



Minnesota Overlay and Guide to the 2011 Enterprise Green Communities Criteria™

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Chapter 1 - Overview

To create homes that are durable, healthy and efficient, Minnesota Housing along with its funding partners, the Greater Minnesota Housing Fund and the Family Housing Fund, has created this updated Overlay and Guide to the 2011 Enterprise Green Communities Criteria (EGCC). This document modifies the “Mandatory” and “Optional” Criteria of the 2011 EGCC to better adapt them to conditions in our region and in conjunction with Minnesota Housing’s *Rental Housing Design/Construction Standards (RHD/CS)*.

This Minnesota Overlay to the 2011 EGCC is subject to periodic revisions and updates. Such revisions and updates will not be made unless agreed upon by the funding partners listed above. Refer to Minnesota Housing and/or Minnesota Green Communities website(s) for the most current versions of information and documents. The last revised date will be posted on the cover of the document.

Enterprise Green Communities Criteria is also subject to periodic revisions and updates. Development teams shall verify they are working with the most current version of Enterprise’ documents including, but not limited to, Criteria, addendums, workbooks, etc. Find the latest versions 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If a newer version of this document is released after the Initial Award of Financing of a project, the Development team may use the EGCC version and Overlay version current at that time. Teams may also use the newer versions.

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 Construction Type

DELETE the *Definitions of Construction Type* on page 6 (of the EGCC) and replace with the following definitions:

A **Substantial Rehab** (or Gut Rehab) is defined as a project that includes the replacement and/ or improvement of all the major systems of the building, including its envelope. The building envelope is defined as the air barrier and thermal barrier separating exterior from interior space. For Substantial Rehab projects, this could include either removing materials down to the studs or structural masonry on one side of the exterior walls and subsequently improving the building envelope to meet the whole-building energy performance levels for the project type, or creating a new thermal and air barrier around the building that allows the project to meet Enterprise Green Communities Criteria whole-building energy performance levels.

Note: this Substantial Rehab definition is unchanged from the original, however it's included in this overlay to allow a clear understanding of its use with the new Moderate Rehab definition.

A **Moderate Rehab** 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.

Chapter 3 - Acronyms and Abbreviations

Impact Fund = Minnesota Housing's Single Family Community Homeownership Impact Fund

EGCC = Enterprise Green Community Criteria

Certification Workbook = A Microsoft Office Excel document from Enterprise Green Communities which includes Worksheet "tabs" for the Intended Methods Worksheet and Compliance Report Worksheet.

CRW = Compliance Report Worksheet

IMW = Intended Methods Worksheet

NSP = (Single Family) Neighborhood Stabilization Program

RLP = (Single Family) Rehabilitation Loan Program

Rehab = Rehabilitation

Chapter 4 - Certification by Enterprise Green Communities

Enterprise certification **is not required** for projects funded by Minnesota Housing. Minnesota Housing strongly 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 shall be notified in writing of this intent. Submittal requirements are simplified for projects pursuing Enterprise certification; see Chapter 6 *Submittals* for details.

Enterprise shall be consulted early in the process if a certification path is pursued. Revisions to the EGCC, as outlined herein, are minimum requirements for Minnesota Housing funded projects and may not meet all requirements needed for Enterprise certification.

Chapter 5 - How to Use This Document

This Minnesota Overlay & Guide to the 2011 EGCC applies to all Multifamily (MF) and Single Family (SF) new construction, substantial/gut rehab, and moderate rehab projects requesting Minnesota Housing financing. It’s designed to be used in conjunction with the 2011 EGCC available at the Enterprise website. The Items listed within this Overlay & Guide shall revise or modify the corresponding item of the 2011 EGCC.

The 2011 EGCC and this Minnesota Overlay and Guide are applied in different ways. The EGCC is applied based on the structure type (Single Family, Low-rise Multifamily, and Mid/High-rise Multifamily). This Overlay and Guide apply to Minnesota Housing defined MF and SF funded projects, and is based on whether the building is occupied by renters who do not own the property for which they live in, versus owner-occupied properties.

1. For purposes of identifying the specific requirements of the 2011 EGCC relevant to your project, use the Definitions of Construction Type in Chapter 2 of this Overlay & Guide (Single Family, Low-rise Multifamily, and Mid/High-rise Multifamily).
2. For purposes of identifying which items of this Overlay and Guide apply to your project, consider which Minnesota Housing Division (MF or SF) is the funding source.

Minimum “Mandatory” Criteria and “Optional” (points) Criteria required for Minnesota Housing funded MF and SF project shall be per Table 5.1.

Table 5.01 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 ^{3, 4}	Yes, at least (15) ⁶	Encouraged, but not required.
MF Moderate Rehab	Yes ^{1,3,4}	Yes, at least (15) ⁶	Encouraged, but not required.
SF New Construction	Yes	No ⁷	Encouraged, but not required.
SF (All acquisition/rehab)	Yes ^{2, 3, 4, 5}	No	Encouraged, but not required.

Key to Table 5.01 Footnotes:

1. MF Moderate Rehab, only the following minimum criteria of the EGCC and MN Overlay & Guide are required:
 - a. 1.1a Green Development Plan: Integration Meeting(s)
 - b. 1.1b Green Development Plan: Criteria Documentation
 - c. 3.1 Environmental Remediation

- d. 4.1 Water-Conserving Fixtures
 - e. 5.1c Building Performance Standard: Rehab 3 Stories or less
 - f. 5.1d Building Performance Standard: Rehab 4 Stories or more
 - g. 5.5a Efficient Lighting: Interior Units
 - h. 5.5b Efficient Lighting: Common Areas and Emergency Lighting
 - i. 5.5c Efficient Lighting: Exterior
 - j. 7.6b Ventilation
 - k. 7.8 Combustion Equipment: IF natural draft equipment is present in individual dwelling units
 - l. 7.11 Radon Mitigation
 - m. 7.15 Lead-Safe Work Practices
 - n. 8.1 Building Maintenance Manual
 - o. 8.2 Resident Manual
 - p. 8.3 Resident and Property Manager Orientation
2. SF Acquisition/ Moderate Rehab (under the Impact Fund) only the following minimum “Mandatory” and required “Optional” criteria of the EGCC and MN Overlay & Guide are required:
- a. 1.1a Green Development Plan: Integration Meeting(s)
 - b. 1.1b Green Development Plan: Criteria Documentation
 - c. 3.1 Environmental Remediation
 - d. 4.1 Water-Conserving Fixtures
 - e. 5.1c Building Performance Standard: Rehab 3 Stories or less
 - f. 5.5a Efficient Lighting: Interior Units
 - g. 5.5c Efficient Lighting: Exterior
 - h. 7.8 Combustion Equipment
 - i. 7.11 Radon Mitigation
 - j. 7.15 Lead-Safe Work Practices
 - k. 8.2 Resident Manual
 - l. 8.3 Resident and Property Manager Orientation
3. Any additional 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.

Examples:

Criteria 5.3 will apply if heating or cooling equipment will be replaced as part of the project.

Criteria 6.1, which require Low / No VOC paints and primers, will apply if interior painting is part of the project.

4. Existing equipment, plumbing fixtures, and/or appliances that remain (not improved) are exempt from the requirement listed in (d) of footnotes 1 and 2. Typically exempt items have an Effective Useful Life (EUL) of at least 7 years. Existing plumbing fixtures that remain shall be included as part of A Water Efficiency Improvement Plan per Overlay Criteria 4.1.
5. For SF Acquisition/ Rehab under the NSP and RLP programs, refer to the applicable program procedural manual for rehab requirements.
6. In addition to the “Mandatory” Criteria, fifteen (15) “Optional” points are required. Thirty (30) “Optional” points are strongly encouraged.
7. Although not required (35) “Optional” points are strongly encouraged. To effectively identify and encourage sustainability, a technical assistance (TA) meeting shall be conducted with the Owner, Builder (if selected), Minnesota Housing Staff Architect, and Minnesota Green Communities staff via teleconference or via face-to-face meeting if identified by Minnesota Housing as useful for the project. This TA meeting shall take place after selection/ award of funding, yet prior to finalized bidding and construction to affectively incorporate strategies, where applicable.

Chapter 6 - Submittals

As a way to document a development’s intended method of achieving sustainability requirements and to help monitor compliance, Minnesota Housing shall receive submittals and documentation as noted in Table 6.1.

The Intended Methods Worksheet and Compliance Report Worksheet are located within the Microsoft Excel file of the Certification Workbook. See Chapter 7 of this Overlay & Guide for details on where to find and instructions on completing the Certification Workbook.

For *Proof of Registration/ Evidence of Certification* if seeking Enterprise Certification, contact a Minnesota Housing Staff Architect or Minnesota Green Communities. See Chapter 8 *Other Information/ Resources and Links* of this Overlay & Guide for contact information.

The Impact Fund 2011 Enterprise Green Communities Criteria Checklist is available for download at [Single Family Community Homeownership Impact Fund](#) webpage.

For other submittals such as *Energy Star Thermal Enclosure System Checklist, HERS Rating Report, Energy Model, Energy Star MFHR Testing and Verification Protocol, 3rd Party Verification, Infrared Blower Door Testing, Duct Leakage Testing, Home Energy Rating Certificate*, and other building performance documentation/ procedures, see referenced EGCC and Overlay criteria items.

Table 6.01 Multifamily & Single Family Submittals and Documentation

General Note to Table 6.1: All items indicated as “Yes” shall be submitted to Minnesota Housing. Items indicated with a “File” shall not be submitted, but shall be kept on file with the Administrator per footnote #1. If seeking Enterprise certification, the submittal process is simplified. Provide the Enterprise “Proof of Registration” form prior to Loan Commitment AND “Evidence of Enterprise Certification” at End of Construction.

Documentation Requirement	Multifamily Phase				Single Family Phase			
	Initial Application	Intake Meeting	Loan Commitment/ Loan Closing	End of Const.	Impact Fund Initial Application	Impact Fund Post-Board Approval	Impact Fund End of Construction	Non-Impact Fund/ Other Programs
Impact Fund 2011 Enterprise Green Communities Criteria Checklist					Yes ³			
Intended Methods Worksheet in an electronic Excel format OR documented commitment to Certify through Enterprise	Yes		Yes			Yes		
Enterprise Waiver Request	Yes ²					Yes ²		
Water Efficiency Improvement Plan (Criterion 4.1)		Yes ²				File ^{1,2}		
Energy Efficiency Improvement Plan (SF Criterion 5.1b)						File ^{1,2}		

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Blower Door Test			Yes ⁶			File ^{1,2}	File ^{1,2}	
Energy Star Thermal Enclosure System Checklist			Yes ⁶			File ^{1,2}		
HERS Rating Report/ Energy Model Energy Star for Homes			Yes ⁶			File ^{1,2}		
Energy Star for Multifamily High Rise (MFHR) Energy Model Analysis			Yes ⁶					
Criteria 5.1c & 5.1d Prescriptive Path Requirements Summary & 3 rd Party Verification of insulation levels			Yes ⁶					
Integrated Design Meeting/ Charrette documentation			Yes				File ¹	
Energy Star MFHR Testing and Verification Protocol				Yes ⁶				
Criteria 5.1c & 5.1d Prescriptive Path Post-construction infrared blower door testing Post-construction duct leakage testing				Yes ⁶				
Compliance Report Worksheet form electronic PDF (8 ½ "x14" horizontal format) with signatures AND an electronic Excel format version				Yes			File ¹	
Home Energy Rating Certificate				Yes ⁶			File ^{1,4,6}	
See applicable Single Family program procedural manual								Yes

Key to Table 6.1 Footnotes:

1. Documents shall not be submitted unless requested by Minnesota Housing. The Administrator shall 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" in Lieu of the "Impact Fund 2011 Enterprise Green Communities Checklist".
4. Single Family New Construction and Single Family 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. See performance or prescriptive path with in criteria 5.1 (a, b, c, or d) for applicable energy performance.

Chapter 7 – 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 and Compliance Report Worksheet submittal documents.

1. For the **Initial Application phase**, all MF developments (and optional for SF developments for the Impact Fund) seeking funding from Minnesota Housing shall download the Certification Workbook. It's is available for download at the following direct link: <http://www.mngreencommunities.org/publications/> or at the Minnesota Housing [Building Standards](#) web page.
2. Once the Certification Workbook is accessed:
 - a. Open the Certification Workbook (Microsoft Excel spreadsheet) and “Save-As” a document on your computer.
 - b. Start on the “Project Overview” tab (on the bottom of the Microsoft Excel spreadsheet).
 - c. Complete the top portion which includes project name, address, etc. This information automatically updates itself on the other tabs.
3. **Intended Methods Worksheet**. For Minnesota Housing Initial Application Phase (and/or Post-Board Approval Phase for the Impact Fund): Go to the “Intended Methods” tab (on the bottom of the Microsoft Excel spreadsheet).
 - a. Complete the pull-down menus and other input information, where applicable, to your project.
 - b. The third column titled as “If necessary, provide additional information or explanation of alternative approach to meeting this measure” shall be completed and used to describe a more detailed explanation of the intended method to comply with the Criteria. The pull down menu items under the “How Criterion will be implemented” column must be supplemented with a more detailed explanation.
 - c. Optional Criteria points shall be entered in the pull-down “Intended Points” column. The points will automatically tabulate a subtotal by section and a project total at the end.
 - d. Once complete, insert electronic signatures and submit a Microsoft Excel (.xls) format version.
4. Updated **Intended Methods Worksheet**. For Minnesota Housing Loan Commitment/ Closing Phase:
 - a. Re-open the Certification Workbook previously created and saved on your computer. Create another document by “Save-As” for this phase.
 - b. Go to the “Intended Methods” tab. Update the Criteria as needed to align with the plans and specifications.
 - c. The “Criteria Documentation” column shall be completed with specification sections and plans sheet numbers included as applicable.
 - d. Once complete, insert electronic signatures and submit:
 - i. A PDF version in a horizontal, 8 ½” x 14” legal size format
 - ii. And, a Microsoft Excel (xls) format version

5. **Compliance Report Worksheet.** For Minnesota Housing End of Construction Phase:
 - a. Re-open the Microsoft Excel spreadsheet Certification Workbook previously created and saved on your computer. Create another document by “Save-As” for this phase.
 - b. Go to the “Compliance Report” tab. Update the criteria as needed to align with as-built conditions. Also, update the “If necessary explain how the project deviated from the intended optional points laid out on the Intended Methods worksheet”.
 - c. Go to the “Cost Development” tab. Complete the “Green Communities Cost Development Worksheet”.
6. Once complete, insert electronic signatures and submit:
 - a. A PDF version in a horizontal, 8 ½” x 14” legal size format
 - b. And, a Microsoft Excel (xls) format version

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 shall be submitted to Minnesota Housing on an Enterprise Waiver Request Form.

8.02 Conflicting Requirements

Where requirements outlined herein conflict with other local, state or federal requirements (codes, ordinances, regulations, standards, etc.) the most restrictive requirement shall apply. Such conflicts shall be coordinated with the local building official, zoning administrator, fire marshal, or other entity with jurisdiction in said area.

8.03 Energy Star Raters

If an Energy Star Rater and/or Field Inspector is required, such individual and/or entity must be a Third Party Provider and shall not be (or be associated with) the design engineer for the project.

Clarification: Rater vs. Auditor. An Energy Rater and/or HERS Rater is a RESNET Certified individual. The Department of Energy's ENERGY STAR programs requires 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.

8.04 Resources and Links

For Technical Assistance.

Minnesota Housing Documents and Staff Architect Contact Information: Minnesota Housing [Building Standards](#) web page

Minnesota Green Communities: <http://mngreencommunities.org/>

Enterprise Green Communities: www.EnterpriseCommunity.org/green

Contractor Directories.

Energy Rater in Minnesota (search here):

http://www.energystar.gov/index.cfm?fuseaction=estar_partner_list.showPartnerSearch

RESNET Home Energy Raters (search here):

http://www.resnet.us/directory/search/searchtype/auditor/zip/mn/trade_id/89/slug/home-energy-raters-hers-raters/page/1

ENERGY STAR certified HVAC contractors check both the ACCA and Advanced Energy listings:

<http://www.advancedenergy.org/hvac/members.php> and <http://www.acca.org/qa/directory/new-homes>

Minnesota Department of Health Radon Mitigation Contractors:
<http://www.health.state.mn.us/divs/eh/indoorair/radon/mitigation.html>

Technical Resources.

AARST-ANSI Radon Measurement and Mitigation EPA Protocols:
<http://www.aarst.org/bookstore.shtml>

Building Performance Institute (BPI): <http://www.bpi.org/>

Minnesota Building Performance Association Website for finding Minnesota raters and auditors:
<http://mbpa.us/>

Minnesota Weatherization Field Guide: <http://mn.gov/commerce/energy/images/Weatherization-Field-Guide.pdf>

Minnesota Weatherization Policy Manual: <http://mn.gov/commerce/energy/service-providers/For-WAP-Providers/Weatherization-Manual.jsp>

Radon in Minnesota Homes: <http://www.health.state.mn.us/divs/eh/indoorair/radon/index.html>

Radon Technical Assistance:
Minnesota Department of Health
Indoor Environments & Radiation Section, Indoor Air Unit
PO Box 64975
St. Paul, MN 55164-0975
Phone: 651-201-4601 or 800-798-9050
Fax: 651-201-4606 / TTY: 651-201-5797
<http://www.radon.com/sub/mn/>
RESNET
<http://www.resnet.us/>

Chapter 9 - Overlay to Criteria

The following revisions, additions, and/or clarifications to the 2011 EGCC shall be applied to Minnesota Housing funded projects:

Section 2: Location + Neighborhood Fabric

Criteria **2.12**

Access to Fresh, Local Foods **Optional / 6 points**

Available for all projects, If using Option 3, modify the “REQUIREMENTS” as follows:

REQUIREMENTS

Multifamily (MF) & Single Family (SF)

Option 3: Proximity to Farmers Market.

Delete the second sentence “Farmers market vendors may sell only items grown within 150 mile of the project site.”

Section 3: Site Improvements

Criteria **3.1**

Environmental Remediation **Mandatory**

Delete the “REQUIREMENTS” and replace with modified text as follows:

REQUIREMENTS

Multifamily (MF)

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

Single Family (SF)

1. All single family projects: Shall conduct a Phase I Environmental Site Assessment (ESA) if any and/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/dwelling unit 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.

Section 4: Water Conservation

Criteria **4.1**

Water Conserving Fixtures

Mandatory

For all projects:

Under “REQUIREMENTS”, DELETE the last sentence which states “Substantial and Moderate Rehab projects must replace or retrofit all fixtures to meet flow rates above.”

ADD in its place the following text:

Multifamily (MF)

New Construction and Substantial Rehab:

Provide new water-conserving fixtures as per the Criteria. No Overlay.

Moderate Rehab:

If an Effective Remaining Life (ERL) of any plumbing fixture is **less than 7 years**, these fixture(s) shall be replaced or retrofitted to comply with the Criteria.

If the ERL of any plumbing fixture is **7 years or more**, it shall be the Owner’s option to complete item 1 or 2:

1. Option 1: Provide a Water Efficiency Improvement Plan which identifies all plumbing fixtures proposed to remain. This plan should be developed after the funding has been awarded and ideally should be available prior to the Minnesota Housing Intake Meeting. The “Plan” shall include the following data:
 - a. Assess water consumption of existing fixtures using a sample protocol of 5% or one per different unit type (whichever is greater).
 - iii. Toilet Manufacturer date. Toilets dated before 1994 and/ or toilets without a printed gpf equal to or less than 1.6 gpf shall be replaced.
 - iv. Showerheads, bathroom faucets, and kitchen faucets shall have a Flow Rate Test. Turn on the fixture at its normal position, place a container under the fixture and collect the water for 30 seconds, measure the quantity of water in the container in gallons (e.g. 1.3 gallons), multiply that amount by two to get the gpm rate (e.g. 1.3 gallons x 2 = 2.6)
 - b. Generate a list of prioritized cost effective improvements which essentially becomes the “work scope” and which includes the options below:
 - v. Replacing Toilets to meet the Criteria
 - vi. Replacing Showerheads to meet the Criteria
 - vii. Replace Bathroom Faucets or install aerator to meet Criteria
 - viii. Replace Kitchen Faucets or install aerator to meet Criteria
 - ix. Other
 - c. Implement the improvements which provide a cost benefit of two years or less.

2. Option 2: Replace all fixtures to comply with the 2011 EGCC Criteria.

Single Family (SF)

1. New Construction and Substantial Rehab: No Overlay. Provide new water-conserving fixtures as per the Criteria.
2. Acquisition/ Moderate Rehab:
 - a. Follow the Criteria Overlay as noted above for Multifamily Moderate Rehab.
 - b. The Effective Remaining Life shall be field verified to confirm the age of each fixture.
 - c. Disregard the 5% sample protocol.
 - d. All dwelling units and all fixtures shall have the manufacture date and flow rate verified.

Section 5: Energy Efficiency

General Notes applicable to Multifamily Criteria 5.1

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 **5.1a**

Building Performance Standard

Mandatory

New Construction: Single-family and multifamily buildings, three stories or fewer

Modify the “REQUIREMENTS” to add the following text:

At the time of this publication, Enterprise acknowledges that Minnesota may not have a sufficient number of Heating Ventilating and Air Conditioning (HVAC) Contractors certified by the Air Conditioner Contractors of America (ACCA) and Advanced Energy. This is a requirement of ENERGY STAR Qualified Homes (Version 3.0). If a sufficient number of ACCA/Advanced Energy certified HVAC contractors are not available in Minnesota when a project is in the process of ENERGY STAR Certification, Enterprise and Minnesota Housing **will not** require these contractors to be ACCA/Advanced Energy certified. Projects will still be required to meet all other requirements under ENERGY STAR Qualified Homes 3.0 (or current Version), including the checklists. **This is not a “by right” waiver, and must be requested.** To apply for a waiver, document that you have noted preference for a certified contractor in the bidding documents, that you were unable to get a certified waiver to bid on the project, or that the bid from the certified contractor was unreasonable.

Multifamily (MF)

1. If following the “Performance Path” for a building with multiple units and common systems, energy modeling may ignore all common area spaces and apply the common system efficiency ratings to the typical unit’s system efficiencies.
2. Under the “Prescriptive Path”, it is acceptable when using common systems not addressed in the ENERGY STAR Qualified Homes 3.0 (or current Version), to use systems identified in the Prescriptive Path of ENERGY STAR Multifamily High Rise Guidelines (MFHR)

Single Family (SF)

No Overlay. New construction single family homes shall comply with the EGCC criterion.

Criteria 5.1b

Building Performance Standard

Mandatory

New Construction: Multifamily buildings, four stories or more

CLARIFICATION

The Energy Star Multifamily High-Rise program (MFHR) does not allow underground garages to be heated for comfort or to prevent pipes from freezing. However, where heating of garages is important for matters of safety, projects are not prohibited from heating their garages if it serves to prevent ice formation on the ground (i.e. safety reasons). Enterprise has published guidelines clarifying modeling requirements for projects considering inclusion of garage and sidewalk heating, freeze protection and snow/ice melt systems. This clarification letter is available at the [2011 Green Communities Criteria](#) web page.

General Notes applicable to Multifamily Criteria 5.1c & 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 be met. Items unverified prior to application will be assumed to need implementation.

Criteria 5.1c

Building Performance Standard

Mandatory

Substantial and Moderate-Rehab: Single-family and multifamily, three stories or fewer

Modify the “REQUIREMENTS” to add the following text:

Multifamily (MF)

1. Substantial and Gut Rehab: No Overlay. Projects shall meet the requirements of the Criteria as written.
2. Moderate Rehab projects shall meet the requirements by following the Performance, Prescriptive or Project-Specific pathway:
 - a. Performance Pathway:
 - i. Three stories and fewer and built pre-1980
 1. Achieve a Home Energy Rating System (HERS) Index of 100 or less
 2. Follow the Criteria “Recommendations” for testing and a HERS Certificate
 3. If mechanical equipment is being replaced, it shall be per the Enterprise Building Performance Standard 5.1c: Guidelines for Moderate and Substantial Rehab Projects Addendum available online at: [Green Communities Criteria](#) web site.
 - ii. Three stories and fewer built in 1980 or later
 1. No overlay. Follow Criteria Requirements and Recommendations.

2. Demonstrate HERS Index of 85 or less through energy modeling that generates a Home Energy Rating certificate.

b. Or, **Prescriptive Pathway:** Properties shall include the following post-construction conditions as applicable:

- i. Through-wall air conditioners (AC) shall have insulated covers. The covers shall fit the AC units properly and seal tightly to the wall.
- ii. Pitched-roof attics with enough space to allow access in electrically-heated properties with existing insulation less than R49, OR in gas-heated properties with existing insulation less than R30 shall comply with the following requirements:

1. The attic shall be insulated to minimum code R-Value of R49 and shall be air sealed. Spaces unverified prior to application will be assumed to need insulation and air sealing.

NOTE: Third-party verification of existing insulation levels is required by Minnesota Housing. Verification shall 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.

Use the following default R-Values:

- R3.7 per inch for blown cellulose
 - R2.8 per inch for blown fiberglass
 - R3.0 for un-faced, un-marked batt insulation
 - See the BPI *Building Analyst Standards: Typical Insulation R-Value* (page 7) for guidance.
 - Attic spaces unverified prior to application shall be assumed to need air sealing and insulation.
2. The insulation and air sealing shall be verified with a post-construction visual inspection, infrared scan with a blower door to ensure proper air sealing. The testing shall include:
 - a. Test one in four (1:4) upper level units after air sealing is complete.
 - b. If any units fail, all upper level units shall be tested.
 - c. The test shall consist of an infrared camera scan performed with the unit depressurized to 25 Pascals with respect to the outdoors.
 - d. The cubic feet per minute (CFM) 25 does not need to be reported.
 - e. Any failures shall be reported and re-tested once the correction has been completed.
 - iii. HVAC ductwork carrying conditioned air in pitched roof attics with enough space to allow access shall comply with the following requirements:

1. Return and supply ductwork shall be insulated and air sealed in compliance with ASHRAE 90.1-2007 or to a minimum R-Value of R8.
 - a. Insulation and air sealing shall be verified with post-construction duct leakage testing showing less than 8 CFM to the outside per 100 square feet of conditioned space.
 - b. If the HVAC ductwork only serves the common space, use only the common space square footage to determine leakage.
2. Exhaust ductwork shall be sealed and insulated. Exhaust ductwork only requires a visual inspection.
- iv. Exterior walls with a wall cavity of 3.5" or greater, AND with no existing insulation shall comply with the following requirements:
 1. The walls shall be insulated to capacity.
 2. Insulation shall be verified with a post-installation infrared camera assessment to ensure effective insulation.
 - a. Insulation voids must be less than 5% of the insulated area.
 - b. If insulated voids exceed 5% of the insulated area, correction shall be made to reduce the voids to less than 5% of the insulated area.
 3. Exception: Occupied buildings with masonry at all exterior walls are excluded from the wall cavity insulation requirement.
- v. Equipment or systems shall meet the following post-construction requirements:
 1. Hot water boiler space heating system
 - a. Install outdoor air reset controls to automatically adjust supply water temperature.
 2. Exposed Boiler Pipes
 - a. Shall be insulated in compliance with ASHRAE 90.1-2007
 3. Domestic hot water boiler and space heating boiler system tune-ups
 - a. Confirm completion within the past 5 years if any boiler units are to remain in the building.
 4. Forced air system tune-ups
 - a. Confirm completion within the past 2 years if any forced air units are to remain in the building
 5. New Air Handlers
 - a. Air conditioners, furnaces, and other models with air handlers installed as part of the scope of work shall have Electrically Commutated Motors (ECM) if available.
- c. **Or, Project Specific Strategy:**
 - i. Project teams may request pre-approval of an alternative, project-specific strategy. If pre-approval is granted, the plan must demonstrate an approach that will provide sufficient

assessment and implementation of energy improvements. Proposals must include details on the intent and rationale for an alternative approach and shall be subject to final approval by Minnesota Housing.

Single Family (SF)

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* (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 replacing heating, cooling, ventilation and/ or domestic hot water equipment, install ENERGY STAR rated mechanical systems that comply with the Department of Energy (DOE) ENERGY STAR Qualified Homes 3.0 (or current Version) requirements:
http://www.energystar.gov/index.cfm?c=bldrs_lenders_raters.nh_v3_guidelines

Modify the “RATIONALE” to add the following text:

Utility cost for low-income families can account for 19.5% 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 a 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 5.1d

Building Performance Standard

Mandatory

Substantial and Moderate Rehab: Multifamily, four stories or more

Modify the “REQUIREMENTS” to add the following text:

Multifamily (MF)

1. *Substantial/ Gut Rehab*: Shall meet the requirements of the Criteria as written. No Overlay.

2. Moderate Rehab projects shall meet the requirements of the Criteria through one of the following pathways:
 - a. Performance Pathway
 - i. No overlay. Follow the Criteria as written by demonstrating energy performance equivalent to ASHRAE 90.1-2007 through energy modeling.
 - b. Or, Prescriptive Pathway
 - i. Follow the Prescriptive Pathway identified for Criteria 5.1c in this overlay.
 - c. Or, Project Specific Strategy identified for Criteria 5.1c in this overlay.

Single Family (SF)

Not Applicable.

Section 7: Healthy Living Environment

Criteria **7.2**

Environmentally Preferable Flooring

Mandatory

If project scope includes provisions of flooring

Modify the “REQUIREMENTS – Prohibited Locations” to add the following exceptions:

For all **Multifamily** and **Single Family** new construction, substantial rehab and moderate rehab projects, the following Exceptions to the “Prohibited Locations” shall 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.
 - a. This test may also be used after the installation of a moisture control system if approved by Minnesota Housing.
 - b. Conditions for the use of the Poly-film Test:
 - i. Carpet Tile must be installed at said locations. Roll/ Sheet products are not allowed.
 - ii. The “Poly-film” test must be provided by a third party, independent testing agency with the results sent to Minnesota Housing.

Notes:

- “Approved carpet/ carpet tile” shall meet the Carpet and Rug Institute’s Green Label or Green Label Plus certification for carpet, pad, and carpet adhesives.
- Avoid carpet pads and/ 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 7.6b

Ventilation

Mandatory (Mandatory per this Overlay, earns 5 Optional points)

Moderate Rehab

Multifamily (MF)

Modify the “REQUIREMENTS” to include the following added text:

ADD: The following paragraph.

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

1. Process shall 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 8.2)

Criteria 7.8

Combustion Equipment

Mandatory

For projects with combustion equipment

New Construction and Substantial Rehab: No Overlay.

Moderate Rehab: Multifamily (MF) & Single Family (SF): IF combustion equipment is located in individual dwelling units

Modify the “REQUIREMENTS” to include the following added text:

ADD: The following paragraph shall be inserted after the last “Requirements” paragraph.

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 shall 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 shall 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 shall 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 second paragraph and replace with the following new paragraph:

CO alarms shall be installed at all New Construction, Substantial Rehab, and Moderate Rehab properties as required to meet Minnesota State Statute.

Criteria 7.11

Radon Mitigation Mandatory

New Construction and Substantial Rehab

DELETE: all "REQUIREMENTS" and replace with the following:

Multifamily (MF)

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

Single Family (SF)

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 shall 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 shall be installed in accordance with item number 5. Radon Mitigation (as noted below).
3. Rehab (with envelope improvements). Radon testing shall 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 shall 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.
2. Testing. The lowest livable level shall 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 that meet basic requirements noted herein.
 3. Radon Mitigation. In homes where a radon mitigation system is installed, the mitigation system shall meet the following requirements:
 - a. The system shall 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 shall be provided to verify that radon levels are below 4 pCi/L.
 - c. Test results shall be provided to the homeowner along with supplemental information on radon as specified in ASTM E2121 Section 7.7.
 4. Exterior System. An exterior Radon mitigation system is not allowed.

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

Criteria 7.15

Lead-Safe Work Practices

Mandatory

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

REQUIREMENTS

Multifamily (MF)

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.

Single Family (SF)

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

END OF MN OVERLAY AND GUIDE TO THE 2011 ENTERPRISE GREEN COMMUNITIES CRITERIA