



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

(Updated 4/2013)

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Table of Contents:

OVERVIEW	1
MINNESOTA HOUSING PROJECT TYPE DEFINITIONS	2
ACRONYMS & ABBREVIATIONS.....	2
CERTIFICATION BY ENTERPRISE GREEN COMMUNITIES	3
INITIAL APPLICATION PHASE:	3
AWARDED/ INTAKE PHASE:.....	3
EXCEPTION TO INTENDED METHOD WORKSHEET (CERTIFICATION WORKBOOK) SUBMITTAL:	3
HOW TO USE THIS DOCUMENT.....	4
MANDATORY AND OPTIONAL CRITERIA TABLE	4
SUBMITTALS.....	6
INSTRUCTIONS	9
RESOURCES AND LINKS.....	10
EXEMPTIONS AND WAIVERS.....	10
CONFLICTING REQUIREMENTS	10
ENERGY STAR RATERS.....	10
OVERLAY TO CRITERIA	11
SECTION 2: LOCATION + NEIGHBORHOOD FABRIC	11
2.12 <i>Access to Fresh, Local Foods Optional / 6 points</i>	11
SECTION 3: SITE IMPROVEMENTS	11
3.1 <i>Environmental Remediation Mandatory</i>	11
SECTION 4: WATER CONSERVATION	11
4.1 <i>Water Conserving Fixtures Mandatory</i>	11
SECTION 5: ENERGY EFFICIENCY.....	12
5.1a <i>Building Performance Standard Mandatory</i>	12
5.1c <i>Building Performance Standard Mandatory</i>	13
5.1d <i>Building Performance Standard Mandatory</i>	15
SECTION 7: HEALTHY LIVING ENVIRONMENT.....	16
7.2 <i>Environmentally Preferable Flooring Mandatory</i>	16
7.11 <i>Radon Mitigation Mandatory</i>	16
7.15 <i>Lead-Safe Work Practices Mandatory</i>	19
END OF MINNESOTA OVERLAY AND GUIDE TO THE 2011 EGCC.....	19

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” 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. At the time of this publication, Enterprise Green Communities (Enterprise) has issued additional guidance on Criteria Items 5.1a, 5.1b, 7.8 and 5.1c. Enterprise allows two options for meeting 5.1b. Those options are to either Certify under the Energy Star Multifamily High-Rise (MFHR) program or to complete the LEED for Homes Multifamily Midrise Alternative Compliance Path. Development teams are encouraged to 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

If a newer version of this document is released after the Initial Award of Financing of a project, the Developer and Architect of Record may use the EGCC version and Overlay version current at that time. Teams may also use the newer versions.

Minnesota Housing Project Type Definitions

1. **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.
2. **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.
3. Definitions of Construction Type:
 - a. The **Substantial/Gut Rehab** and **Moderate Rehab** defined in the 2011 EGCC "Introductions" section shall apply only to Multifamily projects with the following exceptions:
 - i. Building envelope improvements.
 1. If the scope of work includes replacement and/ or improvement of major interior systems, interior assemblies, mechanical, electrical, and/ or plumbing, Minnesota Housing reserves the right to classify the construction type as "Substantial/ Gut" regardless of the envelope scope of work.
 2. Construction type classification for the purpose of establishing which Criteria to follow may or may not be based upon whether or not the envelope scope of work meets the Enterprise "Substantial Rehab" definition.
 3. Contact a Minnesota Housing Staff Architect for Technical Assistance.
 - b. All existing Single Family projects undergoing acquisition/ rehab must meet the requirements noted for substantial, gut or moderate rehab regardless of the scope of work.

Acronyms & Abbreviations

- **CRV** = (Single Family) Community Revitalization Fund Program
- **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

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. Once certified, Minnesota Housing shall receive a copy of the final certification issued by Enterprise.

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.

Enterprise has changed the information submission process to apply for certification since the initial publication of this Overlay. For this reason, compliance with Green Communities shall be demonstrated through the following process:

Initial Application Phase:

All Multifamily and Single Family developments seeking funding from Minnesota Housing shall submit at the initial application phase, an electronic, Microsoft Excel, version of the Certification Workbook with the "Intended Method Worksheet" tab completed. <http://www.mngreencommunities.org/publications/download/CertWorkbook.xlsx>

Awarded/ Intake Phase:

All Multifamily and Single Family developments selected to receive funding shall continue to use the Certification Workbook for subsequent submittals as outlined in this Overlay.

Exception to Intended Method Worksheet (Certification Workbook) Submittal:

If a development team chooses to seek certification at Initial Application or after the funding is awarded, the development team shall create a user profile and register the development through Enterprise's online certification portal found at this link: <http://enterprisecommunity.force.com/greenportal>. Documentation of online portal registration, including compliance with mandatory items and optional points achieved, may be used to confirm compliance with Green Communities in lieu of the Certification Workbook.

Unless exempt or a waiver is granted, conformance to the entire 2011 EGCC as modified in this document is required. All criteria in the 2011 EGCC documents, if not specifically modified herein, are applicable as written.

How to use this Document

This Minnesota Overlay to the 2011 EGCC applies to all Multifamily and Single Family 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 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 structure type (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 is the funding source.

Minimum "Mandatory" Criteria and "Optional" (points) Criteria required for Minnesota Housing funded MF and SF project shall be as follows:

Mandatory and Optional Criteria Table

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 Mandatory and Optional Criteria Table Footnotes

1. MF Moderate Rehab, only the following minimum "Mandatory" criteria of the EGCC and Minnesota Overlay and 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. 7.11 Radon Mitigation
 - k. 7.15 Lead-Safe Work Practices
 - l. 8.1 Building Maintenance Manual
 - m. 8.2 Resident Manual
 - n. 8.3 Resident and Property Manager Orientation
2. SF Acquisition/ Rehab (under the CRV program) only the following minimum "Mandatory" Criteria of the EGCC and Minnesota Overlay and 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. 7.11 Radon Mitigation
 - i. 7.15 Lead-Safe Work Practices
 - j. 8.2 Resident Manual
 - k. 8.3 Resident and Property Manager Orientation
3. Any improvements enacted upon at the time of MF Moderate Rehab or SF Rehab (new finishes, replacement of equipment, systems, building components, or assembly of components) are required to comply with the corresponding “Mandatory” Criteria, except when the Criteria specifically denotes “New Construction only”.
 4. Existing equipment, plumbing fixtures, and/or appliances that remain (not improved) are exempt from this requirement. Typically exempt items have an Effective Useful Life (EUL) of at least 7 years. Existing items that remain shall be included as part of A Water Efficiency Improvement Plan and Energy Efficiency Improvement Plan. See applicable Overlay Criteria.
 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. This TA meeting shall take place after selection/ award of funding, yet prior to finalized bidding and construction to affectively incorporate strategies, where applicable.

Submittals

As a way to document a development's intended method of achieving EGCC requirements and to help monitor compliance, Minnesota Housing has established the following submittal process.

The Intended Methods Worksheet (IMW) and Compliance Report Worksheet (CRW) are located within the Microsoft Excel file of the [Certification Workbook](#). This workbook is available for download at the following direct link: <http://www.mngreencommunities.org/publications/>. See the special Instructions Chapter of this Overlay and guide for help finding and completing the [Certification Workbook](#).

Minnesota Housing submittal requirements are as follows:

1. Multifamily (MF) New Construction & Substantial/Gut Rehab & Moderate Rehab
 - a. **Initial Application Phase.** Submit at the time of the Minnesota Housing Consolidated Request For Proposals (RFP) or Pipeline Application the following:
 - i. Complete the Intended Methods Worksheet tab within the Enterprise [Certification Workbook](#) and include an electronic Microsoft Excel file with the application.
 - ii. Include Mandatory signatures in the Green Development Agreement portion of the Intended Methods Worksheet. The General Contractor signature is not required at this phase.
 - iii. Enterprise Waiver Request Form(s) if applicable.
 - iv. Exception: If voluntarily seeking Certification, an Intended Methods Worksheet/ Certification Workbook is not required if proof of Enterprise Certification project registration is submitted.
 - b. **Intake Meeting Phase.** All items below shall be received prior to Loan Commitment/ Closing and ideally shall be submitted at least 14 calendar days prior to the Intake Meeting. Coordinate with Minnesota Housing if, submissions will be delayed past Intake.
 - i. A Water Efficiency Improvement Plan (Moderate Rehab, if applicable)
 - ii. An Energy Efficiency Improvement Plan (Moderate Rehab, if applicable)
 - iii. Exception: If voluntarily seeking Certification, an Intended Methods Worksheet/ Certification Workbook is not required if documentation of online certification registration, including compliance with mandatory items and optional points achieved, is submitted.
 - c. **Loan Commitment/ Closing Phase.** Submit prior to Commitment/ Closing the following:
 - i. Update previously submitted Intended Methods Worksheet with Mandatory signatures in the "Green Development Agreement" portion.
 - ii. Documentation of Integrated Design Meeting and/or charrette as per Criteria 1.1a "Best practices in documenting" recommendation.
 - iii. Provide a HERS Rating Report/ Energy Modeling Summary from a qualified Home Energy Rater which sets the energy efficiency goals. These goals shall comply with [ENERGY STAR Qualified Homes](#). Confirm if following the "Performance Path" or "Prescriptive Path" as outlined by Enterprise. (New Construction & Substantial Rehab three stories or less).
 1. [Energy Performance Report Form](#) (New Construction and Substantial Rehab four stories or more). This is an Enterprise form available Online.
 - iv. Exception: If voluntarily seeking Certification, an Intended Methods Worksheet/ Certification Workbook is not required if documentation of online certification registration, including compliance with mandatory items and optional points achieved, is submitted.
 - d. **End of Construction Phase.** Submit the following prior to closing:
 - i. Compliance Report Worksheet (within the Certification Workbook) with updated compliance methods for all Criteria.
 - ii. Mandatory signatures shall be included in the Compliance Report Agreement portion.
 - iii. Cost Development Worksheet within the Enterprise Certification Workbook.

- iv. New Construction projects 3 stories or less shall submit an ENERGY STAR Qualified Homes Inspection Checklist completed by a qualified Energy Rater or similar form.
- v. New Construction projects 4 stories or more shall provide performance test results confirming compliance with ASHRAE 90.1-2007.
- vi. Exception: If voluntarily seeking Certification, an Intended Methods Worksheet/ Certification Workbook is not required. Submit documentation of Enterprise Certification.

2. Single Family (SF) CRV Program Requirements

- a. **Initial Application Phase.** Submit to Minnesota Housing with application the following:
 - i. Complete the Intended Methods Worksheet tab within the Enterprise [Certification Workbook](#) and include an electronic Microsoft Excel file with the application.
 - ii. Mandatory signatures shall be included in the Green Development Agreement portion of the Intended Methods Worksheet. The General Contractor signature is not required at this phase.
 - iii. Enterprise Waiver Request Form(s), if applicable.
- b. **End of Construction Phase.** The Administrator shall retain these documents in a project file for compliance. Only submit directly to Minnesota Housing if requested:
 - i. Water Efficiency Implementation Plan – Moderate Rehab only.
 - ii. Energy Efficiency Implementation Plan – Moderate Rehab only.
 - iii. Blower Door Test – Moderate and Substantial Rehab only.
 - iv. HERS Reports – New Construction only.
 - v. Green Communities Compliance Report Worksheet with criteria updated.
 - vi. Mandatory signatures shall be included in the Compliance Report Agreement portion of the Enterprise Certification Workbook.
 - vii. Exception: If voluntarily seeking Certification, an Intended Methods Worksheet/ Certification Workbook is not required. Submit documentation of Enterprise Certification.

3. Single Family (SF) Non-CRV Program Requirements

- a. For SF Acquisition/ Rehab under other non-CRV programs, see the applicable program procedural manual for rehab requirements.

4. MN Housing Multifamily & Single Family Submittals and Documentation Summary Table

Requirement	Multifamily				Single Family		
	Initial App.	Intake Meeting	Loan Com. / Closing	End of Const.	CRV Initial App.	CRV End of Const.	Non CRV
Intended Methods & Green Development Agreement (with signatures)	Yes		Yes ⁴		Yes		
Enterprise Waiver Request Form(s) if applicable	Yes ³				Yes ³		
Water Efficiency Improvement Plan (Moderate Rehab)		Yes ³				Yes ¹	
Energy Efficiency Improvement Plan (Moderate Rehab)		Yes ³				Yes ¹	
Blower Door Test		Yes ³				Yes ¹	
HERS Reports (NC & Substantial Rehab - 3 stories or less)		Yes ³				Yes ^{1,5}	
Energy Performance Report Form (NC & Substantial Rehab – 4 stories or more)		Yes					
Integrated Design Meeting			Yes ²				

Documentation							
Green Communities Compliance Report / Compliance Report Agreement (with signatures)				Yes		Yes ¹	
Cost Development Worksheet				Yes			
Evidence of Certification		No ⁶	No ⁶	No ⁶		No ⁶	
See applicable program procedural manual							Yes

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. Enterprise offers grants to help cover the costs of planning and implementing green components of affordable housing developments, as well as tracking their costs and benefits. For Charrette Grants and Sustainability Training Grants (post-construction), go to the [Enterprise Green Communities Resources](#) web page.
3. Only required if applicable.
4. Document shall be updated and resubmitted.
5. Single Family New Construction only.
6. 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.

Instructions

Completing the submittals for each Minnesota Housing phase can be accomplished by:

1. *For the Initial Application phase, all MF and SF developments seeking funding from Minnesota Housing shall download the [Certification Workbook](http://www.mngreencommunities.org/publications/download/CertWorkbook.xlsx) found at this link:
<http://www.mngreencommunities.org/publications/download/CertWorkbook.xlsx>*
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).
 - i. Complete the top portion which includes project name, address, etc. This information automatically updates itself on the other tabs.
3. For Minnesota Housing Initial Application Phase: 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) version and a hard copy.
4. For Minnesota Housing Loan Commitment/ Closing Phase:
 - a. Re-open the Certification Workbook you 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. Insert electronic signatures and submit both a Microsoft Excel (xls) version and a hard copy.
 - e. Exception: For projects voluntarily seeking Certification from Enterprise, documentation from Enterprise of compliance with Green Communities may be used in lieu of the Certification Workbook.
5. For Minnesota Housing End of Construction Phase:
 - a. Re-open the Microsoft Excel spreadsheet Certification Workbook you 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”.
 - d. Once complete, insert electronic signatures and submit Microsoft Excel (.xls) version and hard copy.
 - e. Exception: For projects voluntarily seeking Certification from Enterprise, Enterprise documentation of Green Communities Certification may be used in lieu of the Certification Workbook.

Resources and Links

Minnesota Green Communities:

<http://mngreencommunities.org/>

Enterprise Green Communities:

www.EnterpriseCommunity.org/green

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.

Enterprise Waiver Request Forms are available at

<http://www.enterprisecommunity.com/solutions-and-innovation/enterprise-green-communities/certification/get-started>.

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. For Multifamily projects, contact Minnesota Housing's Staff Architects with questions regarding Minnesota Housing's standards or requirements.

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.

To search for a rater in Minnesota, go to DOE ENERGY STAR website:

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

The Minnesota Building Performance Association Website may be helpful for finding raters and auditors:

<http://mbpa.us/>. The Building Performance Institute can be searched by state and zip code for companies with certified professionals on staff: <http://www.bpi.org>.

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.

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

2.12 Access to Fresh, Local Foods

Optional / 6 points

If using Option 3, modify the “REQUIREMENTS” as followings:

REQUIREMENTS

Multifamily (MF) & Single Family (SF)

Option3: 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

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 Environmental Standards available:

<http://www.mnhousing.gov>.

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

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: shall 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 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).
 - i. 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.
 - ii. 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:
 - i. Replacing Toilets to meet the Criteria
 - ii. Replacing Showerheads to meet the Criteria
 - iii. Replace Bathroom Faucets or install aerator to meet Criteria
 - iv. Replace Kitchen Faucets or install aerator to meet Criteria
 - v. 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)

No Overlay. New Construction and Substantial Rehab: Provide new water-conserving fixtures as per the Criteria.

Acquisition/ Moderate Rehab: Follow the Criteria Overlay as noted above for Multifamily Moderate Rehab. The Effective Remaining Life shall be field verified to confirm the age of each fixture. Disregard the 5% sample protocol. All dwelling units and all fixtures shall have the manufacture date and flow rate verified.

Section 5: Energy Efficiency

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:

General Note to Multifamily and Single Family: At the time of this publication, Enterprise acknowledges that Minnesota may not have a sufficient number of Air conditioner Contractor's of America (ACCA) certified in Heating, Ventilating and air conditioning (HVAC) Contractors. This is a requirement of ENERGY STAR Qualified Homes (Version 3.0). If a sufficient number of ACCA 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 certified. Projects will still be required to meet all other requirements under ENERGY STAR Qualified Homes 3.0 (or current Version), including the checklists.

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) available at:

http://www.energystar.gov/ia/partners/bldrs_lenders_raters/downloads/mfhr/ENERGY_STAR_MFHR_Prescriptive_Path_V1.0.pdf

Single Family (SF)

No Overlay. New construction single family homes shall comply with the EGCC 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 projects shall meet the requirements of these Criteria as written. No Overlay.
2. Moderate Rehab: Understanding that achieving a Home Energy Rating System (HERS) Index of 85 for Moderate Rehab projects may be unreasonable, therefore meeting a HERS Index of 85 **is not** required. However, all Moderate Rehab projects must demonstrate energy performance through one of the following options:
 - i. Energy Modeling (by a HERS Rater) Option:
 1. Follow the “Recommendations” chapter of the Criteria with the following modifications:
 - a. Provide an energy model at the design phase to establish the existing energy performance,
 - b. Identify cost effective improvements and incorporate them into another energy model showing improved performance goals,
 - c. Achieving a final performance HERS Index of 100 or less is preferred and you are encouraged to set 85 as a goal. Consult with Minnesota Housing if a HERS Index of 100 cannot be achieved.
 - d. Include cost effective improvements into plans, specifications and work scope,
 - e. If the project entails exterior wall modifications, insulation and new drywall, conduct a mid-construction pre-drywall thermal bypass and air sealing inspection to identify and correct missed opportunities. If applicable, this inspection would be done prior to insulating the attic.
 - f. Verify the final performance of the building with post construction testing
 - ii. Energy Efficiency Improvement Plan Option:
 1. Conduct an energy audit with a blower door test (RESNET Standards Test Protocol) prior to construction. This will establish a baseline of existing energy features and infiltration. If due to the poor condition of the existing envelope, a blower door test prior to construction is impractical, the blower door test may be performed during the mid construction pre-drywall phase.
 2. Create and implement an Energy Efficiency Improvement Plan. This “Plan” shall generate a list of prioritized cost effective improvements for the entire building(s) based upon the sampling data. The Minnesota Weatherization Field Guide (Chapter 2.1.1) is a resource for assessing existing buildings and their energy infiltration weaknesses.
 3. 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.
 4. Cost benefit analysis can be performed by using established software or through a manual assessment.
 5. If the project entails exterior wall modifications, insulation and new drywall, conduct a mid-construction pre- drywall thermal bypass and air sealing inspection to identify and correct missed opportunities. If applicable, this inspection would be done prior to insulating the attic.

6. At the end of construction, provide a post-renovation inspection and conduct a blower door test to confirm infiltration improvements.
 7. Existing equipment that remains (not improved) and has an Effective Useful Life (EUL) of at least 7 years shall be listed as remaining, in the Energy Efficiency Improvement Plan.
 8. If existing equipment is replaced :
 - a. It shall meet the minimum efficiencies of the table located in the Building Performance Standard 5.1c: Guidelines for Moderate and Substantial Rehab Projects Addendum available at the EGCC website: www.EnterpriseCommunity.org/green; Or,
 9. Meet the Department of Energy (DOE) Energy Star Qualified Homes 3.0 (or current Version), guidelines. The “Prescriptive Path” requirements can be used or the Prescriptive Path of Energy Star Multifamily High Rise Guidelines (MFHR) can also be used if applicable to building type.
- iii. Project Specific Strategy:
1. Project teams are welcome to propose an alternative, project-specific strategy to Minnesota Housing for assessing and implementing Energy Improvements for consideration. Proposals must include details on the intent and rationale for an alternative approach.

Single Family (SF)

1. For all Acquisition/ Substantial and Acquisition/ Moderate Rehab, create and implement an Energy Efficiency Improvement Plan which contains the following:
 - a. Generate a list of prioritized cost effective improvements for the entire building(s) based upon the sampling data from the 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.
 - 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:

Minnesota Weatherization Policy Manual:

http://www.state.mn.us/mn/externalDocs/Commerce/Minnesota_Weatherization_Policy_Manual_070704032633_Master_Manual.pdf

Minnesota Weatherization Field Guide:

http://www.state.mn.us/mn/externalDocs/Commerce/070704030802_Minnesota%20WFG.pdf

Listing of qualified auditors or HERS raters:

<http://www.dunwoody.edu/custom/energyaudit.html#jobs>

Minnesota Building Performance Association:

<http://mbpa.us/>

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 these Criteria as written. No Overlay.
2. Moderate Rehab.
 - a. Demonstrating that energy performance is equivalent to ASHRAE 90.1-2007 in Moderate Rehab projects may be unreasonable; therefore, performance equivalent to ASHRAE 90.1-2007 **is not** required for Moderate Rehab. Moderate Rehab projects are strongly encouraged to prepare an Energy Efficiency Improvement Plan that generates a list of prioritized cost effective improvements that provide a cost benefit and good return on investment. These cost effective improvements shall be implemented into the scope of work. Refer to details of the Energy Improvement Plan Option in Overlay Item 5.1c on page 14.
 - b. Only improvements enacted upon at the time of moderate rehab (replacement of cooling, heating and domestic water equipment) are required to comply with the Criteria.
 - c. Existing equipment that remains (not improved) and has an Effective Useful Life (EUL) of at least 7 years shall be listed as remaining in the Energy Efficiency Improvement Plan.
3. If existing equipment is replaced, it shall meet the Department of Energy (DOE) ENERGY STAR Qualified Homes 3.0 (or current Version), or meet performance standards of systems identified in the Prescriptive Path of ENERGY STAR Multifamily High Rise Guidelines (MFHR).
 - http://www.energystar.gov/index.cfm?c=bldrs_lenders_raters.nh_v3_guidelines
 - http://www.energystar.gov/ia/partners/bldrs_lenders_raters/downloads/mfhr/ENERGY_STAR_MFHR_Prescriptive_Path_V1.0.pdf

Single Family (SF)

Not Applicable.

Section 7: Healthy Living Environment

7.2 Environmentally Preferable Flooring

Mandatory

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.

7.11 Radon Mitigation

Mandatory

New Construction and Substantial Rehab.

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

Multifamily (MF)

1. New Construction. All Multifamily type buildings without underground parking shall provide a **Passive** sub-slab depressurization system. For the purpose of system design, the subfloor preparation, vent pipe, electric outlet and other requirements under the Minnesota State Building Code for Single Family new construction shall apply to New Multifamily Construction with the following amendments:
 - a. Provide at least one 4” diameter (in lieu of 3”) vertical vent pipe per 3,000 square feet of building foot print; or, at least one 4” diameter vertical vent pipe per dwelling unit (at townhomes). An exterior Radon mitigation system is not allowed.

- a. All ground-connected floors of the building shall be tested when the project is complete (prior to initial occupancy). If testing finds Radon levels to be 4 pC/l or greater, the **Passive** system shall be converted to an **Active** system by:
 - i. Adding a fan which remains in full operation continuously and is approved by manufacturer for Radon use.
 - ii. In apartment buildings with common area, the continuously operating fan shall be tied to a common area power source.
 - iii. In townhome (without common space) buildings, the continuously operating fan for each unit shall be tied to the power source (meter) of the dwelling unit it serves.
 - b. Testing protocols shall be as per the Minnesota Department of Health’s “Best Practices for Radon Measurement in Minnesota Schools and Commercial Buildings”. Available at: <http://www.health.state.mn.us/divs/eh/indoorair/schools/radontestingschools.pdf>
2. Substantial Rehab. All Multifamily Substantial Rehab projects shall provide, at a minimum, a **Passive** sub-slab depressurization system which meets the requirements defined under the Minnesota State Building Code for Single Family new construction with the following amendments:
 - a. Prescriptive or Performance approaches
 - i. A Prescriptive approach shall include:
 1. At least one 4” diameter (in lieu of 3”) vertical vent pipe per 3,000 square feet of building foot print; or,
 2. At least one 4” diameter vertical vent pipe per dwelling unit (at townhomes).
 3. At each vertical pipe location, the pipe shall extend 1” below the concrete slab into a suction pit (void area), that is a minimum 3’ in diameter and 1’ deep.
 - ii. Or, a Performance approach which involves a custom analysis and design by a Radon Contractor/ Mitigation Service Provider.
 - iii. An exterior Radon mitigation system is not allowed.
 - b. Omit all reference to “Follow EPA guidance for conducting a radon test” noted in the Criteria. Testing protocols shall be as per the Minnesota Department of Health’s “Best Practices for Radon Measurement in Minnesota Schools and Commercial Buildings”. Available at: <http://www.health.state.mn.us/divs/eh/indoorair/schools/radontestingschools.pdf>
 - c. All ground-connected floors of the building(s) shall be tested when the project is complete (prior to initial occupancy). If testing finds radon levels to be 4 pC/l or greater, the **Passive** system shall be converted to an **Active** system as noted in New construction above (1bi, 1bii, and 1biii).
 3. Underground Garages Serving Multifamily Projects.
 - a. Omit all reference to Radon control at underground garages as noted in the Criteria. Underground garages designed and vented to meet applicable Minnesota codes and regulations do not need any other source of Radon control.
 4. Moderate Rehab. Radon testing and/or Radon control are not required.
 - a. However, testing is strongly encouraged. If testing is voluntarily provided, it shall follow the testing protocol and Radon control noted above for Substantial Rehab (2a, 2b, & 2c).
 - b. If testing finds Radon levels to be 4 pC/l or greater, the following procedures shall be followed:
 - i. Consult with a radon contractor or mitigation service provider to identify and design a Radon control system; and/or
 - ii. Consult with Minnesota Department of Health, Indoor Environments & Radiation Section, Indoor Air Unit (see Radon Technical Assistance below)
 - iii. An exterior Radon mitigation system is not allowed.

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 strongly 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 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 below.
3. Rehab (with envelope improvements). Radon testing shall be conducted in accordance with item number 4. Testing (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 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 shall be tested when the project is complete (and prior to occupancy) following the EPA testing protocol using a continuous radon monitor or simultaneous testing using two short-term test devices that are approved by the National Environmental Health Association National Radon Proficiency Program; Or National Radon Safety Board. Testing should always be conducted in the lowest livable level and by devices that meet basic requirements noted herein.
5. 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.
6. Exterior System. An exterior Radon mitigation system is not allowed.

Resources and Links

Radon Zone Map of Minnesota:

<http://www.epa.gov/radon/states/minnesota.html>

EPA Protocol:

http://www.epa.gov/radon/pdfs/homes_protocols.pdf

Minnesota Department of Health Radon Mitigation Contractors:

<http://www.health.state.mn.us/divs/eh/indoorair/radon/mitigation.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/>

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: <http://www.mnhousing.gov>. See also Minnesota Housing’s Design/Construction Standards Supplement for Federally Funded Projects located in Chapter 9 of the Minnesota Housing Rental Housing Design and Construction Standards.

Single Family (SF)

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

END OF MINNESOTA OVERLAY AND GUIDE TO THE 2011 EGCC