



**Maryland Department of Housing and Community Development
7800 Harkins Road, Lanham, Maryland 20706**

The Maryland Department of Housing and Community Development (DHCD) has established the following rehabilitation standards as the primary document for identifying and correcting sub-standard conditions in dwellings being rehabilitated with National Housing Trust and/or HOME funds.

**REHABILITATION STANDARDS
FOR DHCD MULTIFAMILY HOUSING PROGRAMS INCLUDING NHT AND
THE HOME PROGRAM**

“Rehabilitation” is defined as “the process of restoring a property to the greatest degree of usefulness, through repair or upgrade, creating an energy efficient contemporary use while preserving those portions and features of the property which are significant to its historic, architectural and cultural values.”

The purpose of these standards is to establish minimum guidelines when the Department of Housing and Community Development (DHCD) undertakes a rehabilitation project funded in whole or part with NHT and/ or HOME (State or Federal) funds.

DHCD requires that all housing units and building exteriors receiving rehabilitation work be brought up to the Maryland Building Performance Standard (COMAR 05.02.07), or county codes whenever more restrictive, and meet minimum livability codes. All work must be performed within industry standards and be of acceptable quality. Upon completion of any project all major systems must have a remaining useful life of a minimum of twenty (20) years, if not; replacement of components will be required. Major systems include structural framing, roofing, cladding and weatherproofing (e.g., windows, doors, siding, gutters), plumbing, HVAC, electrical and elevators.

All materials used in connection with DHCD financed projects are to be new, above Builder Grade quality and without defects.

TABLE OF CONTENTS

SUBJECT	SECTION	PAGE
General Requirements	I.	3
Site Conditions and Exterior Building Criteria	II.	4
Site Criteria		4
Exterior Building Criteria		5
Foundation Criteria	III.	8
Structural Integrity Criteria	IV.	9
Building Envelope Criteria	V.	10
Roofing Criteria	VI.	11
Interior Components Criteria	VII.	13
Kitchen Facilities Criteria	VIII.	15
Bathroom Criteria	IX.	16
Bedroom Criteria	X.	17
General Electrical Criteria	XI.	18
General Plumbing Criteria	XII.	20
Building Water Tightness Criteria	XIII.	22
HVAC	XIV.	24
Disaster Mitigation	XV.	25
Replacement Housing	XVI.	25
Lead Based Paint	XVII.	27
Energy Conservation	XVIII.	27
Web Site References		28

I. GENERAL REQUIREMENTS

Working Hours

All work at the site, unless otherwise agreed upon as part of the Construction Contract, shall be performed during regular/business working hours. Regular/normal, or otherwise, working/business hours will be specified in the Construction Contract between the Owner(s) and the General Contractor.

Guaranties and Warranties

General Contractor shall guarantee the work performed for a period of one year from the date of Substantial Completion, as represented by a fully executed AIA Document G704 Certificate of Substantial Completion with a 2.5% of Construction Contract dollar volume Latent Defect, or Maintenance, Bond. Upon notification by the property owner and at the contractor's sole expense, the contractor will correct any and all defects due to unacceptable workmanship and/or materials and/or damages resulting thereby. Contractor shall furnish the property owner with Operation & Maintenance (O&M) Manuals minimally containing all manufacturers and supplier's written guarantees and warranties, as applicable, covering materials and equipment furnished under the construction contract.

Permits

The General Contractor must apply for and have issued all required grading or trade permits prior to the start of any work. Building permits are by Owner. Permits for specific trades must be obtained prior to the specific trade starting work. Contractor is responsible for securing all required permits unless otherwise stated in the scope of work.

Safety

The contractor will be responsible for all safety precautions and programs in connection with the work. The contractor must take all necessary precautions for the safety of, and provide all necessary protection to prevent damage, injury or loss to (i) residents, employees and other persons who may be affected; (ii) the work and all materials and equipment whether in storage on or off the site; and (iii) other property at or adjacent to the site, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not slated for removal, relocation or replacement during the course of construction. The contractor must comply with all applicable laws, ordinances, regulations and order of any public authority having jurisdiction for the safety and protection of persons or property. The contractor must establish and maintain all necessary safeguards for the duration of the contract. This shall include posting of signage and other warnings against hazards, disseminating safety regulations, and

notifying the Owner and residents of the posting. Materials identified as toxic waste such as, but not limited to, lead and asbestos, must be removed or remediated in accord with applicable federal, state and local regulations by companies licensed to do so.

Subcontractors

Subcontractors will be bound by the terms and conditions of the Construction Contract insofar as it applies to their work. The General Contractor is directly responsible to the owner for the proper completion of all work under the contract and shall not be released from this responsibility by any arrangement they may have with any subcontractor(s).

II. GENERAL SITE CONDITIONS AND EXTERIOR BUILDING CRITERIA (for specific information refer to Building Evaluation Report (BER) and/or Environmental Site Assessment (ESA)

SITE CRITERIA

Positive Drainage

All drainage on a site to drain away from building(s). Slope shall have a 6 inch drop within 10 feet. Drainage should be toward a street, alley, or easement, and be facilitated by elevation around structures or design to include the construction of swales.

Cleanup

At all times the premises must be kept in a clean and well-organized manner free from construction materials and waste. All debris, trash, waste and surplus materials including excess dirt, tree and shrubs, etc., must be removed from the job site and shall be disposed of by legal means by recycling where feasible, or, to a proper land fill. Remove any temporary containers or structures that are located on site and legally dispose of all debris resulting from construction activities. At a minimum, exterior spaces shall be yard raked and free of all construction related debris before ground is seeded/stabilized and/or sodded.

Trees

Trees that are too close to the structure or threaten the structure shall be trimmed or removed. Otherwise, shade trees shall be preserved whenever possible.

Landscaping

Refer to contract documents for landscaping scope of work. Where soil is disturbed for installation of water and sewer, or to remove unneeded sidewalks or outbuildings, etc., plantings or grass seed and straw shall be provided to cover bare soil.

Paving and Walks

Deteriorated, cracked or unlevelled essential walkways, such as accessible route, will be removed and replaced. Non-essential paving such as unnecessary sidewalks will be removed and appropriately landscaped.

Any areas of failed paving to be removed and replaced under the supervision of Soils Technician. Paving to be milled and overlain or resurfaced as recommended in BER.

Soil Treatment

Play Areas: Bare soil play areas frequented by children under the age of six years shall be tested for arsenic, lead content. Any bare soil over 400 parts per million (ppm) of lead shall be covered per Maryland Department of the Environment (MDE) regulations, or, minimally, with a reinforced landscape cloth and impermanent surface covering e.g. gravel, bark, sod, or artificial turf with no lead content. Loose impermanent covering such as bark or gravel shall be applied in a thickness of not less than 6 inches.

Other Bare Soil: Bare soil outside of play areas shall be tested for lead content. Bare soil over 1200 ppm of lead and totaling more than 6 square feet per property shall be covered with a reinforced landscape cloth or other impermanent surface covering, an interim control measure which prevents children access to the bare soil. Soil lead levels above 5000 ppm of lead require abatement of the soil. Abatement shall include removal and replacement of soil or covering with concrete or other permanent barrier considered to have a life span of 20 years or more.

Outbuildings

Repair Standard

Unsafe and blighted structures, including outbuildings, sheds, garages and barns, will be removed if it is not financially feasible to complete the repairs required to make them structurally sound and weatherized with lead hazards stabilized.

Replacement Standard

No removal/replacement of outbuildings is allowed unless the work is reviewed and approved by DHCD on a case-by-case basis.

Lifts

Lift requirements shall be determined based on mobility needs of proposed tenants. Manufacturer's installation instructions, specifications, and all necessary components, including but not limited to, required permits/inspections, to complete the project will be followed. Contractors licensed by the State of Maryland to perform the work will perform all work within industry standards.

Repair Standard

Unsafe or inoperable lifts will be repaired, if components are able to be repaired according to Manufacturer's instructions, specifications, including but not limited to, required permits/inspections, to complete the project will be followed. Contractors licensed by the State of Maryland to perform the work will perform all work within industry standards.

Replacement Standard

Unsafe or obsolete lifts will be replaced, if any components are unable to be repaired according to Manufacturer's instructions, specifications, including but not limited to, required permits/inspections, to complete the project will be followed. Contractors licensed by the State of Maryland to perform the work will perform all work within industry standards.

EXTERIOR BUILDING CRITERIA

Access

All access to residential structures must meet accessibility requirements in 24 CFR part 8 including any additional local code requirements and accessibility standards.

Exterior Paint

Any exterior painting must meet lead-based paint requirements at 24 CFR 35.

Repair Standard

All lead paint shall be stabilized using lead-safe practices and performed by contractor(s) licensed by the State of Maryland to perform lead paint remediation work.

Replacement Standard

Leaded components shall be replaced, encapsulated and/ or the paint removed by Lead Safe certified contractors to create a lead-free exterior using lead-safe practices and following all Maryland Historic Trust (MHT) and Local Preservation Office's requirements.

Exterior Cladding

Repair Standard

Siding and trim will be intact and weatherproof. All exterior wood components shall have a minimum of two continuous topcoats of exterior grade paint and one coat of back prime. All exterior painted surfaces will be free of any peeling, flaking or deteriorated paint.

Replacement Standard: Minimum Useful Life: 10 Years

Durable siding over house wrap, or replacement of original materials with in-kind materials and design, where cost-effective.

Exterior Porches

Repair Standard

Unsafe or unsightly porches will be repaired to conform closely to historically accurate porches in the neighborhood or with in-kind material and design approved by the MHT. Porch repairs will be structurally sound, with smooth and even decking surfaces.

Replacement Standard: Minimum Useful Life: 10 Years

Deteriorated wood porches shall be rebuilt with preservative treated structural lumber using manufacturer's recommended fasteners and suitable exterior decking material. Masonry elements shall be rebuilt with masonry.

Exterior Steps and Decks

Repair Standard

Steps, stairways, and porch decks will be structurally sound, reasonably level, and trip free with smooth, even surfaces.

Replacement Standard: Minimum Useful Life: 20 years

New steps and stairways shall be constructed of preservative treated lumber using manufacturer's recommended fasteners in conformance with local code, or of masonry. Porch decks shall be replaced with suitable exterior decking material.

Exterior Railings

Repair Standard

Handrails will be present on one side of all interior and exterior steps or stairways with more than four risers, and guard railings are required around porches or platforms over 30 inches above ground level. Railing repairs will be historically sensitive. All handrails shall be easy to grasp and shall have 'returns' to wall surface at each end of the handrail.

Replacement Standard: Minimum Useful Life: 15 Years

Exterior Hardware

Replacement Standard

Every dwelling unit will have a mailbox, or mail slot, and minimum Grade 2 exterior door hardware.

Concrete, Steps and Landings

Repair Standard

Steps, stairways, and porch decks will be structurally sound, reasonably level, with smooth and even surfaces with no slip, trip or fall issues.

III. FOUNDATION CRITERIA

Any exterior painting must meet the lead-based paint requirements at 24 CFR 35.

Foundations

Repair Standard

Foundations will be sound, reasonably level, and free from movement and subject to an engineering review if determined by DHCD.

Replacement Standard:

Must meet state and local building code.

Stability

The foundation must be structurally sound and the top of foundation - at base of structure - must not be significantly out of level.

The foundation may be constructed of concrete block, stone, piers or solid concrete on footing designs in accord with state and/or local regulation.

Reconstruction of foundations must adhere to state and/or local foundation design code including depth, installation of rebar, etc. Lack of stability beyond a reasonable level that would create an unsafe condition will preclude rehabilitation being undertaken. The type of foundation construction may vary (i.e. brick, solid concrete, stone, concrete block or piers) for geographic regions throughout the State but all must be structurally sound and meet the State and Local Building Codes.

Collapsed Sections

Collapsed sections of foundations must be reconstructed as prescribed by state/local code or a stamped engineer's blueprint including engineer's recommended sequence of construction. Consideration should be given to the degree to which the remaining foundation meets minimum standards.

Cracks

Inspect and evaluate foundations to identify cracks. All cracks must be filled with non-shrink grout or other appropriate materials. All cracks with more than a 1/4 inch spread shall be investigated by a licensed engineer and have an appropriate treatment applied.

Foundation, Vent

All foundations with a crawl space must be adequately vented to meet code requirements. Foundation vents must be screened, louvered and operational. Flood vents are required for properties located in FEMA designated flood zones.

Spalling Foundation

Spalling refers to the condition exemplified by crumbling or, weak, localized areas of concrete. Where these conditions exist, foundations must be reviewed by a licensed contractor, and if necessary, corrected with a design provided by a Structural Engineer licensed in the State of Maryland.

IV. STRUCTURAL INTEGRITY CRITERIA

Defined

Structural Integrity means that the foundation, roof, walls and floor system must not show any significant signs of movement or deterioration/damage. The foundation shall be intact without any signs of leaning, sagging, etc. Shell and foundation shall be of standard construction and be covered by durable, weather-tight and appropriate building exterior material.

Bearing Walls

Identify and inspect bearing walls, beams, supports for proper construction and structural integrity. Repair or replace with in-kind material, or, by accepted industry standard, to maintain integrity of the structure. No bearing walls may be removed when undertaking rehabilitation unless appropriate alternative construction support design is installed per all state/local regulations to permit a safe working environment and compensate for the structural removal.

Existing Additions

All additions to residential structures must be permitted, be on a properly constructed foundation and must not evidence separation from the original structure.

Structural Walls

Repair Standard

Structural framing and masonry shall be free from visible deterioration, rot, or termite/insect damage and be adequately sized for current loads. Prior to rehab, all sagging floor joists or rafters will be visually inspected to determine cause. Repair by replacing or by sistering as required. Significant structural damage and its cause must be identified and corrected.

Replacement Standard

Newly constructed structural walls must meet State and Local building code and be inspected prior to close-in.

Firewalls

Repair Standard

Party walls shall be maintained without cracks and finish deterioration. Removal/replacement of wall surface to be 5/8 inch type X gypsum, glued and screwed to studs equal to UL rated 2-hour fire rating.

Replacement Standard: Minimum Useful Life: 10 Years

V. BUILDING ENVELOPE CRITERIA

Any repairs must meet the lead-based paint requirements at 24 CFR 35.

Siding Material

All siding must be weather tight and in good condition. If the siding has a remaining useful life of less than 5 years it should be repaired or replaced with in-kind materials wherever possible and be approved by the State Historic Preservation Office where applicable.

Existing asbestos siding in good condition is not inappropriate as a siding material. Repair/replace broken, detached or fraying siding by a licensed contractor per Maryland Department of the Environment (MDE) regulations.

Asphalt siding is considered to be an inappropriate material by the Fire Marshal. In accord with state and local regulations, a fire retardant siding material may cover this material when rehabilitation is undertaken.

Paneling, untreated plywood, sheetrock and other materials that are not rated for exterior application are deemed inappropriate and must be removed.

All siding must be installed in accordance with manufacturer's recommendations. The installation of any air sealing or weatherization shall be performed per Building America Best Practices, Vol. 4 and/or state and local code.

Painting and Exterior Walls

Correct chipping, cracking and deteriorating paint using Lead Safe certified contractor per federal, state and local regulations. If the structure was built prior to 1978, the local or state regulations may require that a lead-based paint analysis be conducted. Lead-based paint hazard reduction work may only be performed by qualified contractors that meet all EPA, MDE requirements.

Historic Considerations

All structures in historic districts or those with architectural features that exemplify unique architectural characteristics must be given special consideration. The State Historic Preservation Office shall be involved in making specific decisions affecting these projects.

VI. ROOFING CRITERIA

Roofing Specifications

Remove and dispose of all existing roof material and defective sheathing using CDX plywood, or other roof deck material of matching thickness.

Install new ridge vent, preformed aluminum drip edge, and vent pipe boots. Replace all flashing. Valleys and eaves shall have ice and water shield; fasten 15 lb. felt, or synthetic underlayment, and install fiberglass asphalt shingles with a 30-year warranty. Install shingles over ridge vent. No roof shall exceed two layers of asphalt shingles.

Trusses and Supports

Install engineered trusses 24" on center to match existing profile, 5/8" CDX plywood sheathing and 30-year fiberglass asphalt shingles over 15 lb. felt. Extend the chimney and plumbing vents, through a 5/8" plywood roofing deck.

Unless otherwise specified, all material shall match existing as closely as possible for material, style, color and method of installation. Seal all edges. Flash and caulk all adjoining surfaces and make weather tight. Replace all flashing, roofing accessories and nails using rust-resistant material. Install all roofs in one continuous operation. .

Slope Requirements

Minimum roof pitch shall be four inch to one-foot rise for shingled roofs. Roof areas not having minimum slope should be considered for reconstruction or replaced with standing seam, membrane, or other suitable roofing product. Installation shall be to code and manufacturer's recommendations.

Pitched Roofs

Repair Standard

Missing and leaking shingles and flashing shall be repaired on otherwise functional roofs. Slate roofs shall be repaired in-kind.

Replacement Standard: Minimum Life: 30-Years

Fiberglass asphalt, three-tab, weighing 220-240 lbs., 30-year warranty shingles with continuous ridge vent stopping one foot from both ends. Energy-Star rated wherever feasible.

Flat and Low Slope Roofing

Repair Standard

Remove and replace any localized damage, or area of leak, with in-kind material by a certified roofing company.

Replacement Standard: Minimum Useful Life: 10 Years

Fully adhered EPDM over insulation board. Or Install a 3-ply built-up fiberglass roof of one coated glass base sheet and two plies of Type IV fiberglass, hot mopped. Install gravel stop, flashing and vent collars with .019 aluminum. Flood coat & embed aggregate. Or Install 90 lb. mineralized fiberglass roll roofing using a 4" minimum overlap, fastened per manufacturer's specs.

Fascia and Soffit Board

Fascia shall be 2x dimensional lumber wrapped with pre-bent vinyl clad aluminum fascia. Replace damaged, worn and/or aged soffit material. Install vented vinyl soffit that simulates beaded T&G soffit material. Include all trim accessories.

Chimneys

Install brick chimney, on the original footing, including one 8"x 8" terra cotta flue liner and cement wash at top. Install or replace chimney cap with a 2' x 2' metal or precast concrete cap cemented in place.

Repair Standard

Structurally unsound chimneys shall be repaired or removed and replaced by a licensed contractor. When chimneys are to be used for combustion ventilation, they shall be relined. Repair chimney above roof area by cutting out mortar at least ½", removing all loose material and repointing using Portland cement mortar or equivalent. Saturate joints with water before applying mortar. Match color as closely as possible. Replace all missing or defective materials with matching materials. Clean mortar and other debris from adjoining surfaces and gutter.

Replacement Standard: Minimum Life: 20 Years

Fireplace flues may not be reconstructed in this program. Replacement furnace flues shall be metal double- or triple-walled as recommended by the furnace manufacturer.

Gutter/Downspout

Gutters and downspouts must be in good condition. Gutters and downspouts are to be installed to direct storm water away from residence. All standard gutters to be .027 gauge thicknesses, 5 inch "K" style, seamless. Downspouts and elbows are to match gutters and be properly fastened with preformed straps and pop rivets. Properly angled concrete splash blocks or extensions are to be installed at the end of each downspout. Install downspouts at each corner and major offsets with straps 3' on center. Gutter guards are not permitted unless the residence is located in an extensively wooded setting and the owner is not physically capable of maintaining the gutters.

VII. INTERIOR COMPONENT CRITERIA

Any interior repairs must meet the lead-based paint requirements at 24 CFR 35.

Interior Standards Lead-Containing Components

Repair Standard

Particular attention must be considered in dwelling units built in and before 1978. Deteriorated lead-based paint on walls, trim, doors, and cabinets must be stabilized using lead-safe work practices. A liquid encapsulate can be applied on components when the surface is deemed suitable for such coatings, otherwise, other encapsulate methods may be used. All work to be performed by contractor(s) licensed by the State of Maryland to perform lead paint remediation work.

Replacement Standard

When funding is sufficient, lead-containing walls, trim, doors and cabinets identified during a lead-paint inspection can be replaced or enclosed as appropriate.

Flooring

Repair Standard

Bathroom and kitchen floors shall be rendered smooth and cleanable using polyurethane or by being covered with water-resistant vinyl flooring or ceramic tile. Damaged wood floors may be repaired with in-kind material. Basement floors shall, minimally, be continuous concrete.

Replacement Standard: Minimum Life: 6 Years

Baths shall receive vinyl sheet goods over plywood underlayment or ceramic tile over cement bed. Kitchens shall be vinyl composition tile over plywood or ceramic tile over cementitious underlayment. New basement slabs shall be at least 4" standard reinforced slab on grade.

Closets

Repair Standard

All bedrooms shall have closets with a door, clothes rod, and shelf.

Replacement Standard: Minimum Life: 15 Years

All bedrooms shall have a minimum of one 4' long by 2' wide closet with swing, or sliding, doors and wire shelf.

Interior Walls and Ceilings

Repair Standard

All holes and cracks shall be repaired to create a continuous flat surface and any deteriorating paint should be stabilized using lead-safe measures. Minimum height for habitable rooms is 7' 6".

Replacement Standard: Minimum Life: 10 Years

Walls shall be plumb, ceilings level with a smooth finish on at least ½" (5/8" type X for ceilings) gypsum and/or plaster.

Additional Reference: American Gypsum Association

Hazardous Materials

Repair Standard

Asbestos, lead paint, and other hazards, when identified, shall be addressed in conformance with applicable local, state, and federal laws. If lead abatement or asbestos remediation is part of the project, rehabilitated properties shall be cleaned to pass a lead dust clearance test to the levels prescribed by federal, state and local regulations.

Lead Paint

A lead-based paint analysis should be conducted on houses constructed prior to 1978 that evidence chipping, flaking, cracking and otherwise deteriorating paint. If testing reveals the existence of lead-based paint surfaces, they must be removed or covered as prescribed by federal, state and local Lead-Based Paint regulations. All housing must meet the lead-based paint requirements at 24 CFR 35.

Fire Barriers

Five-eighth inch Type X sheetrock is required under joist in garages that have a living area above them and on walls in garages adjoining living quarters. Five-eighth inch Type X sheetrock is also required when another structure is within five feet of the wall being reconstructed as part of the rehabilitation activity. No cardboard materials, paper materials, tarpaper, or exterior insulation materials, such as fiberboard, will be permitted in for use at interior walls.

Damaged Interior Walls

Holes in sheetrock must be repaired and precautions taken to prevent future damage by installation of doorstops, blocking, or other necessary measures. Water damaged sheetrock must be removed and replaced once inspection to determine cause is complete. In bathrooms, waterproof green, or blue sheetrock or other similar drywall material must be utilized. Interior walls with decayed sheetrock must be repaired by removal and replacement with new sheetrock followed by appropriate level of finish.

Ceilings

All cracked or deteriorating ceilings require an inspection to determine the cause. Correct underlying problem before the ceiling is repaired. Cracks must be properly repaired with finish restored and the ceiling completely repainted when treated.

Bath and Shower Areas

When there is decaying ceramic wall tile or plastic tile in bath or shower areas, the deteriorated finishes and substrate must be removed. Water proof sheetrock – or cement backer board, at ceramic tile – must be installed and reused or new tile installed, grouted, sealed and edges caulked.

Stairwell

Stairs shall have no slip/trip hazards.

All stairways must have continuous handrails on at least one side of stairwell, 34 to 36” from top of nosing and handrail grip shall be at least 1-½ inches in width.

VIII. KITCHEN FACILITIES CRITERIA

Minimum Cabinet Requirements

All kitchens must have sufficient base cabinets/countertops to house a kitchen sink and provide sufficient usable countertop area and upper cabinets to optimize kitchen storage areas. Replace all Unsanitary or nonfunctional cabinets. Replacement cabinets must be of mid-grade quality, plywood box construction.

Counter Tops

All countertops showing evidence of wear, water damage, delamination of surface material, etc. must be replaced. New counter tops, minimally, shall be laminate Formica type material and shall include back splash, finished ends or approved equal.

Faucets

All kitchen plumbing must be inspected by a licensed plumber to ensure that faucets and drainpipes work properly. Installation of new countertops requires sink removal and, with few exceptions, new sinks and faucets must be provided. All new sinks must be vented as prescribed by the Uniform Plumbing Code (UPC). New faucets shall be Water Sense rated fixtures.

Flooring

Worn flooring with delaminating, or, missing tiles, and/or cracked, peeling areas, etc., require new flooring be installed. Worn carpeting may not show trip/fall hazard and must be replaced where these condition occur. The use of indoor/outdoor carpeting is discouraged. Replacement of carpet with 10-year warranty vinyl or laminate floor covering is acceptable.

Lighting and Electrical

GFCI outlet receptacles will be installed as required to meet National Electric Code (NEC). Minimum lighting in kitchen will consist of one lighting fixture in the kitchen/cooking area and one lighting fixture in an adjoining eating/dining area. The use

of Energy Star rated light fixtures is recommended at replacement locations, fluorescent lighting is an acceptable alternative.

IX. BATHROOM CRITERIA

Minimum Requirements

The minimum standard in a residential structure is as follows: One functional toilet, lavatory, towel rack, ring or hook and either a shower or a bathtub. Any additional bathrooms in a house, at minimum, must contain a toilet, towel rack, ring or hook and a sink.

Sinks

All faucets must have sufficiently accessible hot and cold water levers and must be in good functioning condition. The sink must have a proper drain with P-trap and be vented to the outside as prescribed by the Uniform Plumbing Code. A shut-off valve at the water line connection is required when replacements are made. Use Water Sense rated fixtures for all plumbing fixture replacements. Inspection of bathroom plumbing by a licensed plumber to be conducted in conjunction with the above.

Ventilation

All bathrooms must have an operational window or a functional electric exhaust vent fan vented to the exterior.

Doors

All bathroom doors must be functional.

Flooring

Existing bathroom flooring must be inspected at the base of the toilets to ensure that leaking is not occurring. When leaking has occurred and sub floor has rotted, the sub floor must be removed and replaced in-kind, or, minimally, by 3/4" plywood. Whenever a toilet is removed or installed for any purpose, new toilet wax-ring gaskets must be used. Finish flooring material that permits water to seep into the sub floor is unacceptable. Finish floor shall be sealed ceramic tile on proper setting bed or 10-year warranty sheet goods installed continuously and properly sealed at all termination points.

Bathroom Lighting

All bathrooms must have at least one light that can be switched from the inside. Lights switched from the outside generally do not need to be relocated, unless the room is being rewired. Any electrical outlet installed or upgraded must be GFCI outlet receptacles and installed as required to meet NEC.

X. BEDROOM CRITERIA

Closets

All bedrooms must have access to closets for storage or clothing. On existing housing, closets in adjoining hall areas are acceptable.

Lighting

All bedrooms must have one switchable light fixture, preferably in the interior of the bedroom next to the entrance.

Outlets

Use of extension cords is discouraged and additional outlets should be provided whenever possible to avoid their use. Any new bedroom receptacle circuits shall have ARC protection circuit interruption protection with receptacles located according to building code as well as NEC requirements.

XI. GENERAL ELECTRICAL CRITERIA

A licensed electrician shall inspect all wiring, motors, fixtures and devices for proper function, shorts, defects, etc. Adhere to NEC for compliance. Non-functioning and dangerous equipment shall be replaced with new Energy Star rated equipment. Wiring, devices and fixtures, where replaced, shall be replaced with appropriately sized code-compliant wire, outlets, devices and fixtures with Energy Star rated products where applicable.

Electric Service

Repair Standard

Main distribution panels shall be adequate to safely supply power to all existing and proposed electrical devices and meet NEC and local codes.

Replacement Standard

If electrical demand requires a heavy-up, or replacement, the new service panel shall conform to the Current NEC and local code. Upgrades shall be 200 amp, main

disconnect, 110/220 volt, 32 circuit panel board, and, if required, meter socket, weather head, service cable and ground rod and cable. Seal exterior service penetration.

Knob and Tube Wiring

Knob and tube wiring in attics is not acceptable when insulation covers the wires. This type of wiring needs to expel heat through the insulation and is considered to be a potential fire hazard when covered by insulation. Knob and tube wiring in attics must be replaced with code-compliant wire whenever replacement is undertaken. Knob and tube wiring may be left intact in walls where insulation is not to be accomplished. Consult a licensed electrician to ensure code compliance and safety.

Ground Faults

Ground fault electrical outlets must meet local code and NEC.

Alarms

Smoke Detector: Install a UL approved ceiling mounted fire/smoke/carbon monoxide detector interconnect and permanently wire into a receptacle box or provide a lithium battery operated fire/smoke/carbon monoxide detector on all floors to code.

Carbon Monoxide Detector: While all dwellings should have a carbon monoxide detector, any dwelling heated by fossil fuel must have one.

Safety Considerations

No hanging wires are permitted. All light fixtures should be inspected to ensure that they are solidly hung and that the electrical connections have not been loosened. All electrical fixtures that evidence wear must be replaced with new fixtures. All electrical outlets, switches and/or junction boxes must have cover plates. Any switches or outlets which are non-functional must be inspected by a licensed electrician and be repaired or terminated. Provide light switches to basement areas, particularly when there is an open staircase. Exterior lighting shall be weather proof.

Exterior Electric

Repair Standard

All entrances will be well lighted and either switched at the interior side of the door, or the light will be controlled by a photoelectric cell. Motion activated security lighting will be installed at the rear and sides of properties where indicated to increase safety. All dwelling units will have at least one exterior, GFCI protected, electrical receptacle.

Replacement Standard: NA

Interior Electric Distribution

Repair Standard

Exposed knob and tube shall be replaced. Every room will have a minimum of two duplex receptacles, or, as stated in the NEC, placed on separate walls and one light fixture or receptacle switched

At each room entrance. Receptacles will be grounded where the source wiring circuit is accessible (i.e. first floor above basements, in gutted rooms, etc.). All switch, receptacle, and junction boxes shall have appropriate cover plates. Wiring shall be free from hazard and all circuits shall be properly protected at the panel. Floor receptacles shall be removed and a metal cover plate installed. All electrical systems shall be installed per NEC.

Replacement Standard: Minimum Life: 15 Years

When wall finish surfaces are removed, the room shall be rewired to the latest version of the National Electric Code (NEC).

Ground Fault and Arch Fault Circuits

Basement and kitchen receptacles within 6 feet of a sink, all bath receptacles and all exterior receptacles shall be protected by a GFCI.

Kitchen Electric Distribution

Permanently installed stoves, refrigerators, freezers, dishwashers and disposals, washers and dryers shall have separate circuits sized to NEC. Two separate alternating 20-amp counter circuits are required with each kitchen area.

Stairwell Lighting

All common halls and stairways between living space must be well lighted with a fixture controlled by 3 way switches at both ends of the hall or stairway.

XII. GENERAL PLUMBING CRITERIA

Plumbing System Water Supply

All fixtures must supply a flow rate of 3-gallons per minute.
All inoperable or leaky main shut off valves shall be replaced. Lead pipe and exposed galvanized pipe shall be replaced with copper pipe or CPVC pipes.

Drain, Waste, Vent Lines

Waste and vent lines must function without losing the trap seal. When replacement is required, lines shall be installed in accordance with the most recently approved mechanical codes.

Plumbing Minimum Equipment

Every dwelling unit shall have a minimum of one single bowl sink with hot and cold running water in the kitchen and at least one bathroom containing a toilet, a vanity with sink and a shower/tub unit, both with hot and cold running water.

Additional References: Local housing code.

Plumbing Fixtures

Repair Standard

All fixtures and faucets shall have all working components.

Replacement Standard: Minimum Life: 20 Years

Single lever, metal faucets and shower diverters with 15-year drip-free warranty. Ceramic toilets, double bowl stainless steel sinks, fiberglass tub surrounds and 5' fiberglass or steel enameled tubs. Replacement plumbing fixture to be Water Sense labeled.

Water Heaters

Repair Standard

Each dwelling unit shall have a hot water heater. The minimum capacity for units with two bedrooms or less shall be 30 gallons; larger units shall have a minimum capacity of 40 gallons. Insulation jackets shall be present unless manufacturer provided an internal insulation blanket. Water heaters shall have pressure relief valves with drip legs that extend to within one foot of the floor. Expansion tanks will be included with the installation of new water heaters.

Replacement Standard: Minimum Life: 8 Years

High efficiency, Energy Star rated water heaters with at least R-7 insulation and an 8-year replacement warranty, or combination with the same minimum capacity as noted above.

Type of Pipe

Unless otherwise specified, all materials shall be copper or CPVC for domestic water, PVC for waste. All items shall operate without leakage, noise, vibration or hammering. All penetration of building components shall be neat, sleeved and fire stopped. No solder containing lead shall be used in any pipe or fixture. Damage to structural members from

drilling or notching shall be repaired to the acceptance of the owner, Agency and to code. Plumbing must be done in accordance with the Uniform Plumbing code.

Venting

The Uniform Plumbing Code requires that all drains be vented. All drains that are changed as a result of replacing or installing fixtures must be vented in accordance with the Uniform Plumbing Code.

Faucets

If newly installed, replaced faucets should be mid-grade lever handle faucets of chrome or white ceramic.

The color and type are to be selected by the owner from stock samples.

Functional Sewer Lines

Each residential property must have its own functional sewer line. All houses with problems with sewage backup must be investigated and repairs made to the sewer line. The new water line shall be laid without joints from meter hub to main shut off valve inside structure. The utility trench is to be filled and mounded in anticipation of future earth settlement and the contractor is responsible for any required regrading within the one year warranty period. All galvanized lines should be replaced.

Shut-off Valves

All plumbing fixtures which are removed and replaced require the installation of new shut-off valves.

All gas appliances that are removed and replaced require a new gas shut-off valve that is to be installed by a licensed plumber.

Vent Stacks

All vent stacks must be at least one foot above the roof and appropriately sealed to prevent infiltration of water.

XIII. BUILDING WATER TIGHTNESS CRITERIA

Windows

Windows are not to be replaced unless they are inoperable and are permitting the infiltration of air, snow or rain. Any replacement or treatment of windows must meet the MHT requirements and any Historic Requirements of the local jurisdiction.

Rotted sills and trim are to be replaced . All windows should have locking devices for security. If new windows are required they must be Energy Star rated. All operable windows must have screens.

Repair Standard

All single glazed windows shall be replaced with Energy Star rated Double-glazed windows. Windows shall have a locking device and mechanism to remain partially open.

Dilapidated lead-containing windows should be replaced by certified Lead Safe contractor. All habitable rooms shall have a window for egress.

Replacement Standard: Minimum Life: 20 Years

Energy Star Rated Double-glazed, double or single hung. PVC, low E, one over one, with historically sensitive snap-in grids and a minimum for your region. All new construction windows shall meet 5.7sf net clear opening.

Basement, Egress

Any basement bedroom must have a code compliant window or door egress system.

Door

When doorjambes are in good condition or the doors are of unusual sizes, hollow core wood, prefinished or unfinished doors will be provided. All exterior doors should be provided with locking hardware.

Exterior Doors

Repair Standard

Doors shall be solid, weather stripped, operate smoothly, and include a peep site, a dead bolt, and an entrance lock set.

Replacement Standard: Minimum Life: 10 Years

All replacement doors at the front of the property will be historically sensitive and Energy Star rated. Steel six- panel doors may be installed at entrances not visible from the front street. Dead-bolt locks will be installed on all doors. All exterior entrance doors shall be minimum size of 36x80. Landings in front of exterior doors shall be minimum depth of 36”.

Interior Doors/Placement

Repair Standard

All bedrooms, baths and closets shall have operating doors.

Replacement Standard: Minimum Life: 10 Years

Hollow core, pressed wood product with bedroom lockset of suitable standard finish.

Wall Insulation:

When the framing is exposed during rehabilitation, insulation must be installed with a minimum value of R-13. Insulation installed for newly constructed homes shall be R-21.

Insulation

Repair Standard NA

Replacement Standard: Minimum Life: 15 Years

Attic areas and crawl space will be insulated. Attic insulation shall be R-49, and for crawl spaces R-19. Frame walls will be insulated with R-13 fiberglass batts if the wall finish is removed, and with high density cellulose otherwise. 6 mil Plastic vapor barriers will be placed over bare soil in crawl spaces. Crawl space shall have vents unless crawl space is conditioned. If crawl space is conditioned, must have sump-pump.

Attic Ventilation

Repair Standard NA

Replacement Standard: Minimum life: 20 Years

Attics will be ventilated with a minimum of 1 square foot of free vent for each 300 square feet of roof area.

Kitchen Ventilation

Range hoods or exhaust fans shall be exterior ducted; where it is possible.

Bath Ventilation

Repair Standard NA

Replacement Standard: Minimum Life: 5 Years

Exterior ducted 70 CFM. 20 some with separate switch in all full baths.

Basement/Crawl Space Insulation

Floor joist shall be insulated with a minimum value of R19 and crawl spaces shall have a vapor barrier of 6 mil plastic. Exception shall be determined on the age of the home and dimensional lumber used in that era.

Roof Insulation: All ceilings under attics or roofs must be insulated with a minimum value of R-49.

XIV. HVAC

Heating/Ventilation/Air Conditioning Plant

Repair Standard

Inoperative, hazardous or inefficient (less than 75% AFUE) heating plants (HVAC units) shall be repaired and altered to perform at least 85% efficiency, where feasible. Programmable thermostats are required.

Replacement Standard: Minimum Life: 20 Years

Gas- and oil-fired plants (HVAC units) shall be Energy Star rated. Heat pumps/HVAC units shall be rated at 16 SEER or better. Programmable thermostats are required. Replacement heating/HVAC equipment shall be properly sized in accordance with the ACCA's Manual J or other recognized methodology. Data for heat load/loss calculations shall be based on post-rehabilitation conditions.

Distribution System

Repair Standard

Energy Star rated Heat-pump (or equal) integrated HVAC system heating unit capable of safely and adequately heating (or cooling as applicable) a conditioned space is defined (in relevant part) as an area in a building provided with heating or cooling systems or appliances capable of maintaining 68 Deg. F during the heating season or 80 Deg. F during the cooling season.

To include all vents, vent covers, returns, ducts, and concrete (or comparable) pad for exterior condenser/heat exchanger, electrical and plumbing connections as per code. Programmable thermostats are required.

All ductwork shall be well supported, sealed with mastic and insulated in unconditioned spaces.

Replacement Standard: Minimum Life: 20 Years

XV. DISASTER MITIGATION

Any rehabilitation or replacement of homes will include all necessary local codes/state codes and/or federal requirements in order to mitigate any damage that may have occurred as a result of a disaster and as well as addressing any future disaster.

Flood Plain Requirements

When the project is in a flood zone (floodplain): the following surveys will be required.

CDA requires the completion of a survey by a registered surveyor for all projects. The survey must include the required information and be accompanied by the appropriate certificates.

The Survey must comply with the ALTA Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys (effective 2/23/2011). Table A must include all items except items 5, 10(b), 15 and 21. A full size copy of the survey must be provided to CDA and its counsel for review and approval prior to execution.

Upon completion of a project that involves adding buildings or other improvements, roads and/or sidewalks, an as-built survey which complies with the above requirements must be provided. CDA at its discretion may require an as-built survey for other types of projects.

The survey needs to include the following items:

- Lot lines and set-back lines
- Location of all existing easements, rights of way, improvements on or encroachments upon, over, to or from the property
- Location of all items that will be listed in Schedule B, Part II of the lender's title policy.

Termite Treatment

Contractor will provide termite treatment including adjacent soil treatment and foundation barrier cap. Treatment shall be done upon foundation completion and prior to main floor construction.

XVI. LEAD BASED PAINT

All properties must meet the lead –based paint requirements at 24 CFR 35. All properties built prior to 1978 may be subject to a Lead Paint Testing Assessment Report prepared for the property owner by an approved Risk Assessor.

Bidders must be Renovation, Repair and Painting (RRP) Certified by Environmental Protection Agency (EPA), or State of Maryland Lead Safe Certified for lead safe work practices for this project or any home built prior to 1978. Prior to work beginning, the contractor shall provide evidence of all required certificates and accreditations.

In addition, prior to starting work, each owner is to be provided a copy of the EPA “Protect Your Family from Lead in Your Home” pamphlet.

All lead-based paint operations are to be performed in accordance with all State, County, City and Federal regulations.

XVII. ENERGY CONSERVATION

All new construction and rehabilitation projects shall be energy efficient and follow current International Energy Efficiency Code (IEEC) as adopted by the State of Maryland.

Examples of Green building practices

WEB SITE REFERENCES:

ENERGY STAR
www.energystar.gov

Ventilation
www.ashrae.org