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Green + Healthy Property Management

A Guide for Multifamily Affordable Housing

Local Initiatives Support Corporation

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LISC

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Introduction

The Local Initiatives Support Corporation, known as LISC, is one of the largest organizations supporting projects to revitalize communities and bring greater economic opportunity to residents. These include more affordable housing, better schools, safer streets, growing businesses, and programs that improve the financial outlook of people. We provide the capital, strategy, and know-how to local partners to get this done. Our work impacts the lives of millions of Americans in both rural areas and urban centers across the country.

In 2009, LISC Boston created the Green Retrofit Initiative to help Boston community development corporations (CDCs) build their capacity to implement energy efficient and clean energy technology, transition to safer cleaning products and pest management techniques, and go smoke-free in their buildings. The program grew to cover the entire state and to all owners of affordable housing in 2012 through a partnership with our longtime building science expert, New Ecology, Inc. Since 2010, LISC Boston has worked with over 50 multifamily affordable housing owners statewide. With them, we have tracked energy performance of 17,000 units through benchmarking, undergone energy retrofits in 5,000+ units (consistently resulting in 20% energy savings), and leveraged over $17 million.

Between 2010 and 2012 Community Weatherization Partners, a joint venture between LISC New York City and Enterprise Community Partners, oversaw an ambitious and successful program that weatherized 2,226 apartments in 96 multifamily affordable housing buildings in New York City. LISC New York City made important enhancements to the program to ensure that the intended health, economic, and environmental benefits would be comprehensive. These enhancements were critical to the program's success, and included the following: documenting the financial benefits of weatherization to influence funding programs and policy; better coordination of work to enable minimal disruption to the tenants; active resident engagement; post-construction monitoring to make sure that the intended savings will be realized; and training property management staff on energy and water saving procedures. This comprehensive program resulted in reduced energy and water consumption and cost, improved indoor air quality, and better trained maintenance staff.

Through our work in both Massachusetts and New York, we have learned that there are many ways to improve the energy and water performance of a property, improve the health of residents, and decrease safety hazards. **We are publishing this guide to provide our community partners and other owners of affordable housing with a basis for an open discussion with their property managers about green and healthy goals, implementation of those goals, and ongoing oversight of the properties' energy and water performance. The guide will help organizations decide which tasks need to be implemented by the owner, and those that need to be executed by the management staff to achieve the best results.**

In creating this guide, we actively engaged several CDCs and their third-party property managers to comb through applicable green and healthy goals, the thresholds for action, and the responsibility of each party. In revisions to this guide, we build off of the shared experiences and lessons learned of a growing number of CDCs and property managers, and keep pace with product and technological advancements. In the same way, we hope others will use this document as an organizational policy adopted by executive leadership, and a working procedure manual for ensuring high-performing physical assets while improving the health and safety of residents.

Overview

LISC created this Guide to help affordable housing owners define and pursue measures to reduce the use of energy, water, and harmful chemicals in their properties; reduce waste generated onsite; create healthier living environments for residents; and reduce the carbon and environmental footprint associated with residential properties. Owners and property managers are encouraged to review the sample policies and practices and tailor them to meet their needs.

The Guide was developed to complement and enhance the U.S. Department of Housing and Urban Development's (HUD) Housing Quality Standards. Activities best undertaken by the property owner are distinguished from those most appropriately pursued by the property manager. Activities to monitor green and healthy practices are most effectively linked to existing tasks (e.g., monthly meetings, annual financial reviews, capital planning, etc.). The recommended green and healthy practices are, whenever possible, integrated with existing management practices. Appendix A summarizes a model schedule to implement these green and healthy policies.

The policies, particularly those related to energy reductions, were prepared for owners operating in a heating climate. Property owners in areas with greater cooling needs may want to modify the policies to address their local climate.

Finally, going green is a process! Owners are encouraged to update their green commitments to take advantage of new technologies, strategies, and opportunities.

How to Use This Guide

Property owners and managers can use this Guide to develop green and healthy property management practices that are appropriate for their organization and buildings. It is a five-step process.

1. Assess Current Practices – Owner and Property Manager
2. Develop Your Goals – Owner and Property Manager
3. Secure Organizational Commitment – Owner
4. Develop A Portfolio-wide Strategy – Owner and Property Manager
5. Pursue and Track Green and Healthy Practices – Owner and Property Manager

1. **Assess Current Practices:** It's best to start by comparing current practices to those recommended in this Guide. Both the property owner and manager should participate in this step because each has relevant information. Use the worksheet provided in Appendix C to help with this process. For example, ask:
   - Is your organization tracking energy and water use in each building?
   - Have you established energy and water targets?
   - Do you have an Integrated Pest Management Policy?
   - Do you have a preventative maintenance protocol?

   The assessment should help the team to discuss key issues:
   - If we are not achieving the practice recommended in this Guide, is it possible?
   - What would it take for us to improve our practices?
   - What is a reasonable goal for our organization and a given property?

2. **Develop Your Goals:** Decide the scope of the green and healthy practices your organization would like to address. Do you want to tackle the 15 listed in this Guide or begin with a subset? Using the information gathered in Step 1, tailor goals that will be effective for your organization. State each goal clearly and identify the responsibilities for both the owner and property manager. LISC has a template of this Guide in a word processing format to help property owners develop a tailored set of policies and procedures.

3. **Secure Organizational Commitment:** Green and healthy practices thrive when the portfolio has a "green champion," and the leadership of that organization has empowered the green champion to implement portfolio-wide and property-specific green policies. At this stage, it is important to secure the support of the organization's senior managers. For nonprofit housing owners, this will often be the Board and Executive Director. In for-profit companies, the senior managers' support is critical. In some cases, a third party property manager may help promote green and healthy practices in ways that build an internal champion.

4. **Develop A Portfolio-wide Strategy**: When looking at a portfolio of buildings, it can be difficult to know where to start. Even when you have good data on each building, there are other factors that may influence your prioritization of, and approach to, the next steps. Is there a similar problem that has been identified, such as high water use, across many buildings in the portfolio? Is it possible, and is there benefit to the economies of scale that might exist, to address them all at once? Is there a refinancing in two years that may cause you to wait? Where have you implemented upgrades, and did it achieve what you expected, and was the cost/benefit such that you want to prioritize it elsewhere? Is there one property that is an ideal place to start when implementing a new smoke-free policy, so the process can later be evaluated before rolling it out in other buildings? These considerations, and more, should help you develop a path forward toward achieving your goals.

5. **Pursue and Track New Practices:** It is critical to monitor progress in addition to implementing your new procedures. Often new practices require tweaking. Regular tracking, as outlined in this Guide, is an important element of any change in operational activities and will enable the owner and manager to provide information to the Board or senior managers, who will ask, "How is it going?" Both the written Green + Healthy Guide and monitoring data will help the property owner tell the "green story" of the portfolio.

1. Energy Assessment

GOAL

Measure and track energy use associated with buildings using a common metric, normalized by square footage, and adjusted for weather conditions to enable comparisons in energy use across the portfolio and across years. Various benchmarking tools exist for multifamily properties that allow for property and asset management, trouble-shooting, and proactive maintenance. Use energy tracking data to inform maintenance and management activities, capital needs planning, and targeted energy upgrades.

PROPERTY OWNER

1. **Compile Benchmarking Data:** Compile and enter baseline data into a benchmarking program that will allow comparisons among buildings and across years. Collecting the necessary information can be time-consuming initially, but using a program that will automatically upload utility use data from your utility provider greatly eases this burden going forward. We recommend that you benchmark the whole portfolio because it allows for a more thoughtful, strategic approach to your portfolio. Starting with the properties you believe are the worst performing and those that have master-metered utility accounts is also good advice if your budget is limited.

2. **Create a Threshold for Action:** Establish a threshold for action related to heating energy use. For example, all buildings using more than 7 BTU per square foot per Heating Degree Day (BTU/ft^2/HDD) will likely require action. Similar goals for domestic hot water and electricity use should be created as well.

3. **Review Baseline Data:** Meet with the Property Manager to review the baseline energy data for each building and resolve any data quality issues. Determine which metrics you want to monitor regularly.

4. **Review Data Monthly:** Establish a format and require tracking reports from the Property Manager that highlight worst performers, recent upgrade activity, or significant changes in consumption.

5. **Conduct Annual Review of Data:** Annually review energy use, effectiveness of efficiency efforts (including new construction, renovations, or energy upgrades), and to plan energy retrofits.

PROPERTY MANAGER

1. **Provide Monthly Update to Property Owner:** Identify buildings that exceed the established thresholds and/or show significant changes from the same period the previous year. Show before and after energy use data from properties with completed energy retrofits on an ongoing basis.

2. **Provide Annual Review to Property Owner:** Identify changes in energy use, track use after upgrades, and suggest actions to reduce high-energy use.

TRACKING

Monthly review energy data with the Property Owner and Manager. Integrate energy tracking with other performance metrics used by the owner. See Appendix B for sample agenda items to add to your monthly management meetings.

Annually review threshold for action.

RESOURCES

- Bright Power's EnergyScoreCards – Software to track and evaluate energy usage – http://www.brightpower.com/energyscorecards
- WegoWise – Software to track and evaluate energy usage – www.wegowise.com

2. Energy Reduction

GOAL

Reduce energy use in buildings to achieve the target energy benchmark in existing buildings of less than 7 BTU/ft^2/HDD for gas/oil heated buildings and 4 BTU/ft^2/HDD for electrically heated buildings and in new construction to 3 BTU/ft^2/HDD or less, any fuel.

PROPERTY OWNER

1. **Pursue Energy Efficiency Program Funding:** Apply to available energy retrofit programs for which your property is eligible. Prioritize buildings that exceed the energy consumption goals that you set. It is advantageous to be in a position to direct any Energy Efficiency (EE) program auditors toward your areas of greatest concern, based on data or other matters.

2. **Identify Energy Saving Opportunities:** Meet with the Property Manager to discuss the potential energy saving measures in buildings that exceed the target energy use. These are often informed by an energy efficiency program audit or a more in-depth audit by a professional auditing firm. Consider the opportunities listed below and others the Property Manager may identify.
    a. **Mechanical Equipment**: Identify buildings with old equipment (over 20 years) or inefficient equipment, if easily determined (e.g., < 80%). Examples of equipment that can be inefficient include: 1) steam, oil, or atmospheric gas boilers; 2) stand-alone atmospheric or instantaneous domestic hot water systems, particularly in buildings with greater than 50 units; 3) water re-circulating loops with constant circulation and un-insulated pipes; 4) missing or out of commission boiler controls.
    b. **Appliances**: Identify inefficient appliances (e.g., refrigerators, room air conditioners, clothes washers, etc. not labeled as ENERGY STAR). Develop an appliance inventory that also highlights these inefficient appliances. This inventory can inform

and provide you with a fast track for getting utility rebates from energy efficiency programs.

c. **Common Area Lighting**: Identify incandescent bulbs for replacement with LEDs. Identify T-12 lights with magnetic ballasts (replace with LEDs and electronic ballasts). Identify exterior lights without photo sensors; consider replacing halogen or metal halide fixtures with LED fixtures. Identify opportunities for motion or occupancy sensors indoors. Replace incandescent Exit signs with LED models.
d. **Insulation Opportunities**: Identify opportunities to add insulation in attics and below roof crawl spaces (< 8-10 inches), wall cavities, foundations, hot water pipes, and other locations. Air sealing should be completed prior to insulating.
e. **Air Sealing**: Identify opportunities in attics or below roof crawl spaces, unconditioned basement spaces with penetrations to conditioned spaces, penetrations through exterior walls in conditioned spaces, and penetrations between units.

3. **Integrate with Capital Planning:** During annual capital planning process, identify potential energy saving measures in priority properties review available energy efficiency program rebates and incentives, and integrate energy saving measures in capital planning. Engage a professional energy auditor in conjunction with periodic Capital Needs Assessments (about every 5 years).

4. **Specify Energy Conserving Equipment:** Specify ENERGY STAR appliances for all replacements provided by the Property Owner to common areas or apartments (e.g., refrigerators, bath fans, boilers, air conditioners, clothes washers (see Green Laundry), windows, doors, and skylights). Not all ENERGY STAR labeled equipment has the same performance, so further investigation is warranted before selections are made.

5. **Maintenance and Unit Turnover:** Require management to remove window air conditioning (AC) units or, if not possible, provide insulating sleeves for window and thru-wall units during heating season (Nov - Apr). Incorporate energy savings assessment and upgrades into unit turnover and annual inspection protocols (see Unit Turnover and Inspection Priorities).

6. **Track Energy Performance Post-Construction:** In recently constructed or renovated properties, require commissioning of all major systems, review energy use data after full occupancy to assure the building is performing as intended, and undertake actions to address poor performance (e.g., mechanical system and control adjustments). Many of the energy tracking software's allow owners to clearly track performance post renovation to confirm energy use is in line with predictions. Monitoring systems for major systems will track performance in a more real-time and granular manner, often required for trouble-shooting any problems.

7. **Train Staff:** Superintendents and management staff are generally the first responders on all aspects of a building's operations and maintenance. They interact with residents, supervise building staff, and communicate with building owners and outside contractors. Building superintendents are in a key position to perform low-cost and no-cost strategies that ensure energy and water conservation and to ensure savings are maintained over time.

PROPERTY MANAGER

1. **Baseline**: Provide baseline inventory of potential energy saving measures noted in #2 above.

2. **Annually**: Provide summary of energy benchmarking data to identify buildings above the targets that were set and potential energy saving measures. This may require a skilled auditor.

3. **Specify ENERGY STAR Appliances:** Specify ENERGY STAR for all replacements (e.g., refrigerator, bath fan, boiler, air conditioner [central and room], clothes washer, windows, doors, skylights).

4. **Maintenance:** Actively market your services to tenants for the removal of their window AC units during the heating season (Nov - Apr), to the extent feasible. Provide and install AC window sleeve and thru-wall covers during heating season.

TRACKING

Annually review energy use and opportunities for reduction.

RESOURCES

- LISC's Green Retrofit Initiative – http://www.lisc.org/boston/our-work/green-retrofit-initiative/
- Massachusetts LEAN (Low-Income Affordability Network) Multifamily Program – www.leanmultifamily.org
- Consortium for Energy Efficiency, Residential Sector – Information on energy efficient equipment – www.cee1.org
- Database of State Incentives for Renewables & Efficiency® – Listing of state resources – http://www.dsireusa.org/
- DIY Guide The White Roof Project – http://whiteroofproject.org/diy/
- Enterprise Community Partners Multifamily Retrofit Toolkit – https://www.enterprisecommunity.org/resources/enterprise-community-partners-multifamily-retrofit-toolkit-14203
- Enterprise Green Communities: Operations and Maintenance Checklists – https://www.enterprisecommunity.org/resources/enterprise-green-communities-operations-and-maintenance-checklists-14219
- New York State Energy Research and Development Authority (NYSERDA) – https://www.nyserda.ny.gov/
- NYC Retrofit Accelerator – https://retrofitaccelerator.cityofnewyork.us/
- Stewards of Affordable Housing for the Future (SAHF) Multifamily Energy and Water Toolkit – http://www.sahfnet.org/resources/downloads/multifamily-energy-and-water-toolkit
- Stewards of Affordable Housing for the Future (SAHF) Operations & Maintenance Toolkit – http://www.sahfnet.org/our-work/energy-and-water-conservation/operations-maintenance
- U.S. EPA ENERGY STAR – EPA tested energy efficient products – https://www.energystar.gov/

3. Water Assessment

GOAL

Evaluate all properties for water use and normalize data by bedroom. Identify properties where water use exceeds the initial target benchmark of greater than 55 gallons per bedroom per day (other benchmarks may apply in single room occupancy units or other types of apartments or populations). Ultimately, a somewhat aggressive but achievable goal for those paying attention to leaks is 40-45 gallons/bedroom/day.

PROPERTY OWNER

1. **Develop baseline water use** in gallons/bedroom/day. If you are using an energy benchmarking program it may also benchmark water use.

2. **Identify properties where indoor water use exceeds the target benchmark** of greater than 55 gallons/bedroom/day.

PROPERTY MANAGER

1. **Under direction from the Property Owner, input water use data into a benchmarking program** on a quarterly basis, at a minimum. Benchmarking services (listed in Resources below) often track water along with energy. If your water authority does not provide a way for data to be automatically imported to your benchmarking platform, you will need to contact them for an historic use accounting. This should be requested in electronic format (e.g. csv or Excel files, which they may not be able to provide), for each account, and include read date, volume consumed (and units), and cost. If both water and sewer costs are available, it is important that they are distinct from one another. Going forward, someone within the organization can be made responsible for entering that data manually into the benchmarking platform each time a bill is received.

2. **Under direction from the Property Owner, conduct a water assessment** to document water use specifications for fixtures in buildings and to identify leaks. Calibrated bags can be purchased to easily measure the flow rate of kitchen and bath faucets and showerheads. Leaks should be noted, including across the shower diverter valve (excessive water exiting the tub spout while the shower is on). Dye tablets easily identify toilet flapper leaks. Irrigations systems should be checked for leaks at the beginning of each season.

3. **Quarterly and Annually:** Provide updates to the Property Owner on water use in buildings.

Note: Water conservation and efficiency opportunities can often be identified as part of an energy audit. Talk to your auditor to be sure they provide a comprehensive set of opportunities.

TRACKING

Monthly or quarterly review of water use, depending on billing cycle.

Annually identify significant changes in water consumption, target buildings for water conservation efforts in the coming year, and evaluate the effectiveness of completed water conservation measures in terms of water consumption.

RESOURCES

- Bright Power's EnergyScoreCards – Software to track and evaluate energy usage – http://www.brightpower.com/energyscorecards
- U.S. EPA WaterSense – Water conserving equipment and information – www.epa.gov/watersense
- WegoWise – Software to track and evaluate energy usage – www.wegowise.com

4. Water Conservation

GOAL

Reduce water use in properties to below the target benchmark of 55 gallons per bedroom per day.

PROPERTY OWNER

1. **Water Conserving Equipment:** Specify water conserving appliances and fixtures during upgrades and unit turnover (see Green Product Specifications). Our recommendations exceed the EPA WaterSense standards, and are recommended based on the positive experience of other owners. *(Please note that green building certification standards may impose different minimums.)*
    a. **Toilets**: EPA WaterSense (1.28 gallons per flush (gpf)) and also a minimum of 800 grams of solid waste removal (WaterSense sets a minimum of 350 grams). Added information on solid waste removal is available at Maximum Performance Toilet Testing (MaP) www.map-testing.com – a searchable database.
    b. **Kitchen Faucets**: 1.5 gallons of water per minute (gpm) (Enterprise Green Communities 2015 Criteria)
    c. **Bathroom Faucets**: 1.0 gpm, to account for varying water pressure and rates needed for instantaneous water heaters (EPA WaterSense sets a maximum of 1.5 gpm).
    d. **Showerheads**: 1.5 gpm depending on water pressure (EPA WaterSense sets a maximum of 2 gpm).

2. **Target Water Conservation Projects:** In buildings that exceed water targets, request proposals from the Property Manager and a third-party contractor to conduct water saving measures with the anticipated payback. Pursue cost-effective strategies.

3. **Offer Resident Training:** Provide resident training in conjunction with the Property Manager at lease up and regular intervals, consistent with resident engagement plan.

4. **Water Conserving Landscapes:** Ensure new plantings are drought tolerant and will not need irrigation systems.

5. **Sewer Abatement Meters**: Determine if the property may quality for a sewer abatement meter, working in conjunction with the Property Manager. Sewer abatement programs are offered in some localities, and must be examined on a case-to-case basis. If sewer abatement programs are offered, the owner is eligible to receive credit for water that enters a building or site, but does not enter the sewer system (e.g., irrigation systems, water-cooled air conditioning systems, or large-scale laundries). Depending on the amount of water being used for these purposes, abatement credits can significantly decrease sewer charges.

PROPERTY MANAGER

1. **Appliances and Fixtures:** Install water conserving fixtures and appliances (see specifications aforementioned and in Green Products).

2. **Laundry:** Require laundry contractor to meet Green Laundry specifications.

3. **Unit Turnover:** Test and install water-conserving fixtures during unit turnover (see Unit Turnover and Inspection). Test and replace leaking toilet flappers. Look for missing aerators on kitchen sinks, often a sign of a portable washing machine or dishwasher.

4. **Toilet Maintenance:** Replace toilet flappers on a five to seven year schedule.

5. **Water Conserving Strategies:** Provide cost proposals, as requested by the Property Owner, to undertake water conservation upgrades. Implement those approved.

6. **Resident Education:** Provide information to tenants on how to identify toilet and fixture leaks and the importance of reporting them.

7. **Sewer Abatement Meter:** Identify buildings where it may be appropriate to obtain a sewer abatement meter (properties with substantial water needs, but no accompanying sewer use, such as irrigation, water-cooling air conditioning system, or large-scale laundry rooms). Contact the local water and sewer authority to ask for information on abatement meters. If abatement meters are allowed, ask the authority how to obtain a permit and if there are specific installation requirements. Working in conjunction with the owner, determine if it is cost-effective to install the abatement meter. If yes, proceed to installation.

TRACKING

Annually establish priorities for water conservation efforts and update policy.

RESOURCES

- Enterprise Green Communities: Operations and Maintenance Checklists – https://www.enterprisecommunity.org/resources/enterprise-green-communities-operations-and-maintenance-checklists-14219
- Maximum Performance Toilet Testing – www.map-testing.com
- Stewards of Affordable Housing for the Future (SAHF) Operations & Maintenance Toolkit – http://www.sahfnet.org/our-work/energy-and-water-conservation/operations-maintenance
- U.S. EPA WaterSense – Water conserving equipment and information – www.epa.gov/watersense

5. Green Laundry

GOAL

Reduce the use of water and energy by laundry equipment, while maintaining high functioning cleaning and drying equipment.

PROPERTY OWNER

1. Require ENERGY STAR clothes washers and clothes dryers with moisture sensors in central laundry facilities.

PROPERTY MANAGER

1. **Central Laundry Contracts:** Require contractors and vendors of central laundry equipment to provide ENERGY STAR washers and clothes dryers with automatic shut off controls linked to moisture sensors. Using ENERGY STAR's qualification system, select the most efficient machines taking into account cost-effectiveness. For washers, maximize the Modified Energy Factor (minimum 2.76) and minimize the Water Factor (maximum 3.2).[1] Provide signage for residents regarding high efficiency machines and appropriate detergent use (e.g., most high efficiency machines require much less detergent). Dryers with humidity sensors will shut off when clothes are dry, regardless of the time setting selected. Require annual cleaning of dryer vents and annual inspection of connections and machine operations. The exhaust ductwork should be as short and straight as possible with no gaps, cracks, or crushed ductwork.

2. **Lease Addendum for Residents Supplying Personal Machines:** If residents are permitted to install washer and/or dryers, install hard ducted exhaust so residents only have to make one final connection. Inspect the unit

[1] Modified Energy Factor (MEF) is an equation that takes into account the amount of dryer energy used to remove the remaining moisture content in washed items. The higher the number, the more efficient the clothes washer is. Water Factor (WF) is the water performance metric for clothes washers. The lower the value, the more water efficient the clothes washer is. (https://www.energystar.gov/products/appliances/clothes_washers/key_product_criteria)

annually to ensure the water is drained properly, connections are secure, and dryers are vented appropriately. Dryer vents should be cleaned annually.

TRACKING

Annually review Green Laundry progress.

RESOURCES

- Consortium for Energy Efficiency, Residential Sector – Information on energy efficient equipment – www.cee1.org
- U.S. EPA EnergyStar – Energy efficient appliances and equipment – www.energystar.gov

6. Pest Control

GOAL

Minimize pest problems using Integrated Pest Management (IPM) strategies, which cost-effectively prevent and address pest problems while minimizing the harm to people, property, and the environment. IPM methods rely on a range of strategies beyond the application of pesticides to prevent and control pest issues.

PROPERTY OWNER

IPM Contracts: Ensure contracts with pest professionals require use of IPM certified or trained professionals (e.g., GreenPro or Greenshield certified) and IPM practices, summarized in the recommendations below. A more detailed description is provided in Appendix D.

IPM Policy: Consider adopting an IPM policy (see Appendix D for a sample policy).

IPM Practices: Direct the property manager or pest vendor to comply with the below practices.

1. **IPM Training and Certification**: Require all pest professionals to show proof of IPM training/certification from a state agency or third party – GreenPro or Greenshield certified or demonstrate equivalent IPM training.

2. **IPM Policy:** Contractor shall include a written IPM policy.

3. **Avoid Harmful Practices:** Pesticide sprays (unless it is an insect growth regulator or needed to address bedbug infestations), foggers or bombs, and organophosphate or chlorinated hydrocarbons pesticides should not be permitted.

4. **Inspections:** Conduct initial and periodic inspections of exterior and interior spaces to identify pest entry points, evidence of pests, problem areas; recommend structural, sealing pest entry points, sanitary, or procedural modifications to reduce pest issues

5. **Monitoring:** Track pest levels post repairs or treatment, reporting results to the Property Owner and Manager.

6. **Pesticide Use:** Pesticide application shall be considered after all other methods have been attempted to respond to observed pest problems. Use spot treatments rather than area-wide applications. Select lowest-toxicity pesticide and treat only in response to presence of pests. Provide written notice of the intention to apply any pesticide and post a warning in areas that will receive treatment at least 48 hours prior to application.

7. **Insect Control:** Apply insecticides as "crack and crevice" treatments (i.e., formulated insecticide is not visible to a bystander during or after the application process). For cockroaches, the preferred treatments are vacuuming roach dropping and debris, baits, gels, growth regulators, and boric acid.

8. **Rodent Control:** As a general rule, rodent control inside buildings shall be accomplished with trapping devices only.
    a. **Block Rodent Entry**: Use durable materials to seal holes and cracks where rodents can enter.
    b. **Trapping Devices**: Keep devices out of public view or locked inside trapping stations to avoid being disturbed by routine cleaning. Devices shall be checked on a schedule and the contractor shall be responsible for disposing of all trapped rodents.
    c. **Bait Boxes**: All bait boxes shall be placed out of general view, in locations where they will not be disturbed by routine operations. Securely lock or fasten lids.
    d. **Rodenticides**: In exceptional circumstances, when rodenticides are deemed essential, the contractor shall obtain approval from the Site/Building Manager. All rodenticides, regardless of packaging, shall be placed either in locations not accessible to children, pets, wildlife, and domestic animals, or in EPA-approved tamper-resistant bait boxes.

9. **Bed Bugs**
    a. Confirm bed bugs visually. Inspections target mattresses, sheets, box springs, bed frames and headboards, and other furniture or bed bug harborage areas. Provide residents with clear pre-treatment instructions. Work with maintenance staff and management to address clutter or housekeeping.
    b. Consider use of moat style traps to monitor activity around beds (used on bed legs) or other furniture throughout the

unit. Failure to trap a bedbug is not proof that there isn't an infestation. Treatments to reduce heavy infestations should include instructions to vacuum with HEPA filter only in conjunction with steam, heat, and/or targeted chemicals. Heat treatments shall document that the temperature reached a sufficient level (122 degrees F) – often a second treatment can be needed.

c. Monitor units abutting focus unit using visual inspection, canines, and/or monitoring traps, as appropriate. Re-inspect treated focus units to confirm if added treatment is needed.

10. **Unit Turnover:** Provide unit turnover services and recommended responses for maintenance staff to prevent and address pest issues including sealing cracks, crevices, and other exclusion strategies.

11. **Resident Education:** Provide on-site resident education in conjunction with the Property Owner and Manager. Ensure that all building occupants know how to report pest sightings. Provide residents with guidance on how to dispose of all household garbage and recycling.

PROPERTY MANAGER

1. **Preventative Measures: To help prevent pest issues, maintenance staff shall:**
    a. Provide housekeeping in common areas, hallways, stairwells, laundry rooms, trash chutes, garbage areas, and maintenance/utility areas.
    b. Pest proof by sealing cracks, holes and crevices, doors, windows, and other entry points (such as pipes) to prevent potential pest entry.
    c. Provide trash removal. Provide sufficient cans or dumpsters to contain waste before pick-up. Regularly clean compacter to prevent buildup of debris.
    d. Integrate pest exclusion (e.g., sealing holes, cracks, and crevices) with energy efficiency, air sealing activities, and other repair work.
    e. Keep any landscaped areas well-trimmed and maintained to reduce harborage.

2. **Approve Contractor IPM Plan:** The Property Manager shall review and approve the written IPM Plan submitted by the pest control contractor and work with residents to undertake appropriate actions.

a. **Resident Complaints:** Maintenance staff shall respond promptly to pest complaints.
b. **Written Notice:** Property Managers shall provide written notice to residents at least 48 hours prior to pesticide application.
c. **Resident Education:** In conjunction with IPM contractor, Property Managers shall conduct education and outreach for periodic resident education sessions, during lease up, and during pest infestations.

TRACKING

Quarterly review pest issues and responses.

Annually review Pest Control progress.

RESOURCES

- Boston Public Health Commission, "IPM: A Guide for Managers and Owners of Affordable Housing" – www.bphc.org
- GreenPro Certification – https://www.npmaqualitypro.org/greenpro/
- Green Shield Certified – www.greenshieldcertified.org
- National Center for Healthy Housing, "Integrated Pest Management in Multifamily Housing" – Training for managers and contractors – http://healthyhousingsolutions.com/training-course/integrated-pest-management-in-multifamily-housing/
- New York City Integrated Pest Management Toolkit – https://www1.nyc.gov/site/doh/health/health-topics/pests-and-pesticides-building-owners.page
  National Pest Management Association, "Best Management Practices for Bed Bugs" – http://www.pestworld.org/media/562243/npma-bed-bug-bmps-approved-20160728-1.pdf
- The Northeastern IPM Center, "Integrated Pest Management Guide for Affordable Housing" – www.stoppests.org

7. Green Cleaning

GOAL

Maintain properties using cost-effective green cleaning products that minimize the use of harmful or toxic chemicals. Ensure property management staff and vendors use green cleaning products.

PROPERTY OWNER

1. Require staff, Property Manager, vendors and contractors to use green cleaning products that meet third-party certification unless such products are not available or cost-effective. Acceptable green certifications include: Green Seal, U.S. EPA Safer Choice, and EcoLogo.

PROPERTY MANAGER

1. Require all vendors (cleaning, other rehab contractors) to use green certified cleaning products unless the product is not available. If vendors cannot identify an available cost-effective cleaning product that is Green Seal, EPA Safer Choice or EcoLogo Certified.

2. Encourage the use of: dilution control systems (to reduce packaging waste and supplies), Microfiber wipes and mops, HEPA filtration vacuums, Green Seal certified or Forest Stewardship Council (FSC) certified paper products.

TRACKING

Annually review Green Cleaning progress.

RESOURCES

- EcoLogo – www.ecologo.org/en/
- GreenSeal – www.greenseal.org

- LISC Green Cleaning Tool Kit – http://www.lisc.org/media/filer_public/64/eb/64eb2c70-b2aa-4072-9c96-30b82282aaca/two_shades_of_green_-_green_cleaning_toolkit.pdf
- New York State Green Cleaning Program – https://greencleaning.ny.gov/entry.asp
- Toxics Use Reduction Institute Green Cleaning Laboratory – www.turi.org/Our_Work/Cleaning_Laboratory
- U.S. EPA Safer Choice – www.epa.gov/saferchoice

8. Waste Reduction and Recycling

GOAL

Reduce waste disposal and encourage recycling and composting to the maximum extent feasible.

PROPERTY OWNER

1. Provide resident training, in conjunction with the Property Manager, to encourage recycling and composting.
2. Incorporate recycling- and composting- friendly design into rehab specifications and relevant work order requests.
3. Require the Property Manager to request bids from flooring vendors to recycle removed carpet.
4. Work with the Property Manager to undertake at least one recycling pilot initiative to provide options for residents to recycle electronics not currently recyclable at the curbside.
5. Work with the Property Manager to provide resident training on green practices, including recycling and composting, at lease up and on an ongoing basis.

PROPERTY MANAGER

1. Require flooring contractors to provide bids to recycle removed carpet, identifying their recycling solution, during flooring replacement.
2. Provide each housing unit with a recycling bin and instructions for cleaning the bin. Make recycling convenient, and post clear, simple instructions using simple graphics applicable to any population.
3. Prepare a recycling pilot innovation plan to explore recycling electronics, or other hard to recycle items, at community collection days, if available.

In conjunction with the Property Owner, determine if recycling pilot will be conducted.

TRACKING

Annually review and evaluate new recycling and composting initiatives to assess success, costs, and implementation issues.

RESOURCES

- U.S. Environmental Protection Agency – http://www2.epa.gov/recycle

9. Unit Turnover and Inspection

GOAL

Incorporate actions to identify and address opportunities to save energy and water, reduce waste disposal, reduce the use of pesticides and chemicals, and create healthier living environments into unit turnover practices and annual inspection protocols.

PROPERTY OWNER

1. Require the Property Manager to review performance and incorporate energy and water saving features into unit turnover protocols, annual inspections, and other comprehensive property maintenance inspections.

Mechanical Systems/Electrical

- Set thermostat to 50 degrees in unoccupied apartments.
- Replace analog thermostats with limiting and/or programmable thermostats.
- Turn off air conditioner units unless needed to avoid excessive heat.
- Between November and April remove the air conditioner or install a cover sleeve; check caulking.
- HEPA vacuum and wipe baseboard radiators and ventilation fans.
- Ensure light fixtures are ENERGY STAR, if not replace with ENERGY STAR.
- Replace incandescent bulbs with LED fixtures/bulbs.
- Check operation of carbon monoxide and smoke alarms, repair as needed in accordance with state or local laws.

Appliances

- Install ENERGY STAR appliances where replacements are made.
- Direct vent kitchen range to exterior where possible.
- Hoods venting to the exterior should be dampered. Ensure ducting is rigid and properly sealed at joints.

Plumbing/Bath/Kitchen

- Replace toilets that flush at higher rates than code, typically 1.6 gallons per flush, with EPA WaterSense toilets (1.28 gpf) that also have a minimum 800 grams of solid waste removal – see www.map-testing.com for results. Consider flapperless designs.

- Test toilet flapper and replace if leaking.
- Check showerhead for flow of 1.5 gpm maximum (EPA WaterSense sets a maximum of 2 gpm). Install new low-flow showerhead as needed.
- Check shower diverter valve for leaks and repair or replace as needed.
- Check bath fan operations; install ENERGY STAR fan on timer or humidistat where possible.
- Check faucet aerators and install as needed: kitchen at 1.5 gpm, bath at 1.0 gpm.
- Check under kitchen and bathroom sinks for water leaks; repair as needed.

Air Sealing/Weatherization

- Air seal perimeter, where accessible or as part of flooring replacement scope, with caulk where the wall meets the floor.
- Air seal any plumbing and electrical penetrations into walls and floors. These are typically found near baseboard and fan coils and under kitchen and bathroom sinks. Large openings, greater than ¼", should be filled or covered prior to air sealing work.
- Caulk windows and storms; rebalance and ensure smooth operation.
- Check and repair weather stripping and door sweeps on entry doors.

Flooring/Painting/Cleaning/Pests/Trash (See Green Products)

- HEPA vacuum carpet.
- Use green certified replacement flooring. (FloorScore resilient flooring; Green Label Plus carpet)
- Recycle removed carpet.
- Use low- or no-VOC paints (meet South Coast Air Quality Management District (SCAQMD) Rule 1113 (e.g., Master Painters Institute- MPI- GS-2, Extreme Green; Green Wise Gold; GreenSeal (GS) 11 v 3.2))
- Use green certified cleaning products (e.g., Green Seal; EPA Safer Choice, Eco-Logo)
- Inspect for pests; report problems to IPM contractor; seal holes for pest entry.
- Ensure recycling bins are present.

PROPERTY MANAGER

1. Integrate green unit turnover and inspection items into existing checklists and protocols.

2. Provide green unit turnover protocol to the Property Owner to review.

3. Train maintenance staff on new procedures.

4. Train new residents on recycling procedures, use of thermostats and baseboard controls, cleaning of any special floor materials, etc.

TRACKING

Annually review Unit Turnover and Inspection compliance.

RESOURCES

- EcoLogo – www.ecologo.org/en/
- FloorScore – Resilient Flooring Association certified products – http://www.rfci.com
- Green Label and Green Label Plus Certified by The Carpet and Rug Institute (CRI) – http://www.carpet-rug.org/green-label-plus.html
- GreenSeal – www.greenseal.org
- Green Wise Gold – http://greenwisepaint.com/green-wise-gold
- Master Painters Institute – http://www.paintinfo.com/index.asp
- Maximum Toilet Performance Testing – www.map-testing.com
- New York State Green Cleaning Program – https://greencleaning.ny.gov/entry.asp
- U.S. EPA ENERGY STAR – EPA tested energy efficient products – https://www.energystar.gov/
- U.S. EPA Safer Choice – www.epa.gov/saferchoice
- U.S. EPA WaterSense – Water conserving equipment and information – www.epa.gov/watersense

10. Green Product Specifications

GOAL

Specify and install green products when available and cost-effective during work order requests, renovation, unit turnover, and property maintenance.

PROPERTY OWNER

1. **Identify green certifications and products for use by:** property management staff, contractors, and owner staff undertaking repairs, renovations, or maintenance. A list of such certifications and products is provided below.

PROPERTY MANAGER

1. **Require staff and contractors to specify the green products identified by the Property Owner.** Modify vendor contracts as needed to ensure compliance with your green goals.

Product	Green Specification
Bathroom	
Toilet	0.8-1.28 gpf with at least 800 grams of solid waste removal (EPA WaterSense specifies 1.28 gpf and minimum 350 grams of solid waste removal).
Showerhead	1.5 gpm (EPA WaterSense specifies 2 gpm).
Faucet Aerators	Bath: 1.0 gpm (WaterSense allows 1.5 gpm).
Bath Fan	EPA ENERGY STAR with timer, motion-sensor or humidistat.

Kitchen

Faucet Aerators	Kitchen: 1.5 gpm at 60 psi.
Kitchen Fan	EPA ENERGY STAR. Fan should vent to the outdoors.

Appliances and Lighting

Refrigerators	EPA ENERGY STAR.
Air Conditioner	EPA ENERGY STAR.
Dishwasher	EPA ENERGY STAR.
Lighting	EPA ENERGY STAR; LED throughout with daylight sensors in common spaces and photo sensors for exterior lighting; LED exit signs.

Cleaning Supplies

Cleaners	GreenSeal, EPA Safer Choice, or EcoLogo Certified.

Flooring and Cabinets

Carpet and Entry Mats	Green Label or Green Label Plus Certified by Carpet and Rug Institute. Recycle removed carpet: Vendor to supply price quote to recycle removed carpet and components (100%, 50%, 30% recycled).
Resilient Floor	FloorScore Certified by Resilient Flooring Association.
Floor Adhesives	Use mechanical or stick and peel products. Other products should meet SCAQMD Rule 1168 VOC content limits.
Cabinets	Urea formaldehyde-free cabinets, compliant with TSCA Title VI or California 93120 Phase 2 requirements.

Paint

Interior Paint	Products meet South Coast Air Quality Management District (SCAQMD) Rule 1113 (e.g., Master Painters Institute- MPI- GS-2, Extreme Green; Green Wise Gold; GreenSeal (GS) 11 v 3.2).

TRACKING

Annually review Green Product Specifications compliance.

RESOURCES

- EcoLogo – Green products certified by Canadian Government – www.ecologo.org/en/
- FloorScore – Resilient Flooring Association certified products – http://www.rfci.com
- Green Label and Green Label Plus Certified by The Carpet and Rug Institute (CRI) – http://www.carpet-rug.org/green-label-plus.html
- GreenSeal – Green certified products – www.greenseal.org
- Green Wise Gold – http://greenwisepaint.com/green-wise-gold
- Master Painters Institute – http://www.paintinfo.com/index.asp
- Maximum Toilet Performance Testing – Independent testing on toilet effectiveness and water conservation – www.map-testing.com
- U.S. EPA ENERGY STAR – EPA tested energy efficient products – https://www.energystar.gov/
- U.S. EPA Safer Choice – www.epa.gov/saferchoice
- U.S. EPA WaterSense – EPA tested water conserving products – www.epa.gov/watersense

11. Green Landscaping

GOAL

Develop high performance landscapes that reduce the use of water, eliminate the use of synthetic chemicals, create habitat, and encourage community engagement.

PROPERTY OWNER

1. **Pest and Insect Control:** Develop an Integrated Pest Management (IPM) policy for landscaping and direct the Property Manager and contractors to follow IPM practices.

2. **Landscaping**: Design and maintain outdoor spaces to encourage natural processes that reduce maintenance, water use, fertilizer use, and air pollution.
    a. **New Plantings**: Provide sufficient soil and appropriate selection to minimize use of fertilizer, water, and maintenance.
    b. **Native and Adaptive Perennial Plantings**: Use native, adaptive (hardy non-natives), and non-invasive woody and perennial plantings that are drought resistant and low maintenance. Annual plantings, if desired, should be limited to containers or small planters to reduce the need for watering and fertilizing large areas.
    c. **Lawns**: New lawn areas should use tall fescue sod and seed mixes (over Kentucky Bluegrass mixes) that require less fertilizer and maintenance. Replace existing lawn with high performance woody and herbaceous plant groups in lieu of high maintenance turf areas, when possible. Well-designed plant groups perform multiple functions – they provide shade and reduce heat island effect, allow stormwater infiltration, reduce mowing, provide multi-seasonal structure and color, and improve habitat for pollinators.
    d. **Lawn Care**: Discourage the Property Manager from hiring companies that favor “Mow and Blow.” The use of gas-powered equipment may appear to save labor costs, but it can be over applied resulting in extra hours of labor time if not applied strategically, create a noise nuisance, provide unhealthy air

quality for residents, and will increase in cost as energy prices rise.

e. **Mulch**: Use mulch and compost mixes to reduce fertilizer, herbicides and water use.
f. **Irrigation and Watering**: Minimize the use of irrigation and watering through appropriate plant selection.
g. **Fertilizer**: Minimize or eliminate the use of fertilizer where possible.

3. **Food Production:** Consider developing spaces for community gardens to encourage residents to spend time outdoors and care for outdoor areas around their buildings. Due to potential soil contamination from past historic uses, raised beds should be used for all gardens. Raised beds are also easier to maintain, and look neater and more organized.

PROPERTY MANAGER

1. **Pest and Insect Control**: Follow IPM practices. Contract with IPM trained or certified professionals when addressing pest or insect issues.

2. **New Planting:** Provide a mix of loam and compost six inches deep for all new plant projects. Healthy soils encourage microbiota that will support healthy plant growth reducing the need for labor, energy, fertilizers, and water.

3. **Native and Adaptive Perennial Plantings:** Use non-invasive, low-maintenance, and drought-resistant native or adaptive (hardy non-native) plants. A list of locally appropriate plantings can be found at the EPA WaterSense website by state (see Resources listed below). Consider engaging the expertise of a plant designer that has experience in low maintenance landscapes to guide the choice and combination of plants.

4. **Grass and Turf:** When possible take the below actions.
    a. **Reduce Grass Areas**: Substitute large plant groupings that include a combination of trees, shrubs and perennial plants designed for reduced maintenance.
    b. **Substitute or Integrate Low Maintenance Grass Mixes**: Use grass mixes that are designed to require less water, less fertilizer, remain green during the summer drought periods and grow less quickly. The sample seed mix below is designed for higher traffic area, is disease and insect resistant, requires less water, and provides good color and texture:
        i. 25% Masterpiece Tall Fescue

ii. 25% Rembrandt Tall Fescue
iii. 20% Kittyhawk SST Tall Fescue
iv. 20% Exacta Perennial Ryegrass
v. 10% Bordeaux Kentucky Bluegrass

Fescue and perennial ryegrass mixtures are better alternatives to mixtures favoring traditional Kentucky Bluegrass.

c. **Compost Lawn Areas**: In areas where grass clippings are removed, all turf mixes (including high maintenance turf) should receive a light top-dress of organic matter like compost (compost tea is an alternative) and be aerated at least once per year. Reseed all areas in early fall or late spring. These practices will help reduce weeds and the need for herbicides, which create poor soil conditions in which weeds thrive.
d. **Mowing**: Set mower blade at three inches all year. Longer grass shades out weeds, promotes deeper root growth and a more drought resistant lawn. Consider leaving clippings on the ground in less visible areas. Mulching places grass clippings back on the lawn, which helps to add nitrogen and organic matter to the soil and enhance grass health.
e. **Lawn Care**: Do not allow on-site managers to hire companies that favor "Mow and Blow" as discussed under the Property Owner section.

5. **Watering and Irrigation:** Water the grass and plantings only as needed. Create zones of low maintenance plants with similar requirements and reduce watering and irrigation accordingly. Well-designed groupings of drought tolerant plants that are tailored to a site's soil conditions will eliminate the need for watering after the first two years of planting if mulched regularly. If irrigation systems are used, recommend use of drip irrigation or other methods to effectively soak plantings. Even for higher maintenance plants it is not necessary to adhere to a strict water schedule (e.g., one inch per week), which can waste water. Watering demands are based on weather and soil conditions. Verify that any irrigation controls take into account recent rain and the soil conditions, and that they are properly functioning. Consider the use of in-ground moisture sensors linked to irrigation system and drip irrigation or equivalent systems to save money on water use in wet periods. All irrigation water use should be separately metered from domestic use in the building to avoid sewer charges.

6. **Mulch**: Consider mulching with compost/bark mixes over straight wood bark mixes. Compost provides organic matter and micronutrients that build soils and improve plant performance. Compost can also eliminate the need for fertilizers and herbicides after plants are established.

Repeated applications of bark mulch in poor soil areas can reduce plant performance.

7. **Fertilizer**: Fertilizer encourages thirsty new growth, causing the landscape to require additional water. If fertilizer is needed, look for a product that contains "natural organic" or "slow-release" ingredients. These fertilizers feed plants slowly and evenly, helping to create healthier plants with strong root systems and no excessive "top growth". Moreover, using "slow-release" fertilizers can reduce nutrient run-off into ground and surface waters, protecting natural resources. The first three numbers (nitrogen, phosphorous, and potassium) listed on fertilizer should be as low as possible. These numbers represent the percentage (by weight) of these three nutrients. Stay away from high numbers, especially the first number (nitrogen), which is only necessary for establishing new lawns. Fertilizers with higher numbers can burn plants.

8. **Trees**: Explore opportunities to plant trees on site. Some cities and localities offer free trees or may make referrals to local non-profits who can provide trees for urban spaces. Trees reduce heat island effect, save building energy costs, provide shade, and help reduce storm water runoff. Leaves can be used in community garden compost piles or shredded and used as mulch on garden areas.

TRACKING

Annually review Green Landscaping progress.

RESOURCES

- Sustainable Sites Initiative – www.sustainablesites.org
- The YardScaping Initiative – www.yardscaping.org
- U.S. Department of Agriculture, Cooperative Extension – Information on plantings and IPM – https://nifa.usda.gov/program/integrated-pest-management-program-ipm
- U.S. EPA Safer Choice Labeled Products – Information on greener ice melt options – www.epa.gov/saferchoice/products
- U.S. EPA WaterSense Outdoors – www.epa.gov/watersense/outdoor

12. Active Design

GOAL

Pursue active design strategies to increase opportunities for physical activity for building residents, workers, and visitors.

PROPERTY OWNER AND PROPERTY MANAGER

1. **Encourage Stair Use:** Direct the Property Manager to post signs and take other actions to encourage stair use, noting the health benefits.

2. **Encourage Children's Play:** Provide safe indoor and/or outdoor active play spaces for children and youth. Simple inexpensive features such as colorful ground markings that are stenciled or painted can inspire children to play more actively.

3. **Facilitate Exercise for Adults:** Provide a room or space with exercise equipment. Consider making it adjacent to children's play areas so parents can exercise while keeping an eye on their children. A simple walking track around children's play areas can be created inexpensively with paint.

4. **Create Community Through Healthy Activities:** Provide multi-use rooms for social gatherings involving exercise classes, healthy cooking classes, and other activities.

5. **Create A Gardening Space:** Large or small, in a yard or on a roof, gardens are good for health. Gardening is a form of physical activity for people of all ages. And gardens can provide fresh, healthy food while helping to create a sense of community.

6. **Support Bicycling:** Provide indoor bicycle storage and/or secure outdoor bicycle parking.

7. **Provide Water Fountains in Common Areas:** Promote access to a healthy and sustainable beverage option. Providing a spigot on water fountains allows users to safely and easily fill reusable water bottles.

PROPERTY MANAGER

1. **Ensure Stairs Are Accessible:** Provide access to stairs from all apartments and common areas. If there are security concerns, consider implementing a key-card or security-code system to maintain security.

2. **Encourage Stair Use:** Consider posting signs (e.g., "Burn Calories, Not Electricity. Take the Stairs!") at elevator call areas and outside stairwells. Studies show that signs result in increased stair use. Use signage and design treatments to help direct people to the stairs. Make stairs more inviting by repainting with bright colors, incorporating artwork such as murals, and providing music. Consider the use of fire-rated glass on stair doors to increase the visibility for the stairs and to increase natural lighting, which may help reduce energy use for lighting.

3. **Other:** Implement other actions related to play areas, healthy activities, gardening, cycling, etc. as directed by the Property Owner.

TRACKING

Annually review Active Design progress.

RESOURCES

- Center for Active Design – www.centerforactivedesign.org
- Centers for Disease Control "StairWELL to Better Health" – https://www.cdc.gov/physicalactivity/worksite-pa/toolkits/stairwell/
- FitWel – https://fitwel.org/
- New York City Active Design Guidelines – http://www1.nyc.gov/site/ddc/about/active-design.page

13. Smoke Free Housing

GOAL

Explore establishing smoke free housing policies for new developments and existing properties. Smoking is the single greatest cause of disease and premature death in the United States, contributes to tenant complaints related to odor, and increases the property's operational costs.

PROPERTY OWNER

1. **Pilot Program:** Pilot test a smoke free housing policy for new construction or substantial rehab properties. Alternatively, choose a single site to implement a smoke free housing pilot policy. Use results to inform efforts to expand smoke free policies to the existing portfolio.

2. **Resident Outreach:** Explore resident interest in pursuing smoke free housing in existing buildings through the use of tenant surveys and resident outreach.

PROPERTY MANAGER

1. **Tenant Outreach and Surveys:** Work with the Property Owner to support resident education and outreach, including resident surveys.

2. **Enforcement:** Enforce smoke free housing policy and related lease restrictions at pilot site and any additional properties adopting a smoke free housing policy.

3. **Signage:** Install signage and provided printed material for visitors at the main entrances of each building with a smoke free housing policy.

Sample Smoke Free Housing Policy
Effective [DATE], the use of all tobacco smoking products (cigarettes, cigars, and pipes) is prohibited on [Property Name] property and within 25 feet of the building. This prohibition applies to all indoor and outdoor areas (apartments, entry areas, walkways, grassed areas, picnic areas, parking lots, vehicles owned by [property owner and manager] and private vehicles parked on

[Property Name] property). This policy applies to all employees, visitors, residents, subcontractors, volunteers, and vendors.

Sample Exception (for existing properties establishing a smoke free policy)
Current residents who use tobacco products that have entered into a lease agreement prior to [DATE] will be permitted to continue to use tobacco products in their apartments for twelve months after the smoke free policy is in effect. Therefore, on [DATE], all units will be smoke free and at that time all smokers will need to adhere to the set policy. This exception shall not extend to visitors or anyone other than the lease holder/occupant.

Sample Lease Addendum Language
Adopt the below language consistent with funder restrictions.
Included in the "Definitions" section of the lease:
Smoking: “Smoking” shall include the inhaling, exhaling, burning, or carrying of any lighted cigarette, cigar or other tobacco product, marijuana, or illegal substance.

Included in the restrictions section of the lease:
Smoking: Due to the increased risk of fire, and the known health effects of secondhand smoke, smoking is prohibited indoors and within 25 feet of the residential building. This restriction applies to both private and common areas and applies to all owners, tenants, guests, and servicepersons.

TRACKING

Annually review Smoke Free progress.

RESOURCES

- Boston Public Health Commission – www.bphc.org
- Capital District Tobacco-Free Communities – www.smokefreecapital.org
- Michigan Smoke-Free Apartments – www.mismokefreeapartment.org
- Minnesota Smoke-Free Housing – www.mnsmokefreehousing.org
- National Center for Healthy Housing – http://www.nchh.org/
- New York State Smoker’s Quitline: Call 1-866 NYQUITS, or www.nysmokefree.com
- NYC Coalition for a Smoke-Free City – www.nycsmokefree.org
- Smoke-Free Housing Coalition of Maine – www.smokefreeforme.org
- Smoke-Free Housing New York State – www.smokefreeny.org
- Tobacco Technical Assistance Consortium – www.ttac.org

- U.S. HUD Smoke Free Housing Policy Implementation, Notice H2010-21 – www.hud.gov
- U.S. HUD Multi Family Smoke Free Housing Tool Kit – https://www.hud.gov/smokefreetoolkits

14. Green Office Practices

GOAL

Reduce product consumption and the use of energy, water, and toxins in on-site property management offices and in owner offices, to the extent feasible.

PROPERTY OWNER

1. Use the below green products and practices at the Property Owner's offices and Property Management offices at residential properties.

Green Products and Purchases

- Purchase minimum 20% post-consumer recycled paper.
- Use GreenSeal or Forest Stewardship Council Certified (FSC) certified bathroom and kitchen paper products.
- Install water filters, rather than providing bottled water.
- Supply reusable kitchenware (silverware, dishes, glasses, etc.) if washing facilities are available.
- Purchase green office furniture (Forest Stewardship Council Certified or made with high recycled content) to the extent feasible.
- Purchase green cleaning products (see Green Cleaning).

Office Practices

- Turn off lights when not in use and install motion sensors for conference rooms.
- Recycle printer cartridges, broken electronics, paper, cans, bottles, light bulbs, and batteries.
- Enable sleep mode on computers and other electronics (faxes, printers, etc.). Turn off computers, printers, and copiers at the end of the day. Use smart powerstrips.
- Specify new printers that have double sided printing capability.
- Check and replace drinking water filters.
- Encourage employees to get to work by walking, bike riding, carpooling, or riding public transit. See EPA's Commuter Choice Primer for information on starting a Commuter Choice program.
- Subscribe to online billing to reduce paper use, when feasible.

PROPERTY MANAGER

1. Comply with the above green practices and products, to the extent feasible.

TRACKING

Annually review Green Office progress.

RESOURCES

- Commuter Choice – http://www.commuterchoice.com/

15. Resident Engagement

GOAL

Provide residents with information, tools, and activities to support and participate in green practices.

PROPERTY OWNER

1. **Resident Engagement and Resources**: Provide residents information, training, resources, and opportunities to engage, in conjunction with Property Manager, on green building components (e.g., dual flush toilets, programmable thermostats, recycling or composting) and suggestions for green and healthy living (e.g., energy and water conserving actions, homemade green cleaning products, local farmers markets or healthy food resources, smoking cessation supports – QuitLine, walking or exercise routes, local public transit options). See the Stewards for Affordable Housing Resident Engagement Tool Kit, for suggestions on how to assess what strategies may work for your community and tools to get started.

2. **Health Action Plans to Build Health into Green Construction or Renovation:** As part of the construction or renovation planning process, consider developing a Health Action Plan, which offers a roadmap to plan for building related health improvements by engaging owners, public health professionals, and community residents in prioritizing community health needs through data analysis and community engagement. See Enterprise Green Communities Criteria Health Action Plan.

PROPERTY MANAGER

1. Develop handouts, resources, training, and opportunities to engage residents with green and healthy living practices that include using green building components and suggestions for green and healthy living, listed above.

2. Make sure management staff “walk the walk”, by taking steps to conserve energy and water, use green cleaning products, follow

Integrated Pest Management (IPM) practices, and share information on the energy and water use at the building.

3. Working with the Property Owner, provide training on green and healthy practices to residents at move in and at regular intervals.

4. Highlight success by sharing stories of what's working with residents and highlighting resident success stories to build leadership.

5. Encourage residents to use online billing to reduce paper use.

TRACKING

Annually review Resident Engagement progress.

RESOURCES

- Enterprise Green Communities Tools to Engage Residents in Green & Healthy Living – https://www.enterprisecommunity.org/solutions-and-innovation/green-communities/tools-and-services/resident-engagement
- Enterprise Green Communities Health Action Plan – https://www.enterprisecommunity.org/solutions-and-innovation/health-and-housing/affordable-housing-designed-for-health/health-action-plan
- PolicyLink's The Community Engagement Guide for Sustainable Communities – http://www.policylink.org/resources-tools/community-engagement-guide-for-sustainable-communities
- Stewards for Affordable Housing Resident Engagement Tool Kit – This provides step-by-step instructions on assessing current level of resident engagement and tailoring resident engagement to your situation – https://www.sahfnet.org/our-work/energy-and-water-conservation/resident-engagement

Appendix A: Green Property Management Schedule

Frequency	Property Owner	Property Manager
Start Up	• Adopt green policies. • Benchmark baseline energy and water use. • Identify buildings with high energy or water use. • Hire professional help, as needed, to produce an appropriate strategy and scope(s) of work. • Apply for resources, such as energy efficiency rebate programs, to address high energy and water use buildings. • Implement prioritized energy and water upgrades.	• Review policies, tools, and vendor contracts for consistency with Green + Healthy Guide. • Become familiar with energy and water benchmarking data system. • Prepare report for owner identifying buildings with high energy use (>7 BTU/ft^2/HDD) and identify potential energy saving opportunities. • Work with owner to identify buildings with high water use.
Monthly	• Meet Property Manager to review energy and water use and quantify progress.	• Report energy and water use to owner. Identify inefficient buildings and results of work completed.
Quarterly	• Review pest, recycling, and other green issues.	• Report pest, recycling, and other green issues to owner.
Seasonal	----------	• Remove AC units and insulate AC sleeves (Nov-Apr).
Annual	• Review energy and water use. Identify buildings with greatest energy and water saving potential, plan for upgrades, evaluate performance of upgraded buildings, and integrate opportunities for improvements with capital needs planning. • Review compliance with green specifications, vendor contracts, and policies.	• Review energy and water use with owner. Identify buildings with greatest energy and water saving potential and evaluate performance of previously upgraded buildings. • Provide owner update on compliance with green specifications, vendor contracts, and policies.
Bi- Annual	• Review and modify green and healthy policies.	• Review green and healthy policies with owner.

Appendix B: Sample Green Agenda Items

Monthly Property Management Meeting

1. Review energy and water use in the five most inefficient buildings.
2. Review energy and water use after retrofits – if applicable.
3. Review unusual energy or water use spikes and responses.
4. Review unusual activities (pest problems, water leaks, unit turnover challenges, etc.).

Appendix C: Assess Green Practices

Goal	No Actions	Partially Achieved	Achieved	Comment
Energy Assessment				
Energy Reduction				
Water Assessment				
Water Conservation				
Green Laundry				
Pest Control				
Green Cleaning				
Waste Reduction and Recycling				
Unit Turnover and Inspection				
Green Product Specifications				
Green Landscaping				
Active Design				
Smoke Free Housing				
Green Office Practices				
Resident Engagement				

Appendix D:
Sample Integrated Pest Management Policy

The ***[Add Owner's Name]*** will use Integrated Pest Management (IPM) strategies to prevent and address pest problems within our properties to maintain safe, healthy environments for residents and staff, and minimize harm to the environment. Our IPM approach uses pest proofing strategies, trash management, maintenance/housekeeping, and limited and targeted use of the least hazardous pesticides based on need to prevent and control pest issues. Excluding bed-bug treatments or the use of insect growth regulators, routine application of pesticide sprays, foggers or bombs, and organophosphate or chlorinated hydrocarbons pesticides are not permitted. Maintenance staff, pest professionals, and resident services staff will coordinate to prevent and respond to pest problems. Pest professionals shall have IPM training or certification.

The IPM program will involve a baseline inspection and annual inspection of units and common areas; monitoring of pest activity in interior and exterior spaces to guide responses; and development of building specific IPM plans. IPM plans will be reviewed annually with the pest professional and will describe:

- Pest focus areas and recommended treatment responses, including maintenance repairs, removal of pest droppings, housekeeping needs, and selected and targeted use of the least-hazardous pesticides;
- Preventative maintenance or trash management;
- Ongoing monitoring; and
- Recordkeeping to track treatments and related repairs.

Maintenance staff shall inspect for evidence of pest activity, seal holes and cracks with pest proof materials, and report evidence of pest activity to the pest professional, before new tenants move in.

This policy emphasizes prompt, multifaceted action to identify, prevent, and treat problems. Resident awareness and support of this policy will help ensure its success.

Notes