

**Municipal Guidance for
Promoting Energy
Efficiency in the
Private Sector**

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Prepared by the Center for Green Building at Rutgers University for the Energy Efficient Buildings Hub, Philadelphia, PA.

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Background

The implementation of an individual Advanced Energy Retrofit (AER) takes place within a regulatory framework of a specific local jurisdiction. Nevertheless, projects within a specific jurisdiction are subject also to regional, state and federal level regulatory requirements and/or influences. These various regulatory frameworks at different levels present both barriers and opportunities. Ideally, requirements are nested and complementary. However, sometimes the requirements are less coordinated and even contradictory. In order to achieve a widespread increase in AERs, it is important to understand and address the various barriers and opportunities in a specific region. Similarly, when working to achieve transformational change, these issues must be approached on many scales with a variety of approaches.

This policy brief focuses on how planning and zoning tools at the municipal level and public-private partnerships between municipalities and building owners can increase uptake of AERs. NJ municipalities do not have jurisdiction over building code so are somewhat limited in their ability to impact the design of buildings; however, the Local Redevelopment and Housing Law,¹ and planning and zoning per the Municipal Land Use Law (MLUL) provide opportunities to encourage energy efficiency. The Municipal Land Use Law is the legislative basis of planning and zoning boards of adjustment and defines the powers of these boards.² The Local Redevelopment and Housing Law empowers municipalities to act to improve areas in need of redevelopment. Redevelopment plans provide an opportunity to incorporate specific energy efficiency measures into redevelopment projects.

The Rutgers Center for Green Building developed municipal guidance that will be delivered through Sustainable Jersey, an established and successful marketing channel that reaches all NJ municipalities. Elements of this guidance are currently being piloted with West Windsor Township in Mercer County, NJ.

This guidance also serves as a training tool for municipalities as well as developers and business owners in the private sector. Specific training recommendations are outlined, including standards ASHRAE 189.1, ICC-700, and IgCC and sessions on energy modeling, life cycle costing, and ENERGY STAR Portfolio Manager.

Although the guidance document appears differently in web-based form, a straight text version of it is included here.

¹ N.J.S.A. 40A:12A-7 Title 40A. Municipalities and Counties. Ch.12A- Local Redevelopment and Housing Law. L.1992, c. 79. State of NJ Department of State <http://www.nj.gov/state/planning/resources-statelaws.html>

² The New Jersey Planning Officials. http://njpo.org/NJPO_MLUL.html Accessed December 4, 2012.

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I. INTRODUCTION

This guidance document is designed to assist NJ municipalities with promoting energy efficiency in commercial retrofits in the private sector. Buildings use 40% of the energy consumed annually in the United States (NREL & U.S. DOE). The United Nations' Intergovernmental Panel on Climate Change found that the largest energy (and carbon) savings potential in 2030 is in existing buildings through retrofit and renovation.³ Local governments can play a significant role through demonstrating leadership by example, providing incentive programs, education and resources and by leveraging redevelopment and zoning powers.

According to the U.S. Department of Energy, commercial energy use accounted for 26% of all energy consumed in New Jersey in 2009.⁴ The state has undertaken a number of programs and initiatives to advance energy efficiency such as NJ's Clean Energy Program and the NJ Green Building Manual (NJGBM). NJ's Clean Energy Program, a statewide program that provides incentives, programs and services for NJ residents, business owners and local governments, offers significant financial incentives for commercial, industrial and governmental customers to integrate energy efficient renewable technologies into new construction, upgrades, and new cooling and heating equipment installations (www.njcleanenergy.com). The NJGBM is a comprehensive web-based document that defines a baseline of performance and provides enabling economic and environmental best practices for energy efficiency and other green building facets (www.greenmanual.rutgers.edu). Municipalities can draw on these resources among others provided herein for implementing the point-bearing steps below.

II. STEP-BY-STEP IMPLEMENTATION OF POINT-BEARING ENERGY EFFICIENCY SUBACTIONS

A. Encourage Energy Efficiency in Redevelopment Projects

The Local Redevelopment and Housing Law⁵ empowers municipalities to act to improve areas in need of redevelopment. Redevelopment plans and associated project approvals provide an opportunity to incorporate specific energy efficiency measures into redevelopment projects. As part of a negotiated redevelopment agreement, energy efficiency measures can be suggested or required, making local redevelopment and housing law a potent tool for addressing energy efficiency retrofits.

What to do:

Amend the municipality's redevelopment plan to incorporate energy efficiency targets or related certifications (i.e., ENERGY STAR, LEED). For example, a municipality can recommend or require achieving 15% or 20% reduction in energy use in redevelopment areas (*see Sample Redevelopment Plan Language*). A 15% target can help projects meet the

³ IPCC Fourth Assessment Report, Working Group III "Mitigation of Climate Change," Chapter 6

⁴ U.S. Energy Information Administration http://www.eia.gov/state/seds/hf.jsp?incfile=sep_sum/plain_html/rank_use.html accessed September 12, 2012

⁵ N.J.S.A. 40A:12A-7 Title 40A. Municipalities and Counties. Ch.12A- Local Redevelopment and Housing Law. L.1992, c. 79 (State of NJ Department of State <http://www.nj.gov/state/planning/resources-statelaws.html>)

requirement of NJ's Clean Energy's Pay for Performance program and earn associated incentives. Other possible incentives that a municipality could offer directly include density bonuses, flexible zoning, and/or a higher level of acknowledgement through an energy efficiency recognition program (*see E. Create an Energy Efficiency Recognition Program below*). Achieving a 15-20% energy use reduction can also help projects earn LEED certification and qualify for an ENERGY STAR label (*see Township of Cranford Ordinance No. 2005-46*).

B. Use Planning and Zoning Powers to Achieve Energy Efficiency Targets

As a matter of standard planning and zoning powers, municipalities generally have jurisdiction over building features that are outside the building envelope while those inside the design envelope are features that are regulated by building code and related standards. Illustratively, municipal site plans cover such standards as landscaping including plant type, height and location and exterior lighting.

What to do:

1. Incorporate voluntary energy efficiency measures into the municipal site plan approval process.

Municipalities can choose to make energy efficiency measures voluntary conditions for site plan approval. This requires the adoption of an ordinance to amend the site plan checklist (*see Sample Enabling Ordinance*). While incorporating energy efficiency targets directly or indirectly into the site plan approval process, it is also advisable to review land development ordinances to ensure agreement between Site Plan Checklist items and these ordinances (*see Sample Site Plan Checklists*).

Note also that Section 19 of the Municipal Land Use Law (P.L. 1975, c.291) codified at N.J.S.A. 40:55D-28, which authorizes a local planning board to include in its master plan a "green buildings and environmental sustainability plan element," was enacted as Assembly Bill A1559 in 2008. The purpose of the additional Master Plan element is to encourage and promote, among other things, "the efficient use of natural resources [and] . . . the impact of buildings on the local, regional and global environment . . . through site orientation and design."

2. Amend municipal ordinances or create new ordinances that require energy efficiency measures (outside of the building envelope).

Municipalities can choose to make energy efficiency measures outside of the building envelope a requirement and develop municipal ordinances related to those measures. Examples include landscaping for windbreaks and installing energy efficient exterior lighting. NJ Municipal Land Use Law dictates what an ordinance can include, but there are some areas that fall between what is named in the law and what is named in the building code. For example, because NJ codes do not specify reflective properties or color for roofs this allows municipalities to encourage or require reflective roofing through an ordinance (*see Excerpt from Hopewell Township Green Land Use Ordinances*).

1. Review existing regulations and amend language that acts *as barriers* to implementing energy efficiency measures.

Sometimes there is language within municipal regulations that inadvertently creates barriers to implementing energy efficiency measures. By reviewing and revising zoning and planning regulations, municipalities can promote energy efficiency targets by eliminating these barriers. Jersey City, for example, implemented changes to zoning that was acting as a barrier to energy efficiency and other objectives by adopting a sustainable zoning ordinance. This change promoted the installation of green roofs through exempting green roofs from the rooftop area limit of 20% of rooftop appurtenances (*see Excerpt from Jersey City Ordinance 11-041*).

C. Promote Public/Private Partnerships that Focus on Financing Energy Efficiency Upgrades

New Jersey now allows municipalities to establish Property Assessed Clean Energy (PACE)⁶ funding programs to finance energy efficiency and clean energy improvements for private property owners. Municipalities have flexibility in how to design their program and can include a range of improvements. Repayment is made through a special assessment that is paid along with regular property taxes, and secured by a municipal lien. This program minimizes the risk to lenders and investors. The improvements and the payments are associated with the property not the owner, operator or tenant, therefore limiting the risk to the current owner.⁷

What to do:

1. Define parameters of the municipality's PACE program. There are no specific restrictions on the type of clean energy or energy efficiency improvements the program can include and municipalities can tailor the program to focus on specific types of properties (*see Sample PACE Program*).
2. Determine the funding mechanism for the municipality's PACE program. Municipalities can fund the program through issuing bonds, applying to a county improvement authority that issues bonds, using bank financing, reserves, grant funds or a combination of sources. The proceeds from the special assessment may be used to repay the bond obligations or replenish a revolving fund.⁸
3. Create an ordinance and adopt provisions that create a "clean energy special assessment" to be attached to properties that participate in the program. The special assessment payments are collected by the municipality quarterly and must be used to repay the equipment loans.
4. Submit PACE program to NJ Department of Community Affairs (NJ DCA) for review and approval. Municipal PACE programs are subject to approval by NJ DCA. NJ DCA

⁶ NJ's legislation, "AN ACT concerning the financing of renewable energy and energy efficiency systems, amending P.L. 1960, c.183, and supplementing R.S.40:56-1 et seq." was passed as amended in January of 2012, and came into effect May 17, 2012 (Center for Leadership in Sustainability).

⁷ Center for Leadership in Sustainability www.njpace.net

⁸ Center for Leadership in Sustainability www.njpace.net

is required to coordinate with the NJ Board of Public Utilities.

5. Once approved by NJ DCA, promote and implement PACE program (see www.njpace.net for additional guidance).

D. Promote Energy Efficiency Programs and Develop a Targeted Outreach Campaign to Developers and Building Owners

It is easier to accelerate building energy retrofits if you have a large number of building owners and managers who are willing to participate.⁹ Understanding the makeup of the municipality's building stock, developing an informed and targeted outreach strategy, and providing examples of success stories from within the municipality can help engage building owners and managers and contribute to promoting energy efficiency retrofits.

What to do:

1. Inventory privately owned existing commercial/multifamily buildings within the municipality in order to develop a targeted marketing plan by building segment. Collect data such as building owner, property manager, age, use, square footage, height, number of stories, roof details, exterior finish, heating & cooling, solar panels and details about energy efficiency upgrades (type, cost, permit date, appliance, etc.).
2. Create a marketing campaign that includes state resources such as NJ's Pay for Performance Program¹⁰ that is based on building type, age and other factors and targets developers/building owners. Use strategies such as sending directed outreach materials (see *Sample Outreach Letter and Flier*) and providing information on the municipal website and at community events. Examples of marketing actions:
 - Setting up a webpage about NJ's Pay for Performance Program on the municipal website and promoting it to commercial building owners/developers
 - Holding a workshop or event with local officials (such as the Mayor) for building owners/developers about NJ's Pay for Performance Program
 - Having the local Chamber of Commerce follow up the mailing effort with a separate communication reinforcing the benefits of the program
 - Having a staff person or a volunteer follow up with building owners/developers
 - Highlighting NJ's Pay for Performance Program on the municipality's website and/or newsletter
 - Establishing a visible recognition program for owners/developers that have participated in the program, e.g. signage in their place of business highlighting their efforts at energy conservation or a proclamation from the Mayor (see *E. Create an Energy Efficiency Recognition Program below*).
 - Another creative initiative not included on this list.

⁹ Living Cities and Institute for Sustainable Communities. *Scaling up Building Energy Retrofitting in U.S. Cities*. http://www.iscvt.org/who_we_are/publications/Green_Boot_Camp_Resource_Guide.pdf accessed December 24, 2012

¹⁰ Pay for Performance is one of several energy efficiency programs offered through NJ's Clean Energy Program <http://www.njcleanenergy.com>

3. Achieve X% participation from building owners/developers in NJ's Pay for Performance Program. (to be set by participating municipality)

E. Create an Energy Efficiency Recognition Program

What to do:

Municipalities can create a program to recognize building owners, developers, managers and tenants who participate in energy efficiency initiatives and achieve energy efficiency targets. Recognition programs provide public acknowledgement of the commitment to reduce energy use, which can promote energy efficiency initiatives, encourage practices and behaviors to conserve energy, provide an edge in marketing and public relations and identify building owners, developers, manager and tenants as innovators and leaders. Municipalities can develop program benefits based on municipal resources available (*see Sample Recognition Program*).

F. Promote Energy Efficiency Training Opportunities

What to do:

Municipalities can maintain an up-to-date listing of programs that provide training related to energy efficiency such as offerings through federal and state agencies, state universities and county colleges, professional organizations, etc. (*see Sample Energy Efficiency Training Opportunities & Resources*). This list can be made available at the municipal building, on the municipality's website and distributed with construction and zoning permit applications.

III. PROGRAMS & RESOURCES

Alliance to Save Energy

<http://ase.org>

Association of New Jersey Environmental Commissions

<http://www.anjec.org>

Clean Air Cool Planet Green Building Ordinances

http://www.cleanair-coolplanet.org/for_communities/green_building_ordinances.php

Community Forestry – Cool Cities http://www.state.nj.us/dep/localgov/cool_cities.html

Energy Efficient Buildings Hub

<http://www.eebhub.org>

Energy Efficiency Financing Article - Green for Green

http://www.comstocksmag.com/Articles/0712_F_construction_Green-for-Green.aspx

Energy Efficiency Financing Program in Sacramento, CA

<http://ygrene.us/ca/sacramento/commercial>

Green Lease Library

<http://www.greenleaselibrary.com>

ICLEI – Local Governments for Sustainability (formerly known as the International Council for Local Environmental Initiatives)

<http://www.icleiusa.org>

<http://www.icleiusa.org/action-center/tools/municipal-clean-energy-toolkit>

International Organization for Standardization (ISO) 50001

<http://www.iso.org/iso/home/standards/management-standards/iso50001.htm>

Municipal Land Use Center @ The College of NJ

<http://www.tcnj.edu/~mluc/index>

NJ DEP Environmental Stewardship Initiative <http://www.state.nj.us/dep/enforcement/stewardship/>

NJ DEP Local Government Resources <http://www.state.nj.us/dep/localgov/guidebook.html>

NJ DEP Planning and Sustainable Communities

<http://www.nj.gov/dep/opsc/envcbp.html>

NJ Economic Development Authority (NJ EDA)

http://www.njeda.com/web/Aspx_pg/Templates/Pic_Text.aspx?Doc_Id=91&topid=718&midid=1417

NJ EDA Clean Energy Solutions

http://www.njeda.com/web/Aspx_pg/Templates/Pic_Text.aspx?Doc_Id=1080&topid=722&midid=1357

NJ Energy Savings Improvement Plan (ESIP)

<http://www.njcleanenergy.com/commercial-industrial/programs/energy-savings-improvement-plan+>

NJ HMFA – Green Homes Office

<http://www.njhousing.gov/dca/hmfa/gho/>

NJ PACE Program

www.NJPACE.net

NJ Sustainable Business Initiative

http://www.nj.gov/dep/sage/sustain_bus.html

NJ Sustainable Energy Efficiency Demonstration Projects (NJ SEED) – Cherry Hill, Montclair, Highland Park (US EPA program)

<http://www.epa.gov/statelocalclimate/local/showcase/sustainable-energy-efficiency.html>

NJ's Clean Energy Program

<http://www.njcleanenergy.com/commercial-industrial/home/home>

Rocky Mountain Institute

http://www.rmi.org/retrofit_depot

Sustainable Jersey

<http://www.sustainablejersey.com>

The City of North Vancouver – Density Bonus Program

<http://www.cnv.org/server.aspx?c=2&i=394>

U.S. EPA Local Climate and Energy Program

<http://www.epa.gov/statelocalclimate/local/index.html>

U.S. EPA Energy Efficiency in Local Government Operations

http://www.epa.gov/statelocalclimate/documents/pdf/ee_municipal_operations.pdf

USGBC NJ

<http://www.usgbcnj.org>

Other Guidance

- Cal Recycle <http://www.calrecycle.ca.gov/GreenBuilding/Toolkit.htm>

Provides case studies, fact sheets, performance standards, product directories, financing, publications, sample documents, training

- US EPA <http://www.epa.gov/region4/recycle/green-building-toolkit.pdf>
- Clinton Climate Initiative Energy Efficiency Building Retrofit Toolkit http://www.clintonfoundation.org/files/cci/cci_toolkit_boma.pdf

Includes a best practices in energy efficiency contracting guide for building owners, the project development process, financing, CCI building procurement support, resources, M&V

- Massachusetts Smart Growth/Smart Energy Toolkit http://www.mass.gov/envir/smart_growth_toolkit/pages/mod-energy.html

“The focus of this Smart Growth / Smart Energy Toolkit module is to provide information on actions that can be taken by municipalities, developers, organizations, and individuals to promote smart energy. Generation of power from renewable sources is one important action this Toolkit encourages. Another is the conservation of energy through energy efficiency, green building, and reduced automobile use. These and other actions will reduce greenhouse gas emissions, improve environmental quality, and provide significant financial savings to consumers and municipalities.”

Provides modules, case studies, model by-laws, power point presentations to help people communicate about the goals/etc., resources

- CUNY Building Performance Toolkit

<http://www.baruch.cuny.edu/realestate/sustainability/building-performance-toolkit/index.html>

“Building operators, building managers, property owners, and other real estate professionals can use this toolkit as a guide to reducing energy costs and consumption. This information is primarily geared toward large commercial property owners in New York City, but can also be helpful to other sustainability professionals. The toolkit also lists financial incentives and programs which can greatly benefit building owners making decisions about energy retrofits.”

- AIA -- Sustainability 2030 Toolkit

<http://info.aia.org/toolkit2030/index.html>

Organized around themes of advocacy, design, and community. Advocacy includes info about policies on state and national level, resources, incentives, etc. Design provides tools for design professionals, etc. including 50 to 50 (50 green principles that lead to 50% reduction in carbon emissions). Community section offers ideas about high-quality, diverse, mixed-use communities that use green principles to foster a sense of place

- Go Solar California – A step by step toolkit for local governments to go solar

<http://www.energy.ca.gov/2009publications/CEC-180-2009-005/CEC-180-2009-005.PDF>

<http://www.energy.ca.gov/2009publications/CEC-180-2009-005/CEC-180-2009-005.PDF#>

- Business Council on Climate Change Green Tenant Toolkit greentenanttoolkit.com

This toolkit was one of the deliverables that came out of the recommendations from the Mayor’s Task Force on Existing Commercial Buildings (City and County of San Francisco, December 2009).

- The Somerset County High Performance Buildings Program Toolkit

<http://www.scbp.org/get-involved/committees-and-task-forces/sustainable-somerset>

For municipal engineers and code officials – to aid in their review of projects participating in the Somerset County Program (requirements based on LEED)

IV. APPENDICES

Appendix 1

Sample Redevelopment Plan Language

Note regarding amendments to Redevelopment Plans: Consider the plan's relationship to municipal zoning ordinances, adjacent municipalities, county master plan and state development and redevelopment plans.

All buildings within the Redevelopment Plan Area shall set targets of 15% or 20% energy use reduction.

For new construction, this will be achieved through creating an energy reduction plan that defines a comprehensive package of measures capable of achieving energy costs 15% (min.) below the current energy code. For existing buildings, the energy reduction plan must define a comprehensive package of measures capable of reducing the existing energy consumption of the building by a minimum of 15%. If pursuing, NJ's Clean Energy Program incentives, see <http://www.njcleanenergy.com/commercial-industrial/programs/pay-performance> for program requirements and a step-by-step description of the program.

Projects that set a target of 20% energy use reduction will be eligible for additional municipal incentives.*

* to be defined by the municipality but may include benefits such as development density bonuses and/or a higher level of acknowledgement through an energy efficiency recognition program.

Appendix 2

TOWNSHIP OF CRANFORD CRANFORD, NEW JERSEY

ORDINANCE NO. 2005-46

AN ORDINANCE TO ADOPT SUSTAINABLE BUILDING STANDARDS FOR CONSTRUCTION IN THE TOWNSHIP OF CRANFORD AND ENACTING CHAPTER 106 (ENERGY EFFICIENCY) OF THE CODE OF THE TOWNSHIP OF CRANFORD RELATING THERETO.

WHEREAS, the Township Committee of the Township of Cranford finds that the public welfare will be served by assuring that further commercial and civic development is consistent with the Township's desire to create a more sustainable community; and

WHEREAS, on August 12, 2003, the Township Committee adopted Resolution No. 2003-259, which adopted a policy of "sustainability," which, at the municipal level of government, means a policy in which decision making about municipal purchasing and operations incorporates the "triple bottom line" of environmental stewardship, economic growth, and social equity, so that the needs to the present generation do not compromise the needs of future generations; and

WHEREAS, the Township Committee finds that green building measures applied to the design, construction, and maintenance of buildings would achieve the following goals:

1. To encourage resource conservation;
2. To reduce the waste generated by construction projects;
3. To increase energy efficiency; and
4. To promote the health and productivity of residents, workers, and visitors to the Township; and

WHEREAS, the Township Committee finds that:

1. Green building practices referenced herein are designed to encourage resource conservation, to reduce the waste generated by construction projects, to increase energy efficiency, and to promote the health and productivity of residents, workers, and visitors to the city;

Green design and construction decisions made by the Township in the construction and remodeling of Township buildings can result in significant cost savings to the Township over the life of the buildings;
3. In recent years, green building design, construction, and operational techniques have become increasingly widespread. Many homeowners, businesses, and building professionals have voluntarily sought to incorporate green building techniques into their projects;
4. At the national level, the U.S. Green Building Council (USGBC), developer of the Leadership in Energy and Environmental Design (LEED®) Green Building Rating System, has become a leader in promoting and developing green building practices;
5. The USGBC LEED® Rating System has been used to design buildings in New Jersey.
6. Requiring Township-funded projects to incorporate the LEED® Rating System is necessary and appropriate to achieve the benefits of green buildings.

NOW, THEREFORE, BE IT ORDAINED by the Township Committee of the Township of Cranford:

SECTION 1. Chapter 106 (Energy Efficiency) of the Code of the Township of Cranford be and is hereby enacted as follows:

CHAPTER 106 - ENERGY EFFICIENCY

ARTICLE I

SUSTAINABLE BUILDING STANDARDS § 106-1 Adoption of codes by reference.

The "Leadership in Energy & Environmental Design Rating System for New Construction & Major Renovations (LEED - NC)", Version 2.1, adopted November 2002, revised March 14, 2003, and the "Leadership in Energy & Environmental Design - EB Green Building Rating System for Existing Building8, Upgrades, Operations and Maintenance", Version 2, adopted October 2004, updated July 2005, both promulgated by the U.S. Green Building Council ("USGBC") are hereby adopted by reference and incorporated into this Chapter.

§106-2. Cranford Township Facility Projects and Existing Buildings.

- a The Township supports *the* use of green building practices and adopts the use of the USGBC's Leadership in Energy Design ("LEED") Rating System for the design and construction of new buildings and major renovations and additions to Township funded facility projects. In addition, the Township adopts LEED-ED for its existing buildings;
- b The Township will incorporate life-cycle and total cost accounting in the design, construction, and maintenance of all Township owned and financed buildings:
- c. The Township adopts a policy that Township funded facility projects and Township-owned facilities meet a minimum LEED® "Silver" rating.
- d The first LEED project will be viewed as a pilot for this initiative and will be evaluated to make further recommendations to the Township Committee.

§106-3. Redevelopment Projects.

The Township of Cranford encourages redevelopers seeking redeveloper status through redevelopment agreement to adopt the LEED® Rating System. To encourage projects to achieve formal LEED certification from the USGBC, Cranford Township has established a Green Building Density Incentive Program. Redevelopers shall be permitted to request an incentive, such as a slightly larger building than would normally be allowed if the project receives official LEED certification from the USGBC at one of the four LEED award levels. The incentive allowed will vary depending on the project and on the LEED award sought. The use of the Program shall be incorporated in redevelopment agreements adopted by the Township.

Redevelopers must submit the following information to the Township for each project:

- a. Name of the LEED Accredited Professional working on the project: Each project must include a LEED accredited professional as part of the project team. This team member advises the project team on LEED issues and ensures that the specific LEED credits for the project are achieved.
- b. LEED Scorecard: A LEED Scorecard must be submitted as part of its plan. The Scorecard must be accompanied by an explanation of how each credit will be achieved or why the credit cannot be achieved for the project. Prior to issuance of

specific permits, reports must be submitted outlining progress on achieving LEED credits A specific number of LEED credits will be negotiated and included in the project.

- c. Construction Waste Management Plan: Prepare and implement a construction waste management plan. The plan must outline where waste will be sent for recycling, reuse, reprocessing, or disposal. Letter from each of the recipient facilities must be included.

- d. Energy Star: For multi-family residential projects; appliances and fixtures must meet U.S. EPA's Energy Star standards. Projects must include Energy Star compliant clothes washers; dishwashers, refrigerators, ceiling fans, ventilation fans (including kitchen and bathroom fans), light fixtures (halls and common areas), and exist signs. To enhance energy efficiency further, the project must also choose and install two of the following Energy Star components: Programmable thermostats (in residential units); residential light fixtures; windows and doors; and HVAC systems.

Redevelopers applying for the Cranford Green Building Density Incentive Program must register their projects with the USGBC. Proof of registration must be submitted to the TOW I Illhip, followed by quarterly updates that identify the progress of the project and points achieved. Projects must be certified by the USGBC at the agreed upon level.

SECTION 2. Three copies of the Leadership in Energy & Environmental Design Rating System for New Construction & Major Renovations (LEED - NC) Version 2.1, adopted November 2002, revision March 14, 2003, and three copies of Leadership in Energy & Environmental Design - EB Green Building Rating System for Existing Buildings, Upgrades, Operations and Maintenance, Version 2, adopted October 2004, updated July 2005, promulgated by the U.S. Green Building council shall be maintained on file in the Office of the Municipal Clerk.

SECTION 3. All ordinances or parts of ordinances inconsistent herewith are hereby repealed to the extent of such inconsistency.

SECTION 4. If any portion of this ordinance shall be determined to be invalid; such determination shall not affect the validity of the remaining portions of said ordinance.

SECTION 5. This ordinance shall take effect upon final passage and publication in accordance with law.
Certification

I, Rosalie Hellenbrecht, Township Clerk of the Township of Cranford, County of Union, State of New Jersey do hereby certify that the above is a true and correct copy of an ordinance adopted by the Township Committee of the Township of Cranford at a meeting held November 14, 2005.

In Witness Whereof I hereunto set my hand and affix the seal of said Township of Cranford on this 15th day of November 2005.
, RMC Township Clerk

Appendix 3

Sample Enabling Ordinance

The following model ordinance is provided as an optional template. Each municipality may have variations in their standard form and process of adopting amendments to their zoning and site planning ordinances. Links to examples of municipal ordinances for the adoption of green standards are included below.

**Name of Municipality
Ordinance ##**

An Ordinance to Amend and the “Land Use” Ordinance

WHEREAS, the (Name of Municipality) finds that the public welfare will be served by assuring that further commercial and civic development is consistent with the (Name of Municipality’s) desire to create a more sustainable community; and

WHEREAS, on (Date), the (Name of Municipality) adopted Resolution No (##), which adopted a *Green Design – Commercial & Residential Buildings Resolution OR Sustainable Land Use Pledge*.

NOW, THEREFORE BE IT ORDAINED by the (Name of Municipality) as follows:

The “Land Use” Ordinance is amended to include the Green Development Checklist (the Checklist). The completion of the Checklist by applicants is mandatory; however, compliance with the Checklist items is not a condition of approval.

BE IT FURTHER RESOLVED,

CERTIFICATION

I, _____, Clerk of the (Name of Municipality), in the County of (Name of County), do hereby certify that the foregoing is a true and correct copy of a resolution duly adopted by the Township Council at a regular meeting held on the ___ day of _____ 201__.

IN WITNESS WHEREOF I have hereunto set my hand and affixed the seal of said Township this ___ day of _____ 201__.

Appendix 4

Sample Site Plan Checklists

See Sustainable Jersey's Green Design – Site Plan Green Design Standards for samples:

<http://www.sustainablejersey.com/certification/actions/#/open/action/31>

Appendix 5

**Excerpt from Hopewell Township, New Jersey
Green Land Use Ordinances (Draft)**

Roofing: Commercial

Baseline Requirements:

1. Choose one of the following to contribute to the reduction of the urban heat island effect.
 - a. Require that roofing materials have a Solar Reflectance Index (SRI) equal to or greater than 78 for a low-sloped roof (less than or equal to 2:12) or 29 for a steep-sloped roof (greater than 2:12) covering 75% of the roof surface. When calculating the surface area of a roof, deduct areas with equipment, solar energy panels, and appurtenances (LEED Heat Island Effect, p95).
 - b. Install a vegetated roof for at least 50% of the roof area (LEED Heat Island Effect, p95).
 - c. Provide any combination of the following strategies for 50% of the site hardscape: shade (within 5 years of occupancy), paving materials with a solar reflectance index (SRI) of at least 29, or employs an open grid system.
 - d. Use Energy Star compliant, high-reflectance roofing (according to Energy Star roof criteria) for a minimum of 75% of the roof surface (Austin, TX).

Appendix 6

Excerpt from Jersey City Ordinance 11-041

The Land Development Ordinance shall be amended as follows.

Article V- Section 345-360. Supplementary Zoning Regulations

W. Green Roofs

1. Green roofs shall be exempt from the rooftop area limit of 20% for rooftop appurtenances, as per Section 345-60 G.2.
2. Green roofs shall be exempt from site plan approval, unless their installation is part of a project that exceeds the threshold for Site Plan review as per Section 345-16.
3. Ancillary green roof equipment and structures, including but not limited to the installation of a greenhouse, shall be subject to the maximum height exceptions for roof appurtenances, as is outlined in Section 345-60G.1. of the Land Development Ordinance

Appendix 7

Sample PACE program

Boulder County, Colorado – Energy Smart program <http://climatesmartloanprogram.org>

Commercial and institutional properties including non-profits, apartment buildings, small manufacturing facilities and multifamily, low-income and/or elderly housing complexes are all eligible for the commercial ClimateSmart Loan Program. Commercial property owners choose a set of energy efficiency and renewable energy measures from eligible measures list and apply for a minimum \$3,000 and up to a maximum of \$210,000 loan to fund the improvement. Each property owner who receives financing through the program will be responsible for repaying the loan via a special assessment on the improved property.

Appendix 8

Sample Outreach Letter and Flier

Dear “Name of Municipality” Building Owner:

“Name of Municipality” has made an important commitment to lower town-wide energy usage to save money, reduce greenhouse gas emissions, make our town more economically competitive, and position our town as a leader in energy efficiency.

We are asking you to join us in saving energy and helping to meet our shared goals. By taking part in NJ’s Clean Energy Pay for Performance Program, you will be part of a community-wide effort to save energy. Plus, you’ll have the opportunity to save on your energy costs, earn financial incentives, spread the word about the importance of saving energy and be acknowledged as a leader through “Municipality” Energy Efficiency Recognition Program.

Building owners/developers will be a key to our success. Therefore, we have created an Energy Efficiency Recognition Program. Participants will earn benefits such as inclusion on the “Name of Municipality” website and exemplars will earn marketing and promotional materials and awards.

If applicable: “name of municipality” has participated in NJ’s Clean Energy Programs and the benefits of reduced energy use and cost are being passed on to our community.

Thank you. We urge you to take this step towards energy efficiency. And remember that the Pay for Performance program can help you save money and energy, improve your building, and make it more comfortable for tenants.

Sincerely,

Mayor of “Name of Municipality”

Don't Miss Out on Financial Incentives and other Benefits available to Building Owners through NJ's Clean Energy **Pay for Performance** Program and "Name of Municipality"

The **Pay for Performance** program is a comprehensive, whole-building approach to saving energy in existing facilities and earning incentives that are directly linked to the energy savings.

Incentive #1 – Submission of an energy reduction plan

Incentive #2 – Implementation of recommended measures

Incentive #3 – Completion of Post-Construction Benchmarking report

Low interest loans are now available through NJ Economic Development Authority to Pay for Performance participants with an approved energy reduction plan

Go to "Name of Municipality" website

or <http://www.njcleanenergy.com/commercial-industrial/programs/pay-performance> for further information, or call X at "Name of Municipality"

Go Green & Save Green, and Start Saving NOW!

Appendix 9

Sample Recognition Program

Energy Savers Program

The _____ *Energy Savers Program** is a component of _____ overall energy efficiency program, designed to energy efficiency in the private sector. Projects participating in *Energy Savers Program* for commercial or multi-family retrofitting/remodeling, shall be eligible for the following



encourage the _____ residential benefits:

1) Program participants:

- Information about available incentive programs
- Building site sign designating the project as a program participant
- Inclusion on the _____ website

2) Program participants that achieve a 15% (min.) reduction in energy use:

All of the benefits listed above +

- The development of materials to be included in program participant's marketing and promotional packages
- Press releases

3) Program participants that achieve a 20% (min.) reduction in energy use:

All of the benefits listed in 1) & 2) +

- West Windsor Energy Savers Award*
- Designation on the _____ website as an Energy Saver Awardee

* See the _____ *Energy Savers Program* for complete criteria and guidelines

** _____ *Energy Savers Award*. For the purpose of publicly recognizing outstanding commitment to energy efficiency, the program shall provide for an award called the "_____ Energy Savers Award" to be awarded annually by the borough of _____.

Appendix 10

Sample Energy Efficiency Training Opportunities

ASHRAE Education and Certification

<http://www.ashrae.org/education--certification/online-learning/standard-189-1-courses-and-seminars>

BOMA Energy Efficiency Program

<http://www.boma.org/TrainingAndEducation/BEEP/Pages/default.aspx>

Energy Efficient Buildings Hub – Education and Workforce

<http://www.eebhub.org/education-and-workforce>

Energy Star Training

http://www.energystar.gov/index.cfm?c=business.bus_internet_presentations

Energy Star Portfolio Manager Overview

http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_portfoliomanager

Energy Star Real Estate Workshop Series

http://www.energystar.gov/index.cfm?c=comm_real_estate.bus_comm_realestate_workshop

NJ's Clean Energy Program Green Job Training Center

<http://www.njcleanenergy.com/main/green-job-training/green-job-training>

NJ DCA Code Official Licensing and Continuing Education

http://www.state.nj.us/dca/divisions/codes/offices/licensing_cont_ed.html

Rutgers Advanced Technology Extension

<http://rate.rutgers.edu>

Rutgers Center for Green Building

<http://rcgb.rutgers.edu>

State of New Jersey DEP Sustainability Education Resources

http://www.nj.gov/dep/sage/sustain_educate.html

State of New Jersey State Employment and Training Commission

<http://www.njsetc.net/njsetc/commission/sesp/>

Sustainable Jersey Events and Trainings

<http://www.sustainablejersey.com/events.php>

The Center for Building Knowledge

<http://www.centerforbuildingknowledge.org/content/home-page>

Municipal Guidance for Promoting Energy Efficiency in the Private Sector

U.S. DOE Energy Efficiency & Renewable Energy - Energy Education and Workforce Development
http://www1.eere.energy.gov/education/educational_professional.html

USGBC NJ

<http://www.usgbcnj.org/education>

Many of the New Jersey County Colleges offer non-credit program in green jobs or sustainability. Go to your local county college continuing education website.