



Rental Housing Design/Construction Standards

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Amendments

The following amendment(s) to the originally Published April 2015 version of this document have been included to this Amended June 5, 2015 version.

Chapter 3 General Occupancy Rehabilitation Minimum Standards, Section 3.04 Requirements, Item B.6 Electrical Systems, Sub Item (a) Smoke Detectors.

Chapter 1 – Overview

Minnesota Housing is committed to meeting Minnesotans' needs for decent, safe, and sustainable affordable housing. Since building codes, local regulations and ordinances primarily focus on health, safety and/or protecting property values, they cannot be relied on to meet all of our expectations. Therefore, in an effort to better meet our customer needs and communicate our expectations, Minnesota Housing developed Design/Construction Standards for Rental Housing.

These Design/Construction Standards replace all previous Minnesota Housing standards and are applicable to rental housing receiving Minnesota Housing Tax Credit (HTC) allocation and other capital improvement financing for new construction or rehabilitation. Projects involving adaptive reuse or “gut” rehabilitation of rental housing shall comply with standards for rehabilitation and standards for new construction to the maximum extent feasible.

Minnesota Housing encourages sustainable, healthy housing that optimizes the use of cost effective durable building materials and systems which minimize the consumption of natural resources during construction and in the long term maintenance and operation. In addition, Minnesota Housing welcomes new ideas and looks forward to implementing any new idea that will provide long-lasting benefits to our customers.

We encourage optimizing the use of cost-effective, renewable energy resources that will minimize damage and long term impacts to the environment. We encourage the use of natural amenities such as solar, wind, climate, and building orientation of the development site. If the proposal includes any alternative energy options, Minnesota Housing will require a cost-benefit analysis for such options.

While developing these Design/Construction Standards, we sought input from our Funding Partners, development partners including owners, developers, attorneys, architects and contractors along with the input of the Agency's production and asset management staff. In addition, housing design standards required of other state housing finance agencies conducting business similar to us were reviewed and compared to what we were proposing. Minnesota Housing determined these design standards fall within the mainstream of design standards required by other agencies.

Refer to the beginning summary section of each standard to learn whether the standard is applicable to the project. The project activity or funding source generally dictates when and how a Design/Construction Standard applies. When strict compliance to these standards is not feasible, contact the Minnesota Housing Staff Architect assigned to the development to discuss whether a waiver or variance is warranted.

If a newer version of this document is released after the Initial Award of Financing, the Developer and Architect may use the standards of the document that were current at the time the Formal Application was submitted.

Chapter 2 – General Occupancy New Construction Minimum Standards

2.01 Background

Once a decision is made to construct a new housing development to serve a particular housing need, selecting a smart site location is important. If Minnesota Housing financial assistance is requested to construct a new housing development, the decision to build on a particular site must include determining whether the site can be developed and if it complies with Minnesota Housing standards.

The following standards are supplemental to basic standards established by applicable building codes, local zoning, and other applicable regulations. These standards are supplemental to other applicable design standards promulgated by Minnesota Housing. Where two standards govern the same condition, conformance to the most restrictive standard is required. Regardless of whether the local jurisdiction has adopted or not adopted Minnesota State Building Code, all improvements receiving Minnesota Housing financing must be in compliance with currently adopted Minnesota State Building Code.

2.02 Purpose

To ensure rental housing financed by Minnesota Housing is decent quality, energy efficient, functional, sustainable, and effective in reducing long-term maintenance costs.

2.03 Requirements

The following new construction standards involving site design, building design, mechanical and electrical systems, and building components shall be adhered to if receiving Minnesota Housing funding for new construction.

- A. **Site design:** Site improvements shall comply with the following standards associated with grading, drainage, parking, garages, sidewalks, play equipment/area, signage, and landscaping as follows:
1. **Grading/Drainage:** The site shall be well drained. Surface water must be directed away from structure. Snow removal/storage shall be addressed.
 2. **Parking:** Unless stricter zoning requirements apply, parking shall comply with the following minimum requirements:
 - (a) At least one parking space (off street/onsite) for each one-bedroom dwelling unit.
 - (b) At least two parking spaces (off street/onsite) for each two-bedroom or larger dwelling unit. (Exception: If on street parking is available on adjacent streets up to 0.5 spaces per dwelling unit may be used toward satisfying this requirement).
 - (c) Adaptive reuse type projects or single-room-occupancy (SRO) dwelling units may have less than one parking space for each dwelling unit. Exact number shall be reviewed by Minnesota Housing on a case-by-case basis.
 - (d) Parking spaces shall be at least 8'-6" wide except at designated handicapped parking space(s) which shall be in compliance with applicable codes.
 - (e) For housing in the Twin Cities Metro within one-quarter mile of a planned or existing Light Rail Transit (LRT) Station, Bus Rapid Transit (BRT) Station, or Commuter Rail Station, parking for residential units may be less than the amounts specified provided minimum requirements of local zoning are met. This also applies to high-density urban

developments that require zero-lot-line coverage. Consult Minnesota Housing Staff Architects.

- (f) Parking spaces, drive lanes, vehicle access aisles, and pedestrian accessibility access aisles must be paved (concrete, bituminous, pavers, or other Minnesota Housing approved material). Provide a poured concrete curb and gutter at outer perimeter of drive lanes and parking. (Not required for semi-private driveway leading up to attached garage.)
3. **Garages:** If private garages are provided, they shall meet the following:
- (a) Each stall shall be a full partition from the floor to the roof with solid material.
 - (b) Continuous foundations and frost footings are required at all attached garages and detached garages larger than two stalls.
 - (c) Minimum size requirements:
 - i. Clear Width: 11'-0" (single stall), 20'-0" (double stall)
 - ii. Net Area: 231 sq. ft. (single stall), 420 sq. ft. (double stall)
 - iii. Overhead Door: 9'-0" wide (single stall), 16'-0" wide (double stall)
 - (d) Garages required to be accessible shall comply with minimum quantity, dimensions and clearances as required by applicable accessibility codes.
4. **Exterior sidewalks:** Sidewalks shall be four feet wide (minimum) and made of concrete reinforced with continuous wire mesh.
5. **Play area/play equipment:** A play area for children along with appropriate play equipment shall be provided for children to play unless exempt.
- (a) Minimum size of the play area must be 24'-0" x 24'-0" and is good for up to one hundred children in the development. Add four square feet of additional play area per each additional child above one hundred children. The entire play area must be filled with natural or synthetic protective materials and equipped with reasonable play equipment for the size of the lot. The perimeter shall be designed to keep play area material from spilling, such as curb or sidewalk.
 - (b) The size of the play area must be provided in proportion to the child population of the development. The child population for each unit shall be computed as follows: Efficiency and 1 Bedroom = 0; 2 Bedroom = 1.5; 3 Bedroom = 3; 4 Bedroom = 4.5; and each additional bedroom = 1.5.
 - (c) The play area and equipment must be in compliance with equipment manufacturer requirements. The play area does not have to be square or confined to one location as long as minimum play area size is complied with.
 - (d) Lumber treated with chromated copper arsenate shall not be used for play equipment.
 - (e) Avoid locating any play area(s) where children are required to cross driveways.
 - (f) Provide drain tile beneath all permeable play area surface materials with outlet to nearest storm sewer or drainage ditch.
 - (g) Provide shade, seating, and trash receptacle near all play areas.

- (h) Play areas must be on an accessible route with accessible entrance onto the play area surface.
 - (i) Play area equipment is not required if any of the following conditions apply: The development contains only one-bedroom or smaller units; the project is on a Zero lot line site; there is a public park within a ¼ of a mile of the development (measured from the closest property line in a straight-line to the park), unless separated by a busy street. Or, if Minnesota Housing agrees it is not economically viable.
6. **Signage:** Signage shall be provided as follows:
- (a) If a temporary construction sign is provided it shall be at least 4'x8' in size and erected onsite at time of construction start. It shall contain development name, [Minnesota Housing Logo](#), names of other funders (or their logos – please confirm), Equal Housing Opportunity logo, Owner's name, General Contractor's name, Architect's name, and leasing information and phone number.
 - (b) Every development shall have a permanent development sign that is visible from nearest street. It shall provide name of development, Equal Housing Opportunity Logo, and leasing information/phone number. Night-time lighting is recommended.
- B. **Building design:** The building design shall be reasonably appropriate for the intended site, resident population, and anticipated market and shall be in compliance with the following minimum standards:
- 1. **Laundry:** Housing shall have access to laundry facilities and shall comply with the following requirements:
 - (a) Common laundry is required unless laundry equipment is provided in each dwelling unit.
 - (b) If common laundry, one washer and one dryer must be provided for every 12 dwelling units. Provide folding table and seating area. For senior housing, one bedroom units, or studio units, provide one washer and one dryer for every 16 units.
 - (c) If laundry equipment is provided in each dwelling unit, stackable equipment is acceptable in non-accessible dwelling units.
 - (d) Every clothes washer shall have a disaster pan with floor drain, or be located in a room with appropriate flooring whereby the floor slopes to floor drain.
 - (e) Avoid locating clothes washers near areas with carpeting.
 - 2. **Elevator:** Housing required to have an elevator shall meet the following requirements associated with an elevator:
 - (a) The maximum length of travel from any dwelling unit to an elevator shall not exceed 250 lineal feet.
 - (b) The number of required elevators in each building shall be dictated by the number of stories above grade as follows:
 - i. Three to five stories above grade: One elevator required
 - ii. Six to nine stories above grade: Two elevators required
 - iii. Nine or more stories above grade: Consult Minnesota Housing

3. **Dwelling unit:** Housing shall meet the following requirements associated with decent living space:
- (a) Living room: Least dimension shall be 11'-6" and appropriately sized for anticipated household size. The room must have a window (or glass patio door) to exterior for natural lighting.
 - (b) Primary or Master bedroom
 - i. Least Dimension shall be 10'-0"
 - ii. Least square footage shall be 115 sq. ft.
 - iii. Provide a window for natural light.
 - Exception: One bedroom dwelling units may have a windowless bedroom if approved by the building code and approved by Minnesota Housing.
 - iv. Closet (Five lineal ft. of net rod/shelf length)
 - v. Door and walls to ceiling for privacy. Exception: Efficiency Dwelling Unit/Single Room Occupancy (SRO)
 - (c) Secondary bedroom(s)
 - i. Least dimension 9'-6"
 - ii. Least square footage shall be 100 sq. ft.
 - iii. Provide a window for natural light
 - iv. Closet (Four lineal ft. of net rod/shelf length)
 - v. Door and walls to ceiling for privacy
 - (d) Kitchen
 - i. Kitchen counter work minimum area shall be 6'-0" for one-bedroom units, 7'-0" for two- and three-bedroom units and 8'-0" for larger units. This distance is measured in lineal footage along the front excluding sink, refrigerator and range.
 - ii. Snack bar or eat-in kitchen designs shall be 4'-0" minimum length. This type of seating is required in three bedroom or larger units.
 - iii. A range/oven is required in all dwelling units. All two-bedroom or larger units must have a 30" wide self-cleaning oven. Other small units can use a 24" minimum self-cleaning oven. Avoid locating the oven at the end of a counter. Provide a grease shield behind all ovens or ranges and on abutting partitions. The shields must be high-pressure plastic laminate, enameled or stainless steel.
 - iv. Provide a "Frost-Free" refrigerator with 15" minimum wide counter on the latch side. Fridge shall be a minimum of 14 cu. ft. for one bedroom and smaller units. Larger units shall have a fridge appropriately sized.
 - v. Provide hard surface flooring in kitchen.

(e) Dining

- i. Dining room or area should have hard-surface flooring distinct from the living room. A dining area is required in two-bedroom and larger dwelling units. The area must have window to the exterior or be open to the living room.
- ii. The dining room/area must be appropriately sized for the intended household size and accommodate the following:
 - Two-bedroom dwelling units: Table with four chairs
 - Three-bedroom dwelling units: Table with six chairs
 - Four-bedroom or larger dwelling units: Table with seven chairs
- iii. Dining area exceptions:
 - An eat-in kitchen may be substituted for a dining area as long as the kitchen and dining area are appropriately sized for the intended household size plus two guests.
 - A 4'-0" long snack bar located on rear side of kitchen countertop may be used in lieu of designated dining room/area in one-bedroom or smaller dwelling units.

(f) Bathroom

- i. Defined as follows:
 - Full bathroom includes a lavatory sink, water closet and tub with showerhead.
 - Three-quarter bathroom includes a lavatory sink, water closet and shower
 - Half bathroom/powder room includes a lavatory sink and water closet
 - Compartmentalized full bathroom includes all items of a full bathroom, however the tub with shower head and water closet in a private room with a door. At least one vanity (lavatory) is in the separate alcove. Minnesota Housing encourages this design in three-bedroom and larger units.
- ii. Minimum Requirements:
 - Half bathroom is required at the ground floor of any two-story dwelling unit.
 - Three-quarter bathroom (minimum) shall be provided at all efficiency, Single Resident Occupancies (SRO), and one-bedroom dwelling units.
 - At least one full bathroom is required at two-bedroom dwelling units.
 - One full bathroom and one three-quarter bathroom is required at three-bedroom and larger dwelling units.
- iii. Exception for two-story townhomes: One half bath may be on the main level if there are no sleeping rooms on the main level and if there is a least one compartmentalized full bathroom on the upper level.

iv. Minimum Accessories:

Medicine cabinet (at least one per dwelling unit)

Towel bar(s) (within reach of lavatory and tub/shower)

Toilet paper holder

Shower curtain rod (if applicable)

Mirror

(g) Storage space/closets

i. Entry coat closet is required for one-bedroom or larger dwelling units. Provide close to the main entry.

ii. Designated linen/towel storage space is required in a cabinet design or a closet.

iii. General storage space for household cleaning supplies, vacuum, etc. is required.

(h) Multi-Story Dwelling Unit Living Areas

i. Individual units with multi-stories shall have a kitchen/kitchenette, living area, dining (or eat-in kitchen) on the same, main level.

ii. See Visitability Standards for additional multi-story unit requirements.

C. **Mechanical and electrical systems:** Housing shall have plumbing, mechanical, and electrical systems that comply with the following standards:

1. **Independent technical analysis:** Minnesota Housing reserves the right to require independent technical analysis of any or all building components to determine life expectancy and anticipated ongoing lifecycle costs, as well as a maximum of 10-year payback on energy-efficient investment premiums.
2. **Plumbing systems:** Plumbing systems shall meet the following requirements:
 - (a) All kitchen sinks shall be double compartment (33"x 22" min.), 7" deep minimum with the exception of efficiency dwelling unit/Single room occupancy (SRO) may have single compartment sink.
 - (b) Disaster pan with floor drain shall be provided under any water heater or clothes washer located above ground level. On ground level floors, slope to drain.
 - (c) Water softening is required where the hardness exceeds 14 grains except where special circumstances exist.
 - (d) Plumbing chases and plumbing walls shall not be located in/at new building exterior walls. If required at existing buildings, chases shall be designed to keep plumbing from freezing.
3. **Heating, ventilating, and air-conditioning (HVAC) system:** Air conditioning (AC) or the ability for tenant supplied through-wall AC units, shall be provided at all dwelling units. All intake and exhaust ductwork shall be insulated. AC sleeves shall be provided with a tight-fitting, insulated cover.

4. **Electrical systems:** shall meet the following requirements:
 - (a) Ceiling or wall mounted light fixture in all bedrooms
 - (b) Task lighting above kitchen range and kitchen sink
 - (c) Each dwelling unit shall be capable of receiving hi-speed Internet access
 - (d) Exterior light fixtures and lamps shall be rated for -20 degree F weather
 5. **Separately metered commercial space:** All applicable utilities serving commercial space such as water service, gas service, electrical service, etc shall be metered separately from all housing space (dwelling units, common space, etc.)
- D. **Building components:** Minnesota Housing encourages the advancement of sustainable building strategies. Refer to “Chapter 8 – Sustainable Housing” for requirements and guidance in meeting Mandatory and Optional Criteria. The following building components shall also meet the following minimum standards:
1. **Millwork**
 - (a) All new kitchen cabinets and new wood bathroom cabinets shall have solid wood face-frames, doors, and drawer fronts.
 - (b) Drawer-box construction shall have dovetail or other Minnesota Housing approved reinforced joint construction.
 - (c) All millwork shall meet the Kitchen Cabinet Manufactures Association (KCMA) ANSI/KCMA A161.1 standards. KCMA Certification is suggested but not required
 2. **Exterior windows and doors**
 - (a) All new windows and doors must be ENERGY STAR-qualified. Confirm the most updated Energy Star requirements are met at the time of purchase. Confirm the applicable Minnesota region is designated for Energy Star requirements.
 - (b) Special windows, such as those required for hi-rise buildings, which are unable to meet Energy Star qualifications are acceptable if they include double pane, low-e glass and thermally broken frames.
 - (c) All windows and windows within doors shall be furnished with window coverings for privacy and control of heat/solar shading.
 - (d) All operable windows and operable windows within doors shall have insect screens.
 - (e) The sill of all windows must be solid wood, stone, man-made solid surface material, or other material approved by Minnesota Housing.
 - (f) When possible, design the building garage overhead openings with two doors in lieu of one large door. This allows less energy to escape and provides an alternative opening in case of maintenance and repair.
 3. **Roofing**
 - (a) Low Slope Roofing
 - i. Shall have a minimum of ¼” inch per foot (finished) slope unless otherwise approved by Minnesota Housing Staff Architect and Building Official.

- ii. Approved Systems shall include 60 mil adhered EPDM & TPO, or four-ply asphalt/gravel built-up assembly.
 - iii. Ballasted or mechanically fastened single ply membranes are not accepted.
 - iv. A minimum 20-year manufacturer's warranty required.
- (b) Sloped Roofing, a minimum 25-year manufacturer's warranty is required.
- 4. **Patio and entrance slabs** shall comply with the following requirements:
 - (a) Stoop/footing frost protection required at all entrance slabs with $\frac{1}{4}$ " per foot maximum slope.
 - (b) Where soils are frost susceptible, stoop/footing frost protection required at all patio slabs.
 - (c) Protect front entrance slab from rain/snow accumulation with an overhang or canopy.
- 5. **Closet doors:** Conventional, residential grade, bi-fold doors and hardware package are not acceptable in new construction. Side-hinged, swinging type or other Minnesota Housing approved doors shall be provided.
- 6. **Fire extinguishers:** All townhomes and rental single family homes shall have at least one fire extinguisher in each dwelling unit.
- E. **Schematic design concept/cost estimate:** The Borrower shall have an Architect develop a reasonable schematic design concept. The Borrower shall also have a third-party entity (Architect, Professional Engineer, General Contractor, or Qualified Cost Estimator) prepare a cost estimate which conforms to all applicable Minnesota Housing standards. Refer to Formal Application section of Minnesota Housing's Architect's Guide (available on Minnesota Housing's [Building Standards](#) webpage).
- F. **Contract Documents:** Refer to Minnesota Housing's "[Architect's Guide](#)" for contract document requirements.
- G. **Contractor Procurement:** Refer to Minnesota Housing's "[Contractor's Guide](#)" for requirements associated with selecting a contractor and procuring contractor services.

Chapter 3 – General Occupancy Rehabilitation Minimum Standards

3.01 Background

The following standards apply to any rental housing project receiving Minnesota Housing rehabilitation assistance.

If the project involves substantial rehabilitation or adaptive reuse, the housing shall also comply with the maximum extent feasible with “General Occupancy New Construction Minimum Standards” located in Chapter 2. For rehabilitation projects, any building components or systems being replaced shall also meet the requirements for “New Construction Minimum Standards” in Chapter 2. For example: roofing, kitchen cabinets, windows, etc.

Architectural services are likely to be essential to the success of the project. Refer to Minnesota Housing “Architect’s Guide” (available on Minnesota Housing’s [Building Standards](#) webpage) to determine if architectural services are required for the project.

The following standards are supplemental to basic standards established by applicable building codes, local zoning, and other applicable regulations. Where two standards govern the same condition, conformance to the most restrictive standard is required. Regardless, if the local jurisdiction has adopted or not adopted Minnesota State Building Code, housing shall be in compliance with Minnesota State Building Code.

3.02 Purpose

To ensure rental housing receiving Minnesota Housing rehab assistance is decent quality, energy efficient, functional, sustainable and effective in reducing long-term maintenance costs.

3.03 Definitions of Rehabilitation Type

- A. **Substantial Rehabilitation** (or “Gut” Rehab) is defined as a project that includes the replacement and/or improvement of all major systems of the building, including its envelope.
- B. **Moderate Rehabilitation** is defined as a project that does not include all major systems and building envelope work as described for Substantial Rehab nor has it been approved by Minnesota Housing as a Limited Scope Rehab.
- C. **Limited Scope Rehabilitation** status may be considered by Minnesota Housing based upon the cost, funding source, number of dwelling units, number of stories, or other reasons.

Minnesota Housing shall have the sole responsibility of determining and approving Substantial, Moderate, or Limited Scope status for rehabilitation activities. All projects shall be considered Substantial or Moderate at the time of application. Limited Scope status may only be considered after funding is awarded.

3.04 Requirements

All housing that is undergoing rehabilitation with Minnesota Housing funds must meet the requirements associated with a physical or capital needs assessment, environmental standards, accessibility, other inspections, preliminary scope of work and cost estimate, contract documents, and contractor procurement as follows:

- A. **Physical Needs Assessment (PNA) or Capital Needs Assessment (CNA):** Multifamily developments proposing rehabilitation and applying for funds through Minnesota Housing Consolidated RFP, Pipeline Application, or other Minnesota Housing funding, shall submit either a full CNA or a PNA as follows:
1. **CNA:** If the applicant chooses to submit a full CNA (or if a CNA is required for other funding sources), it shall be completed by a third party qualified needs assessor who is not part of the development team. The CNA can be in any of the following established formats:
 - (a) USDA Rural Development
 - (b) HUD/ FHA Project Capital Needs Assessment (PCNA) or Green Capital Needs Assessment (GCNA)
 - (c) ASTM E 2018-08 Standard Guide for Property Conditions Assessment
 - (d) Other Minnesota Housing approved format
 2. **PNA/ 20YCE:** If the applicant chooses to submit a PNA (rather than a CNA), it shall consist of a completed Minnesota Housing [Physical Needs Assessment Template](#) and a Minnesota Housing [20-Year Capital Expenditure Template](#) (20YCE). An alternative document with a similar format and the same information may be substituted. When completing the 20YCE Template, it shall be completed “As Is” with the proposed immediate needs and rehabilitation scope of work noted in the “Year One” column.
 - (a) Needs Assessor Qualifications. All PNA’s must be prepared by a Needs Assessor who is a licensed Architect, licensed Professional Engineer, or an individual who meets the definition of a “Qualified Rehab Specialist” as defined in the Minnesota Housing Architect’s Guide. The Needs Assessor may be a member of the development team but shall not have an identity of interest with the Owner, Developer, or Borrower.
 - (b) Life Expectancy. The PNA with 20YCE shall provide a Life Expectancy analysis including Estimated Age, Expected Useful Life (EUL), and Effective Remaining Life (ERL) of the following minimum elements identified in the [Physical Needs Assessment Template](#) and the [20-Year Capital Expenditure Template](#).
 - (c) Dwelling Unit Inspections. At a minimum, dwelling unit inspections for Minnesota Housing’s PNA shall:
 - i. Include inspect of at least 25% of all units in similar condition
 - ii. Include in the sampling each type of unit size, (such as OBR/ SRO, 1BR, 2B, 3BR etc.) and typical unit types in typical buildings
 - iii. Include all Accessible Units
 - iv. Inspect those units which are more subject to architectural stress such as: ground floor units; units underneath the roof; units adjacent to elevator cores; and units on the sides of the building which receive the most weathering
 3. **Exemptions:** New construction projects, gut rehabilitation projects and adaptive re-use projects are not required to provide a PNA or CNA. However, adaptive re-use projects shall provide a 20-Year Capital Expenditure to capture the Effective Remaining Life (ERL) of elements to remain.

4. **Age of PNA/CNA:** The age of any needs assessment report from time of Application (or at time of Preservation Pre-application if required) shall be one year or less. If over one year, but less than two years the needs assessment report may be used to comply with this needs assessment requirement, however an updated 20-Year Capital Expenditure (20YCE) (less than six months old) shall be included. Provide new assessments if older than two years.
 5. **Incomplete Assessments:** Minnesota Housing reserves the right to order a third-party PNA or CNA if the one submitted does not adequately include a complete assessment of a property's condition. Minnesota Housing reserves the right to have any incomplete PNA or CNA updated and re-submitted. The cost for new or updated PNAs or CNAs will be the responsibility of the developer/borrower/owner.
- B. **Minimum Essential Physical Needs:** The inspection shall be conducted to identify deficiencies under applicable state and local codes, ordinances, and the following:
1. **Structural integrity:** Structures shall be structurally sound and free of any pending or imminent structural collapse or failure. (i.e.: decks, basement columns, foundations, floors, walls, roof framing, headers, lintels, etc.)
 2. **Building envelope:** The building envelope shall be weather and water tight. All openings susceptible to water and air penetration shall be sealed. Ensure envelope is adequately insulated or supplement the insulation to the envelope. Typically the attic is the cheapest and easiest to supplement, and will provide the greatest cost-to-benefit payback. Ensure that all attics are adequately ventilated to prevent ice-damming, and all attic bypasses are sealed and insulated.
 3. **Site and roof drainage:** The site shall be well drained. There shall be no standing water in non-designated holding pond areas 12 hours after a rain event. Surface drainage must be directed away from the structure, to a designated ponding area, or to municipal storm sewer system. Include roof drainage provisions when assessing site drainage conditions.
 4. **Plumbing and sanitation systems:** All plumbing systems shall be code compliant, adequately sized, and operable with an anticipated minimum seven-year life expectancy. Obsolete, water wasting fixtures shall be replaced and no leaks allowed. Minnesota Housing may require sanitary sewer lines to be video-scoped to detect if any unforeseen repair and maintenance is necessary.
 5. **Mechanical systems:** All heating, air conditioning, and ventilation systems shall be code compliant, adequately sized, and operable with an anticipated minimum seven-year life expectancy. Bathrooms shall have an operating exhaust vent ducted to the exterior. Clothes dryers shall be connected to code compliant rigid type vent exhausting to the exterior. To the greatest extent feasible ensure that all dwelling units are air conditioned or equipped with A/C sleeve(s).
 6. **Electrical systems:** All electrical systems shall be code compliant with circuit breakers, adequately sized for the structure and intended use. All electrical life safety fixtures shall be in place and functional including the following:
 - (a) Smoke detectors. Battery –powered smoke detectors meeting requirements of Underwriter Laboratories, Inc. and approved by the International Conference of Building Officials, shall be furnished and installed in all areas as if required for new construction. Also, at least one hard-wired smoke detector with battery back-up shall be provided in each dwelling and be audible from all sleeping rooms.

- (b) Ground-fault circuit-interrupter (GFCI) protection. The same level of GFCI receptacle protection shall be provided in rehab projects as required for new construction regardless whether mandated by code/regulations.
 - (c) Arc-fault circuit-interrupter (AFCI) protection. AFCI protection shall be provided for receptacle outlets in locations as required per applicable codes/regulations.
 - (d) Carbon Monoxide (CO) alarms. Provide as required per applicable state statute.
7. **Elevator:** If there is an existing elevator and hoistway in a building, it shall be made to be in compliance with 2007 Minnesota Elevator Code as applicable to existing buildings.
8. **Functional kitchen:** Kitchen shall be appropriately sized and equipped with appropriate cabinets, sink, and operational range/oven/hood/refrigerator appropriately sized for intended household.
9. **Dwelling unit**
- (a) Housing shall meet the requirements associated with decent living space outlined in "Chapter 2 - General Occupancy Rental Housing Minimum New Construction Standards."
 - (b) Exception: The moderate rehab of an existing building development may request a variance for the least dimension(s) and area of the Living Room and Bedrooms by 15%. If approved by Minnesota Housing, the 15% reduction shall be clarified as follows:
 - i. Living Room: 11'-6" x 85% = **9'-9"**.
 - ii. Primary/Master bedroom: 10'-0" x 85% = **8'-6"**. 115 sq. ft. x 85% = **96 sq. ft.**
 - iii. Secondary bedroom(s): 9'-6" x 85% = **8'-1"**. 100 sq. ft. x 85% = **85 sq. ft.**
10. **Parking:** Adequate parking for the resident population shall be available for resident use. Any onsite pavement with initial signs of raveling, transverse cracks, longitudinal cracks, or minor block cracking shall have preventative maintenance which includes corrective measures such as crack sealing, seal coating, asphalt patching and repair. Any onsite pavement with severe cracking damage shall be adequately repaired and replaced. Hard surface parking shall be properly striped and any accessible parking spaces properly identified.
11. **Fire Extinguishers:** All townhomes and rental single family homes shall have at least one fire extinguisher in each dwelling unit.
- C. **Environmental Standards:** It is essential to perform all environmental assessments early in the planning process to ensure that all mitigation measures and costs are integrated into the scope of work. Project activities must comply with requirements for Phase I/Phase II Environmental Site Assessments (ESAs), Lead Based Paint evaluation and reduction, Lead Based Paint visual inspection requirements, Asbestos Inspection Surveys, Radon Mitigation, Historic Preservation, Contamination and Clandestine Drug Lab Cleanup. These requirements can be found in the "[Environmental Assessments](#)" section on the Minnesota Housing website.
- D. **Accessibility:** Refer to Chapter 6 for "Accessibility Analysis and Survey Requirements" for existing developments.
- E. **Other inspections:** Minnesota Housing encourages the Borrower to engage the local building inspector, Minnesota Housing Staff Architect, and any other funder's inspecting rehab specialist or

architect in the initial inspection process. Conducting these inspections early in the development, planning and budgeting phase will ensure that all local property standards, local building code, and other deficiencies are identified and included in the preparation of the bid specification/scope of work.

- F. **Preliminary Scope of Work/Cost Estimate:** The Borrower shall provide a preliminary scope of work and cost estimate prepared by a third party entity such as an Architect, Professional Engineer, General Contractor, Qualified Cost Estimator, or Qualified Rehab Specialist. The scope and estimate shall adequately address property deficiencies to ensure compliance with all applicable building codes and all requirements within this Rental Housing Design/ Construction Guide. Work scope shall include any reasonable accommodation requests for persons with accessibility needs.
- G. **Contract documents:** Refer to Minnesota Housing’s “[Architect's Guide](#)” for contract document requirements.
- H. **Contractor procurement:** Refer to Minnesota Housing’s “[Contractor's Guide](#)” for requirements associated with selecting a contractor and procuring contractor services.
- I. **Decent, safe, sanitary and in good repair:** Unless local codes, ordinances or zoning requirements require more stringent standards, existing conditions with no improvements planned, shall be in compliance with HUD’s Uniform Physical Condition Standards (UPCS) (Title 24, Part 5, Subpart G). The type of funding will usually dictate which standard applies. If you are uncertain how UPCS applies to your property, contact your Minnesota Housing Management Officer (HMO) Compliance Officer. Regardless, the site, buildings and structures and all parts thereof shall be kept in good repair. All defective components shall be repaired or replaced.

Chapter 4 – Supportive Housing Minimum Design and Construction Standards

4.01 Background

The following design standards shall apply to all supportive rental housing receiving Minnesota Housing financing for new construction, rehabilitation, and/or adaptive reuse of an existing building and are in addition to other applicable Minnesota Housing standards.

These standards are supplemental to basic standards established by Minnesota Housing for new construction and rehabilitation of general occupancy housing (Chapters 2 and 3), applicable building codes, local zoning, and other applicable regulations. Where two standards govern the same condition, conformance to the most restrictive standard is required. Regardless, if the local jurisdiction has adopted or not adopted the Minnesota State Building Code, all site improvements receiving Minnesota Housing financing must be in compliance with the Minnesota State Building Code.

4.02 Purpose

To ensure supportive rental housing financed by Minnesota Housing is decent quality, energy efficient, functional, sustainable, durable, and effective in reducing long-term maintenance costs.

4.03 Requirements

- A. **Durability:** Emphasis will be placed on durability of construction materials and finishes that achieve cost effective life-cycle costs and reduce ongoing maintenance (i.e., finish flooring, cabinet construction, windows, window treatments, solid-core doors, hardware, toilet accessories, etc.).
- B. **Program Space:** If program space is provided, shall be appropriate for intended use and resident population and must be accessible via an accessible route. In addition, Minnesota Housing encourages program space be convertible into housing space in the future.

Chapter 5 – Housing Tax Credit Only Design and Construction Standards

5.01 Background

This Chapter is for projects receiving an allocation of either 4% or 9% Housing Tax Credits (HTC) from Minnesota Housing. Developments receiving HTC allocation as well as other capital improvement financing from Minnesota Housing shall comply with Minnesota Housing's typical process for multifamily design, construction and submittals noted in the "Architect's Guide" and "Contractor's Guide."

It is important to confirm design standards applicable for a given year's HTC allocation at time of initial HTC selection as design standards often change from year to year.

5.02 Purpose

To ensure rental housing financed by HTC is cost reasonable and of similar quality and livability as any other housing financed by or in part with Minnesota Housing assistance.

5.03 Requirements

- A. **Design and Construction Standards for all Housing Tax Credit Projects:** The design and construction of any development receiving HTC funding for new construction or rehabilitation shall comply with all applicable Minnesota Housing Rental Housing Design/Construction Standards (RHD/CS) in effect at time of initial HTC selection. If developments claim and are awarded Large Family points, the Moderate Rehab 15% Reduction in room sizes noted in Chapter 3 of this document (RHD/CS) apply. Additional design requirements may be applicable if points are claimed or awarded which require the development to include specific design elements (such as high-speed internet connections, non-smoking building, and/ or universal design).
- B. **Cost Reasonableness for all Housing Tax Credit Projects:** Minnesota Housing will evaluate the costs of each project in comparison to other current comparable projects. Unique characteristics will be accounted for in determining whether the proposed project costs are reasonable. We will use our Predictive Cost Model to test cost reasonableness for all projects. The model uses cost data from previous tax credit properties, industry cost data from RSMeans, and regression analysis to predict total project costs. Based on a project's characteristics (building type, project size, location, population served, financing, etc.), the model predicts the total development costs. Additional documentation will be required if the proposed costs are not comparable or reasonable.
- C. **Application Submittals Applicable to 4% and 9% HTC:** Any developments receiving only Minnesota 4% or 9% HTC allocation and no other financing (HTC Only) from Minnesota Housing, shall submit the following at application:
 1. [Minnesota Housing's "Tax Credit Design Standards/Review Process Certification" form](#). The "Application Phase" shall be indicated on the form.
 2. Enterprise Green Communities Criteria (EGCC) completed "Compliance Intended Methods Worksheet" which is located within the EGCC Certification Workbook. Or, provide evidence that the project is seeking EGCC Certification.
 3. Other submittals or information requested by Minnesota Housing.

- D. **Pre-construction Submittals Applicable to 9% HTC Only:** In addition to the application submittals noted above (Item C), developments receiving only 9% HTC shall also submit prior to commencing with construction:
1. Concept/ Schematic Design documents if revised after initial application
 2. Construction Documents at 50% completed
 3. Construction Documents at 100% prior to bidding
 4. Applicable Environmental Assessments per Minnesota Housing's [Environmental Standards](#) including: Phase I ESA and Phase II ESA, Lead-Based Paint, Asbestos, Radon, and Minnesota Pollution Control Action Plan
 5. Note, **construction may not start** until all construction documents (plans, specifications and addendum) and other required submittals have been approved by Minnesota Housing.
- E. **Construction Monitoring Applicable to 4% and 9% HTC Only:** Minnesota Housing representatives shall be granted access to the site as deemed necessary to monitor work in progress. If requested, Minnesota Housing shall receive:
1. Regular construction meeting minutes
 2. Observation reports
 3. Change orders
 4. Any other documentation that alters the contract, alters the completion date, or as determined by Minnesota Housing.
- F. **End of Construction submittals applicable to 4% and 9% HTC Only:** Minnesota Housing shall receive the following after construction and before IRS Form 8609 submittal:
1. Minnesota Housing's "[Tax Credit Design Standards/Review Process Certification](#)" form. The "Project Completion Phase" shall be indicated on the form.
 2. Enterprise Green Communities Criteria (EGCC) and MN Overlay submittals which includes the "EGCC Compliance Report Worksheet" with updated criteria (located within the [EGCC Certification Workbook](#)), or evidence of EGCC Certification.
 3. Certificate of Substantial Completion.
 4. Certificate of Occupancy (if applicable, or proof all permits are closed).
 5. Environmental Documentation (if applicable) including Lead Clearance Reports, Asbestos abatement reports or Management Plan, MPCA close-out and post-construction radon testing. HTC 4% only deals need only submit these if requested.
 6. Other submittals or information, as requested by Minnesota Housing.
- G. **General Notes:** Failure to comply with the standards or submittal requirements may be subject to penalty during subsequent HTC selections. The information listed in this Chapter 5 of the RHD/CS shall not supersede or have preference over any requirements of the Housing Tax Credit (HTC) Qualified Allocation Plan (QAP) or Procedure Manual.

Chapter 6 – Accessibility Standards

6.01 Background

In an effort to provide housing that reduces barriers for persons with disabilities and to be compatible with the State Accessibility Code, Minnesota Housing has adopted these standards. The new construction requirements only apply to multifamily developments containing four or more dwelling units or sleeping units that are financed by Minnesota Housing, including developments receiving only housing tax credits allocated by Minnesota Housing. Developments receiving only tax credits from a local sub allocator are exempt from this Standard and need only to comply with the Minnesota State Building Code provisions and the sub allocator's requirements.

Regardless of whether or not the local jurisdiction has adopted the Minnesota State Building Code, all site improvements financed by Minnesota Housing must be in compliance with Minnesota State Building Code for Accessibility and other applicable zoning regulations. Where two standards govern the same condition, conformance to the most restrictive standard is required.

6.02 Requirements

- A. New Construction of Developments with four or more units: **To promote housing that reduces physical barriers for persons who are physically disabled, new construction developments shall meet the following:**
1. A minimum of five percent of the total units (with its fraction rounded up) in the development must be designed and constructed to meet accessibility requirements for a Type A unit as promulgated by the Minnesota State Building Code for Accessibility. The five percent requirement applies to two-story townhouses as well as all other types of multifamily dwelling units or sleeping units.
 2. In addition to, and separate from the five percent Type A units, at least two percent (but not less than one) of the total dwelling units shall be adaptable for persons with vision/hearing impairments. Adaptable communication features must include rough-in for audible and visual alarms and notification appliances per applicable ICC/ANSI A117.1 requirements and rough-in wiring to allow future installation of visual notification devices. These devices when installed will alert room occupants of door knock or bell.
 3. Accessible parking spaces shall match the number of Type A Accessible Dwelling Units provided. Additional parking spaces shall be provided as required for visitor parking and/or commercial space. Required accessible parking spaces in excess of quantities per applicable building codes and ordinances may be left as non-accessible spaces. These spaces shall be designed to allow conversion to accessible parking spaces if needed later.
 4. Any required Type A unit that is either a two-story townhouse or some other type of two-story dwelling unit shall have a minimum of two sleeping rooms be accessible.
 5. Where three or more Type A units are required, at least one Type A unit shall be provided with an accessible roll-in shower.
 6. If grab bars are not installed at time of initial occupancy in any Type A unit as permitted by code, the Owner shall be responsible for installing code-compliant grab bars immediately upon request by a resident.

- B. Rehabilitation of Existing Developments/Buildings:** To promote housing that affords persons with disabilities equal opportunity to use and enjoy occupied buildings Minnesota Housing requires existing buildings to have an Accessibility Analysis and Survey conducted by an architect, qualified needs assessor, or qualified rehab specialist prior to finalizing work scope. Housing which is being rehabilitated shall meet the following, as applicable:
1. **Accessibility Analysis and Survey:** Depending upon whether housing is receiving any Federal financial assistance, each building receiving Minnesota Housing financial rehab assistance is required to have an Accessibility Analysis and Survey conducted in accordance with the following:
 - (a) Housing receiving **NO** Federal financial assistance shall have an Accessibility Analysis and Survey, which shall determine compliance with the following:
 - i. The Fair Housing Act of 1968, as amended, which shall also include any documented requests for reasonable accommodations and/or reasonable modifications.
 - ii. The Americans with Disabilities Act (1990)
 - iii. State and Local Codes
 - (b) Housing receiving Federal financial assistance (i.e.: HARP funds) must have an Accessibility Analysis and Survey (in addition to all items listed above for housing receiving no Federal financial assistance) to determine compliance with the following:
 - i. The Architectural Barriers Act (1968)
 - ii. Section 504 of the Rehabilitation Act (1973)
 - (c) A summary of Accessibility Analysis and Survey shall be submitted to Minnesota Housing prior to finalizing work scope and shall include the following:
 - i. Total existing dwelling unit count, existing accessible dwelling unit count (Type A and Type B/Adaptable), dwelling unit types (SRO, one-bedroom, two-bedroom, etc.), accessible and non-accessible parking count, and other general accessible property information.
 - ii. Identification of all accessibility deficiencies including any requests for reasonable accommodations and/or reasonable modifications.
 - iii. Determination of feasible and/or infeasible accessibility improvements.
 - iv. Cost estimates as needed to support feasibility.
 - v. Other information deemed necessary.
 2. Rehabilitation work scope shall include all accessibility improvements, which are determined to be reasonable and feasible as identified in Accessibility Analysis and Survey. Funded improvements must not reduce or have the effect of reducing accessibility of a building or portion of a building.
 3. Housing involving gut rehab, substantial rehabilitation or adaptive reuse must, to the maximum extent feasible, comply with new construction standards unless mandated otherwise by local building code official.

- C. **HTC Universal Design:** Projects awarded Universal Design points for Housing Tax Credit (HTC) application scoring shall include all requirements per the HTC scoring sheet.
- D. **State Visitability Statute:** Refer to “Chapter 7 - Visitability Requirements” for additional accessibility requirements applicable to certain new construction financed by Minnesota Housing.

Chapter 7 – Visitability Requirements

The 2001 Minnesota Legislature imposed a Visitability requirement on certain new construction financed by Minnesota Housing. This requirement was promoted by the disability community.

The Visitability requirement applies to the following types of new construction that is financed in whole or in part by Minnesota Housing:

- A. Single-family homes
- B. Duplexes
- C. Triplexes
- D. Multi-level townhomes

The requirement does not apply to projects receiving only Housing Tax Credit Allocation.

The requirement does not apply to owner-occupied housing financed by Minnesota Housing mortgage programs except in cases where Minnesota Housing has also provided financing for the construction.

Visitability is defined as designs that allow persons with mobility impairments to enter and stay, but not live, in a residence. There are three specific design elements that must be incorporated in each dwelling to satisfy the state visitability requirement. The dwelling must include:

- A. At least one no-step entrance
- B. Thirty-two inch clear opening doorways
- C. At least a one-half bathroom on the main level that meets minimum clear floor space for half baths (powder room) as required by Fair Housing Act “Part B: Usable Bathrooms”

Chapter 8 – Sustainable Housing

8.01 Background

Minnesota Housing’s Sustainable Housing Standards are applicable for all new construction and rehabilitation and require compliance with the “2011 Enterprise Green Communities Criteria (EGCC)” and “2015 MN Overlay and Guide to the 2011 Enterprise Green Communities Criteria.”

Current and previous Sustainable Housing requirements are available on Minnesota Housing’s [Building Standards](#) web page.

8.02 Exception

The State of Minnesota Sustainable Building Guidelines is applicable for developments receiving Publicly Owned Housing Program (POHP) funds, also referred to as general obligation bond proceeds. Refer to Minnesota Housing POHP Program Guide for more information. The Minnesota Housing Sustainable Housing Standards do not apply.

8.03 Energy Rebate Analysis

All projects receiving tax credit allocation or deferred funding from Minnesota Housing shall provide an Energy Rebate Analysis (ERA).

- A. At the application phase, submit a preliminary/draft explanation of energy rebates being considered with estimated rebate amounts.
- B. Prior to closing/loan commitment submit a final ERA as follows:
 - 1. Prepared by a third-party entity with no identity of interest to the developer, borrower, or owner of the development property. The third-party entity may be a Licensed Architect, Licensed Engineer, Needs Assessor, HERS Rater, or other entity deemed qualified by Minnesota Housing to provide this service.
 - 2. The ERA should be on the letter head of the entity it was prepared by and shall include contact information and date it was prepared.
 - 3. The ERA shall include a list of eligible utility company, local, regional, state, or federal rebate programs.
 - 4. The ERA shall include recommendations of applicable rebates to be included with estimated rebate amounts or estimated tax credit amounts.
 - 5. Include calculations, energy models, or other technical data to support recommendations.
 - 6. Include letters, program data information, or other documentation from utility providers to support noted programs
 - 7. If renewable energy strategies are proposed, a cost-benefit analysis shall be included.

Visit the state website with rebate information: <http://www.dsireusa.org/>.

Chapter 9 – Design, Construction, and Property Standards Supplement for Federal Funded Projects (i.e. HARP)

9.01 Background

This supplement was created in an effort to consolidate Minnesota Housing Rental Housing Design and Construction Standards with standards required for HARP funded projects.

The standards identified in this chapter may be modified by either statute or regulatory action of the federal government. When so modified, the changes will be effective on the effective date of the change. When approved designs are affected by new federal actions, owners should discuss with Minnesota Housing the effect of the change on the project and whether already approved plans and specifications must be altered.

9.02 Purpose

Minnesota Housing has created design and construction standards that encourage sustainable, healthy housing that optimizes the use of cost effective durable building materials and systems and that minimizes the consumption of natural resources during construction and reduces long term maintenance and operation costs.

In addition to Minnesota Housing's standards, the federal government applies the following standards and requirements to HARP projects.

9.03 Requirements

The following Federal Regulations apply to HARP projects:

- A. 24 CFR Part 51, Environmental Criteria Standards. Subpart B– Noise Abatement and Control.
- B. 24 CFR 5.703 Uniform Physical Condition Standards. Where there are no local government housing quality standards, the Uniform Physical Condition Standards of 24 CFR 5.703 apply. In all other cases, local government physical condition standards will apply. HARP projects must continuously meet this standard for the full Effective Period.
- C. 24 CFR Part 8 (Section 504 of the Rehabilitation Act of 1973). Housing shall be made accessible to the maximum extent feasible. The Architect of Record shall provide an Accessibility Analysis and Survey for the existing development. Refer to Chapter 6 for Accessibility Analysis & Survey requirements.
- D. 24 CFR Part 100 Discriminatory Conduct Under the Fair Housing Act. Subpart D– Prohibition against Discrimination Because of Handicap. All sections (100.200 - 100.205). Included by reference.
- E. 24 CFR Part 35, "Lead-Based Paint Poisoning Prevention in Certain Residential Structures."
- F. 24 CFR §92.251(b). Capital Needs Assessments are required for properties of 26 units or more to determine if major systems have a useful life that equals or exceeds the Effective Period. If major systems are found to have useful lives less than the Effective Period, they must either be replaced, or the owner must establish a replacement reserve with monthly payments that are deemed adequate by Minnesota Housing to replace the system(s) as needed.