Green and Healthy Property Maintenance Costs and Activities

Prepared by The National Center for Healthy Housing

January 2007

Overview

Where are the opportunities to improve affordable housing property maintenance practices to achieve cost-effective green and healthy building objectives? The National Center for Healthy Housing (NCHH) surveyed the Boston Housing Authority and six Boston area Community Development Corporations (CDCs) about their property maintenance expenditures in 2005 and 2006 and their property management structure. **The goal of this effort was to identify the most costly and frequent property maintenance activities and use this information to identify opportunities to advance resident health and green building practices in a cost effective manner.** The assessment does not address energy costs; these costs are being documented by a partner organization, New Ecology (www.newecology.org). The project team includes NCHH Manager Peggy Hegarty-Steck and NCCH Advisors Ellen Tohn, Tohn Environmental Strategies, LLC and Naomi Mermin, Naomi Mermin Consulting.

Property Management Structure

The Boston Housing Authority (BHA) generally provides maintenance through its own staff; a limited number of services are addressed through outside contractors (e.g., pest control). The CDCs surveyed manage properties both internally and externally via professional private property management companies. One property manager, Maloney Properties, Inc., provides the majority of property management services to the CDCs surveyed. Table 1 below summarizes this information.

Table 1: Property Management Characteristics

CDC	Property Management Choice	Approximate # Units
Allston Brighton	Private	514
Asian	Private	88
Boston Housing Authority	In-House	12,738
Jamaica Plain Neighborhood Development Corporation	Private	130
Madison Park	Private	946
Nuestra Communidad	In-House, transferring to private in 2007	406
Urban Edge	In-House	1,328

Annual Property Maintenance Costs

The project team requested information on a subset of property maintenance activities that have potential linkages to green and healthy practices. Not all respondents were able to provide data in all the categories of interest. In many categories the costs incurred in a single year did not yield a per unit cost that exceeded $0. Responses may vary year to year due to rehab or major maintenance activities. Below Table 2 depicts the range of costs on a per unit basis for selected activities, sorted by mean costs -- high to low.

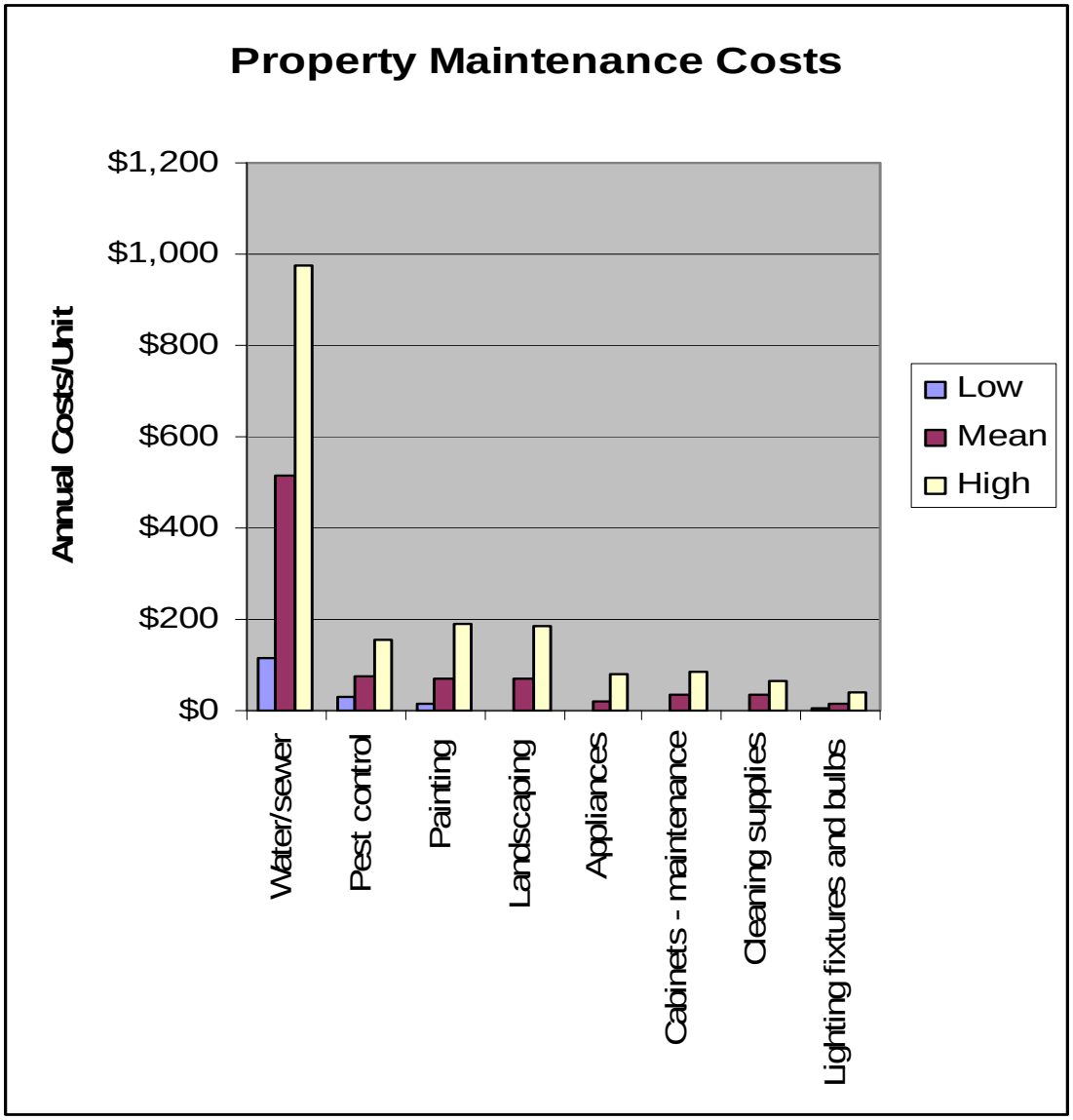
Table 2: Selected Annual Property Maintenance Costs Per Unit

	Low	Mean	High
Water and sewer	$117	$516	$977*
Pest control	$32	$75	$156
Painting	$13	$72	$189
Landscaping	$0	$72	$187
Appliances	$0	$22	$79
Cabinets - Maintenance	$0	$34	$83
Cleaning supplies	$2	$33	$65
Lighting fixtures and bulbs	$6	$17	$38
Ovens and ranges	$0	$15	$26
Windows	$0	$5	$26
Lighting – Fixtures only	$0	$9	$18
Kitchen and bath fans	$0	$9	$2
Lighting - Bulbs only	$0	$3	$6
Cabinets - New	$0	$0	$0

* High costs are due to an unnoticed water usage with an outside hose.

Figure 1 below graphically presents the same information. The data clearly point to water/sewer utilities as a dominant expense. A second category of expenses merits attention: pest control, painting, landscaping (which is also categorized by tremendous variation), cabinet maintenance/replacement, cleaning supplies and appliances (generally replacement).

Figure 1: Selected Annual Property Maintenance Costs Per Unit



Frequent Property Maintenance Activities

In addition to costs, the team gathered data on the frequently cited work orders. The most common work orders are listed below:

- Plumbing repairs and leaks (particularly toilets)
- Carpentry (e.g., door replacement)
- Flooring replacement
- Repainting
- Light bulb replacement
- Screen replacement
- Pest control/extermination

Green and Healthy Property Maintenance and Construction Activities

a. What's Working

Several important green and healthy practices are undertaken by most owners/managers: installing carbon monoxide detectors, hard wiring smoke detectors, exhausting dryers to the outside in new construction and rehab, installing Energy Star fixtures and bulbs, avoiding carpet in wet areas, avoiding particle board in cabinets, using solid doors, exhausting kitchen and bath fans (Energy Star), sealing holes and cracks for pests, not placing plumbing on exterior walls, and insulating cold water pipes.

b. Opportunities to Improve Maintenance and Unit Turnover Activities

Opportunities exist, however, to make the following green and healthy practices the norm and not the actions of a selected few.

Some practices are **rarely** followed:

- Install safety latches on storage cabinets.
- Use improved ventilation (MERV 8 or higher filters; ASHRAE 62.2), kitchen fans installed at unit turnover.
- Apply boric acid in cracks to control cockroaches both preventatively or in maintenance.
- Install pan flashing during window replacement.
- Use Green Label carpet (i.e., an industry certified standard for carpet with lower volatile organic compounds and off-gassing).

Some practices are **followed by some, but not most owners**:

Water:

- Replace older leaky toilets with high efficiency and conserving toilets.

Ventilation

- Check that bath and kitchen fans are operating and replace fans with Energy Star models.

Carpentry:

- Replace hollow doors with solid doors. This will likely help reduce the demand for carpentry repairs to replace doors and save owners funds over time.

Appliances/Lighting:

- Install Energy Star fixtures and bulbs.
- Exhaust dryers to the outside when possible.
- When replacing hot water systems use combustion sealed equipment.

Flooring/Finishes:

- Use low VOC paint.
- Provide no carpet in one bedroom at unit turnover.
- Install greener flooring when flooring replacement occurs.
- Use less toxic cleaning supplies.
- Install walk off mats, particularly in multi family buildings and units on busy streets.

c. Opportunities Rehab and New Construction Activities

During rehabilitation and new construction, there are significant opportunities to incorporate green and healthy practices. They will often add the most modest of additional costs when undertaken as part of construction.

Ventilation:
Of particular note, few property managers are aware of or implementing green and healthy ventilation strategies. Require mechanical contractors to meet ASHRAE 62.2 (which requires use of a MERV 9 filter, exterior exhausting bath and kitchen fans).
Few property owners are implementing safety latches to reduce the risk of poisonings (one of 3 key injury risks). This is a relatively low cost add on.

Windows:
Pan flashing below windows and doors is not routinely completed when windows are installed. This flashing would typically increase the hard cost of the window by less than $20 for windows that often cost upwards of $400.

Walk off mats:
Be sure all new units have walk off mats, particularly in multi family buildings and units on busy streets. Walk off mats are low cost items that can minimize the track in of lead dust, allergens, and other contaminants. They also help to keep the building entrance cleanable.

Pest control:
Use boric acid in holes to help avoid future cockroach problems. This will require a licensed pesticide applicator.

Flooring/finishes:
If carpet is installed, insist on Carpet and Rug Institute's "Green Label" rating.

Conclusions and Opportunities

The survey results point to four specific areas for change across nearly all affordable housing owners.

1. Undertaking water conservation actions that also reduce plumbing repairs will be a win-win. It can save money (utilities & repairs) and reduce moisture problems linked to asthma and mold.
2. Alternative approaches to pest control/extermination are needed that reduce costs and are more effective, both during maintenance and construction.
3. Additional attention is needed to provide consistent and effective ventilation that provides fresh air, remove exhaust contaminants and exhaust moisture that can lead to mold growth.
4. Modifying the current practices for window installation, bath fan installation, carpet installation, and painting can yield healthier and greener buildings with minimal costs.