



Vermont Housing Finance Agency



Vermont Housing &
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VHFA, VHCB, DHCD

Capital Needs Assessment (CNA) Guidance

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This joint document has been developed by the Vermont Housing Finance Agency (VHFA), Vermont Housing and Conservation Board (VHCB) and the Vermont Department of Housing and Community Development (DHCD) as guidance for housing developers, asset managers and property managers who rely on capital needs assessments as a tool for the long term physical health of affordable housing properties.

For the purpose of this document, capital expenses (also referred to as Physical Condition Assessments – PCAs) are considered expenses involving the replacement of building components over time. They are not annually recurring expenses and differ from routine building maintenance expenses in this way.

Definition of Capital vs. Maintenance Operating Expense

Capital Expense – Major capital improvements to maintain the physical integrity and upkeep of a property are usually funded from the Replacement Reserve account. Funds from this account should be restricted for uses consistent with the CNA unless otherwise approved by the funding agencies. Typical uses include: new appliances, heating equipment, hot water heaters, reroofing roofs, exterior painting and repair, kitchen and bathroom fixtures, doors and windows, flooring, plumbing equipment, kitchen cabinetry, elevators, grounds maintenance equipment, major sitework modifications, septic/sewer line repair, sprinkler and alarm systems, electrical equipment, and similar improvements or replacements.

Maintenance Expense – any and all regular and recurring expenses associated with maintaining the physical integrity and upkeep of a property not otherwise considered a capital expense.

Turnover Expense – the costs of interior painting, cleaning and unit prep (exclusive of carpet, appliance and cabinetry replacement) should be maintenance expenses and not capital expenses.

Capital Needs Issues to Consider During the Development Process

Several critical areas play an important role in assuring both new and existing properties are able to meet future capital replacement costs. They include:

- When acquiring and/or rehabbing an existing building, the scope of rehabilitation work and CNA must be in sync so that the CNA for a rehabbed property reflects the new infrastructure and systems. This will also result in establishing accurate replacement reserve deposit levels so reserves can accumulate prior to the need for replacement of building components.
- Funds for completing the first post-construction or rehabilitation CNA should be included in the development budget.
- Accurate assumptions in the development and underwriting phase are critical to a property's ability to fund reserves in the required amount. Income, expense and trending estimates must be realistic and based on experience of asset management staff using the most similar properties' actual history.

Pre-Capitalized Reserves and Completion of Initial CNA

- The funding agencies strongly encourage and in some cases may require the capitalization of a replacement reserve account initially during the development stage in combination with required ongoing deposits in order to help match the future funds needed with actual replacement costs.
- New construction and/or substantial rehab properties must complete a Capital Needs Assessment no later than six months from the date of construction completion. If a CNA has not been completed at the time the property is placed in service, a pre-capitalized reserve in the amount of \$1,000/unit is strongly recommended. If the CNA is provided at closing or construction completion, the replacement reserve deposit levels in the operating budget should reflect the amount indicated in the CNA.
- New loan/grant applications for existing buildings not undergoing substantial rehabilitation must include a CNA to support the budgeted reserve deposit levels. For the purpose of this document, substantial rehabilitation is defined as rehabilitation that involves the upgrading or replacement of the majority of building components to achieve a "like new" condition. Moderate rehabilitation is defined as selective replacement of building components that have come to the end of their useful life or are within five years of coming to the end of their useful life, or need to be upgraded to meet current building code requirements. In general, the cost of construction in a building undergoing moderate rehabilitation is less than 25% of the total development cost (consult with funders' staff on a case by case basis).

General CNA Report Requirements

- Initial CNAs on all projects must be completed by an approved third party who does not have an identity of interest relationship with the developer, owner or sponsor.
- Initial CNAs on projects that are not new construction or substantial rehab must not be older than two years of the loan application date. Site inspection must confirm that project's physical condition is consistent with the findings of the CNA.

- Each CNA report must cover a period of 20 years for both existing (rehab.) projects and new construction.
- Each CNA report must include a cash flow model, in spreadsheet format, providing an analysis of existing capital reserves and a detailed year by year schedule of expected repairs and replacement costs incurred. An inflation factor that is consistent with actual experience and historical data shall also be built into future replacement cost projections. It is recommended that an electronic copy of the spreadsheet be provided to the developer, owner or sponsor so that it can be used as an interactive record of capital costs and reserve balances moving forward.

CNA Updates

Each CNA must be updated every five years for the life of the project. Updated CNAs should be incorporated into the yearly annual budget process as an integral part of capital planning and should reflect any changes in federal, state or local codes which may impact on future capital needs.

Property owner/managers will have two options for fulfilling the requirement for five year CNA updates:

Option one: Owners/managers will hire a third party approved CNA provider to provide a new/updated CNA every five years.

Option two: Owners/managers who show the interest and capacity (in the opinion of funders) to perform an “in house” CNA review and update will be permitted to do so at the 5, 15, 25 , etc. year review period. The requirement for a formal third party CNA will be for years 1, 10, 20, etc.. Owners/managers wishing to pursue Option two shall perform the following:

- 1) Submit a letter of intent to the Asset Management Staff of your funding agency outlining the property to be reviewed, the name(s) of the in house staff tasked with performing the review, the qualifications of this/these staff member/s to perform a CNA review, and the current reserve balance surplus/shortfall projection based on the previous formal third party CNA which is to be reviewed and updated.
- 2) In house staff in performing the CNA review/update shall assess all appropriate building systems. Estimated Useful Life (EUL) estimates provided with these guidelines together with on site experience and other sources shall be utilized to extend the review period an additional five (5) years maintaining a 20 year projection time horizon.
- 3) Upon completion of the update/review process a report shall be submitted to VHFA, VHCB, DHCD Asset Management staff outlining the findings of the CNA update/review together with a projection spreadsheet reflecting the new extended 20 year time horizon. This report shall be reviewed and signed by owner/manager’s Director of Asset Management (or equivalent) as well as by the owner/manager’s Executive Director.

Required Components of a Capital Needs Assessment (CNA)

An effective CNA is composed of the following elements:

The inventory component must include all of the building systems, not just those that may require attention during the 20 year report period. Any item that has recently been replaced, and may not be expected to need attention again for the next 20 years or more, should still be listed for reference. If the assessor has made an assumption that a particular item represents an operating cost concern, the analysis should be shown to facilitate discussion and remediation.

Each system or item included must have its age identified. In older properties, ages of components may not coincide with the development's age. Ages may vary widely between items and even across a single item. i.e., Unit flooring may have been installed over a five-year period, which began eight years ago.

Expected useful life (EUL) estimates are the key to replacement timing. Capital planning is built on the idea that even systems that operate properly now will eventually fail. EULs should be adjusted from the norms found in various tables to the actual conditions at each development. EULs should be adjusted for climate, original materials and installation, maintenance practices, and resident demographic profiles. For example, elderly and family occupancy present different issues. Tables for typical estimated useful life cycles may be found on the Fannie Mae website and are attached as Appendix II of this document.

Cost estimating is a critical part of capital planning and the CNA consultant should take into account replacement costs adjusted for the local area. The ability to adjust costs for individual building circumstances and the relative purchasing power of the developer/owner/manager are equally important. [*RS Means*](#) and [*Marshall and Swift*](#) are reliable resources for this information.

A detailed year-by-year cost summary of all of the anticipated capital needs should list not only how much needs to be spent but when. While a steady level may be desirable from a financial viewpoint, peaks and valleys will more accurately describe the real needs of the property, especially at single-building developments.

Narrative presentations should describe the current condition, maintenance history, and the rationale behind the consultant's cost and timing decisions, therefore, an Executive Summary is especially helpful. Narratives allow for a description of the cause of current problems, details on location of problems, or discussion of alternatives like rebuilding a pump motor instead of replacing the whole pump.

Photographs are required and are an invaluable tool when the report has a non- technical audience or is shared with a third party. These readers may never have been in a boiler room or crawl space and may be unfamiliar with technical terms. Photographs can also support the findings and recommendations of the consultant. Showing the extent of the siding damage or the width of the foundation cracks can overcome a lot of resistance.

Capital Need Assessments must incorporate plans to install or maintain required building code requirements and improvements required under ADA, Section 504 and/or Fair Housing Guidelines.

Optimum Energy Efficiency is critical. In today's escalating and volatile utility markets, properties must be as energy efficient as possible and meet the highest standards possible to assure long-term operating sustainability. Recommendations on energy and utility efficiency improvements must be included as an essential part of the CNA. VHFA, VHCB, & DHCD Energy Standards should be used as a frame of reference in achieving optimum energy efficiency. Please refer to Efficiency Vermont's website www.encyvermont.com for more information.

VHFA shall evaluate past and current operating and maintenance practices for consistency with the project's operating pro forma and most recent CNA, and to ensure practices are consistent with the findings of the most recent physical inspection.

Life Safety Issues. The CNA must report the presence of potentially hazardous materials, waste or toxic substances including but not limited to the presence of mold, asbestos, lead, urea formaldehyde, etc. if observed.

Most importantly, the CNA must evaluate existing capital reserves and annual contributions to reserves against the long-term spending plan. This analysis, presented as a spreadsheet cash flow analysis, will indicate the optimum annual contribution to reserves in a way that can be convincingly presented to funding agencies. The reserve plan should reflect real life constraints that are at odds with making the "optimum" contribution. Please go to www.on-site-insight.com, or www.efanniemae.com/mf/guidesforms/pdf/forms/III-12.PDF for detailed information and an example of acceptable CNA formatting.

Requirements of a Capital Needs Assessment Consultant

The CNA Consultant must meet minimum qualifications, professional education, training and experience to perform site visits and prepare CNA reports.

Professional Experience

- CNA Consultant, its personnel and subcontractors must be independent third-parties, unrelated to, and not have any financial or economic interest in the property; or
- CNA Consultant must not be an affiliated entity of the property owner unless previously approved by VHFA.
- CNA Consultant must not be under suspension or debarment by HUD or Fannie Mae, involved as a defendant in criminal or civic action with HUD or Fannie Mae, and not be an Federal Housing Finance Agency (FHFA) prohibited party.
- Five years of professional experience in one or more of the following disciplines:
 - architecture;
 - engineering (structural, mechanical or civil); or
- Construction management and cost estimating (which may include cost estimating experience associated with the preparation of a CNA Report). Three years of experience performing multifamily property condition physical needs assessments, completed a minimum of five property inspections, and reporting of property condition assessment findings in a manner consistent with these Instructions or ASTM E2018-08 "Standard Guide for Property Condition

Assessments: Baseline Property Condition Assessment Process”; or

- Knowledge and experience with ASTM E2018-08; or
 - Minimum of three years history providing CNA reports acceptable to VHFA either directly or through a VHFA approved CNA Consultant.
- VHFA may approve new CNA Consultants based on a review of a resume, sample reports and references.

Education Requirements

CNA Consultants must possess or have completed one of the following programs:

- Bachelor of Science degree in engineering, architecture, construction management, historic preservation, construction/building science or building facilities management.
- Property Inspection Risk Management course offered by the MBA;
- Real Estate Assessment Center (“REAC”) for the Department of Housing and Urban Development (“HUD”) as a Certified Home Inspector;
- Building Performance Institute (BPI);
- American Society of Home Inspectors (“ASHI”);
- National Association of Home Inspectors (“NAHI”);
- At least five years assessing multifamily properties and preparation of ASTM E2018-08 compliant reports; or
- Other approved professional certifications, registrations, or training recognized by a Government Sponsored Enterprise (GSE) or HUD.

Insurance Requirements

The CNA Consultant must provide evidence of the following insurance coverage to VHFA as an exhibit to the CNA report:

- Commercial General Liability Insurance with limits of at least \$1 million per occurrence and \$2 million aggregate with a maximum deductible amount of \$35,000.
- Professional Liability Insurance with limits of \$1 million per claim and \$2 million aggregate with a maximum deductible amount of \$100,000;
- Worker’s Compensation insurance; and
- Automobile Liability Insurance for all owned (if any), non-owned and hired vehicles of \$1 million per accident.

The CNA Consultant should have appropriate insurance coverage in place for traveling to and from the Property and conducting work at the Property.

Appendix I – VHFA Approved Independent CNA Consultants

US Housing Consultants
72 North Main Street, Suite 202
Concord, NH 03301
(603) 223-0003
<https://www.us-hc.com/>

On-Site Insight
38 Chauncy Street, Suite 600
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Amy Gay
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Appendix II - Estimated Useful Life (EUL) Tables

These Estimated Useful Life Tables for multifamily property systems and components are intended to represent standardized average estimated useful life (“EUL”) values and are not intended to replace the professional judgment of the CNA Consultant in determining the Effective Age and Remaining Useful Life of the systems and components at the Property. The CNA Consultant should consider preventive maintenance practices, as well as environment, geographic, resident, and other factors when determining Effective Age and Remaining Useful Life of the systems and components of a multifamily Property. In addition to providing guidance on EUL values typically considered capital expenditure items, the EUL tables may include items that are typically considered general maintenance and repair items to be handled by in-house maintenance staff.

Estimated Useful Life (EUL) Tables

FLATWORK, PARKING AREAS AND WALKWAYS	Multifamily / Coop	Seniors	Students
Asphalt pavement	25	25	25
Asphalt seal coat	5	5	5
Concrete pavement	50	50	50
Curbing, asphalt	25	25	25
Curbing, concrete	50	50	50
Parking, stall striping	5	5	5
Parking, gravel surfaced	15	15	15
Security gate (site ingress/egress) - rolling gate / lift arm	10	10	10
Sidewalk, asphalt	25	25	25
Sidewalk, brick paver	30	30	30
Sidewalk, concrete	50	50	50

SITE LIGHTING	Multifamily / Coop	Seniors	Student
Building mounted exterior lighting	10	10	10
Building mounted High Intensity Discharge (HID) lighting	10	20	10
Lighting (pole mounted)	25	25	25

SITE FENCING AND RETAINING WALLS	Multifamily / Coop	Seniors	Students
Bulkhead (barrier) / partition wall /embankment	10	20	10
Fencing, chain-link (4' height)	40	40	40
Fencing, concrete masonry unit (CMU)	30	30	30
Fencing, dumpster enclosure (wood)	12	15	10
Fencing, PVC (6' height)	25	25	25
Fencing, Tennis Court (10' height)-Chain link	40	40	40
Fencing, wood privacy (6' height)	15	20	10
Fencing, wrought iron (4-6' height and decorative)	50	50	50
Retaining walls, 80 lb block type	50	50	50
Retaining walls, concrete masonry unit (CMU) with brick face	40	40	40
Retaining walls, timber (railroad tie)	25	25	25

STRUCTURAL FRAME AND BUILDING ENVELOPE			
BUILDING STRUCTURES	Multifamily / Coop	Seniors	Students
Carports	40	40	40
Canopy, concrete	50	50	50
Canopy, wood / metal	40	40	40
Garages	50	50	50
Storage Sheds	30	30	30
Penthouse (mechanical room)	50	50	50

FOUNDATIONS	Multifamily / Coop	Seniors	Students
Foundations	50+	50+	50+
Waterproofing (foundations)	50+	50+	50+

FRAMING	Multifamily / Coop	Seniors	Students
Brick or block	40	40	40
Precast concrete panel (tilt-up)	40	40	40
Wood floor frame	50+	50+	50+

BUILDING ENVELOPE / CLADDING / EXTERIOR WALL FINISHES	Multifamily / Coop	Seniors	Students
Aluminum Siding	40	40	40
Brownstone	40	40	40
Brick or Stone Veneer	50+	50+	50+
Cement-board siding (Hardi-plank)/ Cementitious (mfgr) siding	45	45	45
Exterior Insulation Finishing Systems (EIFS)	20	20	20
Glass block	40	40	40
Granite block	40	40	40
Insulation, wall	50+	50+	50+
Metal/ glass curtain wall	30	30	30
Painting, Exterior	5-10	5-10	5-10
Pre-cast concrete panel	45	45	45
Stucco systems	50+	50+	50+
Vinyl siding	25	25	25
Wood shingle/ clapboard/ plywood, stucco, composite wood	20	20	20

ROOF SYSTEMS	Multifamily / Coop	Seniors	Students
Asphalt shingle (3-tab)	20	20	20
Built-up roof - Ethylene Propylene Diene Monomer (EPDM) / Thermoplastic Polyolefin (TPO)	20	20	20
Metal	40	40	40
Parapet wall	50+	50+	50+
Caps, copings (aluminum/ terra-cotta) - Parapet	25	25	25
Roof drainage exterior (gutter/ downspout)	10	10	10
Roof drainage interior (drain covers)	30	30	30
Roof railing	25	25	25
Roof structure	50+	50+	50+
Roof hatch	30	30	30
Roof skylight	30	30	30
Slab	50+	50+	50+
Slate, clay, concrete tile	40	40	40
Soffits (wood/ stucco)	20	20	20
Soffits (aluminum or vinyl)	25	25	25
Wood shingles (cedar shake)	25	25	25

DOORS AND WINDOWS	Multifamily / Coop	Seniors	Students
Exterior common door, aluminum and glass	30	30	30
Exterior common door, solid core wood or metal clad	25	25	25
Exterior unit door, solid wood/ metal clad	25	30	20
Residential Sliding Glass Doors	25	30	20
Residential French Glass Doors	25	30	20
Ceilings, open or exterior	30	30	30
Service door (roof)	25	30	20
Storm/ screen doors	7	10	5
Storm/ screen windows	10	15	7
Windows (frames and glazing), vinyl or aluminum	30	30	30

APPURTENANCES:	Multifamily / Coop	Seniors	Students
Chimney	40	40	40
Exterior stairs, wood	15	20	15
Exterior stairs, metal pan- concrete filled	30	30	30
Exterior stairs, concrete	50	50	50
Fire Escapes	40	40	40
Porches, concrete	50	50	50
Wood Decks	20	20	20

AMENITIES	Multifamily / Coop	Senior	Student
Basketball court	25	25	25
Mail kiosk	10	15	10
Mail facility, interior	20	25	20
Pool deck	15	15	15
Pool/ spa plaster liner	8	8	8
Tennis court / basketball court surface (paint markings)	5	7	5
Tennis court Surface (acrylic emulsion)	10	12	10
Tot-lot (playground equipment)	10	15	10
Tot-lot, uncompressed ground cover	2+	3+	2+

MECHANICAL/ELECTRIC/ PLUMBING SYSTEMS
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WATER DISTRIBUTION AND DOMESTIC HOT WATER SYSTEMS	Multifamily / Coop	Seniors	Students
Feedwater only (hydronic)	10	10	10
Condensate and feedwater (steam)	Included in boiler	Included in boiler	Included in boiler
Cooling Tower	25	25	25
DHW Circulating Pumps	by size	by size	by size
Domestic Hot Water (DHW) - supply / return	30	30	30
Tank only, dedicated fuel	10	10	10
Exchanger in storage tank	15	15	15
Exchanger in boiler	15	15	15
External tankless	15	15	15
Instantaneous (tankless type)	10	10	10
Domestic Hot Water Storage Tanks, Small (up to 150 gallons)	15	15	15
Domestic Hot Water Storage Tanks, Large (over 150 gallons)	15	15	15
Domestic Cold Water Pumps	15	15	15
Heating Water Circulating Pumps	by size	by size	by size
Heating Water Controller	15	15	15
Hot and Cold Water Distribution	50	50	50
Solar Hot Water	20	20	20
Water Softening and Filtration	15	15	15

SANITARY WASTE AND VENT	Multifamily / Coop	Seniors	Students
Purchased Steam Supply Station	50+	50+	50+
Sanitary Waste and Vent System	50+	50+	50+
Sewage Ejectors	50	50	50

SUMP PUMP	Multifamily / Coop	Seniors	Students
Residential Sump Pump	7	7	7
Commercial Sump Pump	15	15	15

HEATING/COOLING SYSTEM AND CONTROLS	Multifamily / Coop	Senior	Student
Pad/ roof condenser	20	20	20
A/C window unit or through wall	10	10	10
Evaporative Cooler	15	15	15
Fan coil unit, electric	20	20	20
Fan coil unit, hydronic	30	30	30
Furnace (electric heat with A/C)	20	20	20
Furnace (electric heat with A/C)	20	20	20
Furnace (gas heat with A/C)	20	20	20
Packaged terminal air conditioner (PTAC)	15	15	15
Packaged HVAC (roof top units)	20	20	20
Heat pump condensing component	20	20	20
Heater, electric baseboard	25	25	25
Heater, wall mounted electric or gas	20	20	20
Hydronic heat/ electric A/C	20	20	20
Line Dryers	15	15	15
Master TV System	10	10	10
Motorized Valves	12	12	12
Outdoor Temperature Sensor	10	10	10
Pneumatic lines and Controls	30	30	30

BUILDING HEATING WATER TEMPERATURE CONTROLS	Multifamily / Coop	Seniors	Students
Chilled Water Distribution	50+	50+	50+
Chilling Plant	15	15	15
Cooling Tower	25	25	25
Fuel Oil Storage	25	25	25
Fuel Transfer System	25	25	25
Gas Distribution	50+	50+	50+
Heat Sensors	15	15	15
Heat Exchanger	35	35	35
Heating Risers and Distribution	50+	50+	50+

VENTILATION SYSTEMS	Multifamily / Coop	Seniors	Students
Combustion Air, Duct with fixed louvers	30	30	30
Combustion Air, Motor louver and duct	25	25	25
Flue Exhaust	w/boiler	w/boiler	w/boiler
Free Standing Chimney	50+	50+	50+

ELECTRICAL SYSTEMS	Multifamily / Coop	Seniors	Students
Common area	15	15	15
Buzzer/Intercom, central panel	20	20	20
Central Unit Exhaust, roof mounted	15	15	15
Compactors	15	15	15
Dumpsters	10	10	10
Electrical distribution center	40	40	40
Electric main	40	40	40
Emergency Generator	25	25	25
Gas lines	40	40	40
Gas main	40	40	40
Heating supply/ return	40	40	40
Power distribution	40	40	40
Transformer	30	30	30

BOILER ROOM EQUIPMENT	Multifamily / Coop	Seniors	Students
Blowdown and Water Treatment	25	25	25
Boiler Room Pipe Insulation	Included in boiler	Included in boiler	Included in boiler
Boiler Room Piping	Included in boiler	Included in boiler	Included in boiler
Boiler Room Valves	15	15	15
Boiler Temperature Controls	Included in boiler	Included in boiler	Included in boiler

VERTICAL TRANSPORTATION - ELEVATORS	Multifamily / Coop	Senior	Student
Electrical Switchgear	50+	50+	50+
Electrical Wiring	30	30	30
Elevator, Controller, dispatcher	15	20	10
Elevator, Cab	15	20	10
Elevator, Machinery	30	30	30
Elevator, Shaft-way Doors	20	20	20
Elevator, Shaft-way Hoist rails, cables, traveling	25	25	25
Elevator, Shaft-way Hydraulic piston and leveling	25	25	25

BOILERS	Multifamily / Coop	Seniors	Students
Oil-fired, sectional	22	22	22
Gas/ dual fuel, sectional	25	25	25
Oil/ gas/ dual fired, low MBH	30	30	30
Oil/ gas/ dual fired, high MBH	40	40	40
Gas fired atmospheric	25	25	25
Electric	20	20	20

FIRE SAFETY AND FIRE PROTECTION SYSTEMS	Multifamily / Coop	Senior	Student
Call station	10	15	10
Emergency Generator	25	25	25
Emergency Lights	8	10	5
Fire Extinguisher	10	15	5
Fire Pumps	20	20	20
Fire Suppression	50+	50+	50+
Smoke and Fire Detection System, central panel	15	15	15

INTERIOR ELEMENTS (COMMON AREA / DWELLING UNIT)			
INTERIOR / COMMON AREA FINISHES	Multifamily / Coop	Seniors	Students
Common area doors, interior (solid wood/ metal clad)	20	20	20
Common area floors, ceramic / quarry tile, terrazzo	50+	50+	50+
Common area floors, wood (strip or parquet)	30	30	30
Common area floors, resilient tile or sheet	15	15	15
Common area floors, carpet	5	5	5
Common area floors, concrete	50+	50+	50+
Common area railing	20	20	20
Common area ceiling, concrete	50+	50+	50+
Common area ceiling, acoustic tile (drop ceiling), drywall / plaster	10	10	10
Common area countertop and sink	20	20	20
Common area, refrigerator	10	10	10
Common area dishwasher	15	15	10
Common area disposal	5	7	3
Common area kitchen cabinets, wood	15	20	10
Common area walls	15	25	10
Interior railings	20	25	15
Interior lighting	15	20	10
Public bathroom accessories	7	12	5
Public bathroom fixtures	15	20	10

DWELLING FIRE, SAFETY AND SECURITY	Multifamily / Coop	Seniors	Students
Unit Smoke/Fire Detectors *	5	5	5
Unit Carbon Monoxide Detectors *	5	5	5
Unit Buzzer/Intercom	20	20	20

*Tested annually, batteries changed annually.

DWELLING UNIT CEILINGS	Multifamily / Coop	Seniors	Students
Concrete	50+	50+	50+
Acoustic Tile / Drywall / Plaster	10	15	10

DWELLING UNIT FIXTURES	Multifamily / Coop	Senior	Student
Bathroom: Vanity	10	15	10
Bathroom: Fixtures / Faucets	15-20	20+	15-20
Bathroom: Fiberglass Bath / Shower	20	25	18
Bathroom: Toilet	50+	50+	40
Bathroom: Toilet Tank Components	5	5	5
Bathroom: Vent / Exhaust	10	10	10
Interior Doors	15	30	10
Kitchen: Cabinets (wood construction)	20	25	15
Kitchen: Cabinets (particle board)	15	20+	13
Kitchen: Dishwasher	5-10	10-12	5-8
Kitchen: Microwave	10	12	8
Kitchen: Range	15	25	15
Kitchen: Range-hood	10	20	10
Kitchen: Refrigerator	10	20	10
Window covering	3	5	1+

DWELLING UNIT FLOORS	Multifamily / Coop	Senior	Student
Ceramic / Tile / Terrazzo	20	25	20
Wood (strip/ parquet)	15	20	20
Resilient Flooring	10	15	7
Carpet	7	10	3+
Concrete	50+	50+	50+

DWELLING UNIT HVAC AND MECHANICAL EQUIPMENT	Multifamily / Coop	Senior	Student
A/C window unit or through wall	10	10	10
Evaporative cooler	15	15	15

Fan coil unit, electric	20	20	20
Fan coil unit, hydronic	30	30	30
Furnace (electric heat with A/C)	20	20	20
Furnace (gas heat with A/C)	20	20	20
Packaged terminal air conditioner (PTAC)	15	15	15
Packaged HVAC (roof top unit)	15	15	15
Heat pump condensing component	15	15	15
Heater, electric baseboard	25	25	25
Heater, wall mounted electric or gas	20	20	20
Hydronic heat/ electric AC	20	20	20
Unit Electric Panel	50+	50+	50+
Unit Level Boiler	25	25	25
Unit Level Domestic Hot Water	10	15	10
Unit Level Hot Air Furnace	25	25	25
Unit Radiation - Steam/ Hydronic (baseboard or freestanding)	30	30	30
Unit Wiring	30	30	30