exit signs and emergency lighting
<b>Partner Requirements</b>	<p>Prepare Inspection documentation as required or ensure that the signed <i>Statement of Substantial Completion</i> is accurate and complete.</p> <p>Compare the quantities and wattages of the lamps and fixtures to the assumptions made in the ERP and note conformance/deviation.</p> <p>Due diligence should include opening fixtures to confirm lamp type and wattage.</p> <p>Due diligence should include confirming emergency power provision, when applicable, by turning off power or using test buttons on equipment.</p>
<b>Option 1: Statement of Substantial Completion</b>	
<b>Statement of Substantial Completion</b>	<p>A signed <i>Statement of Substantial Completion</i> from lighting contractor or commissioning agent may reduce the Partner sampling requirements, provided it meets at least the stated documentation requirements for 100% of the installed lighting.</p> <p>Partner should be satisfied that signed <i>Statement of Substantial Completion</i> is thorough and accurate. See description of signed Statements of Completion in the introduction of this section.</p>
<b>Required Attachments</b>	Record quantities, locations, make/model, types, and wattages of all signs and fixtures.
<b>Option 2: Partner Sampling</b>	
<b>Partner Sampling Requirements</b>	<p>Inspect all unique common areas (basements, lobbies) and a representative 20% sample (minimum five (5)) of similar, or repetitive, areas (stairwells and stairwell landings, corridors, trash chute rooms, etc.).</p> <p>Problems with installations found during random inspections will require an expanded sample to determine extent of problem.</p>
<b>Required Attachments</b>	Record quantities, locations, make/model, types, and wattages of inspected signs and fixtures.

<b>LIGHTING</b>	<b>LED Lighting</b>
<b>Equipment Covered</b>	LED (solid state) lamps and fixtures
<b>Partner Requirements</b>	<p>Prepare Inspection documentation as required or ensure that the signed <i>Statement of Substantial Completion</i> is accurate and complete.</p> <p>Compare the quantities and wattages of the lamps and fixtures to the assumptions made in the ERP and note conformance/deviation.</p> <p>Due diligence should include opening fixtures to confirm lamp type and wattage.</p> <p>Due diligence should include confirming emergency power provision, when applicable, by turning off power or using test buttons on equipment.</p>
<b>Option 1: Statement of Substantial Completion</b>	
<b>Statement of Substantial Completion</b>	<p>A signed <i>Statement of Substantial Completion</i> from lighting contractor or commissioning agent may reduce the Partner sampling requirements, provided it meets at least the stated documentation requirements for 100% of the installed lighting.</p> <p>Partner should be satisfied that signed <i>Statement of Substantial Completion</i> is thorough and accurate. See description of signed Statements of Completion in the introduction of this section.</p>
<b>Required Attachments</b>	<p>Record quantities, locations, make/model, types, and wattages of all lamps and fixtures.</p> <p>One of the following:</p> <ol style="list-style-type: none"> <li>1. Proof of ENERGY STAR® listing; or</li> <li>2. Proof of DesignLights™ Consortium's Qualified Products Listing; or</li> <li>3. LM79 test results for the product from a certified independent test laboratory; LM80 test results for the SSL product or LED module package; AND unconditional three-year warranty on product (from either manufacturer or installer)</li> </ol>
<b>Option 2: Partner Sampling</b>	
<b>Partner Sampling Requirements</b>	<p>Inspect all unique common areas (basements, lobbies) and a representative 20% sample (minimum five (5)) of similar, or repetitive, areas (stairwells and stairwell landings, corridors, trash chute rooms, etc.).</p> <p>Problems with installations found during random inspections will require an expanded sample to determine extent of problem.</p>
<b>Required Attachments</b>	<p>Record quantities, locations, make/model, types, and wattages of all lamps and fixtures.</p> <p>One of the following:</p> <ol style="list-style-type: none"> <li>1. Proof of ENERGY STAR® listing; or</li> </ol>

	<ol style="list-style-type: none"><li>2. Proof of DesignLights™ Consortium's Qualified Products Listing; or</li><li>3. LM79 test results for the product from a certified independent test laboratory; LM80 test results for the SSL product or LED module package; AND unconditional three-year warranty on product (from either manufacturer or installer)</li></ol>
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<b>LIGHTING</b>	<b>Lighting Controls</b>
<b>Equipment Covered</b>	Occupancy sensors, timers and, photocell controls
<b>Partner Requirements</b>	<p>Prepare Inspection documentation as required or ensure that the signed <i>Statement of Substantial Completion</i> is accurate and complete.</p> <p>Compare the quantities, types and, settings of the lighting controls to the assumptions made in the ERP and note conformance/deviation.</p> <p>Due diligence should include confirming that each control type is operable. For occupancy sensors, step in and out of the zone and confirm that lights switch off within a time period equivalent to the specified ON time.</p> <p>For timers, set timer to current time and confirm control of fixture.</p> <p>For photocells, cover or blackout photocell and confirm control of fixture</p> <p>For switches and dimmers, operate control to confirm control of fixture.</p> <p>For day lighting controls, dim or blackout location to observe change in fixture light level.</p>
<b>Option 1: Statement of Substantial Completion</b>	
<b>Statement of Substantial Completion</b>	<p>A signed <i>Statement of Substantial Completion</i> from lighting contractor or commissioning agent may reduce the Partner sampling requirements, provided it meets at least the stated documentation requirements for 100% of the installed controls.</p> <p>Partner should be satisfied that signed <i>Statement of Substantial Completion</i> is thorough and accurate. See description of signed Statements of Completion in the introduction of this section.</p> <p>The <i>Statement of Substantial Completion</i> should include a description of tests, calibrations, and lighting control settings.</p>
<b>Required Attachments</b>	Record location, make/model, and type of each lighting control.
<b>Option 2: Partner Sampling</b>	
<b>Partner Sampling</b>	<p>Inspect all unique common areas (basements, lobbies) and a representative 20% sample (minimum five (5)) of similar, or repetitive, areas (stairwells and stairwell landings, corridors, trash chute rooms, etc.).</p> <p>Inspect 10% of apartments to include, at a minimum, one representative apartment from each line. A minimum of five (5) apartments must be visited. Problems with installations found during random inspections will require an expanded sample to determine extent of problem.</p>
<b>Required Attachments</b>	Record location, make/model, and type of each inspected lighting control.

<b>ENVELOPE</b>	<b>Roof and Cavity Insulation</b>
<b>Equipment Covered</b>	Roof insulation, attic insulation and, cavity insulation
<b>Partner Requirements</b>	<p>Prepare Inspection documentation as required or ensure that the signed <i>Statement of Substantial Completion</i> is accurate and complete.</p> <p>Compare the insulation type, thickness, and R-value to the assumptions made in the ERP and note conformance/deviation.</p> <p><i>Tip (not required): Use infrared scan to ensure proper insulation installation and performance by scanning interior wall and ceiling surfaces to confirm ERP assumptions</i></p>
<b>Option 1: Statement of Substantial Completion</b>	
<b>Statement of Substantial Completion</b>	<p>A signed <i>Statement of Substantial Completion</i> from insulation/air-sealing contractor or commissioning agent may reduce the Partner sampling requirements, provided it meets at least the stated documentation requirements for 100% of the installed insulation.</p> <p>Partner should be satisfied that signed <i>Statement of Substantial Completion</i> is thorough and accurate. See description of signed Statements of Completion in the introduction of this section.</p>
<b>Required Attachments</b>	<p>Record insulation type, thickness, and R-value.</p> <p>Photograph depth of blown insulation using tape measure or other depth measurement, minimum one photograph per attic.</p> <p>Photograph roof deck insulation before it is covered.</p> <p>Photograph cavity insulation before it is covered.</p>
<b>Option 2: Partner Sampling</b>	
<b>Partner Sampling</b>	<p>Each unique roof or cavity assembly shall be inspected. For example, if unique sections of the building are constructed differently, all distinct areas must be inspected. If insulation specifications are different for different areas, each different specification shall be inspected.</p> <p>Sampling may be used to inspect roof or cavity assemblies that are consistent throughout large sections of the building. At each stage of the inspection process, a minimum of 20% of total roof and cavity area must be inspected for each unique roof and cavity type. Problems with installations found during random inspections will require an expanded sample.</p> <p>An interim inspection (prior to area being enclosed) is required when insulated area will be inaccessible after completion.</p>
<b>Required Attachments</b>	<p>Record insulation type, thickness and, R-value for each area inspected.</p> <p>Photograph depth of blown insulation using tape measure or other depth measurement, minimum one photograph per inspected attic.</p>

	Photograph roof deck insulation before it is covered. Photograph cavity insulation before it is covered.
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<b>ENVELOPE</b>	<b>Windows</b>
<b>Equipment Covered</b>	Exterior windows, sliding glass doors
<b>Partner Requirements</b>	<p>Prepare Inspection documentation as required or ensure that the signed <i>Statement of Substantial Completion</i> is accurate and complete.</p> <p>Compare the energy performance specifications and actual installation to the assumptions made in the ERP and note conformance/deviation.</p> <p>Due diligence should include testing operating sashes, screens, and hardware for a tight fit at contact points and weather stripping for smooth operation and weather-tight closure.</p> <p>Due diligence should include confirming proper fit and effective connection to building envelope weather and air barriers.</p> <p><i>Tip (not required): Verify air tightness of the weather stripping and window installation using an appropriate qualitative technique. For example, use a smoke pencil around the window, casing, and frame, or use an infrared camera to scan around window, with building exhaust fans and/or blower door equipment operating to pressurize/depressurize the building, as appropriate.</i></p>
<b>Option 1: Statement of Substantial Completion</b>	
<b>Statement of Substantial Completion</b>	<p>A signed <i>Statement of Substantial Completion</i> from installing contractor or commissioning agent may reduce the Partner sampling requirements, provided it meets at least the stated documentation requirements for 100% of the installed windows.</p> <p>Partner should be satisfied that signed <i>Statement of Substantial Completion</i> is thorough and accurate. See description of signed Statements of Completion in the introduction of this section.</p>
<b>Required Attachments</b>	<p>Record quantities and locations of all new windows.</p> <p>Record energy performance specifications (window type, frame type, U-value, gas fill, SHGC, low-e type, and location) for all windows.</p> <p>Provide copies of NFRC or other relevant rating agency's label(s). For large jobs, provide certificates from NFRC or other relevant rating agency, which should be on file.</p> <p>Provide copies of low-e glass from manufacturer's cut sheets</p>
<b>Option 2: Partner Sampling</b>	
<b>Partner Sampling</b>	<p>At least 10% of new windows (minimum 10) shall be inspected and shall include, at a minimum, one of each different type of window installation based on different window types (fixed, double hung, etc.) and different energy performance specifications (e.g. if low-e glass is specified on part of the building but not all).</p> <p>The sample set shall include, at a minimum, the inspection of new windows in one representative apartment from each line.</p>

	<p>Problems with installations found during random inspections will require an expanded sample to determine extent of problem.</p>
<b>Required Attachments</b>	<p>Record quantities and locations of new windows inspected.</p> <p>Record energy performance specifications (window type, frame type, U-value, gas fill, SHGC, low-e type, and location) for inspected windows.</p> <p>Provide copies of NFRC or other relevant rating agency's label(s). For large jobs, provide certificates from NFRC or other relevant rating agency, which should be on file.</p> <p>Provide copies of low-e glass from manufacturer's cut-sheets.</p>

<b>ENVELOPE</b>	<b>Exterior Doors</b>
<b>Equipment Covered</b>	Exterior doors and interior doors opening onto common areas
<b>Partner Requirements</b>	<p>Prepare Inspection documentation as required or ensure that the signed <i>Statement of Substantial Completion</i> is accurate and complete.</p> <p>Compare the energy performance specifications and actual installation to the assumptions made in the ERP and note conformance/deviation.</p> <p>Due diligence should include inspecting for proper operation, fit, and weather stripping.</p>
<b>Option 1: Statement of Substantial Completion</b>	
<b>Statement of Substantial Completion</b>	<p>A signed <i>Statement of Substantial Completion</i> from installing contractor or commissioning agent may reduce the Partner sampling requirements, provided it meets at least the stated documentation requirements for 100% of the installed doors.</p> <p>Partner should be satisfied that signed <i>Statement of Substantial Completion</i> is thorough and accurate. See description of signed Statements of Completion in the introduction of this section.</p>
<b>Required Attachments</b>	<p>Record quantities and locations of all new doors.</p> <p>Record make/model, type, and U-value for all new doors.</p>
<b>Option 2: Partner Sampling</b>	
<b>Partner Sampling</b>	<p>Verify proper installation of 50% of all new common area exterior doors.</p> <p>Inspect 10% of new apartment exterior doors (minimum of 5) where garden style apartments exist. Problems with installations found during random inspections will require an expanded sample to determine extent of problem.</p>
<b>Required Attachments</b>	<p>Record quantities and locations of inspected doors.</p> <p>Record make/model, type, and U-value for inspected doors.</p>

<b>ENVELOPE</b>	<b>Air Sealing</b>
<b>Equipment Covered</b>	Weatherstripping, caulk, thermal barriers, and stops
<b>Partner Requirements</b>	<p>Prepare Inspection documentation as required or ensure that the signed <i>Statement of Substantial Completion</i> is accurate and complete.</p> <p>Where quantitative measures of air sealing effectiveness are available, compare the actual installation to the assumptions made in the ERP and note conformance/deviation.</p> <p>For weather stripping of windows or doors, due diligence should include confirming that all latches, hinges, and self-closing mechanisms operate smoothly and properly and confirming that weather stripping is secured with screws.</p> <p><i>Tip (not required): Confirm that airtight seals were achieved using an appropriate qualitative technique. For example, use a smoke pencil around air sealed areas, or use an infrared camera to scan air sealed areas, with building exhaust fans and/or blower door equipment operating to pressurize/depressurize the building, as appropriate.</i></p> <p><i>Fast Track Projects (required): Fast Track projects up to and including 3 stories shall provide blower door test results for pre-installation and post-installation conditions in all buildings.</i></p>
<b>(new for Version 5)</b>	
<b>Option 1: Statement of Substantial Completion</b>	
<b>Statement of Substantial Completion</b>	<p>A signed <i>Statement of Substantial Completion</i> from insulation/air-sealing contractor or commissioning agent may reduce the Partner sampling requirements, provided it meets at least the stated documentation requirements for 100% of the installed air sealing.</p> <p>Partner should be satisfied that signed <i>Statement of Substantial Completion</i> is thorough and accurate. See description of signed Statements of Completion in the introduction of this section.</p> <p>Statement should explain how work was performed and what quality control mechanisms were in place. If blower doors were used, statement should list test-in and test-out blower door readings.</p>
<b>Required Attachments</b>	<p>Record location and description of air sealing activities.</p> <p>Record quantities and description of materials used.</p>
<b>Option 2: Partner Sampling</b>	
<b>Partner Sampling</b>	<p>For elements that provide central services to the building (e.g. entry doors, central duct chases, utility service penetrations, etc.) a minimum 50% sample shall be inspected.</p> <p>For elements that are repeated throughout the building or occur in every living unit (e.g. windows, wall/floor connections, air conditioner sleeves, etc.) a minimum 10% sample shall be inspected. A minimum of five (5) apartments</p>

	<p>must be visited.</p> <p>Problems found during random inspections will require an expanded sample to determine extent of problem.</p> <p>Where general in-unit air sealing was specified in the ERP, the sample set shall be representative of the variety of apartment types in the building, including end/corner units and inside units; top-floor, middle-floor, bottom-floor units; and at least one unit of each size/type (studios, 1-bed, 2-bed, etc.).</p>
<p>Option 2: Partner Sampling (cont'd)</p>	
<p><b>Required Attachments</b></p>	<p>Record location or areas inspected and description of observed evidence of air sealing activities.</p>

<b>HVAC &amp; DHW</b>	<b>Combustion, Steam and Hydronic Systems</b>
<b>Equipment Covered</b>	Boilers and furnaces
<b>Partner Requirements</b>	<p>Prepare Inspection documentation as required or ensure that the signed <i>Statement of Substantial Completion</i> is accurate and complete.</p> <p>Compare the energy performance specifications and actual installation to the assumptions made in the ERP and note conformance/deviation.</p>
<b>Option 1: Statement of Substantial Completion</b>	
<b>Statement of Substantial Completion</b>	<p>A signed <i>Statement of Substantial Completion</i> from HVAC contractor or commissioning agent may reduce the Partner sampling requirements, provided it meets at least the stated documentation requirements for 100% of the installed equipment.</p> <p>Partner should be satisfied that signed <i>Statement of Substantial Completion</i> is thorough and accurate. See description of signed Statements of Completion in the introduction of this section.</p>
<b>Required Attachments</b>	<p>Record make and model information on all installed equipment.</p> <p>Record nameplate efficiency, or measured efficiency if nameplate efficiency is not available.</p> <p>Affirm that all applicable operating and specification manuals are delivered to the building staff. Where applicable, summarize the training performed and personnel involved.</p> <p><i>System Functional Performance Testing</i> checklist verification and start-up reports/checklists.</p> <p>Condensing boilers - at a minimum, provide efficiency testing for high and low fire in the start-up report.</p> <p>Hot Water Heating Systems: Measure and report supply water temperature, return water temperature, and outdoor air temperature in the shade. Record control set points. For outdoor reset controls, record design set points, and actual settings.</p> <p>Steam Systems: Record system pressure and control set points.</p>
<b>Option 2: Partner Sampling</b>	
<b>Partner Sampling</b>	<p>All primary equipment (boilers, etc.) should be inspected.</p> <p>A representative sample of 10% of in-unit terminal devices (radiators, unit heaters, etc.) should be included in the process. A minimum of five (5) apartments must be visited.</p>
<b>Required Attachments</b>	<p>Collect make and model information on inspected equipment</p> <p>Record nameplate efficiency, or measured efficiency if nameplate efficiency is</p>

	<p>not available.</p> <p>Confirm that all applicable operating and specification manuals are delivered to the building staff. Where applicable, summarize the training performed and personnel involved.</p> <p><i>System Functional Performance Testing</i> checklist verification and startup reports/checklists.</p> <p>Condensing Boilers: At a minimum, provide efficiency testing for high and low fire in the startup report.</p> <p>Hot Water Heating Systems: Measure and report supply water temperature, return water temperature, and outdoor air temperature in the shade. Record control set points. For outdoor reset controls, record design set points and actual settings.</p> <p>Steam Systems: Record system pressure and control set points.</p>
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<b>HVAC &amp; DHW</b>	<b>Cooling</b>
<b>Equipment Covered</b>	Common area and apartment cooling equipment
<b>Partner Requirements</b>	<p>Prepare Inspection documentation as required or ensure that the signed <i>Statement of Substantial Completion</i> is accurate and complete.</p> <p>Compare the energy performance specifications and actual installation to the assumptions made in the ERP and note conformance/deviation.</p>
<b>Option 1: Statement of Substantial Completion</b>	
<b>Statement of Substantial Completion</b>	<p>A signed Statement of Substantial Completion from HVAC contractor or commissioning agent may reduce the Partner sampling requirements provided it meets at least the stated documentation requirements for 100% of the installed equipment.</p> <p>Partner should be satisfied that signed <i>Statement of Substantial Completion</i> is thorough and accurate. See description of signed Statements of Completion in the introduction of this section.</p>
<b>Required Attachments</b>	<p>Record make and model information on all installed equipment</p> <p>Record nameplate efficiency.</p> <p>Affirm that all applicable operating and specification manuals are delivered to the building staff. Where applicable, summarize the training performed and personnel involved.</p> <p>Cooling Systems: Refer to air conditioner test instructions, on next page. Follow instructions for 100% of installed equipment.</p>
<b>Option 2: Partner Sampling</b>	
<b>Partner Sampling</b>	<p>All primary equipment (chillers, air handling units, etc.) should be inspected. A representative sample of 10% of in-unit terminal devices (fan coils, PTACs, room air conditioners, etc.) should be included in the process. A minimum of five (5) apartments must be visited.</p> <p>Problems with installations found during random inspections will require an expanded sample to determine extent of problem.</p>
<b>Required Attachments</b>	<p>Collect make and model information on inspected equipment. Record nameplate efficiency and efficiency proposed in the <i>Energy Reduction Plan</i>.</p> <p>Confirm that all applicable operating and specification manuals are delivered to the building staff. Where applicable, summarize the training performed and personnel involved.</p> <p>Cooling Systems: Refer to air conditioner test instructions on next page. Follow instructions for all inspected equipment.</p>

<b>Air Conditioner Test Instructions</b>	
<b>All types of air conditioners</b>	<p><i>Optional but recommended: Shut outside air damper, if any. Run air conditioner and measure supply air temperature, room air temperature, and outdoor air temperature in the shade.</i></p> <p><i>The temperature difference between the room air temperature and the supply air temperature should be greater than 20°F. Record measurements.</i></p>
<b>Central air conditioners</b>	<p>Check the capacity of the equipment against the design cooling load to confirm proper size. If output capacity of the installed cooling plant is more than 10% larger than the modeled design load, record the designer's justification for over-sizing the cooling plant.</p> <p>Confirm that duct seams are sealed per the energy code.</p> <p>Record duct insulation material and thickness.</p> <p><i>Optional but recommended: Record outside air temperature, refrigerant superheat and subcooling, and unit amps. Compare to manufacturer's data at outside air conditions. If measurements do not match manufacturer's data, adjust refrigerant charge and/or identify airflow obstructions.</i></p> <p><i>Optional but recommended: Measure supply airflow to all zones. Compare to design values, and adjust to within 5%.</i></p>
<b>Room air conditioners</b>	<p><i>Optional but recommended: Visually inspect sealing around air conditioner sleeve. No daylight should be visible from indoors.</i></p> <p><i>Optional but recommended: Test for air leakage from outdoors: Shut outside air damper, if any; run unit on fan only (no compressor); measure outdoor air temperature in the shade, supply air temperature, and room temperature. Supply air temperature should equal room air temperature; if not, this indicates air leakage from outdoors. Record measurements.</i></p>

<b>HVAC &amp; DHW</b>	<b>Ventilation and Heat Recovery</b>
<b>Equipment Covered</b>	Heating, ventilation and air conditioning equipment
<b>Partner Requirements</b>	<p>Prepare Inspection documentation as required or ensure that the signed <i>Statement of Substantial Completion</i> is accurate and complete.</p> <p>Compare the energy performance specifications and actual installation to the assumptions made in the ERP and note conformance/deviation.</p>
<b>Option 1: Statement of Substantial Completion</b>	
<b>Statement of Substantial Completion</b>	<p>A signed <i>Statement of Substantial Completion</i> from HVAC contractor or commissioning agent may reduce the Partner sampling requirements, provided it meets at least the stated documentation requirements for 100% of the installed equipment.</p> <p>Partner should be satisfied that signed <i>Statement of Substantial Completion</i> is thorough and accurate. See description of signed Statements of Completion in the introduction of this section.</p>
<b>Required Attachments</b>	<p>Record make and model information on all installed equipment.</p> <p>Record nameplate efficiency, or measured efficiency if nameplate efficiency is not available.</p> <p>Affirm that all applicable operating and specification manuals are delivered to the building staff. Where applicable, summarize the training performed and personnel involved.</p> <p>Heat Recovery: Record entering and leaving air temperatures for both intake and exhaust air streams. Measure exhaust and intake air flows. Calculate heat recovery efficiency and compare to manufacturer's rating at measured airflow and temperature conditions. Ensure supply air is 70 F ± 5 F.</p> <p>Roof Fan Timers: Record timer set points.</p>
<b>Option 2: Partner Sampling</b>	
<b>Partner Sampling</b>	<p>All primary equipment (central fans, air handling units, HRVs, etc.) should be inspected. A representative sample of 10% of in-unit terminal devices (individual room fans, grilles, roof fans, etc.) should be included in the process. A minimum of five (5) apartments must be visited.</p> <p>Problems with installations found during random inspections will require an expanded sample to determine extent of problem.</p>
<b>Required Attachments</b>	<p>Collect make and model information on installed equipment.</p> <p>Record nameplate efficiency, or measured efficiency if nameplate efficiency is not available, and efficiency proposed in the <i>Energy Reduction Plan</i>.</p> <p>Confirm that all applicable operating and specification manuals are delivered to the building staff. Where applicable, summarize the training performed and personnel involved.</p>

Option 2: Partner Sampling (cont'd)	
<b>Required Attachments (cont'd)</b>	<p>Heat Recovery: Record entering and leaving air temperatures for both intake and exhaust air streams. Measure exhaust and intake air flows. Calculate heat recovery efficiency and compare to manufacturer's rating at measured airflow and temperature conditions. Ensure supply air is 70 F ± 5 F.</p> <p>Roof Fan Timers: Record time of day and whether fan was found on or off. Record timer set points.</p>

<b>HVAC &amp; DHW</b>	<b>Cogeneration</b>
<b>Equipment Covered</b>	Cogeneration is not an eligible measure in the Multifamily Performance Program Version 4.

<b>HVAC &amp; DHW</b>	<b>Domestic Hot Water</b>
<b>Equipment Covered</b>	Domestic hot water systems
<b>Partner Requirements</b>	<p>Prepare Inspection documentation as required or ensure that the signed <i>Statement of Substantial Completion</i> is accurate and complete.</p> <p>Compare the capacity, efficiency, water temperature, and actual installation to the assumptions made in the ERP and note conformance/deviation.</p>
<b>Option 1: Statement of Substantial Completion</b>	
<b>Statement of Substantial Completion</b>	<p>A signed <i>Statement of Substantial Completion</i> from HVAC contractor or commissioning agent may reduce the Partner sampling requirements, provided it meets at least the stated documentation requirements for 100% of the installed equipment.</p> <p>Partner should be satisfied that signed <i>Statement of Substantial Completion</i> is thorough and accurate. See description of signed Statements of Completion in the introduction of this section.</p>
<b>Required Attachments</b>	<p>For new equipment, record make/model, nameplate efficiency, or measured efficiency if nameplate efficiency is not available.</p> <p>Record water temperature at a faucet nearest and a faucet farthest from the water heater (as measured along the distribution system) and the location where that measurement was made.</p>
<b>Option 2: Partner Sampling</b>	
<b>Partner Sampling</b>	<p>All primary equipment (boilers, hot water heaters, etc.) should be inspected.</p> <p>A minimum of two (2) faucets should be tested for water temperature, as described more fully in the next section.</p>
<b>Required Attachments</b>	<p>For inspected equipment, record make/model, nameplate efficiency, or measured efficiency if nameplate efficiency is not available.</p> <p>Record water temperature at a faucet nearest and a faucet farthest from the water heater (as measured along the distribution system) and the location where that measurement was made.</p>

<b>HVAC &amp; DHW</b>	<b>Pipe Insulation, Duct Insulation</b>
<p><b>Partner Requirements</b></p>	<p>Prepare Inspection documentation as required or ensure that the signed <i>Statement of Substantial Completion</i> is accurate and complete.</p> <p>Compare the insulation type, thickness, and R-value to the assumptions made in the ERP and note conformance/deviation.</p> <p><i>Tip (not required): Use infrared scan to ensure proper insulation installation and performance by scanning insulated surfaces to confirm ERP assumptions.</i></p>
<p>Option 1: Statement of Substantial Completion</p>	
<p><b>Statement of Substantial Completion</b></p>	<p>A signed <i>Statement of Substantial Completion</i> from HVAC contractor or commissioning agent may reduce the Partner sampling requirements, provided it meets at least the stated documentation requirements for 100% of the installed insulation.</p> <p>Partner should be satisfied that signed <i>Statement of Substantial Completion</i> is thorough and accurate. See description of signed <i>Statements of Completion</i> in the introduction of this section.</p>
<p><b>Required Attachments</b></p>	<p>Record insulation type, thickness, and R-value of all insulation.</p> <p>Photograph insulation in areas that will be hidden at the end of construction.</p>
<p>Option 2: Partner Sampling</p>	
<p><b>Partner Sampling</b></p>	<p>Each unique device assembly shall be inspected. For example: DHW pipes, heating pipes, and ductwork should all be inspected independently.</p> <p>Sampling may be used to inspect device assemblies that are consistent throughout large sections of the building. At each stage of the inspection process, a minimum of 20% of total insulated area must be inspected for each unique device type.</p> <p>An interim inspection (prior to area being enclosed) is required when insulated area will be inaccessible after completion</p>
<p><b>Required Attachments</b></p>	<p>Record insulation type, thickness, and R-value of inspected insulation.</p> <p>Photograph insulation in areas that will be hidden at the end of construction.</p>

<b>OTHER</b>	<b>Energy / Building Management Systems</b>
<b>Equipment Covered</b>	Energy Management Systems, Building Management Systems
<b>Partner Requirements</b>	<p>Prepare Inspection documentation as required or ensure that the signed <i>Statement of Substantial Completion</i> is accurate and complete.</p> <p>Compare the control sequence, energy performance specifications, and actual installation to the assumptions made in the ERP and note conformance/deviation.</p> <p>Due diligence could include being present during the EMS/BMS communication and functionality test.</p>
<b>Option 1: Statement of Substantial Completion</b>	
<b>Statement of Substantial Completion</b>	<p>A signed <i>Statement of Substantial Completion</i> from controls contractor or commissioning agent may reduce the Partner sampling requirements, provided it meets at least the stated documentation requirements for 100% of the installed equipment.</p> <p>Partner should be satisfied that signed <i>Statement of Substantial Completion</i> is thorough and accurate. See description of signed Statements of Completion in the introduction of this section.</p>
<b>Required Attachments</b>	<p>Record location, make/model, and type of each energy management system device or control.</p> <p>Printout of submetering communication and functionality test that demonstrates all meters are functioning properly.</p>
<b>Option 2: Partner Sampling</b>	
<b>Partner Sampling</b>	Visually inspect a representative sample of 20% of the installed monitoring points.
<b>Required Attachments</b>	<p>Record location, make/model, and type of each energy management system device or control.</p> <p>Printout of submetering communication and functionality test that demonstrates all meters are functioning properly.</p>
<b>Communication and Functionality Test</b>	<p>All EMS/BMS contractors must perform a communication and functionality test at the completion of the installation. The test provides proof of communication between the monitoring points, controls, equipment, and the System Controller. Most of these systems are tied to a computer on site or to a recording device. The controller can scroll through connection points and provide data (e.g. outside and inside temperatures, set points, run times of equipment, etc.). A print screen of these points confirms connectivity to the sensors and equipment. Successful adjustments to these settings confirm functionality and response of the system.</p> <p>A copy of these print screens and test would serve as a good commissioning tool. It would also be useful for the Partner or construction manager to be present when the controls company conducts the test.</p>

<b>HVAC &amp; DHW</b>	<b>Low-Flow Aerators &amp; Showerheads</b>
<b>Equipment Covered</b>	Low-flow aerators and low-flow showerheads
<b>Partner Requirements</b>	<p>Prepare Inspection documentation as required or ensure that the signed <i>Statement of Substantial Completion</i> is accurate and complete.</p> <p>Compare the rated GPM to the assumptions made in the ERP and note conformance/deviation.</p>
<b>Option 1: Statement of Substantial Completion</b>	
<b>Statement of Substantial Completion</b>	<p>A signed <i>Statement of Substantial Completion</i> from installing contractor or commissioning agent may reduce the Partner sampling requirements, provided it meets at least the stated documentation requirements for 100% of the installed devices.</p> <p>Partner should be satisfied that signed <i>Statement of Substantial Completion</i> is thorough and accurate. See description of signed Statements of Completion in the introduction of this section.</p>
<b>Required Attachments</b>	<p>Record location, type, and quantity of all devices.</p> <p>Record rated GPM of all devices.</p>
<b>Option 2: Partner Sampling</b>	
<b>Partner Sampling</b>	<p>A representative sample of 10% of all installed aerators and low-flow devices is required. A minimum of five (5) apartments must be visited. Sample must be random and statistically representative.</p> <p>Problems with installations found during random inspections will require an expanded sample to determine extent of problem.</p>
<b>Required Attachments</b>	<p>Record location, type, and quantity of inspected devices.</p> <p>Record rated GPM of inspected devices.</p>

<b>OTHER</b>	<b>Elevator Drive Systems</b>
<b>Partner Requirements</b>	<p>Ensure that the <i>Statement of Substantial Completion</i> is accurate and complete.</p> <p>Compare the energy performance specifications and actual installation to the assumptions made in the ERP and note conformance/deviation.</p>
<b>Statement of Substantial Completion</b>	<p>A signed <i>Statement of Substantial Completion</i> or commissioning statement from elevator contractor or commissioning agent is required that meets at least the stated documentation requirements for 100% of the installed equipment.</p> <p>Partner should be satisfied that signed <i>Statement of Substantial Completion</i> is thorough and accurate. See description of signed Statements of Completion in the introduction of this section.</p>
<b>Required Attachments</b>	<p>Record system type and size.</p> <p>Record efficiency minimums for elevator drives and motors, where applicable.</p> <p>Record control system manufacturer and model.</p> <p>Record elevator drive manufacturer and drive capacity.</p> <p>Photograph completed installation and drive nameplate.</p> <p>Basic elevator test results should be provided by installation contractor, including commissioning of control system.</p> <p>Evidence of elevator safety inspection should be provided.</p>

<b><i>OTHER</i></b>	<b>Electric Submetering</b>
<b>Partner Requirements</b>	Electric Submetering is not an eligible measure in the Multifamily Performance Program Version 5.

## 11 PERFORMANCE PAYMENT

The Performance Payment is an incentive available to project which achieve outstanding, verifiable energy savings. Post-retrofit utility data is compared to pre-retrofit data to determine actual energy savings in the project.

### 11.1 Eligibility

Both Standard Path and Fast Track projects are eligible for the Performance Payment. Projects must project a minimum 20% energy savings in their Energy Reduction Plan to be eligible for the performance payment. Projects that project 15-19% energy savings are eligible for Stage 2 and 3 incentives, but performance payment funding will not be available for the project.

## 11.2 Performance Payment

Table 10-1 identifies the maximum Performance Payment for which a project would be eligible. The tier is determined by the energy reduction target proposed in a project’s Energy Reduction Plan, which sets the maximum incentive a project shall receive under the Performance Payment.

If, one year following the Stage 3 submittal, a project achieves energy savings within their projected tier or higher, they will receive the Performance Payment for their projected tier. If achieved savings fall into a lower tier, the project will received the Performance Payment associated with that lower tier. If they achieve savings less than Tier 1, they will have 6 months to achieve savings within at least Tier 1 and resubmit their request.

Table 10-1 Existing Buildings – Performance Payment	
Upon achievement of the project’s minimum energy performance target of 20%. (per unit)	
Tier #1 - 20%-22%	\$150
Tier #2 - 23%-25%	\$200
Tier #3 - 26%-28%	\$250
Tier #4 - 29%+	\$300

The Performance Payment does not differentiate between Firm Gas and Non-Firm Gas projects.

**~Example~**

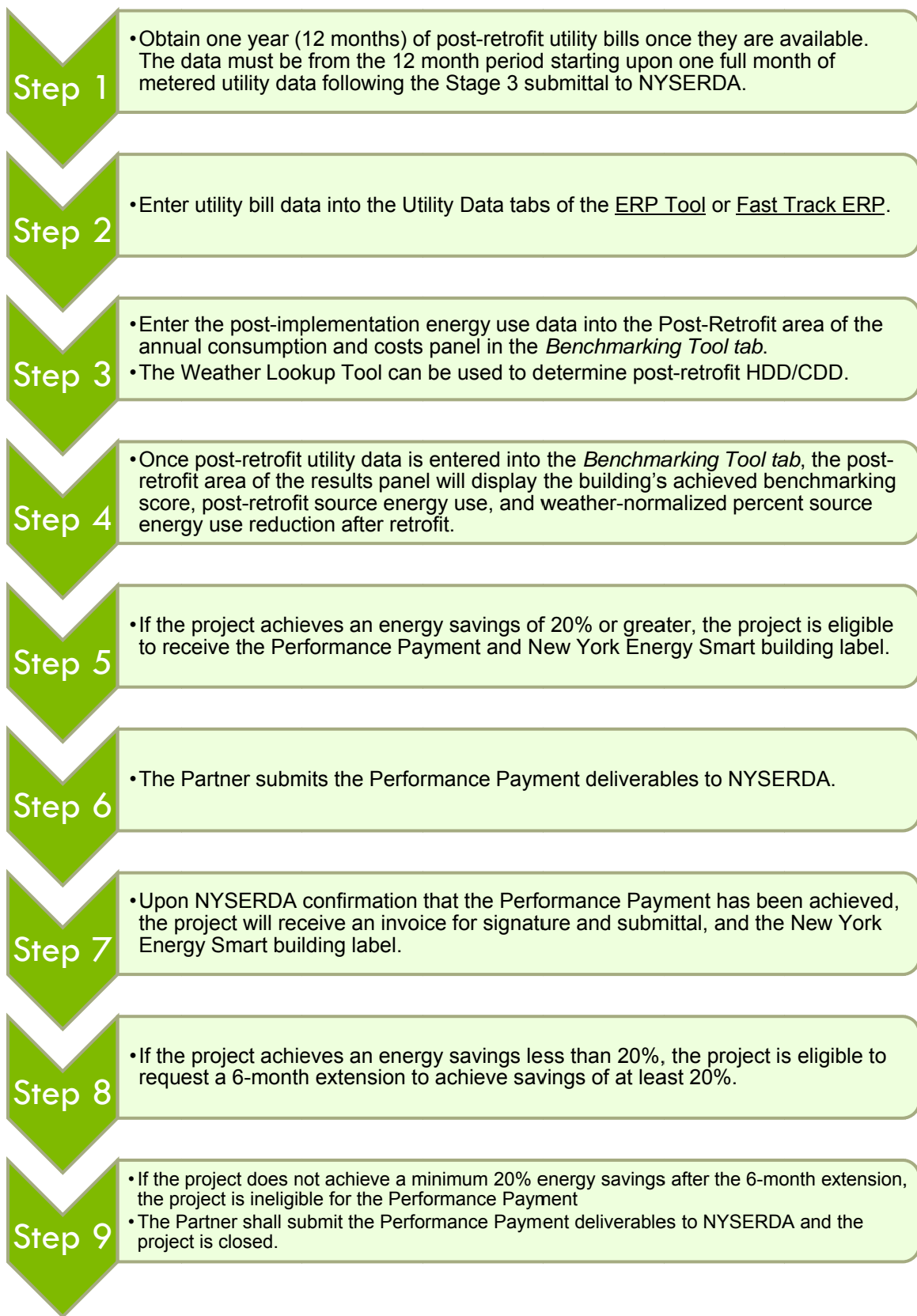
**Scenario:** NY Apartments is a Standard Path project with an Energy Reduction Plan projecting 21% energy savings. After performing post-construction utility data analysis, NY Apartments actually saved 24%.

**Answer:** The Performance Payment is Tier 1’s \$150 per unit. While NY Apartments performed better than their anticipated 21%, this better performance does not increase the incentive beyond what is set aside with the Exhibit C.

What is the Performance Payment?

## 11.3 Performance Payment Analysis

The Performance Payment Analysis repeats the utility bill analysis performed for the Energy Reduction Plan, but using 12 months of post-construction data. The Performance Payment that is based on the verification of savings realized by the project and compared to the projections in the Energy Reduction Plan.



**FIGURE 11-1  
STEP-BY-STEP PERFORMANCE PAYMENT DEVELOPMENT**

## 11.4 Performance Payment Deliverables

Performance Payment deliverables shall be submitted to NYSERDA after the Partner has completed a post-retrofit utility bill analysis. The following deliverables are required for the Performance Payment milestone:

- ✓ Updated [ERP Tool](#)
- ✓ [Performance Payment Worksheet](#) – completed by the Partner to signify that the Partner has reviewed the performance payment analysis for compliance with all program rules and requirements (formerly called the Incentive 4 Worksheet)
- ✓ Raw downloaded utility data or scanned utility bills (aka original data used to complete the Utility Data tabs)
- ✓ Building owner and, if applicable, resident DRAFs for sampled units (if not previously submitted during Stage 1).

### 11.4.1 Requirements

1. The post retrofit monitoring period is the 12-month period after approval of Stage 3.
2. Performance Payment deliverables must be submitted within 14 months of Stage 3 submittal to NYSERDA. If an extension is granted, the deliverables must be submitted within 20 months of Stage 3 submittal to NYSERDA.
3. The File Name Convention must be followed.

Document	File Naming Convention	Example
ERP Tool	Project Name – ERP_rev#.xls	NY Aps – ERP_rev4.xls
Data Release Authorization Form(s)	Project Name – DRAF.pdf (for new or changed accounts)	NY Apts – DRAF Post.pdf
Performance Payment Worksheet	Project Name – PP Worksheet.xls	NY Apts – PP Worksheet.xls
Utility Data	Project Name – account type.* (as appropriate)	NY Apts – Common Gas.pdf NY Apts – Tenant Gas.pdf

## 11.5 Vacancy Rate Adjustments

Vacancy rates, and any related adjustments, are primarily a concern when they are anticipated to be different between the pre and post construction periods. Small, short term swings in occupancy (< 10%) will not require adjustment. Any adjustments must be clearly identified and fully described in the Post Construction Benchmarking Report.

When necessary, adjustments will need to be applied based on the metering configuration in the affected buildings, using the following as guidance:

1. Master metered baseload electricity: Partner will have the option of scaling the “Number of Units” input to match the actual number of occupied units (i.e., 100 apts. x 90% vacancy = 90 apts.) or scaling the energy consumption to reflect the number of occupied units. When scaling energy consumption, it is important to scale only the level of consumption that is estimated to be used by the apartments, net of common area use.
2. Master metered heating energy (any fuel): Vacant units are often heated to safeguard from frozen pipes or because apartment-level zoning is not possible. If all units are heated, vacant or not, there is no need for adjustments. However, if heating to the units is zoned by apartment and heat is turned off or to a low “vacant” level, Partner may need to scale the energy consumption to reflect the number of occupied units. As with electricity, it is important to scale only the level of consumption that is estimated to be used by the apartments, net of common area use.
3. Direct metered: Since energy consumption for direct metered projects will typically be based on a 10% sample per the *Utility Data tabs*, vacant units should not affect the estimate. However, if vacancy rates vary between the pre and post construction periods, consumption can be scaled by scaling the “Number of Units” to match the number of occupied apartments.

## 11.6 Non-Achieving Projects

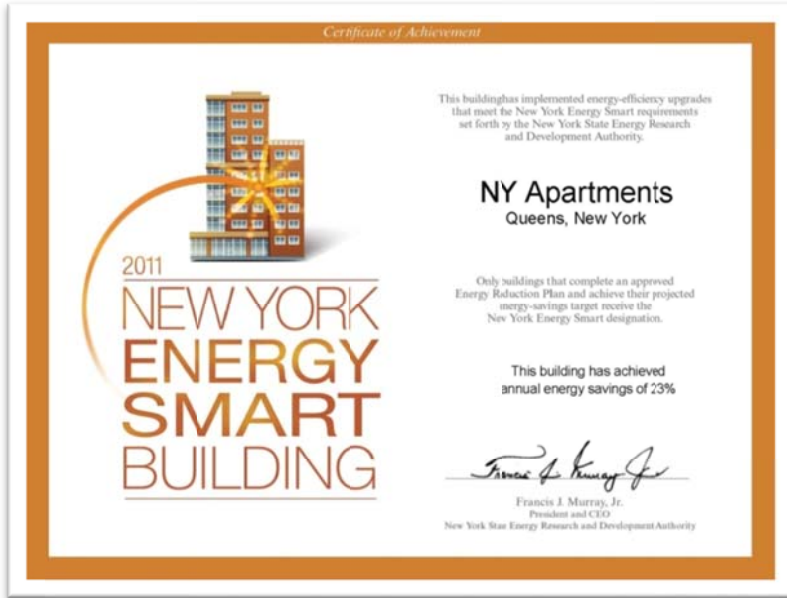
In cases where the energy savings achieves the performance target or greater after 12 months, the project is eligible to receive the Performance Payment. If the energy savings do not achieve a minimum 20% (Tier 1) after 12 months, the Partner must submit the Benchmarking Tool to the Case Manager indicating the failure to achieve the performance target.

The Partner may request a six month extension to allow additional energy saving measures to be implemented by the owner to contribute to the savings reduction. The resubmitted documents will include the most recent 12 months of post-implementation data from the past 18 months following the first full month of metered utility data after Stage 3 deliverable submittals. The first six months used in the original Post-Retrofit Benchmarking will not be included in this submittal.

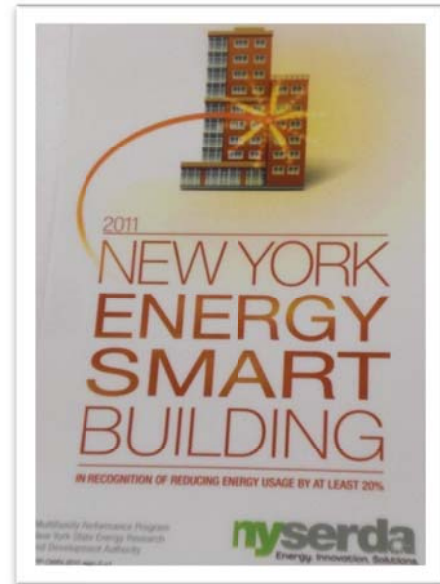
NYSERDA will work with the Partners to understand why savings are not reaching projected levels so that the Program can be modified, as necessary, to accommodate issues that may be revealed through this process.

## 11.7 New York Energy Smart Label

Projects that achieve the Performance Payment will receive a New York Energy Smart wall plaque (Figure 10-2) and door cling (Figure 10-2).



**FIGURE 10-1**  
**WALL PLAQUE**



**FIGURE 10-2**  
**DOOR CLING**

## APPENDIX A - SUMMARY OF CHANGES

The following is a summary of changes made to the Program Guidelines from Version 4. This list is not intended to be an exhaustive list of each document change, but to highlight substantive programmatic changes. Partners should familiarize themselves with the entire Program Guidelines.

### Overall

- Updated multifamilyprograms@nyscrda.ny.gov email address.
- Combined separate references to ERP Tool and Fast Track Tool.

### Section 1 Multifamily Energy Performance Portfolio Overview

- Removed reference to Basic Measures Program.

### Section 3 Incentives

- 3.1 Removed wording regarding wait-listing projects.

### Section 6 Energy Reduction Plan Development

- 6.3.2 Added guidance on Photo Documentation.
- 6.4.9 Added Guidance on combining MPP EB projects with other NYSERDA on-site generation programs.

### Appendices

- Moved Appendix 5.2 into Section 6.4.9.

11/18/13

## APPENDIX B – OWNER’S MANUAL

The Program does not offer incentives for an Owner’s Manual. In recognition of the valuable role that building operation and maintenance practices play in achieving improved energy performance in multifamily buildings, Partners and Participants may wish to develop an Owner’s Manual as part of an overall set of recommendations for the project.

In conjunction with training and certification, an owner’s manual containing a detailed inventory of equipment, operations manuals, warranties, and other information pertaining to a building’s systems can help address problems commonly found during building assessments and inspections.

<b>Recommended Items for Owner’s Manual</b>	
1.	Two clearly labeled, durable 3-ring binders or bound copies of the following items; one binder should be placed conspicuously in a boiler room (or superintendent’s office) and the other given to the owner.
2.	All information should be in electronic form (non-electronic records should be scanned) and stored on a compact disk included with each binder in the 8.5x11 pocket.
3.	Contact list of firms involved in project.
4.	Table of Contents
5.	List of installed equipment, including manufacturer and model numbers, number of units installed, and locations (e.g. apartment numbers).
6.	Approved submittals.
7.	Change orders, and design directives.
8.	As built drawings (11x17, folded and in binder) and specs, where used in construction. If available in CAD form, include CD in binder in the 8.5x11 pocket.
9.	Output reports from the ERP Tool spreadsheet.
10.	Clear list of suggested operation and maintenance practices, in a very simple bulleted form (only what is not covered in operating manuals). Preventative maintenance plan, i.e. filter changes, when and what type, clean and tune procedures, disposal of waste products, etc.
11.	Testing and balancing reports
12.	Commissioning reports, including control sequences and initial trend logs.
13.	Equipment installation and operating manuals for all equipment and controls.
14.	Warranty on work (including contact information).
15.	Equipment warranties.
16.	Reproducible educational/instructional materials distributed to residents concerning energy efficiency measures or use of new equipment/systems.

17.	Necessary replacement part list for items that should be stocked in-house, for example, pin-based light bulbs should have specific models with color temperature and CRI.
18.	Preventative maintenance logs that Program Partner develops for building staff (in a separate binder) with instructions. These should include: <ul style="list-style-type: none"> <li>• Repair logs</li> <li>• Logs for any contractors working in the building</li> </ul>
19.	Next steps and list of follow-up action items with energy performance contact information.
20.	Labeled photos of installations of hidden elements (insulation, etc).
21.	Labeled photos of every attic insulated with open blow insulation, including depth markers.
22.	Plan for ensuring that training gets passed on to new employees when there is turnover. Must be either training for a new hire or a succession plan that allows outgoing employee to train incoming employee.
23.	Meter Readings during construction, and two-week period after installation.
24.	Service contracts where applicable with easily identifiable contact info.
25.	Video tape or DVD of actual on-site staff training so new staff can also have a way to learn about the proper operation. This is especially important when there is a high turnover of staff.

## APPENDIX C – CONSOLIDATED LIST OF DELIVERABLES

	Document	File Name Convention	Example
<b>Application</b>	Terms and Conditions	Project Name – Terms and Conditions.pdf	NY Apts – Terms and Conditions.pdf
	W-9	Project Name – W-9.pdf	NY Apts – W-9.pdf
	Electronic Funds Transfer (EFT) Form	Project Name – EFT.pdf	NY Apts – EFT.pdf
	Affordable Housing Documentation	Project Name - * (as appropriate)	NY Apts – NYSDHCR Contract.pdf
<b>Stage 1 Standard Path</b>	Energy Reduction Plan Tables	Project Name – ERP_rev0.xls	NY Apts – ERP_rev0.PDF
	Modeling Software File	Project Name – Model_rev0.xxx	NY Apts – Model_rev0.xxx
	For projects with multiple models:	Project Name – Site Name1_rev0.xxx Project Name – Site Name2_rev0.xxx	NY Apts – Bldg A_rev0.xxx NY Apts – Bldg B_rev0.xxx
	Partner-Participant Contract	Project Name – Partner Contract.PDF	NY Apts – Partner Contract.pdf
	Data Release Authorization Form(s)	Project name – DRAF.pdf	NY Apts – DRAF.pdf
	Photographs (multiple in zip file or Template)	Project Name – Photos.zip Project Name – Photos.pdf	NY Apts – Photos.zip NY Apts – Photos.pdf
<b>Stage 1 Fast Track</b>	Fast Track Energy Reduction Plan	Project Name – ERP_rev0.xls	NY Apts – ERP_rev0.PDF
	Partner-Participant Contract	Project Name – Partner Contract.PDF	NY Apts – Partner Contract.pdf
	Data Release Authorization Form(s)	Project name – DRAF.pdf	NY Apts – DRAF.pdf
	Photographs (multiple in zip file)	Project Name – Photos.zip	NY Apts – Photos.zip
<b>Stage 2 (Standard Path Only)</b>	Site Inspection Request	Project Name – 50% Inspection.xls	NY Apts – 50% Inspection_rev0.xls
	Photo Documentation	Project Name – Photos_50%.pdf	NY Apts – Photos_50%.pdf
	Measure documentation:	Project Name - * (per Site Inspection Protocols)	NY Apts – Boiler cut sheets.pdf NY Apts – Blower Door.pdf
<b>Scope Change</b>	Scope Change Cover Sheet	Project Name – Scope Change #.pdf	NY Apts – Scope Change 1.pdf
	ERP Tool	Project Name – ERP_rev#.xls	NY Apts – ERP_rev3.xls
	Simulation Model(s)	Project Name – Model_rev#.xxx	NY Apts – Model Rev3.tpg

	Document	File Name Convention	Example
<b>Stage 3</b>	Site Inspection Request	Project Name – 100% Inspection.xls	NY Apts – 100% Inspection_rev0.xls
	Photo Documentation	Project Name – Photos _100%.pdf	NY Apts – Photos_50%.pdf
	Measure documentation:	Project Name - * (per Site Inspection Protocols)	NY Apts – Boiler cut sheets.pdf NY Apts – Blower Door.pdf
<b>Performance Payment</b>	ERP Tool	Project Name – ERP_rev#.xls	NY Apts – ERP_rev4.xls
	Data Release Authorization Form(s)	Project Name – DRAF.pdf (for new or changed accounts)	NY Apts – DRAF Post.pdf
	Performance Payment Worksheet	Project Name – PP Worksheet.xls	NY Apts – PP Worksheet.xls
	Utility Data	Project Name – account type.* (as appropriate)	NY Apts – Common Gas.pdf NY Apts – Tenant Gas.pdf
	Renewable Program M&V (only if applicable)	Project Name – documentation type (as appropriate)	NY Apts – PV Monitoring.pdf