

**FANNIE MAE
PHYSICAL NEEDS ASSESSMENT
GUIDANCE TO THE PROPERTY EVALUATOR**

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Introduction

While many factors affect the soundness of a mortgage loan over time, one of the most significant is the physical condition of the property - past, present and future. A prudent lender must be concerned with the past maintenance and improvements because they may indicate owner and management practices as well as expenses to be incurred in the future. The lender must be concerned with the condition of the property at the time the loan is made, and over the term of the loan, because property condition may directly impact marketability to prospective tenants and the need for major expenditures may impact the economic soundness and value of the property. The lender must also be concerned with the condition of the property at the end of the loan term. If the property has deteriorated, the owner may not be able to secure sufficient financing to pay off the loan at maturity.

Most lenders have always given some attention to physical conditions and needs of properties in their underwriting. However, the amount of attention, the data secured, the quality and analysis of that data, and the impact of this information on underwriting has varied widely. Indeed, many properties and the loans that they secure are now in trouble because of inadequate consideration of physical needs in the underwriting coupled with inadequate attention to property maintenance which has diminished the marketability and overall value of the property.

The guidance and forms in this package, together with the guidance provided to our lenders in our Delegated Underwriting and Servicing (DUS) and Multifamily Guides, is based upon a desire to see a more standardized approach to assessing the physical needs of properties that will be securing our loans. These documents attempt to respond to stated desires on the part of our lenders for a “level playing field” among competing lenders who may otherwise have different notions of the level of data and analysis required to assess a property’s physical condition. They also attempt to respond to the needs of property evaluators who, desiring to produce the quantity and quality of information deemed necessary, need specific guidance to avoid the appearance of glossing over problems or providing material which is too detailed or complex to be usable by the underwriters.

These documents are meant to provide useful guidance and tools to the evaluators. They cannot cover all situations and are not meant to be inflexible. They are designed to elicit the judgment of the evaluator (in a format which is useful to the underwriter), not to substitute for it. We welcome comments from evaluators in the field, as we did in developing this package, on improving either our forms or guidance so that this package can best serve the needs of both the evaluators and our lenders. If you have such comments, please contact the Office of Affordable Housing Preservation, U.S. Department of Housing and Urban Development, at resourcedeskweb@oahp.net.

Specific Guidance to the Property Evaluator

Purpose

The purpose of the Physical Needs Assessment is to identify and provide cost estimates for the following key items:

- Immediate Physical Needs - repairs, replacements and significant maintenance items which should be done immediately
- Physical Needs Over the Term - repairs, replacements and significant maintenance items which will be needed over the term of the mortgage and two years beyond.

As part of the process, instances of deferred maintenance are also identified.

The assessment is based on the evaluator's judgment of the actual condition of the improvements and the expected useful life of those improvements. It is understood that the conclusions presented are based upon the evaluator's professional judgment and that the actual performance of individual components may vary from a reasonably expected standard and will be affected by circumstances which occur after the date of the evaluation.

This package explains how to use the set of forms provided by Fannie Mae. It is important to recognize that the forms are intended to help the evaluator conduct a comprehensive and accurate assessment. They also present the results of that assessment in a relatively standard format which will be useful to the lender in making underwriting decisions. However, the forms should not constrain the evaluator from fully presenting his or her concerns and findings. The forms should be used and supplemented in ways which facilitate the preparation and presentation of information useful to the lender regarding the physical needs of the property.

The Systems and Conditions forms may be altered and/or computerized to serve the evaluators' needs so long as information is provided on the condition and Effective Remaining Life of all components and the Effective Remaining Life is compared to the standard Expected Useful Life (EUL). The Summary forms may also be extended or computerized so long as the basic format is maintained.

Terms of Reference Form

The lender completes this form for the evaluator. It serves as a reference point for the assessment and provides the evaluator with basic information about the property and the term of the loan. Four additional topics are covered:

- *Sampling Expectations* - The lender's expectations about the number and/or percentage of dwelling units, buildings and specialized systems to evaluate may be stated. If there is no stated expectation, the evaluator should inspect sufficient units, buildings, and numbers of specialized systems to state *with confidence* the present and probable future condition of each system at the property. The evaluator should provide a separate statement indicating the sampling systems used to ensure a determination of conditions and costs with acceptable accuracy. If a Sampling Expectation is provided by the lender which is not adequate to achieve the requisite level of confidence, the evaluator should so advise the lender.

Considerations in determining an adequate sample size are age and number of buildings (especially if the property was developed in phases), total number of units, and variations in size, type and occupancy of units. Effective sampling is based on observing a sufficient number of each significant category. Using the above criteria, categories could include *buildings by age of each building* (e.g. inspect buildings in the 8 year old phase and in the 11 year old phase), *buildings by type* (e.g. rowhouse, L-shaped rowhouse, walkup, elevator) and/or *buildings by construction materials* (e.g. inspect the garden/flat roof/brick walls section and the garden/pitched roof/clapboard walls section). Dwelling units are separate categories from buildings. At a minimum, sampling is by unit size (0/1/2/3/4 bedrooms). There may be further categories if units are differently configured or equipped, or have different occupants (especially family or elderly). Generally, we would expect the percentage of units inspected to decrease as the total number of units increases. Systems which are not unit specific, such as boilers, compactors, elevators and roofs, will often have a 100% sample.

The overriding objective: SEE ENOUGH OF EACH UNIT TYPE AND SYSTEM TO BE ABLE TO STATE WITH CONFIDENCE THE PRESENT AND PROBABLE FUTURE CONDITON.

- *Market Issues* - In certain instances, market conditions may necessitate action on certain systems. Examples are early appliance replacement or recarpeting, new entry paving, special plantings, and redecorated lobbies. If the owner or lender has identified such an action, the evaluator should include a cost estimation for such action and indicate what, if any, other costs would be eliminated by such action.
- *Work In Progress* - In some instances, work may be underway (which can be observed) or under contract. When known by the lender, this will be noted. For purposes of the report, such work should be assumed to be complete, unless observed to be unacceptable in quality or scope.

- *Management-Reported Replacements* - In some instances, the property ownership or management will provide the lender with information about prior repairs or replacements which have been completed in recent years. The lender may provide this information to the evaluator to assist in the assessment of these components. The evaluator should include enough units, buildings, or systems in the sample to reasonably verify the reported repairs or replacements.

Systems and Conditions Forms

It is the responsibility of the evaluator to assess the condition of every system which is present at a property. All conditions, except as noted below, requiring action during the life of the loan must be addressed regardless of whether the action anticipated is a capital or operating expense.

To assist evaluators in reviewing all systems at a property, four Systems and Conditions Forms are provided. Each lists a group of systems typically related by trade and/or location. The four forms are Site, Architectural, Mechanical and Electrical, and Dwelling Units. While the forms have several columns in which information may be recorded, *in many instances only the first three columns will be completed*. If the condition of a system is acceptable, the Effective Remaining Life exceeds the term of the mortgage by two years, and no action is required, no other columns need to be completed.

The report is not expected to identify minor, inexpensive repairs or other maintenance items which are clearly part of the property owner's current operating pattern and budget so long as these items appear to be taken care of on a regular basis. Examples of such minor operating items are occasional window glazing replacement and/or caulking, modest plumbing repairs, and annual boiler servicing. However, the evaluator *should* comment on such items in the report if they do not appear to be routinely addressed or are in need of immediate repair.

The report is expected to address infrequently occurring "big ticket" maintenance items, such as exterior painting, all deferred maintenance of any kind, and repairs or replacements which normally involve significant expense or outside contracting. While the evaluator should note any environmental hazards seen in the course of the inspection, environment-related actions, such as removal of lead-based paint, will be addressed in a separate report prepared by an environmental consultant.

Using the Systems and Conditions Forms

Purpose

The forms can be used both to record actual observations at a specific location and for an overall summary. For example, the Architectural form can be used for a specific building (or group or identical buildings) as well as for summarizing all information for buildings at a property. The same is true for the Dwelling Unit form. An unlabeled form is included which can be used as a second page for any of the Systems and Conditions Forms.

In some instances, the evaluator will note components which, while they may continue to be functional, may reduce marketability of the property. For example, single-door refrigerators or appliances in outmoded colors may have such an impact in some properties. The evaluator should note these items, discuss them with the lender, and provide separate estimates of the cost to replace such items if requested.

Items (EUL)

Each of the four forms has a number of frequently-occurring systems and components listed. This list represents only the most frequently observed and is not meant to be all inclusive. *Every system present at the property must be observed and recorded.* Any system not listed on the form may be included in the spaces labeled Other. Note that the assessment includes the systems and components in both residential and non-residential structures. Thus, garages, community buildings, management and maintenance offices, cabanas, pools, commercial space, and other non-residential buildings and areas are included.

The Expected Useful Life (EUL) figure which appears in parentheses after the Item is taken from the Expected Useful Life Table provided. This table provides standard useful lives of many components typically found in apartment complexes. Where the parentheses do not contain a number, it is because there are various types of similar components with differing economic lives. The evaluator should turn to the Expected Useful Life Table and select, and insert, the appropriate Expected Useful Life (EUL) number. If the Expected Useful Life (EUL) will, without question, far exceed the term of the mortgage plus two years, the Expected Useful Life (EUL) number need not be inserted.

Note: It is recognized that the Expected Useful Life Tables represents only one possible judgment of the expected life of the various components. If we receive substantial material to the effect that one or more of the estimates are inappropriate, we will make adjustments. Until such changes are made, the Tables provide a useful and consistent standard for all evaluators to use. They avoid debate on what the appropriate expected life is and permit focus on the evaluator's judgment of the effective remaining life of the actual component in place, as discussed below.

Age

The evaluator should insert the actual Age of the component or may insert “OR” for original. If the actual age is unknown, an estimate is acceptable. If there is a range in Age (for example, components replaced over time), the evaluator may note the range (i.e., 5-7 years) or may use several lines for the same system, putting a different Age of that system on each line.

Condition

This space is provided to indicate the Condition of the component, generally excellent, good, fair, or poor, or a similar and *consistent* qualitative evaluation.

Effective Remaining Life

This space is provided for the evaluator to indicate the remaining life of the component as is. For standard components with standard maintenance, the Expected Useful Life Table provided by the Lender could be used to determine Effective Remaining Life by deducting the Age from Expected Useful Life (EUL). However, this should not be done automatically. A component with unusually good original quality or exceptional maintenance could have a longer life. On the other hand, if the component has been poorly maintained or was of below standard original quality, the useful life could be shorter than expected. *The evaluator applies his or her professional judgment in making a determination of the Effective Remaining Life.*

If the Effective Remaining Life *is longer than the term of the loan plus two years, no deferred maintenance exists, and no action needs to be taken during the life of the loan, no other columns need to be filled out.* The only exception may be Diff? (Difference), as discussed below. This should be noted when the evaluator’s estimate of the Effective Remaining Life varies by more than two years from the standard estimate.

Diff? (Difference)

The Age of the component should be deducted from the Expected Useful Life (EUL) in parentheses and the answer compared to the Effective Remaining Life estimated by the evaluator. Where there is a difference of over two years, the evaluator should insert a footnote number in the DIFF? (Difference) column and supply, in an attached list of footnotes, a brief statement of why, in his or her judgment, the Effective Remaining Life of the component varies from the standard estimate. This approach provides consistency among evaluators while making best of the evaluators’ professional judgment.

Action

If any Action is required - immediately, over the life of the loan, or within two years thereafter - the Action should be recorded as *repair, replace, or maintain*. Repair is used when only a part of an item requires action, such as the hydraulics and/or controls of a

compactor. Replace is used when the entire item is replaced. Maintain is used where special, non-routine maintenance is required, such as the sandblasting of a swimming pool. In cases where a repair or maintenance may be needed now, and replacement or further maintenance may be needed later, separate lines may be used to identify the separate actions and timing.

Now?

If the item involves a threat to the immediate health and safety of the residents, clearly affects curb appeal, will result in more serious problems if not corrected, or should otherwise be accomplished as part of an immediate repair, maintenance or replacement program, this space should be checked. Replacements which may be needed in year one, but do not require immediate attention, need not be checked.

DM (Deferred Maintenance)

The DM (Deferred Maintenance) space is marked in any instances where current management practice is clearly inadequate and the owner's attention should be called to the item, even if no major expenditure or significant labor may be required.

Quantity

For items requiring action, the evaluator should note the Quantity of the system, with the applicable unit of measure entered (each, unit, square feet, square yards, linear feet, lump sum, etc.).

Field Notes

This space, as well as attachments may be used to record the type of component (16cf, fros. free, Hotpoint), the problem (valves leaking) or other information (consider replacement for marketing purposes, replace 30% per year, work in progress, etc.) that the evaluator will need to complete the Evaluator's Summary.

Sample Form

The following example from the Dwelling Unit Systems and Conditions form illustrates how this form is properly used. The example presumes an 11 story building containing 1 and 2 bedroom units. There are 100 units. The age of the building is 9 years. The term of the proposed loan is 7 years.

ITEM (EUL)	AGE	COND	ERL	DIFF ?	ACTION	NOW ?	DM ?	QUANTITY	NOTES
Countertop/Sink (10)	9	EX	10+	1	-	-	-	- ea.	Corian Stainless Steel
Refrigerator (15)	9	Good	6	-	REPL	-	-	100ea	Hot point 16cf. ff 20%/yr @ YR 5
Disposal (5)	0-9	Good	0-5	-	REPL	-	-	100ea	20%/yr. @ YR. 1 OPTE
Bath Fixtures (20)	9	Good	11+	-	-	-	-	-	Dated Looking Repair - Now
Ceiling 04 stack ()	9	Hater Damage	-	-	Repair	Yes	-	10ea	Plumbing Leak

Countertop/sinks are 9 years old. (The entry could also be "OR"). Condition is excellent, with an Effective Remaining Life of 10 years. This is significantly different from the anticipated Effective Remaining Life of 1 (an EUL of 10 years minus an Age of 9 years). Therefore, there is a footnote entry "1" in the Diff? (Difference) column. The footnote will indicate that this item is made of an exceptionally durable material (Corian), along with a top quality stainless steel sink. The evaluator's estimate of an Effective Remaining Life of 10 years + is beyond the term of +2. No capital need would be reported.

Refrigerators are also original, reported as 16 cf frost free Hotpoints. Replacement is expected around the Effective Remaining Life, noted as 20% annually and beginning in the 5th year of the loan when the refrigerators are 14 years old.

Disposals range from new to original (Age = 0-9). 20% per year replacements will be needed starting in year 1. The evaluator notes that disposals appear to be replaced as part of the project's normal operations.

Bath fixtures are original, and in good condition. No replacement is expected to be required during the term +2 years. The note indicates that they are "dated looking," which may prompt a market consideration for replacement.

Ceiling is a special entry. The "04" stack of units has experienced water damage to ceiling from major plumbing leak. This is noted for repair NOW. As this apparently occurs in all 10 units in this stack and therefore is likely to have more than a modest cost, this action would be reported on the Immediate Physical Needs summary form.

Evaluator's Summary Forms

Two separate forms are used to summarize the evaluator's conclusions from the Systems and Conditions Forms. One summarizes Immediate Physical Needs and the other summarizes the Physical Needs Over The Term +2 years.

Evaluator's Summary: Immediate Physical Needs

All of the items for which Now? is checked are transferred to this form. This form provides for the listing of Items, Quantity, Unit Cost and Total Cost of each. The Item and Quantity are transferred directly from the Systems and Conditions Form.

Unit Cost - This is the cost per unit (sf, ea, lf, etc.) in current dollars to implement the required action. The source of the cost estimate should be listed in a separate attachment. The sources may include a third-party estimation service (e.g., R.S. Means: *Repair and Remodeling Cost Data*), actual bid or contract prices for the property, estimates from contractors or vendors, the evaluator's own cost files, or published supplier sources.

Total Cost - This is the result of multiplying the quantity times the unit cost. It is expressed in current year dollars.

DM (Deferred Maintenance) - If the item evidences deferred maintenance, this column is checked.

Comments - the comments column, or an attachment, should clearly provide information on the location and the nature of problem being addressed for each item. The information should be adequate for the owner to begin to implement the action.

Evaluator's Summary: Physical Needs Over the Term

Those items not listed on the Immediate Physical Needs form, but for which action is anticipated during the term of the loan plus two years, are listed on the form. The item and Quantity are transferred directly from the Systems and Conditions Form. The Unit Cost is calculated in the same manner as on the Immediate Physical Needs Form. An attachment should be provided which gives any necessary information on the location of action items and the problem being addressed for each item. The information should be adequate for the owner to begin to implement the action.

Cost by Year - the result of multiplying the quantity times the unit cost, in current dollars, is inserted in the column for the year in which the action is expected to take place. Generally, the Effective Remaining Life estimate provided by the evaluator on the Systems and Conditions will indicate the action year. For example, if the evaluator has indicated that the Effective Remaining Life of the parking lot paving is 4 years, the cost, in current dollars, is inserted in Year 4. If the items are likely to be done over a number of years, the costs, in current dollars should be spread over the appropriate period. For example, if the Effective Remaining Life of the Refrigerators is estimated to be 4 years,

or 3-5 years, one third of the cost of replacing the refrigerators may appear in each of Years 3, 4, and 5.

Total Uninflated - After inserting all of the appropriate action items, the evaluator should total the items for each year.

Total Inflated - The evaluator should multiply the Total Uninflated times the factor provided to produce the Total Inflated.

Total Inflated All Pages - On the last sheet, the evaluator should include the Total Inflated Dollars for that page and all prior pages.

Cumulative Total All Pages - On the last sheet, the evaluator should insert the Total Inflated Dollars of that year and all prior years.

Special Repair and Replacement Requirements

While performing a property inspection, the evaluator must be aware that certain building materials and construction practices may cause properties to experience (or to develop in a short time period) problems that can be corrected only with major repairs or replacements. The following identifies some specific construction related problems; however, the evaluator must be aware that other construction related problems may be found in any property and should be identified. If any of the following requirements are not met or if the evaluator determines that the following conditions (or others) are present, *the evaluator must contact the lender immediately to discuss the timing as well as the cost of the repairs or replacements.* The evaluator should ensure that any of these conditions are thoroughly addressed in the Physical Needs Assessment.

Minimum Electrical Capacity - Each apartment unit must have sufficient electrical capacity (amperage) to handle the number of electrical circuits and their use within an apartment. Therefore, the evaluator must determine, based on referencing the National Electric Code as well as local building codes, what is the minimum electrical service needed. In any event, that service must not be less than 60 amperes.

Electrical Circuit Overload Protection - All apartment unit circuits, as well as electrical circuits elsewhere in an apartment complex, must have circuit breakers as opposed to fuses as circuit overload protection.

Aluminum Wiring - In all cases, where aluminum wiring runs from the panel to the outlets of a unit, the evaluator's inspection should ascertain that the aluminum wiring connections (outlets, switches, appliances, etc.) are made to receptacles rated to accept aluminum wiring or that corrective repairs can be done immediately by the owner.

Fire Retardant Treated Plywood - While performing the roof inspection, the evaluator should investigate whether there is any indication that fire-retardant treated plywood was

used in the construction of the roof (primarily roof sheathing). This inspection should focus on sections of the roof that are subjected to the greatest amount of heat (e.g., areas that are not shaded or that are poorly ventilated) and, if possible, to inspect the attic for signs of deteriorating fire-retardant treated plywood or plywood that is stamped with a fire rating.

Our concern is that certain types of fire-retardant treated plywood rapidly deteriorate when exposed to excessive heat and humidity or may cause nails or other metal fasteners to corrode. Common signs of this condition include a darkening of the wood and the presence of a powder-like substance, warping of the roof and the curling of the shingles. Fire-retardant treated plywood is most likely to be in townhouse properties or other properties with pitched, shingled roofs that were constructed after 1981 and that are located in states east of the Mississippi River and some southwestern states.

Narrative Conclusion and Attachments

A complete narrative summary of the property and its components is not required. However, the evaluator should supply a concise summary of the conclusions reached concerning the overall condition of the property, its future prospects, and the quality of the current maintenance programs. *Any items affecting the health and safety of residents should be clearly flagged.*

The summary should include a discussion of the sampling approach used, discussed above, and any market issues which the evaluator believes it may be appropriate to address or which were noted by the lender.

The narrative, the forms use and the attachments (footnotes explaining Differences, information regarding sources of costs, and, if necessary, information needed to identify the location and type of problem addressed in the Evaluator's Summary: Physical Needs Over the Term) should be supplied.

EXPECTED USEFUL LIFE TABLES

Forms and Expected Useful Life Tables developed for Fannie Mae
by On-Site Insight of Needham, MA

EXPECTED USEFUL LIFE TABLE			
	Family Development	Elderly Development	Action
SITE SYSTEMS			“Action” equals replace unless other wise noted
NOTE: 50+ “long-lived” systems: EUL based on location and use specific conditions			
Basketball Courts	15	25	
Built Improvements (playgrounds/site furniture)	20	20	
Catch Basin	40	40	
Cold Water Lines	40	40	
Compactors	15	15	
DHW/Supply/Return	30	30	
Dumpsters	10	10	
Dumpster Enclosure	10	10	Fence Only
Earthwork	50+	50+	
Electrical Distribution Center	40	40	
Emergency Generator	15	15	
Fencing			
Chain Link	40	40	
Wrought Iron	50+	50+	
Stockade/Basinweave	12	12	
Post and Rail	25	25	
Gas Lines	40	40	
Heating Supply/Return	40	40	
Incinerators	50+	50+	
Irrigation System	30	30	
Lift Station	50	50	
Mail Facilities	10	10	
Landscaping	50+	50+	
Parking			
Asphalt	25	25	Resurface
Gravel	15	15	Resurface
Pedestrian Paving	15	15	Resurface
Bimminors	15	15	
Concrete	30	30	
Retaining Walls			
Concrete	20	20	Fill Cracks/Repoint
Masonry	15	15	Fill Cracks/Repoint
Wood	15	15	Replace
Stone	15	15	Fill Cracks/Repoint
Roadways			
Asphalt (Sealing)	5	5	Seal
Asphalt	25	25	Resurface
Gravel	15	15	Resurface (grade and gravel)
Sanitary Treatment	40	40	
Site Electrical Main	40	40	
Site Gas Main	40	40	
Site Lighting	25	25	
Site Power Distribution	40	40	
Site Sanitary Lines	50+	50+	
Site Sewer Main	50+	50+	
Site Water Main	40	40	
Storm Drain Lines	50+	50+	
Swimming Pool - Deck	15	15	Resurface Deck
Mechanical Equipment (filter/pump/etc.)	10	10	
Tennis Courts	15	15	Resurface
Transformer	30	30	
Water Tower	50+	50+	

EXPECTED USEFUL LIFE TABLE

	Family Development	Elderly Development	Action
BUILDING ARCHITECTURE			
NOTE: 50+ = "long-lived" systems: EUL based on location and use-specific conditions			
Appurtenant Structures			
Porches	50	50	Paint at 5 years
Wood Decks	20	20	Paint at 5 years
Storage Sheds	30	30	Paint at 5 years
Greenhouses	50	50	
Carports	40	40	
Garages	50+	50+	
Basement Stairs	50+	50+	
Building Mounted Exterior Lighting	6	10	
Building Mounted HID Lighting	6	20	
Bulkheads	30	30	
Canopies			
Wood/Metal	40	40	Replace
Concrete	20	20	Re-roof
Ceilings, Exterior or Open	5	5	Paint
Chimney	25	25	Point
Common Area Doors (fire/hall/closet/etc.)	50+	50+	
Common Area Floors			
Ceramic/Quarry Tile/Terrazzo	50+	50+	Replace
Wood (strip or parquet)	30	30	Replace Portion/Sand and Finish
Resilient Flooring (tile or sheet)	15	15	Replace
Carpet	7	7	Replace
Concrete	50+	50+	Replace
Common Area Railings	50+	50+	
Common Area Ceilings			
Concrete/Drywall/Plaster	50+	50+	Replace (paint 5-8 years)
Acoustic Tile	20	20	Replace
Common Area Countertop & Sink	20	20	
Common Area Dishwasher	15	15	
Common Area Disposal	5	5	
Common Area Walls	50+	50+	Replace (paint 5-8 years)
Exterior Common Doors			
Aluminum and Glass	30	30	Door only
Solid Core (wood or metal)	25	25	Door only
Amo	15	30	Door and mechanism
Exterior Stairs			
Wood	30	30	Replace
Filled Metal Pan	20	20	Replace
Concrete	50+	50+	Replace
Exterior Unit Doors	25	25	
Exterior Walls			
Aluminum Siding	15	15	Prep and Paint
Brick or Block	40	40	Repoint
Brownstone/Stone Veneer	20	20	Waterproof and Caulk
Glass Block	15	15	Recaulk
Granite Block	40	40	Repoint
Metal/Glass Curtain Wall	10	10	Recaulk
Pre-cast Concrete Panel	15	15	Recaulk
Vinyl Siding	30	30	Replace
Wood shingle, Clapboard, Plywood, Stucco	5	5	Prep and Paint/Stain
Fire Escapes	40	40	Resecure
Foundations	50+	50+	

EXPECTED USEFUL LIFE TABLE			
	Family Development	Elderly Development	Action
Hatches/Skylights			
Access Hatch	30	30	
Smoke Hatch or Skylight	50+	50+	
Insulation/Wall	50+	50+	
Interior Lighting	25	25	
Interior Railings	50+	50+	
Kitchen Cabinets	20	20	
Local HVAC			
Electrical Fan Coil	20	20	
Electric Heat/Electrical AC	15	15	
Gas Furnace With Split DX AC	20	20	
Heat Pump w/ Supplementary Electrical	15	15	
Heat Pump, Water Source	20	20	
Hydronic Fan Coil	30	30	
Hydronic Heat/Electrical AC	20	20	
Mail Facilities	10	30	
Parapet Wall	50+	50+	
Penthouse	25	25	New Door and Pointing
Public Bathroom Accessories	7	7	
Public Bathroom Fixtures	15	15	
Radiation			
Hydronic (baseboard or freestanding)	50	50	
Electric Baseboard	25	25	
Electric Panel	20	20	
Railings Roof	10	10	Paint
Refrigerator, Common Area	15	15	
Residential Glass Doors			
Sliding	15	15	
Atrium/French	30	30	
Roof Covering			
Aluminum Shingles	40	40	
Asphalt Shingles	20	20	
Built-up (BUR)	20	20	
Membrane	20	20	
Metal (pre-formed)	40	40	
Slate, Tile, Clay, or Concrete Shingles	50+	50+	
Wood Shingles	20	20	
Roof Drainage Exterior (gutter and fascia)	25	25	New Gutters
Roof drainage Interior (Drain Covers)	50+	50+	
Roof Structure	50+	50+	
Slab	50+	50+	
Service Doors	25	25	
Soffits			
Wood / Stucco / Concrete	5	5	Paint Replace
Aluminum or Vinyl	25	25	
Stair Structure	50+	50+	
Storm/Screen Doors	7	15	
Storm/Screen Windows	20	20	
Waterproofing Foundation	50+	50+	
Window Security	40	40	
Windows (Frames and Glazing)	30	30	
Wood Floor Frame	50+	50+	

EXPECTED USEFUL LIFE TABLE

Family Development Elderly Development

Action

DWELLING UNITS

NOTE: 50+ = "long-lived" systems: EUL based on location and use-specific conditions

Bath Accessories	10	15	
Bath Fixtures (Sink, toilet, tub)	20	20	
Closet Doors	10	20	
Countertop and Sink	10	20	
Dishwasher	10	15	
Disposal	5	8	
Electric Fixtures	20	20	
Hallway Door	30	50	Door Only
Heat Detectors	20	20	
Interior Door	30	50	Door Only
Interior Stairs	50+	50+	
Kitchen Cabinets	20	25	
Living Area Ceilings			
Concrete/Drywall/Plaster	50+	50+	Replace (Paint at 5-8 years)
Acoustic Tiles	20	20	
Living Area Floors			
Ceramic/Quarry Tile/Terrazzo	50+	50+	Replace
Wood (strip or parquet)	30	30	Replace Portion/Sand and Finish
Resilient Flooring (tile or sheet)	15	20	Replace
Carpet	7	10	Replace
Concrete	50+	50+	Replace
Living Area Walls	50+	50+	Replace (Paint at 5-8 years)
Local HVAC			
Electric Fan Coil	20	20	
Electric Heat/Electric AC	15	15	
Evaporative Condenser ("swamp cooler")	20	20	
Gas furnace With Split DX AC	20	20	
Heat Pump w/ Supplementary Electric	15	15	
Heat Pump, Water Source	20	20	
Hydronic Fan Coil	30	30	
Hydronic Heat/Electric AC	20	20	
Range	15	20	
Rangehood	15	15	
Refrigerator	15	15	
Smoke/Fire Detectors	10	10	
Unit Air Conditioning (Window)	15	15	
Unit Electric Panel	50+	50+	
Unit Level Boiler	25	25	
Unit Buzzer/Intercom	20	30	
Unit Level DHW	10	10	
Unit Level Hot Air Furnace	25	25	
Unit Radiation			
Hydronic or Steam (baseboard or freestanding)	50	50	
Electric Baseboard	25	25	
Unit Vent/Exhaust	15	15	
Unit Wiring	99	99	
Vanities	20	20	
Window Covering	3-20	3-25	Material/User Specific

EXPECTED USEFUL LIFE TABLE			
	Family Development	Elderly Development	Action
MECHANICAL/ELECTRICAL			
NOTE: 50+ = "long-lived" systems: EUL based on location and use specific conditions			
Central Unit Exhaust, Roof Mounted	15	15	
Chilled Water Distribution	50+	50+	
Chilling Plant	15	25	
Compactor	15	15	
Cooling Tower	25	25	
Electrical Switchgear	50+	50+	
Electrical Wiring	50+	50+	
Elevator, Controller/Dispatcher	15	20	
Elevator, Cab	15	20	Rebuild Interior
Elevator, Machinery	30	30	
Elevator, Shaftway Doors	20	30	Replace Gibs and Rollers
Elevator, Shaftways			
Hoist Rails, Cables, Traveling Equipment	25	25	
Hydraulic Piston and Leveling Equipment	25	25	Re-sleeve Piston
Emergency Call Alarm System, Station	15	15	
Emergency Generator	35	35	
Emergency Lights	10	10	Battery operated
Evaporative Cooler	15	15	
Fire Pumps	20	20	Pump Motor
Fire Suppression	50+	50+	Piping
Gas Distribution	50+	50+	Piping
Heat Sensors	15	15	
Heating Risers and Distribution	50+	50+	
Heating Water Controller	15	15	
Hot and Cold Water Distribution	50	50	
HVAC			
Cooling Only	15	15	
Heat Only	15	15	
Heating and Cooling	15	15	
Master TV System	15	15	
Outdoor Temperature Sensor	10	10	
Sanitary Waste and Vent System	50+	50+	
Sewage Ejectors	50	50	
Buzzer/Intercom Central Panel	15	15	
Smoke & Fire Detection System, Central Panel	15	15	
Sump Pump			
Residential	7	7	Replace
Commercial	15	15	Replace Motor
Water Softening and Filtration	15	15	
Water Tower	50+	50+	
Boiler Room Equipment			
Blowdown and Water Treatment	25	25	
Boiler Room Pipe Insulation	With Boiler	With Boiler	
Boiler Room Piping	With Boiler	With Boiler	
Boiler Room Valves	15	15	Repack Valves
Boiler Temperature Controls	With boiler	With boiler	
Boilers			
Oil-fired Sectional	22	22	
Gas or Dual-fuel-fired Sectional	25	25	
Oil Gas or Dual-fuel-fired Package, Low MBH	30	30	

EXPECTED USEFUL LIFE TABLE
Family Development Elderly Development

			Action
MECHANICAL/ELECTRICAL (continued)			
Oil Gas or Dual-fuel-fired Package, High MBH	40	40	
Gas-fired Atmospheric	25	25	
Electric	20	20	
Bottled Gas Storage	20	20	
Building Heating Water Temperature Controls			
Residential	12	12	
Commercial	15	15	
Combustion Air			
Duct with Fixed Louvers	50+	50+	Replace
Motorized Louver and Duct	25	25	Replace Motor
Make-up Air	25	25	Replace Fan/Preheater
Compressors	15	15	
Condensate and Feedwater			
Feedwater Only (Hydronic)	10	10	
Condensate and Feedwater (Steam)	With Boiler	With Boiler	
DHW Circulating Pumps	By Size	By Size	
DHW Generation			
Tank Only, Dedicated Fuel	10	10	
Exchanger in Storage Tank	15	15	
Exchanger in Boiler	15	15	
External Tankless	15	15	
Instantaneous	10	10	
DHW Storage Tanks			
Small (up to 150 gallons)	12	12	Replace
Large (over 150 gallons)	7	7	Point Tank Lining
Domestic Cold Water Pumps	15	15	
Fire Suppression	50+	50+	
Flue Exhaust	With Boiler	With Boiler	
Free Standing Chimney	50+	50+	
Fuel Oil Storage	25	25	
Fuel Transfer System	25	25	
Heat Exchanger	35	35	
Heating Water Circulating Pumps	By size	By size	
Line Dryers	15	15	
Motorized Valves	12	12	
Outdoor Temp Sensor	10	10	
Pneumatic Lines & Controls	30	30	
Purchased Steam Supply Station	50+	50+	
Solar Hot Water	20	20	Replace Collector Panels

Rental Assistance Demonstration Program Environmental Restrictions Checklist

Project Name and Location (Street, City, County, ST, Zip Code):	Owner Name, Address (Street, City, ST, Zip Code), and Phone:	
Project Description:		
ENVIRONMENTAL REVIEW FINDINGS		
	YES	NO
FLOOD PLAIN		
Is the project located in a FEMA Special Flood Hazard Area? (Current flood plain maps should be found in each HUD field office or call FEMA at 1-877-FEMA-MAP, FEMA's web site URL is www.fema.gov/FHM/)		
Identify Map Panel and Date		
Does the project currently carry Flood Insurance?		
Do any structures appear to be within or close to the floodplain? (If yes and if the project does not currently carry flood insurance, flood insurance is required.)		
HISTORIC PRESERVATION (If yes, identify relevant restrictions below.)		
Is the property listed on the National Register of Historic Places?		
Is the property located in a historic district listed on the National Register of Historic Places?		
Is the property located in a historic district determined to be eligible for the National Register?		
AIRPORT HAZARDS		
Is the project located in the clear zone of an airport? (24 CFR Part 51 D. If yes, Notice is required.)		
HAZARDOUS OPERATIONS		
Is there any evidence or indication of manufacturing operations utilizing or producing hazardous substances (paints, solvents, acids, bases, flammable materials, compressed gases, poisons, or other chemical materials) at or in close proximity to the site?		
Is there any evidence or indication that past operations located on or in close proximity to the property used hazardous substances or radiological materials that may have been released into the environment?		
EXPLOSIVE/FLAMMABLE OPERATIONS/STORAGE (24 CFR Part 51C)		
Is there visual evidence or indicators of unobstructed or unshielded above ground storage tanks (fuel oil, gasoline, propane etc.) or operations utilizing explosive/flammable material at or in close proximity to the property?		
FOR YES RESPONSES, SUMMARIZE RESTRICTIONS BELOW:		

RENTAL ASSISTANCE DEMONSTRATION PROGRAM ENVIRONMENTAL RESTRICTIONS CHECKLIST

ENVIRONMENTAL REVIEW FINDINGS	YES	NO
TOXIC CHEMICALS AND RADIOACTIVE MATERIALS		
Petroleum Storage		
Is there any evidence or indication of the presence of commercial or residential heating activities that suggest that underground storage tanks may be located on the property?		
If yes, are any such tanks being used? If yes, indicate below whether the tank is registered, when it was last tested for leaks, the results of that test, and whether there are any applicable state or local laws that impose additional requirements beyond those required under federal law.		
Are there any out-of-service underground fuel storage tanks? If yes, indicate whether the tank was closed out in accordance with applicable state, local and federal laws.		
Is there any evidence or indication that any above ground storage tanks on the property are leaking?		
Polychlorinated Biphenyls (PCB)		
Is there any evidence or indication that electrical equipment, such as transformers, capacitors, or hydraulic equipment (found in machinery and elevators, installed prior to July 1, 1884) are present on the site?		
If yes, is any such equipment (a) owned by anyone other than a public utility company; and (b) not marked with a "PCB Free" sticker?		
If yes, indicate below whether such equipment has been tested for PCBs, the results of those tests, and (if no testing has been performed) the proposed testing approach. (Electrical equipment need not be tested but will be assumed to have PCBs)		
If PCBs are found in non-electrical equipment over 50ppm it must be replaced or retrofitted, otherwise any equipment with PCBs or assumed to have PCBs require an O&M Plan.		
Asbestos Containing Materials (ACM)		
Is there any evidence or indication of ACM insulation or fire retardant materials such as boiler or pipe wrap, ceiling spray, etc. within the buildings on the property? If yes, the property is required to have an Operations and Maintenance Plan for asbestos containing materials.		
Lead Based Paint		
Are there residential structures on the property that were built prior to 1978?		
If yes, has the property been certified as lead-free?		
If property has not been certified as lead-free, has a Risk Assessment been completed?		
If yes, has the owner developed a plan including Interim Controls to address the findings of the Risk Assessment including Tenant notifications and an Operations and Maintenance plan?		
If yes, has a qualified Risk Assessor reviewed the Owner's plan and O&M plan for compliance with 24 CFR 35?		
EASEMENT AND USE RESTRICTIONS		
Are there easements, deed restrictions or other use restrictions on this property? (e.g. oil and gas well pumping, transformer boxes/units, navigation, microwave, rights of way (ROW), for hi-voltage power transmission lines, interstate/intrastate gas and liquid petroleum pipelines, etc.)		
FOR YES RESPONSES, SUMMARIZE RESTRICTIONS BELOW:		
<p>If you have questions, please call or E-mail the HUD Housing Environmental Clearance Officer, Eric Axelrod at Eric.Axelrod@HUD.GOV or 202-708-1104 x 2275.</p>		

**Rental Assistance Demonstration (RAD)
 Accessibility Law Compliance
 Summary of HUD's Responsibility Laws
 ARCHITECTURAL BARRIERS**

Code of Federal Regulations Number	Act/Section Application	Uniform Federal Accessibility Standards Apply (USFAS)*	Accessibility Requirements
42 USC 4151-4157	<p>Certain buildings financed with Federal funds are so designed and constructed as to be accessible to the physically handicapped.</p> <p>Projects financed with Federal funds including:</p> <ul style="list-style-type: none"> • Section 202/811 capital advances • All newly constructed low-income public housing projects or; • Public housing projects undergoing rehabilitation financed by Comprehensive Improvement Assistance Program (CIAP) funds. 	Yes	

**Rental Assistance Demonstration (RAD)
Accessibility Law Compliance
Summary of HUD's Responsibility Laws**

SECTION 504 OF THE REHABILITATION ACT OF 1973

Code of Federal Regulations Number	Act/Section Application	Uniform Federal Accessibility Standards Apply (USFAS)*	Accessibility Requirements
24 CFR Part 8	<p>Projects receiving Federal financial assistance including:</p> <ul style="list-style-type: none"> • Section 202/811 capital advances • Section 8 project based assistance • Newly constructed public housing projects or; • Public housing projects undergoing rehabilitation financed by Comprehensive Improvement Assistance Program (CIAP) funds. 	Yes	<p>New Construction (24 CFR 8.22 (6)):</p> <ul style="list-style-type: none"> • 5% or a minimum of one dwelling unit (DU) must meet <u>mobility impairment regulations</u> • An additional 2% or a minimum of one DU must meet <u>hearing and visual impairment regulations</u> <p>Substantial Alteration (24 CFR 8.32(a)):</p> <ul style="list-style-type: none"> • Buildings undergoing substantial alteration are only affected if they contain 15 or more DU <u>and</u> the cost of the alterations is 75% or more of the replacement cost. <p>Other Alterations / Clarifications (25 CFR 8.23(b)):</p> <ul style="list-style-type: none"> • Regulation states that alterations “shall to the maximum extent feasible, be made to be readily accessible to and usable by individuals with handicaps. <i>NOTE: This also applies to alterations to common parts of facilities that affect accessibility of existing housing facilities.</i> • Alterations to DUs or common areas that affect accessibility of existing housing facilities must be completed to allow access for all persons. • Owners and sponsors are not required to make the prescribed alterations if doing so would impose an undue financial or administrative burden on the operation of the multifamily housing project. • If alterations, when considered together, to single elements or spaces of a DU, amount to an alteration of a DU, the entire unit must be made readily accessible. • If 5% of DU are readily accessible to the <u>mobility impaired</u>, no further alterations are necessary. This section is silent on visual/hearing impairments. However, additional requirements <i>to</i> include these may be prescribed by the field office. (24CFR 8.23(b)(2))

**Rental Assistance Demonstration (RAD)
 Accessibility Law Compliance
 Summary of HUD's Responsibility Laws
 FAIR HOUSING AMENDMENTS ACT OF 1988**

Code of Federal Regulations Number	Act/Section Application	Uniform Federal Accessibility Standards Apply (USFAS)*	Accessibility Requirements
	24 CFR Part 100	No	<ul style="list-style-type: none"> • At least one unit must be on an accessible route unless impractical due to terrain. (24 CFR 100.205(a)) • All public and common use areas must be accessible. (24 CFR 100.205(c)(1)) • All external and internal doors must be wide enough to accommodate wheel chair access. (24 CFR 100.205 (c)(21)) • All dwelling units must contain the following features of adaptable design: <ul style="list-style-type: none"> ◊ Accessible route into and through the DU (24 CFR 100.205 (C)(3)(i)) ◊ Light switches in accessible locations (24 CFR 100.205 (C)(3)(ii)) ◊ Reinforcements in bathroom walls for grab bars and; (24 CFR 100.205 (C)(3)(iii)) • Usable kitchens and bathrooms for persons in wheelchairs (24 CFR 100.205 (C)(3)(iv))

In addition to the inspection of the units, we inspected the interior and exterior areas of the property for evidence of infestations in the trash disposal areas, laundry facilities, storage areas and any other common area where water and/or food storage is present. Additionally, we inspected all areas where the envelope has been penetrated and all points of ingress/egress for any entry points for pests. Below are our findings for these areas, with a status (high, moderate, low, none) noted, and comments for corrective measures, both immediate and long-term. (Lengthen the table as needed to reflect all areas inspected)

Area	Comments	Status

Based on the above findings, interviews with the property managers, maintenance staff, and tenants, and the review of all documentation made available to us regarding past Pest Control effort we conclude the following course of action is required: (The RPCA Scope of Work requires, at Part 3.2.D.iv, “[the report details]... an immediate course of action, which identifies and estimates the cost of the measures required to address the pest infestations for each identified group (see prior paragraph) and an continuing course of action for using IPM principles at the property”). **(IPM Inspector - add detailed comments below for the units and the common areas including the recommendations from Exhibit 2)**

Sincerely,

(Name of IPM Contractor)

Member of (QualityPro Green, EcoWise, GreenShield, or other certification program accepted by HUD in its sole discretion)

**Rental Assistance Demonstration Program (RAD)
Effective Integrated Pest Management for Affordable Housing**

Essential Elements of Effective IPM (per HUD May 27, 2007 Guidance)	Status at Development (checkmark all that are present)	Comment on Existing Strategies and Deficiencies; Make Recommendations
1. Communicate Policies Communicate ownership/ management's IPM policies and procedures to: <ul style="list-style-type: none"> • All building occupants • Administrative staff • Maintenance personnel • Contractors. 	<input type="checkbox"/> Written pest control policy in place. <input type="checkbox"/> Policy communicated to: <ul style="list-style-type: none"> <input type="checkbox"/> Staff. <input type="checkbox"/> Resident services. <input type="checkbox"/> Maintenance staff. <input type="checkbox"/> Renovation/rehabilitation staff/contractors. <input type="checkbox"/> Pest control services. <input type="checkbox"/> Policy communicated to residents.	
2. Identify Problem Pests Identify pests and environmental conditions that limit the spread of pests.	<input type="checkbox"/> Policy described strategy to address pests: <ul style="list-style-type: none"> <input type="checkbox"/> Rats. <input type="checkbox"/> Mice. <input type="checkbox"/> Cockroaches. <input type="checkbox"/> Bedbugs. <input type="checkbox"/> Other pests: _____ <input type="checkbox"/> Policy described strategy to address environmental conditions: <ul style="list-style-type: none"> <input type="checkbox"/> Water damage and effective cleanup. <input type="checkbox"/> Housekeeping and maintenance within the apartment units. 	

**Rental Assistance Demonstration Program (RAD)
Effective Integrated Pest Management for Affordable Housing**

<p style="text-align: center;">Essential Elements of Effective IPM (per HUD May 27, 2007 Guidance)</p>	<p style="text-align: center;">Status at Development (checkmark all that are present)</p>	<p style="text-align: center;">Comment on Existing Strategies and Deficiencies; Make Recommendations</p>
<p>3. Monitor and Track Establish an ongoing monitoring and record keeping system for:</p> <ul style="list-style-type: none"> • Regular sampling and assessment of pests • Surveillance techniques • Remedial actions taken • Assessment of program effectiveness. 	<ul style="list-style-type: none"> <input type="checkbox"/> Pest control complaints: <ul style="list-style-type: none"> <input type="checkbox"/> Maintained accurate, up-to-date, and accessible tracking reports maintained. <input type="checkbox"/> Recorded in electronic format. <input type="checkbox"/> Analyzed regularly for timeliness, recurrent problems and other trends. <input type="checkbox"/> Action taken based on analysis of complaints. <input type="checkbox"/> Ongoing and regular monitoring of trash handling areas and common areas: <ul style="list-style-type: none"> <input type="checkbox"/> Visual monitoring. <input type="checkbox"/> Glue trap monitoring. <input type="checkbox"/> Ongoing and regular inspection of exterior areas. <input type="checkbox"/> Result of visual monitoring and glue trap monitoring recorded and tracked. <input type="checkbox"/> Annual inspection of each resident for housekeeping and maintenance concerns. <input type="checkbox"/> Annual summary of results of complaint and monitoring analysis. 	
<p>4. Set Thresholds for Action Determine, with involvement of residents:</p> <ul style="list-style-type: none"> • Pest population levels – by species – that will be tolerated • Thresholds at which pest populations warrant action. 	<ul style="list-style-type: none"> <input type="checkbox"/> Zero tolerance set for priority pests: rats, mice, cockroaches, and bedbugs. <input type="checkbox"/> Residents and staff aware of zero tolerance policy. <input type="checkbox"/> Tolerances set for other pests such as ants and spiders. 	

**Rental Assistance Demonstration Program (RAD)
Effective Integrated Pest Management for Affordable Housing**

Essential Elements of Effective IPM (per HUD May 27, 2007 Guidance)	Status at Development (checkmark all that are present)	Comment on Existing Strategies and Deficiencies; Make Recommendations
<p>5. Improve Non-Pesticide Methods Improve:</p> <ul style="list-style-type: none"> • Mechanical pest management methods • Sanitation • Waste management • Natural control agents. 	<ul style="list-style-type: none"> <input type="checkbox"/> Regular and ongoing cleaning of [Frequency] <ul style="list-style-type: none"> <input type="checkbox"/> Interior trash handling areas [_____] <input type="checkbox"/> Exterior trash handling areas [_____] <input type="checkbox"/> Laundry rooms [_____] <input type="checkbox"/> Storage areas [_____] <input type="checkbox"/> Regular removal of interior trash [_____] <input type="checkbox"/> Confirm dumpsters <ul style="list-style-type: none"> <input type="checkbox"/> Are of adequate size <input type="checkbox"/> Are in good repair <input type="checkbox"/> Have tightly fitting lids <input type="checkbox"/> Are located at least 25 feet from building <input type="checkbox"/> Show no signs of overflow problems. 	
<p>6. Prevent Pest Entry and Movement</p> <ul style="list-style-type: none"> • Monitor and maintain structures and grounds including <ul style="list-style-type: none"> ○ Sealing cracks ○ Eliminating moisture intrusion and accumulation • Add physical barriers to pest entry and movement. 	<ul style="list-style-type: none"> <input type="checkbox"/> Exterior holes greater than ¼” sealed. <input type="checkbox"/> Cracks in walls, foundation and floor sealed. <input type="checkbox"/> Sewer traps filled with water. <input type="checkbox"/> Screens in place on opened windows and doors in warm weather. <input type="checkbox"/> Door sweeps in good working condition. <input type="checkbox"/> Materials damaged by water quickly repaired or replaced. <input type="checkbox"/> Cause of water damage corrected. 	
Essential Elements of Effective IPM (per HUD May 27, 2007 Guidance)	Status at Development (checkmark all that are present)	Comment on Existing Strategies and Deficiencies; Make Recommendations

**Rental Assistance Demonstration Program (RAD)
Effective Integrated Pest Management for Affordable Housing**

<p>7. Educate Residents and Update Leases</p> <ul style="list-style-type: none"> • Develop an outreach/educational program • Ensure that leases reflect residents' responsibilities for: <ul style="list-style-type: none"> ○ Proper housekeeping ○ Reporting presence of pests, leaks, and mold. 	<ul style="list-style-type: none"> <input type="checkbox"/> Resident leases set specific requirements for: <ul style="list-style-type: none"> <input type="checkbox"/> Housekeeping, sanitation, and trash storage. <input type="checkbox"/> Reporting of pests, leaks, and mold. <input type="checkbox"/> Educational materials on pest control and pesticide use provided to residents. <input type="checkbox"/> New residents expressly told that they are responsible for proper housekeeping and reporting presence of pests, leaks, and mold. <input type="checkbox"/> Units inspected within one month after moving in. <input type="checkbox"/> Residents regularly reminded of responsibilities. <input type="checkbox"/> Resident told to notify resident services before using any pesticides spray or fogger. 	
<p>8. Enforce Lease</p> <p>Enforce lease provisions regarding resident responsibilities such as:</p> <ul style="list-style-type: none"> • Housekeeping • Sanitation • Trash removal and storage. 	<ul style="list-style-type: none"> <input type="checkbox"/> Pest control services and maintenance alerting resident services to housekeeping, sanitation and trash problems on an identified, established schedule. <input type="checkbox"/> Resident services addressing residents with housekeeping problems through education. <input type="checkbox"/> Residents with ongoing or unresolved housekeeping, sanitation or trash problems addressed through enforcement of lease. 	
<p style="text-align: center;">Essential Elements of Effective IPM (per HUD May 27, 2007 Guidance)</p>	<p style="text-align: center;">Status at Development (checkmark all that are present)</p>	<p style="text-align: center;">Comment on Existing Strategies and Deficiencies; Make Recommendations</p>

**Rental Assistance Demonstration Program (RAD)
Effective Integrated Pest Management for Affordable Housing**

<p>9. Use Pesticides Only When Necessary Use pesticides only when necessary, with preference for products that, while producing the desired level of effectiveness, pose the least harm to human health and the environment, and, as appropriate, notifying PHA management before application.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Snap traps used for mice. <input type="checkbox"/> Rodenticides only used in tamper-resistant plastic boxes. <input type="checkbox"/> No sprays or foggers used by staff, contractors, or residents without written, advance approval of property manager. <input type="checkbox"/> Boric acid and baits used at unit turnover. 	
<p>10. Post Signs Provide and post ‘Pesticide Use Notification’ signs or other warnings.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Program in place to notify residents and staff of pesticide use. <input type="checkbox"/> Signs used to notify residents and staff in advance of pesticide application (if for other than bait stations). <input type="checkbox"/> Residents notified after units treated. <input type="checkbox"/> Residents notified after common areas treated. 	
<p>11. Summary</p>	<ul style="list-style-type: none"> <input type="checkbox"/> How many of the ten Essential Elements of Effective IPM listed in this chart are: <ul style="list-style-type: none"> - Fully addressed? _____ - Partially addressed? _____ - Missing entirely? _____ 	

USING GLUE TRAPS

(from the National Center for Healthy Housing)

Cockroaches don't like the light. They prefer the dark. When you see one, the infestation is probably serious. There may be thousands more hidden. Cockroach glue traps left out overnight in the right places are a better way to identify a problem.

Cockroach glue traps are a strip of cardboard with glue on it. The glue traps come in many shapes and styles. The two most basic types come in a triangle or a flattened tube.



Photo Courtesy of January Jones
Cockroaches on Glue Traps.

They can also be a small, open-face, tray of glue. Avoid these traps since pets and, sometimes, a curious child can get the trap stuck on them. If a mouse gets stuck, it will most likely die after hours of squeaking. People in the area will not be happy. Leave the tray of glue to the professionals.

Please note that glue traps are only useful to monitor for cockroaches. They will not eliminate the cockroaches since only adult cockroaches are likely to be caught.

Setting up the Trap: Each brand is different. Read the instructions. Practice on a few to get it right. Make sure you write the date and location on the trap. Once cockroaches are on the trap, it will be difficult to label. Generally:

- Mark date and location on trap;
- Fold it in the proper shape to get the angles right;
- Open it back up;
- Remove paper that covers glue;
- Fold it into shape using glue to hold it.

You may want to use gloves to avoid getting the glue on your fingers. If you do get glue on you, use a good grease removing detergent such as hand dishwashing soap to get it off. It is not dangerous but it sure is sticky.

Placing the Trap: Cockroaches run along corners. Place the traps in the corner of two walls so the cockroach running along the wall will go through it. Put the trap in places with food, heat and moisture, especially where you see frass (cockroach debris, especially feces). Cockroaches leave it wherever they go.

Kitchen

- On the floor by the refrigerator
- On the floor by the oven
- In the pantry behind the food
- Under sink



Photo courtesy of Changlu Wang, Purdue University
Cockroach Glue Trap along refrigerator

Bathroom

- Behind toilet
- Alongside refrigerator
- In towel closet



Photo courtesy of Changlu Wang, Purdue University
Cockroach Glue Trap along baseboard in bathroom

Basement

- Under sink
- By washer or dryer



Photo courtesy of Philip Smith, West Virginia Dept. of Agriculture
Cockroach Glue Trap along baseboard in kitchen

Other areas

- Behind bed
- Under couch

FOR THE PEST MANAGEMENT PROFESSIONAL

Checking / Collecting the Trap: Make it part of your routine to check the traps for cockroaches. If you find a cockroach in a trap, remove the trap, replace it with a new one, and put the old one in a zip lock bag. You may want to use tongs to pick it up since the cockroaches may be alive.

Write down as clearly as you can where the trap was located on the bag or on paper that you put in the bag. Seal the bag.

It is important to save the trap and its location information. The pest management professional (PMP) needs it to identify the type of cockroach and more quickly find the location of the infestation.