



Minnesota Overlay and Guide to the 2015 Enterprise Green Communities Criteria™

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Chapter 1 – Overview

To create homes that are durable, healthy and efficient, Minnesota Housing and its funding partners created this updated Minnesota Overlay and Guide (MN Overlay). Unless specifically noted otherwise, all projects receiving Housing Tax Credit (HTC) allocation or other capital improvement funding from Minnesota Housing must meet all requirements of the 2015 Enterprise Green Communities Criteria (EGCC) as amended by this MN Overlay.

This MN Overlay is subject to periodic revisions and updates. The last revised date is posted on the cover of the document.

EGCC is also subject to periodic revisions and updates. Development teams should verify they are working with the most current version of Enterprise's documents including, but not limited to, Criteria, addendums, workbooks, etc. Find the latest versions of 2015 EGCC and clarifications at: www.EnterpriseCommunity.org/green or <http://www.enterprisecommunity.com/solutions-and-innovation/enterprise-green-communities/criteria>

If a newer version of this document is released after the initial selection of financing for a project, the Development team may use the EGCC version and Overlay version current at that time. Note that this is the first MN Overlay to the 2015 EGCC.

Chapter 2 – Definitions

2.01 Definitions of Project Type as set by Funding Source

Multifamily (MF) is defined as any project or Dwelling Unit (DU) where the occupant(s) are renters and do not own the property. Multifamily projects may include single family homes, duplexes, townhomes, buildings with elevators, multi-storied buildings, etc., and are generally administered by Minnesota Housing’s Multifamily Division. Contact Minnesota Housing’s [Staff Architects](#) for clarifications if needed.

Single Family (SF) is defined as single family homes, duplexes and townhomes where the occupant owns the dwelling and the project is administered through Minnesota Housing’s Single Family Division.

2.02 Definitions of Rehabilitation (Rehab) Type

Substantial Rehabilitation (or “Gut” Rehab) is defined as a project:

1. That includes the replacement and/or improvements of at least two major systems of the building, including its envelope. Major building systems include roof structures, wall or floor structures, foundations, plumbing, heating ventilating and air conditioning (HVAC) and electrical systems. The building envelope is defined as the air barrier and thermal barrier separating exterior from interior space.
2. Or, where the Work Area exceeds 50 percent of the Aggregate Area of the building per the 2015 Minnesota Conservation Code for Existing Buildings Section 505 - Level 3 Alteration.

Moderate Rehabilitation is defined as a project:

1. That does not fall into Substantial Rehabilitation as defined above.
2. Or, where the work is limited to the 2015 Minnesota Conservation Code for Existing Buildings definition of Section 502 Repairs, Section 503 Level 1 Alteration or Section 504 Level 2 Alteration.

Limited Scope Rehabilitation status may be considered by Minnesota Housing based upon the cost, funding source, number of DUs, number of stories, or other reasons.

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

Chapter 3 – Acronyms and Abbreviations

DU	Dwelling Unit
EGCC	Enterprise Green Communities Criteria (2015 version unless noted otherwise)
HTC	Housing Tax Credits
Impact Fund	Minnesota Housing’s Single Family Community Homeownership Impact Fund
MF	Multifamily
MN Overlay	Minnesota Overlay to the Enterprise Green Communities Criteria
Mod	Moderate
NSP	Neighborhood Stabilization Program (Single Family)
Rehab	Rehabilitation
RLP	Rehabilitation Loan Program (Single Family)
SF	Single Family
Sub	Substantial

Chapter 4 – Certification by Enterprise Green Communities

Enterprise certification is **not required** for projects receiving HTC or other Minnesota Housing funding. However, Minnesota Housing encourages all new construction and substantial rehab developments to seek certification.

If the development team is required by others to certify their project or if the team voluntarily decides to pursue Enterprise certification, Minnesota Housing should be notified in writing of this intent. Submittal requirements are simplified for projects pursuing Enterprise certification; see *Chapter 6 - Submittals* for details.

Enterprise should be consulted early in the process if a certification path is pursued. Revisions to the EGCC as outlined in this overlay and guide are minimum requirements for Minnesota Housing funded projects and may not meet all requirements required for Enterprise certification.

Chapter 5 – How to Use This Document

This MN Overlay applies to all MF and SF new construction, substantial/gut rehab, and moderate rehab projects requesting and receiving Minnesota Housing financing. It's designed to be used in conjunction with the [2015 Enterprise Green Communities Criteria](#). The items listed in this MN Overlay modify or replace the corresponding item in the 2015 EGCC.

The 2015 EGCC and this MN Overlay are applied in different ways.

1. The EGCC is applied based on the structure type (Single Family, Low-rise Multifamily, and Mid/High-rise Multifamily).
2. It's also based on Minnesota Housing's definition of MF and SF funded projects.
 - a. **Multifamily funded projects** must meet the requirements outlined in **Chapter 6** of this MN Overlay.
 - b. **Single Family funded projects** must meet the requirements outlined in **Chapter 7** of this MN Overlay.

Chapter 6 – Multifamily Funded Project Requirements

6.01 Multifamily Minimum Criteria

Mandatory Criteria and Optional (points) Criteria are required for Minnesota Housing funded MF projects must be per Table 6.01.

Table 6.01 Mandatory and Optional Criteria

Construction Type	Required Mandatory Criteria	Required Optional (points) Criteria	Certification
MF New Construction	Yes	Yes, at least 35	Encouraged, but not required.
MF Substantial Rehab	Yes ^{1, 2}	Yes, at least 30	Encouraged, but not required.
MF Moderate Rehab	Yes ^{1,2} See Table 6.02	Yes, at least 30	Encouraged, but not required.

Table 6.01 Footnotes:

1. Any improvements made at the time of construction are required to comply with the corresponding Mandatory Criteria, except when the Criteria specifically denote “New Construction only.” For example, compliance is required for new finishes, replacement of equipment, building components, mechanical systems, electrical systems, assembly of components, and other if replacement is in the project’s scope of work.
2. Existing equipment, plumbing fixtures, and/or appliances that remain (not improved) are exempt from meeting New Construction requirements.

6.02 Multifamily Minimum Mandatory Criteria for MF Moderate Rehab

Not all Mandatory Criteria are required for MF Moderate Rehab project. Minimum Mandatory Criteria for MF Moderate Rehab must be per Table 6.02.

Table 6.02 Minimum Mandatory Criteria for MF Mod Rehab

Criteria No.	2015 EGCC	Moderate Rehab
1.1a	Goal Setting	Mandatory
1.1b	Criteria Documentation	Mandatory
3.1	Environmental Remediation	Mandatory
3.4	Landscaping	Mandatory if in scope of work
3.5a	Efficient Irrigation and Water Reuse	Mandatory if in scope of work
5.1c or 5.1d	Building Performance	Mandatory
5.3	Sizing of Heating and Cooling Equipment	Mandatory if in scope of work
5.4	ENERGY STAR Appliances	Mandatory if in scope of work
5.5	Lighting	Mandatory if in scope of work
6.1	Low/ No VOC Paints, Coatings and Primers	Mandatory if in scope of work
6.2	Low/ No VOC Adhesives and Sealants	Mandatory if in scope of work
6.6	Composite Wood Products that Emit Low/ No	Mandatory if in scope of work

	Formaldehyde	
6.7a	Environmentally Preferable Flooring	Mandatory if in scope of work
6.8	Mold Prevention: Surfaces	Mandatory
6.9	Mold Prevention: Tub & Shower Enclosures	Mandatory if in scope of work
6.12	Construction Waste Management	Mandatory
7.1	Ventilation	Mandatory
7.2	Clothes Dryer Exhaust	Mandatory
7.3	Combustions Safety	Mandatory
7.5	Vapor Retarder Strategies	Mandatory if in scope of work
7.6	Water Drainage	Mandatory if in scope of work
7.7	Mold Prevention: Water Heaters	Mandatory
7.8	Radon Mitigation	See Minnesota Housing Environmental Standards Radon Requirements
7.9	Garage Isolation	Mandatory
7.10	Integrated Pest Management	Mandatory
7.12	Active Design: Promoting Physical Activity within the Building	Mandatory
7.15	Reduce Lead Hazards	See Minnesota Housing Environmental Standards for Lead Hazards
8.1	Building Maintenance Manual	Mandatory
8.2	Emergency Management Manual	Mandatory
8.3	Resident Manual	Mandatory
8.4	Resident and Property Staff Orientation	Mandatory

6.03 Multifamily Submittals and Documentation

Submittals and documentation for Multifamily projects must be per Table 6.03. All items indicated as “Yes” must be submitted to Minnesota Housing at the Initial Application, Loan Commitment/Closing, and/or at End of Construction as indicated.

Table 6.03 Multifamily Submittals and Documentation

Documentation Requirement	Initial Application	Loan Commitment/ Closing	End of Construction
Intended Methods Worksheet in an electronic Excel format, OR documented commitment to certify through Enterprise	Yes ¹	Yes ¹	Yes ¹
Minnesota Housing Waiver Request form	Yes ²		
Criteria 5.1 (a, b, c, and d) HERS Performance or Prescriptive Method Energy Goals; Energy Model; or letter explaining compliance with Prescriptive Method		Yes ³	
Criteria 5.1 (a, b, c, and d) HERS Certificate; Post-build Energy Report; Energy Report Form; or Thermal Enclosure Inspection Checklist			Yes ³

Table 6.03 Footnotes:

1. For projects voluntarily seeking certification through Enterprise, documentation of registration on Enterprise’s Web Portal, including compliance of all mandatory items and optional points achieved, and documentation of final Enterprise certification, may be used in lieu of the Intended Methods Worksheet.
2. Only required if applicable.
3. See performance or prescriptive path with in Criteria 5.1 (a, b, c, or d) for applicable energy performance.

6.04 Multifamily Intended Methods Instructions

For projects voluntarily seeking certification through Enterprise, the following instructions **do not** apply. These instructions are only for projects completing the Minnesota Housing Intended Methods Worksheet for Minnesota Housing approval.

For the **Initial Application phase**, all MF developments seeking funding from Minnesota Housing should download the 2015 Intended Methods Worksheet on the Minnesota Housing [Building Standards](#) web page and complete as follows:

1. Provide project information (Project Name, Location, etc.).
2. Indicate the “Application” Submittal Phase on the top right of the first page
3. Indicate “Construction Type.”
4. For each Criteria, check either “Yes”, “No”, “Not Applicable” (N/A), or “Waiver Request” (WR) under the “Intent to Comply” columns. All applicable Mandatory Criteria must be included.
5. For each Optional Criteria selected, indicate number of optional points under the “Selected Optional Points” (OP) column.
6. For each applicable and selected Criteria, provide an explanation under the “How Will Criteria Be Implemented?” column. Also include where each criteria item is documented by listing draw sheet number, specifications section number, or other.
7. If a waiver is being requested, it must be included on a separate Minnesota Housing Waiver Request form available on the Minnesota Housing [Building Standards](#) web page.
8. Borrower/Developer/Owner and the Architect of Record/Borrower’s Architect must sign and date the “Intent to Comply Certification - Initial Application Phase”.

For the **Loan Commitment/Loan Closing phase**, all MF developments must:

1. Indicate the “Loan Commitment/Loan Closing” Submittal Phase on the top right of the first page.
2. Update the “Date Last Updated.”
3. Update, revise, and correct changes based upon the final Minnesota Housing approved set of construction documents and construction contract.

4. The Borrower/Developer/Owner, Architect of Record/Borrower's Architect, and General Contractor must sign and date the "Contract Document Compliance Certification - Loan Commitment/Closing Phase".

For the **End of Construction/Construction Close-out phase**, all MF developments must:

1. Indicate the "End of Construction/Construction Close-out" Submittal Phase on the top right of the first page.
2. Update the "Date Last Updated."
3. Update, revise and correct any as-built changes.
4. The Borrower/Developer/Owner, Architect of Record/Borrower's Architect, and General Contractor must sign and date the "Compliance Certification - End of Construction/Construction Close-out Phase".

For each submittal phase, save the Intended Methods Worksheet as a PDF and send to Minnesota Housing.

6.05 Multifamily Overlay to Criteria

The following revisions, additions, and/or clarifications to the 2015 EGCC must be applied to Minnesota Housing funded projects including those receiving Housing Tax Credit (HTC) only allocations:

Category 1: Integrative Design

Criteria 1.2a: Resident Health and Wellbeing: Design for Health

(Mandatory for New Construction; 2 optional points for Substantial Rehab and Moderate Rehab)

REVISE: The Mandatory requirements to only include New Construction. Two optional points are available for Substantial and Moderate Rehab projects.

RESOURCES: Go to the Minnesota Department of Health's Environmental [Public Health Data Portal](#) for information to help complete the requirements for this criterion.

Category 2: Location + Neighborhood Fabric

Category 2: Guidance for New Construction Projects

OMIT: Reference to New Construction projects earning Criteria 2.8 or earning 8 optional points from Category 2. Optional points under Category 2 are not required for any projects.

CLARIFICATION: Only New Construction projects are required to meet all Category 2 Mandatory Criteria.

Criteria 2.9: Improving Connectivity to the Community
(Optional/4 max points)

DELETE: The “Improving Access” and “Incentivize Biking Mobility” sections and replace with the following:

Improving Access

Auto

- Include car-share services (parking) on the property. [1 point]

Incentivize Biking Mobility

- Provide outdoor bicycle racks that are accessible for visitors and residents. [1 point]
- Provide secure, lockable, sheltered and accessible bicycle storage. Provide one bicycle space for every two residential units. Post signage directing residents to bicycle parking areas and programs. [2 points]

Criteria 2.12: Access to Fresh, Local Foods
(Optional/6 points)

REVISE: Option 3: Proximity to Farmers Market (6 points). Omit the “grown within 400 miles of the project site, or from within the same state” limit for items sold. There must be no limit for distance from where items are grown.

Category 3: Site Improvements

Criteria 3.1: Environmental Remediation
(Mandatory for all projects)

DELETE: REQUIREMENTS and replace with modified text as follows:

REQUIREMENTS

All multifamily projects must follow Minnesota Housing’s Multifamily (MF) [Environmental Standards](#).

Category 4: Water Conservation

Criteria 4.1: Water Conserving Fixtures

(Mandatory for New Construction and Substantial Rehab; Optional/6 points for Moderate Rehab)

REVISE: The Mandatory/Optional Requirements.

1. Mandatory for New Construction and Substantial Rehab: No Overlay. Provide new water-conserving fixtures as per Criteria. No optional points.
2. Up to 5 optional points available for Moderate Rehab/Acquisition.
 - a. All Toilets = 1 point
 - b. All Urinals = 1 point

- c. All Showerheads = 1 point
- d. All Kitchen Faucets = 1 point
- e. All Lavatory Faucets = 1 point

Criteria 4.6: Access to Potable Water during Emergencies
(Optional)

OMIT: This criteria in its entirety. Minnesota Housing will not accept this criterion for optional points.

Category 5: Energy Efficiency

General Notes applicable to Multifamily Criteria 5.1 (a, b, c, and d)

It is acceptable to use one pathway for the initial application phase and switch to another pathway after funds are awarded. In that event, the work scope must be re-evaluated and redefined based upon the recommendations and findings of the pathway used. Changes in scope are subject to approval by Minnesota Housing.

Criteria 5.1b: Building Performance Standard: New Construction ASHRAE 90.1/ENERGY STAR Multifamily High Rise

(Mandatory for New Construction: MF buildings with four or five stories wherein each DU does not have its own heating, cooling and hot water system; MF buildings with six or more stories)

ADD: The following CLARIFICATION

Buildings with or without heated garages must meet ES MFHR Mandatory Requirements with an energy performance at least 15 percent better than ASHRAE 90.1-2010.

All buildings under this criterion **must** use a Performance Pathway with Energy Model as described herein which best matches their building type. ES MFHR **does not** have a Prescriptive Method for ASHRAE 90.1-2010. See the EPA's [Energy Star](#) website for ES MFHR approved energy model software.

MODIFY: The current criteria REQUIREMENTS to read:

Buildings four stories or more must follow one of the following three Compliance Methods for compliance:

- 1. Compliance Method One. Buildings four stories or more WITH heated garages** are not eligible for ES MFHR Certification or EGGC Certification, therefore these buildings must submit the following directly to Minnesota Housing:

- **Step 1: Prebuild**

- Follow the ES MFHR performance path and submit a Preliminary Enterprise Green Communities *Energy Performance Report Form*, or other Minnesota Housing approved report completed by an Energy

Design professional. The report must demonstrate that the project is designed to the standards of Energy Star MFHR performance pathway and will perform at least 15 percent better than ASHRAE 90.1-2010.

- At a minimum the report should include:
 - General Information
 - Building Modeled Energy Consumption
 - Building Modeled Costs
 - Energy Improvements
 - The report is strongly encouraged to include a process to determine cost effective energy reduction methods. Measures (or bundles) with a payback of 10 years of less must be selected and included in the final building design.
- **Step 2: During Construction**
 - For verification of targeted energy results, follow the *LEED for Homes Multifamily Midrise Alternative Compliance Path* (available at [2011 Enterprise Green Communities Criteria Updates](#) web page) which includes:
 - *Energy and Atmosphere Prerequisite 1 – LEED for Homes Multifamily Mid-Rise*
 - Limit Duct Air Leakage
 - Fundamental Commissioning of Central HVAC Systems
 - Construction Document Specifications
 - *LEED for Homes Multi-Family Mid-Rise Thermal Enclosure Inspection Checklist*
- **Step 3: Post-build**
 - Follow the ES MFHR performance path and submit a revised post-construction Enterprise Green Communities *Energy Performance Report Form*, or other Minnesota Housing approved report completed by an Energy Design professional. The report must demonstrate that the project has achieved a performance level at least 15 percent better than ASHRAE 90.1-2010.
 - Provide a letter confirming that the LEED for Homes Multifamily Midrise Alternative Compliance Path protocols were followed signed by a design professional of the project team. Include performance percentage better than ASHRAE 90.1-2010, duct leakage results, commissioning report results, etc.

- Provide A completed copy of the *LEED for Homes Multi-Family Mid-Rise Thermal Enclosure Inspection Checklist*.

2. Compliance Method Two. Buildings four stories or more WITHOUT heated garages may be eligible for ES MFHR Certification and EGCC Certification. Therefore compliance with 5.1b must be demonstrated via one of the following pathways:

- **Pathway 1: ES MFHR Certification**

- Under this pathway Minnesota Housing must be notified of intent to certify through ES MFHR at the application phase. ES MFHR must be engaged and proof of registration with ES MFHR must be provided. Submit compliance demonstrated with an ES MFHR Certification Certificate after construction completion.

- **Pathway 2: EGCC Certification**

- Under this pathway Minnesota Housing must be notified of intent to certify through EGCC at the application phase. EGCC must be engaged and compliance demonstrated with an EGCC Certification after construction completion.

- **Pathway 3: Minnesota Housing Submission**

- Under this pathway, neither ES MFHR nor EGCC are engaged and the project will not be certified. Instead the project must follow the submission requirements to Minnesota Housing noted in the “Buildings Four Stories or more **WITH** Heated Garages” of this criteria overlay (above).

3. Compliance Method Three. Buildings with up to five stories, WITH or WITHOUT heated garages, in which all units have their own heating, cooling and hot water heating systems that are separate from other units, may choose to comply with Criterion 5.1a but **must** meet the requirements of ENERGY STAR for Homes (current applicable version in Minnesota).

EGCC Certification Exception. For projects seeking EGCC Certification, the Alternative Compliance Pathway for Criteria 5.1b is available at [2011 Enterprise Green Communities Criteria Updates](#) web page.

Heated Underground Garages Prerequisites

New construction properties with heated underground garages (including heated garage above grade with conditioned space above) must include the following prerequisites strategies:

- Insulate the ceiling of the garage/floor of first level to meet floor surface temperature of space above per ASHRAE 55-2004
- Reduce garage temperature set point to 45 degrees Fahrenheit

- Other applicable code requirements

RECOMMENDATIONS

ADD: The following:

The following are suggested strategies for optimizing building performance for all types of buildings with heated garages):

- Where possible, design the ramp entrance/exit such that exterior ice melting systems are not required
- Exceed code required control of garage lighting with occupancy sensors
- Separately meter the garage heating, lighting, and snowmelt systems
- Variable Speed MUA/ Exhaust fans combined with staged control based on a number of CO sensors activated
- Sensible heat recovery from miscellaneous building systems

General Notes Applicable to Multifamily Criteria 5.1c and 5.1d

Development teams are encouraged to complete a **walk-through audit** when developing application budgets in order ensure required energy efficiency; ventilation and combustion safety requirements can meet Criteria requirements.

Criteria 5.1c: Building Performance Standard

(Mandatory for Substantial Rehab and Moderate Rehab: SF detached and attached homes; MF buildings with four DUs or fewer; MF buildings with three stories or fewer; MF buildings with up to five stories, where each DU has its own heating, cooling, and hot water system)

MODIFY: REQUIREMENTS to add the following text:

1. Substantial and Gut Rehab: No Overlay. Projects must meet the requirements of the Criteria as written.
2. Moderate Rehab projects must meet the requirements by following the Performance, Prescriptive **or** Project-Specific pathway:

Performance Pathway for three stories or fewer:

- No overlay. Demonstrate HERS Index of 85.
- Or, achieve a Home Energy Rating System (HERS) Index of 100 or less with pre-1980's exception noted in overlay.

Prescriptive Pathway:

- When using this Prescriptive Pathway, demonstrating energy performance in terms of a HERS index is not required.
- If mechanical equipment is being replaced, it must meet the minimum efficiency levels:
 - Cooling Equipment (Where Provided)

- 13 SEER AC
- Heat pump (See Heating Equipment)
- Heating Equipment
 - 95 AFUE ENERGY STAR gas furnace (non-roof top)
 - 90 AFUE for gas roof top equipment
 - 85 AFUE ENERGY STAR oil furnace
 - 90 AFUE ENERGY STAR gas boiler
 - 86 AFUE ENERGY STAR oil burner
 - 85 AFUE steam boilers and other non-condensing boilers
 - Heat pump:
 - Zone 6. 9.5 HSPF/ 15 SEER/ 12 EER air-source w/ electric or dual-fuel backup
 - Zone 7. 3.6 COP/ 17.1 EER ground-sourced w/ electric or dual-fuel backup
- Water Heater Heater/ Domestic Hot Water (DHW)
 - Gas: 30 Gal = 0.63 EF; 40 Gal = 0.61 EF; 50 Gal = 0.59 EF, 60 Gal = 0.57 EF, 70 Gal = 0.55 EF; and 80 Gal = 0.53 EF.
 - Electric: 30 Gal = 0.94 EF; 40 Gal = 0.93 EF; 50 Gal = 0.92 EF, 60 Gal = 0.91 EF, 70 Gal = 0.90 EF; and 80 Gal = 0.89 EF.
 - Oil: 30 Gal = 0.55 EF; 40 Gal = 0.53 EF; 50 Gal = 0.51 EF, 60 Gal = 0.49 EF, 70 Gal = 0.47 EF; and 80 Gal = 0.45 EF.

To comply with Criterion 5.1c using this pathway, disclose to Minnesota Housing (prior to Loan Commitment) that this is the pathway the project team is pursuing as well as information regarding impacts to scope of work.

Under this pathway, properties must meet the following prescriptive pathway standards, as applicable:

- a. Pitched-roof attics with enough space to allow access must meet the following insulation and attic bypass air sealing requirements:
 1. Conduct third-party verification of existing insulation levels. Verification must be performed by an individual certified by the Building Performance Institute (BPI), an individual certified by RESNET, a licensed architect, a licensed professional engineer, or other qualified individual approved by Minnesota Housing.

2. Follow the *BPI Building Analyst Standards (refer to Technical Resources in Chapter 8)* when checking insulation levels. Use Typical Insulation R-Value (page 7), which assumes the following:
 - i. R3.7/inch for blown cellulose
 - ii. R3.0/inch for un-faced, unmarked batt insulation
3. Insulate attics to a minimum code R-Value of R49 as follows:
 - i. In electronically-heated properties with existing insulation less than R39.
 - ii. In gas-heated properties with existing insulation less than R30.
 - iii. Additional insulation and air sealing is not required in existing attics with insulation at or above these thresholds
4. Conduct attic bypass air sealing when insulation is required to be added. Bypass is defined as any building air leakage pathway between conditioned and unconditioned areas. Attic bypass locations include, but are not limited to chimney chases, combustion/soil stack chases, open wall tops, dropped ceilings, open plumbing walls, beneath knee walls, around ductwork, electrical work and attic access points. Attic bypasses must be sealed in such a manner that the movement of air is “Essentially Stopped”. “Essentially Stopped” means that air leakage will not be detected by an infrared scan when the house (or DU) is depressurized at 25 pascals. Materials used for bypass sealing are determined by the size and location of the bypass. These materials include high quality caulking (with 20-year life span), polyethylene rod stock, spray foam, gypsum board, sheet metal, extruded polystyrene insulation, and densely packed insulation.
5. Verify any new attic bypass air sealing with post-construction visual inspection, infrared scan, and blower door test to ensure proper air sealing. Testing must be as follows:
 - i. Test one in four (1:4) upper level units after air sealing is complete.
 - ii. If any tests fail, all upper level units must be tested.
 - iii. The test must consist of an infrared camera scan performed with the unit depressurized to 25 pascals with respect to the outdoors.
 - iv. The cubic feet per minute (CFM) 25 does not need to be recorded.

- v. Any failures must be reported to Minnesota Housing and re-tested once correction has been completed.
 - vi. A failure is any bypass which is not “Essentially Stopped”.
- b. HVAC must meet the following post-construction requirements:
- 1. Ductwork carrying conditioned air in pitched roof attics with enough space to allow access must comply with the following requirements:
 - i. Insulate and air seal return and supply ductwork in compliance with ASHRAE 90.1-2010, Or to a minimum R-Value of R8. Confirm air sealing with duct leakage testing showing less than 8 CFM to the outside 100 sq. ft. of conditioned space.
 - ii. HVAC ductwork serving only common space, use only the common space to determine leakage.
 - iii. Insulate and air seal exhaust ductwork.
- c. Exterior walls with a wall cavity of 3.5” or greater, AND with no existing insulation:
- 1. Insulate walls to capacity. Insulation voids must be less than 5 percent of insulated area or the voids must be corrected. Verify insulation installation with infrared camera.
 - 2. Occupied buildings with masonry at all exterior walls are **excluded** from this requirement.
- d. Equipment or systems must meet the following post-construction requirements:
- 1. Hot Water Boiler space Heating System: Install outdoor air reset controls to automatically adjust supply water temperature.
 - 2. Exposed Boiler Pipes: Must be insulated in compliance with ASHRAE 90.1-2010
 - 3. Domestic hot water boiler and space heating boiler system tune-ups: Confirm completion within the past 5 years if any boiler units are to remain in the building.
 - 4. Forced air system tune-ups: Confirm completion within the past 2 years if any forced air units are to remain in the building
 - 5. New Air Handlers: Air conditioners, furnaces, and other models with air handlers installed as part of the scope of work must have Electrically Commutated Motors (ECM’s) if available.
 - 6. Provide insulated covers for existing or new through-wall air conditioner (AC) sleeves. The covers must fit the AC sleeves and AC units properly and seal tightly to the wall.

Criteria 5.1d: Building Performance Standard

(Mandatory for Substantial Rehab and Moderate Rehab: MF buildings with four or five stories wherein each DU does not have its own heating, cooling and hot water system; MF buildings with six or more stories)

MODIFY: REQUIREMENTS to add the following text:

Multifamily (MF)

1. Substantial/Gut Rehab: Must meet the requirements of the Criteria with no Overlay.
2. Moderate Rehab projects must meet the requirements of this Criteria through one of the following pathways:
 - a. **Performance Pathway:** No Overlay. Follow the Criteria as written by demonstrating energy performance equivalent to ASHRAE 90.1-2010 through energy modeling.
 - b. Or, **Prescriptive Pathway:** Follow the Prescriptive Pathway identified for Criteria 5.1c in this overlay.

Criteria 5.5: Lighting

(Mandatory for New Construction, and applicable Rehab projects)

MODIFY: The REQUIREMENTS to only be applicable to “any new” light fixtures. At Moderate Rehab, only fixtures included in the proposed scope of work must meet this criterion.

Category 6: Materials

Criteria 6.7a: Environmentally Preferable Flooring

(Mandatory at New Construction and Rehab if project scope includes provisions for flooring)

MODIFY: The REQUIREMENTS to allow carpet at rooms with floors that are in direct contact with the foundation slabs (aka Ground-Connected Concrete Slabs) as follows:

For all new construction, substantial rehab and moderate rehab projects, the following Exceptions to the “Prohibited Locations” must apply:

1. Ground-Connected Concrete Slabs: Approved carpet may be installed on ground-connected concrete slabs if there is evidence of a properly installed vapor barrier present beneath the concrete slab where the carpet is installed. This exception is allowed at non-basement locations where the finish grade is lower than all sides of the concrete slab; **Or,**
2. Basements: Approved carpet tile (not adhered to the floor) may be installed on below grade (full or partial basements) ground-connected concrete slabs if there is a functioning drain tile system that is connected to a functioning sump pump or gravity fed outlet; **Or,**

3. Capillary Break and Vapor Barrier Assembly: If approved by Minnesota Housing, carpet may be installed at ground-connected (concrete slab on grade) floors if a properly installed capillary break and vapor barrier assembly is provided between the (concrete) slab and the carpet. Products made up of a dimpled, heavy-duty plastic membrane may be considered; Or,
4. Poly-film Test Confirms no Moisture Present: If approved by Minnesota Housing, carpet may be installed at ground connected floors if a Poly-film test per ASTM D4263 Test Method of Indicating Moisture in Concrete by the Plastic Sheet Method is conducted on the existing, untreated concrete subfloor with no evidence of vapor. This test may also be used after the installation of a moisture control system if approved by Minnesota Housing. In order to meet the conditions of the Poly-film Test, Carpet Tile must be used. Roll or Sheet products are not allowed. The “Poly-film” test must be provided by a third party, independent testing agency with the results sent to Minnesota Housing.

Notes:

- “Approved carpet or carpet tile” must meet the Carpet and Rug Institute’s Green Label or Green Label Plus certification for carpet, pad, and carpet adhesives.
- Avoid carpet pads or adhered carpet at ground-connected floors.
- The exceptions noted here do not apply if there is a history of flooding, foundation seepage, leaking, or moisture within an existing basement or ground-connected concrete slab.

Criteria 6.12: Construction Waste Management

(Mandatory and optional for New Construction, Substantial Rehab and Moderate Rehab)

CLARIFICATION: This requirement is Mandatory **and** it allows of optional points. All projects regardless of scope of work must meet the Mandatory Optional point requirements.

Category 7: Healthy Living Environment

Criteria 7.1: Ventilation

(Mandatory for all projects including New Construction, Substantial Rehab, and Moderate Rehab. No optional points.)

MODIFY: The Mandatory requirements to make this criteria Mandatory for all projects. It is **not** optional for Moderate Rehab.

MODIFY: REQUIREMENTS to include the following added paragraph:

Abandoned Ventilation System: If an abandoned mechanical ventilation system exists, it must be investigated and re-commissioned with educational systems developed at the time of rehabilitation.

Process must include:

- a. Identify cause of failure by determining if it was:
 - i. Mechanical malfunction – system broken,
 - ii. Human error – maintenance failure, override, or system shut-off
- b. Identify response
 - i. Restore, replace, repair, and/ or re-commission systems(s)
 - ii. Require manuals and education for management and maintenance staff
 - iii. Include tenant education in resident manual and orientation (Criteria item 8.3 and 8.4)

Criteria 7.3: Combustion Equipment

(Mandatory for projects with combustion equipment)

Moderate Rehab: If combustion equipment is located in individual DUs, the following must apply:

ADD: The following must replace the second paragraph under **REQUIREMENTS**.

If combustion equipment is located in individual DUs and if modifications are made to properties which may negatively affect the safe operation of in-unit, existing natural draft combustion equipment (such as building envelope, kitchen exhaust, bath exhaust, etc....) the work scope must include:

1. Replacement of all existing in-unit space and water heating natural draft combustion equipment with new power-vented or closed (sealed) combustion equipment;
2. Or, if existing natural draft combustion equipment will remain, the development team must provide a combustion action plan with post-construction testing and a remediation plan in the event testing reveals unsafe CO levels to ensure combustion safety. Pre-construction testing using a sampling of units is recommended to help guide the work scope.
 - a. Combustion Safety Requirements/ Testing Protocols must be per:
 - i. RESNET Guidelines for Combustion Safety and Developing Work Orders;
 - ii. Or, BPI Combustion Safety Test Procedure for Vented Appliances.

DELETE: The existing third paragraph and replace with the following new paragraph:

CO alarms must be installed at all New Construction, Substantial Rehab, and Moderate Rehab properties as required to meet Minnesota State Statute. See the Minnesota Housing Rental Housing Design/ Construction Standards

Criteria 7.4: Elimination of Combustion within the Conditioned Space

(Applicable for New Construction and Rehab)

CLARIFICATION: To the REQUIREMENTS for Option 1 and Option 2:

Option 1 [9 points] applicable to New Construction and to Rehab if existing gas equipment is replaced with electric equipment.

Option 2 ([11 points] is not applicable if providing new power-vented or closed (sealed) combustion equipment in lieu of natural draft combustion equipment.

Criteria 7.8: Radon Mitigation

(Mandatory for all projects)

DELETE: All REQUIREMENTS and replace with the following:

Radon Mitigation for all MF New Construction, Substantial Rehab, and Moderate Rehab properties must follow Minnesota Housing's [Environmental Standards](#) for Radon Mitigation.

Criteria 7.14: Interior and Outdoor Activity Spaces for Children and Adults

(Optional/7 points)

MODIFY: To allow optional points if existing, older, worn equipment is replaced as part of the work scope.

Criteria 7.15: Reduce Lead Hazards in Pre-1978 buildings

(Mandatory for all rehab)

DELETE: REQUIREMENTS and RECOMMENDATIONS sub-items and replace with the following text:

REQUIREMENTS

For MF rehabilitation, refer to the Minnesota Housing Lead-Based Paint Policy on the website under [Environmental Standards](#). See also the *Design and Construction Standards Supplement for Federally Funded Projects* located in Chapter 9 of Minnesota Housing's Rental Housing Design/ Construction Standards available on the Minnesota Housing [Building Standards](#) web page.

Category 8: Operation, Maintenance, and Resident Engagement

Criteria 8.2: Emergency Management Manual

(Mandatory for all Multifamily Buildings)

CLARIFICATION: Although this is required for all multifamily buildings, Minnesota Housing accepts no responsibility for the Emergency Management Manual and will not review or approve it.

Criteria 8.5: Project Data Collection and Monitoring System: 100 Percent Owner Paid Utility Accounts, 15 Percent Tenant Paid Utility Accounts

(Optional/No points)

OMIT: This Mandatory Criteria. It may be included as an Optional Criteria item, however no points are available. To claim optional points under Criteria 8.6, the requirements of Criteria 8.5 must be met.

Chapter 7 – Single Family Funded Project Requirements

7.01 Single Family Minimum Criteria

Mandatory Criteria and Optional (points) Criteria are required for Minnesota Housing funded SF projects must be per Table 7.01.

Table 7.01 Mandatory and Optional Criteria

Construction Type	Required Mandatory Criteria	Required Optional (points) Criteria	Certification
SF New Construction	Yes	No ⁴	Encouraged, but not required.
SF (All acquisition/rehab)	Yes ^{1,2,3} See Table 7.02	No	Encouraged, but not required.

Table 7.01 Footnotes:

- Any improvements made at the time of construction are required to comply with the corresponding Mandatory Criteria, except when the Criteria specifically denote “New Construction only.” For example, compliance is required for new finishes, replacement of equipment, building components, mechanical systems, electrical systems, assembly of components, and other if replacement is in the project’s scope of work.
- Existing equipment, plumbing fixtures, and/or appliances that remain (not improved) are exempt from meeting New Construction requirements.
- For SF Acquisition/Rehab under the NSP and RLP programs, refer to the applicable program procedural manual for rehab requirements.
- Although not required, 35 optional points are strongly encouraged. To effectively identify and encourage sustainability, a technical assistance (TA) meeting must be conducted with the Owner, Builder (if selected), and a Minnesota Housing Staff Architect via teleconference or via face-to-face meeting if identified by Minnesota Housing as useful for the project. This TA meeting must take place after selection/ award of funding, yet prior to finalized bidding and construction to affectively incorporate strategies, where applicable.

7.02 Multifamily Minimum Mandatory Criteria for SF Moderate Rehab

Not all Mandatory Criteria are required for SF Moderate Rehab projects. Minimum Mandatory Criteria for SF Moderate Rehab must be per Table 7.02.

Table 7.02 Minimum Mandatory Criteria for SF Mod Rehab

Criteria No.	2015 EGCC	Moderate Rehab
1.1a	Goal Setting	Mandatory
1.1b	Criteria Documentation	Mandatory
3.1	Environmental Remediation	Mandatory
3.4	Landscaping	Mandatory if in scope of work
3.5a	Efficient Irrigation and Water Reuse	Mandatory if in scope of work
5.1c	Building Performance	Mandatory
5.3	Sizing of Heating and Cooling Equipment	Mandatory if in scope of work
5.4	ENERGY STAR Appliances	Mandatory if in scope of work

5.5	Lighting	Mandatory if in scope of work
6.1	Low/ No VOC Paints, Coatings and Primers	Mandatory if in scope of work
6.2	Low/ No VOC Adhesives and Sealants	Mandatory if in scope of work
6.6	Composite Wood Products that Emit Low/ No Formaldehyde	Mandatory if in scope of work
6.7a	Environmentally Preferable Flooring	Mandatory if in scope of work
6.8	Mold Prevention: Surfaces	Mandatory if in scope of work
6.9	Mold Prevention: Tub & Shower Enclosures	Mandatory if in scope of work
6.12	Construction Waste Management	Mandatory
7.3	Combustions Safety	Mandatory
7.5	Vapor Retarder Strategies	Mandatory if in scope of work
7.6	Water Drainage	Mandatory if in scope of work
7.8	Radon Mitigation	See Minnesota Housing Environmental Standards Radon Requirements
7.9	Garage Isolation	Mandatory
7.15	Reduce Lead Hazards	See Minnesota Housing Environmental Standards for Lead Hazards
8.2	Emergency Management Manual	Mandatory
8.3	Resident Manual	Mandatory

7.03 Single Family Submittals and Documentation

Submittals and documentation for Single Family projects must be per Table 7.03. All items indicated as “Yes” must be submitted to Minnesota Housing at the Initial Application, Post-Board Approval, End of Construction phase as indicated.

Table 7.03 Single Family Submittals and Documentation

Documentation Requirement	Impact Fund Initial Application	Impact Fund Post-Board Approval	Impact Fund End of Construction	Non-Impact Fund/ Other Programs
Impact Fund 2015 Enterprise Green Communities Criteria Checklist	Yes ³			
Intended Methods Worksheet (Single Family version) in an electronic Excel format, OR documented commitment to Certify through Enterprise.		Yes	File ¹	
Enterprise Waiver Request		Yes ²		
Energy Efficiency Improvement Plan (SF Criterion 5.1b)		File ^{1,2}		
Blower Door Test		File ^{1,2}	File ^{1,2}	
Energy Star Thermal Enclosure System Checklist		File ^{1,2}		
HERS Rating Report/ Energy Model Energy Star for Homes		File ^{1,2}		

Home Energy Rating Certificate			File ^{1,4,6}	
See applicable Single Family program procedural manual				Yes

Table 7.03 Footnotes:

1. Documents must not be submitted unless requested by Minnesota Housing. The Administrator will retain this document in a project file for compliance.
2. Only required if applicable.
3. For SF Impact fund, the applicant may submit the “Intended Methods Worksheet” (Single Family version) in Lieu of the “Impact Fund 2015 Enterprise Green Communities Checklist”.
4. Single Family New Construction and Single Family Substantial Acquisition/ Rehab only.
5. For projects voluntarily seeking certification through Enterprise, documentation of registration on Enterprise’s Web Portal, including compliance of all mandatory items and optional points achieved, and documentation of final Enterprise certification, may be used in lieu of the Intended Methods Worksheet.
6. For MF, see performance or prescriptive path with

7.04 Single Family Intended Methods Instructions

For projects voluntarily seeking certification through Enterprise, the following instructions **do not** apply. These instructions are only for projects completing the Intended Methods Worksheet for Minnesota Housing approval.

1. **Impact Fund Initial Application phase.** Not required.
2. For the **Impact Fund Post-Board Approval phase**, all SF developments seeking funding from Minnesota Housing should download the 2015 Intended Methods Worksheet (Single Family Version) at the Minnesota Housing [Building Standards](#) web page.
 - a. Provide project information (Project Name, Location, etc.).
 - b. Indicate the “Post-Board Approval” Submittal Phase on the top right of the first page.
 - c. Indicate “Construction Type.”
 - d. For each Criteria, check either “Yes”, “No”, “Not Applicable” (N/A), or “Waiver Request” (WR) under the “Intent to Comply” columns. All applicable Mandatory Criteria must be included.
 - e. For each applicable and selected Criteria, provide an explanation under the “How Will Criteria Be Implemented?” column. Also include where each criteria item is documented by listing draw sheet number, specifications section number, or other.
 - f. If a waiver is being requested, it must be included on a separate Waiver Request Form available at Minnesota Housing [Building Standards](#) web page.
 - g. Borrower/Developer/Owner and the Architect of Record/Borrower’s Architect must sign and date the “Initial Application Phase” certification.
3. For the **End of Construction/Construction Close-out phase**, all SF developments must:

- a. Indicate the “End of Construction/Construction Close-out” Submittal Phase on the top right of the first page.
 - b. Update the “Date Last Updated.”
 - c. Update, revise and correct any as-built changes.
 - d. The Borrower/Developer/Owner, Architect of Record/Borrower’s Architect, and General Contractor must sign and date the “End of Construction/ Construction Close-out Phase” certification.
4. For each submittal phase, save the Intended Methods Worksheet as a PDF and send to Minnesota Housing.

7.05 Single Family Overlay to Criteria

The following revisions, additions, and/or clarifications to the 2015 EGCC must be applied to Minnesota Housing funded projects including those receiving Housing Tax Credit (HTC) only allocations:

Category 1: Integrative Design

Criteria 1.2a Resident Health and Well-Being: Design for Health

OMIT: From Mandatory. This is an Optional Criteria, no points.

Criteria 1.3a Resilient Communities: Design for Resilience

OMIT: From Mandatory. This is an Optional Criteria, no points.

Category 2: Location + Neighborhood Fabric

Category 2: Guidance for New Construction Projects

OMIT: Reference to New Construction projects earning Criteria 2.8 or earning 8 optional points from Category 2. Optional points under Category 2 are not required for any projects.

CLARIFICATION: Only New Construction projects are required to meet all Category 2 Mandatory Criteria.

Criteria 2.5 Proximity to Services

OMIT: From Mandatory. This is an Optional Criteria, no points.

Criteria 2.6 Preservation of and Access to Open Space for Rural/Tribal/Small Towns

OMIT: From Mandatory. This is an Optional Criteria, no points.

Category 3: Site Improvements

Criteria 3.1: Environmental Remediation

(Mandatory for all projects)

DELETE: REQUIREMENTS and replace with modified text as follows:

Single Family (SF)

1. All single family projects: Must conduct a Phase I Environmental Site Assessment (ESA) if any or all of the following conditions apply:
 - a. Sites with five or more units where there has been a change in land use from industrial, commercial, institutional or agricultural to residential;
 - b. For new construction, where each individual residence/DU is not connected to a city water supply;
 - c. For rehab, where the unit is neither connected to city water supply or an existing active well;
 - d. Where required as a condition of acquisition/purchase.
2. Exception: Developments of five or more new units on previous residential land uses are exempt from the conducting a Phase I ESA.

Category 5: Energy Efficiency

General Notes applicable to Multifamily Criteria 5.1 (a, b, c, and d)

It is acceptable to use one pathway for the initial application phase and switch to another pathway after funds are awarded. In that event, the work scope must be re-evaluated and redefined based upon the recommendations and findings of the pathway used. Changes in scope are subject to approval by Minnesota Housing.

Criteria 5.1c: Building Performance Standard

(Mandatory for Substantial Rehab and Moderate Rehab: SF detached and attached homes; MF buildings with four DU's or fewer; MF buildings with three stories or fewer; MF buildings with up to five stories, where each DU has its own heating, cooling, and hot water system)

MODIFY: REQUIREMENTS to add the following text:

1. For all Acquisition/Substantial and Acquisition/Moderate Rehab, create and implement an Energy Efficiency Improvement Plan containing the following:
 - a. Generate a list of prioritized cost effective improvements for the entire building(s) based upon the sampling data from an energy audit. The [Minnesota Weatherization Field Guide SWS-Aligned Edition](#) (Chapter 2.1.1) is a resource for assessing existing buildings and their energy infiltration weaknesses.

- b. Implement those improvements into the work scope that provide a cost benefit and good return on investment. Consult Minnesota Housing for guidance, if needed, for an acceptable return on investment pay-back period (Ten years or less return on investment recommended).
 - c. Cost benefit analysis can be performed by using established software or through a manual assessment.
 - d. At the end of construction, provide a post-renovation inspection and conduct a blower door test to confirm infiltration improvements.
2. If mechanical equipment is being replaced, it must meet the minimum efficiency levels:
- a. Cooling Equipment (Where Provided)
 - i. 13 SEER AC
 - ii. Heat pump (See Heating Equipment)
 - b. Heating Equipment
 - i. 95 AFUE ENERGY STAR gas furnace (non-roof top)
 - ii. 90 AFUE for gas roof top equipment
 - iii. 85 AFUE ENERGY STAR oil furnace
 - iv. 90 AFUE ENERGY STAR gas boiler
 - v. 86 AFUE ENERGY STAR oil burner
 - vi. 85 AFUE steam boilers and other non-condensing boilers
 - vii. Heat pump:
 - Zone 6. 9.5 HSPF/ 15 SEER/ 12 EER air-source w/ electric or dual-fuel backup
 - Zone 7. 3.6 COP/ 17.1 EER ground-sourced w/ electric or dual-fuel backup
 - viii. Water Heater Heater/ Domestic Hot Water (DHW)
 - Gas: 30 Gal = 0.63 EF; 40 Gal = 0.61 EF; 50 Gal = 0.59 EF, 60 Gal = 0.57 EF, 70 Gal = 0.55 EF; and 80 Gal = 0.53 EF.
 - Electric: 30 Gal = 0.94 EF; 40 Gal = 0.93 EF; 50 Gal = 0.92 EF, 60 Gal = 0.91 EF, 70 Gal = 0.90 EF; and 80 Gal = 0.89 EF.
 - Oil: 30 Gal = 0.55 EF; 40 Gal = 0.53 EF; 50 Gal = 0.51 EF, 60 Gal = 0.49 EF, 70 Gal = 0.47 EF; and 80 Gal = 0.45 EF.

MODIFY: RATIONALE to add the following text:

Utility cost for low-income families can account for 19.5 percent of household budget (EPA national average 2001). The intent is to maximize financial benefit of energy efficiency and weatherization efforts in moderate renovation projects without adverse impact on home

durability, indoor air quality and existing mechanical equipment. Working with an energy auditor or weatherization expert (single family) on a plan tailored to the specific conditions of each home/unit will help maximize energy savings and ensure health and safety of residents. Check with local utility for rebates or programs that may help off-set the cost of weatherization and new system/component.

Resources and Links: See Chapter 8 of this Overlay and Guide.

Criteria 5.5: Lighting

(Mandatory for New Construction, and applicable Rehab projects)

MODIFY: The REQUIREMENTS to only be applicable to “any new” light fixtures. At Moderate Rehab, only fixtures included in the proposed scope of work must meet this criterion.

Category 6: Materials

Criteria 6.7a: Environmentally Preferable Flooring

(Mandatory at New Construction and Rehab if project scope includes provisions for flooring)

MODIFY: The REQUIREMENTS to allow carpet at rooms with floors that are in direct contact with the foundation slabs (aka Ground-Connected Concrete Slabs) as follows:

For all new construction, acquisition/rehab projects, the following exceptions to the “Prohibited Locations” must apply:

1. Ground-Connected Concrete Slabs: Approved carpet may be installed on ground-connected concrete slabs if there is evidence of a properly installed vapor barrier present beneath the concrete slab where the carpet is installed. This exception is allowed at non-basement locations where the finish grade is lower than all sides of the concrete slab; **Or**,
2. Basements: Approved carpet tile (not adhered to the floor) may be installed on below grade (full or partial basements) ground-connected concrete slabs if there is a functioning drain tile system that is connected to a functioning sump pump or gravity fed outlet; **Or**,
3. Capillary Break and Vapor Barrier Assembly: If approved by MN Housing, carpet may be installed at ground-connected (concrete slab on grade) floors if a properly installed capillary break and vapor barrier assembly is provided between the (concrete) slab and the carpet. Products made up of a dimpled, heavy-duty plastic membrane may be considered; **Or**,
4. Poly-film Test Confirms no Moisture Present: If approved by Minnesota Housing, carpet may be installed at ground connected floors if a Poly-film test per ASTM D4263 Test Method of Indicating Moisture in Concrete by the Plastic Sheet Method is conducted on the existing, untreated concrete subfloor with no evidence of vapor. This test may also be used after the installation of a moisture control system if approved by Minnesota Housing. In order to meet the conditions of the Poly-film

Test, Carpet Tile must be used. Roll or Sheet products are not allowed. The “Poly-film” test must be provided by a third party, independent testing agency with the results sent to Minnesota Housing.

Notes:

- “Approved carpet or carpet tile” must meet the Carpet and Rug Institute’s Green Label or Green Label Plus certification for carpet, pad, and carpet adhesives.
- Avoid carpet pads or adhered carpet at ground-connected floors.
- The exceptions noted here do not apply if there is a history of flooding, foundation seepage, leaking, or moisture within an existing basement or ground-connected concrete slab.

Criteria 6.12: Construction Waste Management

(Mandatory and optional for New Construction, Substantial Rehab and Moderate Rehab)

CLARIFICATION: This requirement is Mandatory **and** it allows optional points. All projects regardless of scope of work must meet the Mandatory.

Category 7: Healthy Living Environment

Criteria 7.3: Combustion Equipment

(Mandatory for projects with combustion equipment)

SF Acquisition/ Rehab: IF combustion equipment is located in individual DUs, the following must apply:

ADD: The following must replace the second paragraph under “REQUIREMENTS”.

If combustion equipment is located in individual DUs and if modifications are made to properties which may negatively affect the safe operation of in-unit, existing natural draft combustion equipment (such as building envelope, kitchen exhaust, bath exhaust, etc....) the work scope must include:

1. Replacement of all existing in-unit space and water heating natural draft combustion equipment with new power-vented or closed (sealed) combustion equipment;
2. Or, if existing natural draft combustion equipment will remain, the development team must provide a combustion action plan with post-construction testing and a remediation plan in the event testing reveals unsafe CO levels to ensure combustion safety. Pre-construction testing using a sampling of units is recommended to help guide the work scope.
 - a. Combustion Safety Requirements/ Testing Protocols must be per:
 - i. RESNET Guidelines for Combustion Safety and Developing Work Orders;

- ii. Or, BPI Combustion Safety Test Procedure for Vented Appliances.

DELETE: The existing third paragraph and replace with the following new paragraph:

CO alarms must be installed at all New Construction and Acquisition/ Rehab properties as required to meet Minnesota State Statute.

Criteria 7.7: Mold Prevention: Water Heaters

OMIT: From Mandatory. This must be an Optional Criteria, no points

Criteria 7.8: Radon Mitigation

(Mandatory for all projects)

DELETE: All REQUIREMENTS and replace with the following:

Note: All Radon Testing/ Measurements must be provided by a person certified by the National Radon Proficiency Program (NRPP) or the National Radon Safety Board (NRSB)

1. New Construction. At a minimum, install a **Passive** sub-slab depressurization system as noted in the Criteria and as required by the Minnesota State Building Code for single family new construction. Although not required, we encourage an **Active** system to meet the Minnesota Department of Health Gold Standard for new construction.
2. Rehab (without envelope improvement). Radon testing must be conducted in accordance with item number 4. Testing (as noted below). If the radon testing results in a reading of 4 pCi/L or more, a mitigation system must be installed in accordance with item number 5. Radon Mitigation (as noted below).
3. Rehab (with envelope improvements). Radon testing must be conducted in accordance with item number 4. Testing (as noted below). If the radon testing results in a reading of 4 pCi/L or more a mitigation system must be installed in accordance with item number 5. Radon Mitigation (as noted below).
 - a. When to Test:
 - i. Prior to construction. Early detection of the presence of radon above the EPA recommendations action level of 4 pCi/L could result in a more cost-effective rehab if the work scope identifies and addresses mitigation measures early in the development of the project; Or,
 - ii. After construction. Rather than testing prior construction, it's acceptable to include a Passive system in the scope of work without testing. After construction is complete, but before occupancy, test for radon and activate the system if needed.
4. Testing. The lowest livable level must be tested when the project is complete (and prior to occupancy) following the ANSI-AARST testing protocol using a continuous

radon monitor or simultaneous testing using two short-term test devices that are approved by the American Association of Radon Scientist and Technologist (AARST) National Radon Proficiency Program (NRPP); or National Radon Safety Board (NRSB). Testing should always be conducted in the lowest livable level and by devices approved by the AARST-NRPP.

5. Radon Mitigation. In homes where a radon mitigation system is installed, the mitigation system must meet the following requirements:
 - a. The system must be installed by a nationally certified radon contractor or radon mitigation service provider listed on the Minnesota Department of Health’s website. Mitigation work must meet the requirements of the ASTM E2121 “Standard Practice of Installing Radon Mitigation Systems in Existing Low-Rise Residential Buildings” standard.
 - b. Where mitigation is performed, a post-test must be provided to verify that radon levels are below 4 pCi/L.
 - c. Test results must be provided to the homeowner along with supplemental information on radon as specified in ASTM E2121 Section 7.7.
6. Exterior System. An exterior Radon mitigation system is not allowed.

Resources and Links: See Chapter 8 of this Overlay and Guide

Criteria 7.12: Active Design: Promoting Physical Activity Within the Building

OMIT: From Mandatory. This is an Optional Criteria, no points.

Criteria 7.15: Reduce Lead Hazards in Pre-1978 buildings

(Mandatory for all rehab)

DELETE: REQUIREMENTS and RECOMMENDATIONS sub-items and replace with the following text:

REQUIREMENTS

For SF rehabilitation, refer to the Minnesota Housing *Lead Based Paint Guidebook* (For Applicable Homes Division Programs).

Category 8: Operation, Maintenance, and Resident Engagement

Criteria 8.5: Project Data Collection and Monitoring System: 100 Percent Owner Paid Utility Accounts, 15 Percent Tenant Paid Utility Accounts

(Optional/No points)

OMIT: This Mandatory Criteria. It may be included as an Optional Criteria item, however no points are available. To claim optional points under Criteria 8.6, the requirements of Criteria 8.5 must be met.

Chapter 8 – Other Information

8.01 Exemptions and Waivers

Compliance with specific Criteria may be waived if the borrower/developer/architect can demonstrate that the Criteria creates a tangible hardship or is inadvisable for a specific project. Alternate means of meeting specific Criteria intent will also be considered, if applicable. Waiver requests should be submitted to Minnesota Housing on a [Minnesota Housing 2015 Waiver Request](#), located on the [Building Standards](#) web page.

8.02 Conflicting Requirements

The most restrictive requirement applies when requirements outlined in this document conflict with other local, state or federal requirements (codes, ordinances, regulations, standards, etc.). Such conflicts should be coordinated with the local building official, zoning administrator, fire marshal, or other entity with jurisdiction in said area.

8.03 Combined New Construction and Rehab

Where a single project/site includes a new building and a rehab building, a separate Intended Methods Worksheet must be provided for each construction type. Under this condition, the following applies:

1. The optional points are limited to a minimum of 30 for each.
2. For non-residential new construction buildings (i.e., community buildings), compliance with Criteria 5.1a must have an “As-Designed” HERS Index equal to or less than the “Energy Star HERS Index of Referenced Design Home” with Size Adjustment Factor.

8.04 Energy Raters and Auditors

If an Energy Star Rater, Field Inspector, or Energy Auditor is required, such individual or entity must be a third party provider and cannot be associated with the architect, design engineer, borrower, owner, contractor, or any other entity with an identity of interest.

Clarification: Rater vs. Auditor. An Energy Rater or HERS Rater is a RESNET Certified individual. The Department of Energy’s ENERGY STAR programs require an Energy Rater/HERS Rater to be RESNET Certified. An Energy Auditor is not necessarily a certified rater, but does have experience in energy auditing. An Energy Auditor cannot provide services for ENERGY STAR, but they can do an energy audit and create an energy efficiency improvement plan.

8.05 Resources and Links

Technical Assistance:

- [Minnesota Housing documents and Staff Architect contact information](#)
- [Enterprise Green Communities](#)

Contractor Directories:

- [Energy Rater in Minnesota](#)
- [RESNET Home Energy Raters](#)
- ENERGY STAR certified HVAC contractors: [ACCA](#) and [Advanced Energy](#)
- [Minnesota Department of Health Radon Mitigation Contractors](#)

Technical Resources:

- [AARST-ANSI Radon Measurement and Mitigation EPA Protocols](#)
- [Building Performance Institute \(BPI\)](#)
- [Minnesota Building Performance Association](#) website for finding Minnesota raters and auditors
- [Minnesota Weatherization Field Guide](#)
- [Minnesota Weatherization Policy Manual](#)
- [Radon in Minnesota Homes](#)
- Radon Technical Assistance:
[Minnesota Department of Health](#)
Indoor Environments & Radiation Section, Indoor Air Unit
PO Box 64975
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