



New Jersey Housing and Mortgage Finance Agency
2010 Green Requirements
for Single Family CHOICE Projects
with the NJ Green Homes Office

2010

The NJ Green Homes Office is located within the NJ Housing & Mortgage Finance Agency and has been tasked with assistance for Single Family CHOICE projects.

Please carefully read through the following notes.

IMPORTANT NOTES:

- The Single Family CHOICE Green Requirements are a sub-set of the NJ Green Homes Office Green Future program requirements. Please see the ‘2010 Green Future Guidelines’ for a more detailed description of each green item. The Green Future program consists of a list of common definitions for green building items referred to by a few financing programs.
- Participants must complete the required elements **and** select an additional four (4) elective elements to complete. Required elements (in **bold**) and elective elements (in *italics*) are listed in the ‘Green Future Checklist – for CHOICE’ that follows.
- All Single Family CHOICE participants must also receive ENERGY STAR Homes Certification. Documentation and submittals for the ENERGY STAR program, as applicable for CHOICE, can be found in the ‘Guide to NJHMFA ENERGY STAR Requirements’. Projects that do not qualify for the ENERGY STAR Homes Program may complete Tier 3 of the Home Performance with ENERGY STAR Program. Information on all ENERGY STAR programs is available from the EPA at <http://www.energystar.gov>. For rebates and incentives available for ENERGY STAR improvements go to the NJ Clean Energy Program website: <http://www.njcleanenergy.com>.
- Changes and Substitutions to the Requirements in the Green Worksheet due to extenuating circumstances must be submitted in writing to the Green Homes Office. Changes must have written approval *prior to implementation*.

FOR TECHNICAL ASSISTANCE CONTACT:

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Trenton, NJ 08611

PROJECT TIMELINE:

WHAT TO SUBMIT WITH CHOICE APPLICATION

- Completed and Signed ‘Green Future Letter of Intent – for CHOICE’
- Completed and Signed ‘ENERGY STAR Letter of Intent – for CHOICE’
- For NEW CONSTRUCTION or GUT REHAB¹:
 - Completed and Signed ‘ENERGY STAR Partnership Agreement’, available online through www.energystar.gov.

OR

- For SUBSTANTIAL REHAB²:
 - Results of a completed Home Energy Audit by a BPI-certified auditor.
 - Contractor’s Cost Estimate to complete the recommendations of the audit

WHAT TO SUBMIT PRIOR TO LOAN CLOSING

- Completed *and NJHMFA approved* ‘Green Future Checklist – for CHOICE’.
 - Any proposed changes to the Green Checklist made by the developer/architect to be clearly documented in writing *and approved* by NJHMFA Green Homes Office and the Green Advisor *prior to implementation*.
- For NEW CONSTRUCTION or GUT REHAB¹:
 - Completed and Signed ‘ENERGY STAR Builder Upgrade Packet’

OR

- For SUBSTANTIAL REHAB²:
 - Confirmation of incentive and approval of work from ‘NJ Home Performance with ENERGY STAR’ program.

WHAT TO SUBMIT UPON COMPLETION OF CONSTRUCTION

- Completed Submittal Checklist Binder with completed “Green Future Submittal Checklist – for CHOICE” for required and elected elements and copies of ALL submittal requirements.
- Copies of the ENERGY STAR ‘Thermal Bypass Inspection’ and ‘Blower Door Test’ (from ENERGY STAR inspector during the “Pre-drywall Inspection”)
- Copy of EPA or NJ ENERGY STAR Homes Certificate(s).

Upon satisfactory completion of all required submittals and documentation, project will receive a letter of Final Approval for completion of the Green Future Program from the NJ Green Homes Office.

¹ Gut Rehab refers to rehabilitation projects that demolish the existing structure down to the building shell.

² Substantial Rehab refers to rehabilitation projects that leave significant portions of the existing building intact (less extensive than Gut Rehab).

GREEN FUTURE LETTER OF INTENT – for CHOICE:



**New Jersey Housing and Mortgage Finance Agency
Single Family CHOICE Green Requirements 2010
GREEN FUTURE**

Please include this signed document in your CHOICE application package.

By signing this document, I certify the following (“we” refers to the applicant organization):

1. We have received and reviewed the Program’s materials, consisting of the ‘2010 Green Requirements for Single Family CHOICE’ and ‘Green Future Guidelines 2010’ documents, which includes a list of requirements, an application timeline, Submittal Checklist and related informational material.
2. We understand that ENERGY STAR certification is a prerequisite to participation in the CHOICE program and a required item in the Green Future program. We will comply with ENERGY STAR requirements as indicated in the ‘ENERGY STAR Letter of Intent – for CHOICE’.
3. We understand the Program material, and more specifically we have read and understand the process and procedures set forth in the ‘2010 Green Requirements for Single Family CHOICE’ and ‘Green Future Guidelines 2010’ documents.
4. We understand that if our project’s application for CHOICE funding is accepted, we will be required to commit to the 20 required elements (indicated in **bold**) in the ‘Green Future Program Checklist’ that are to be integrated into the project, as well as the *following four(4) elective elements*:

Item # Green Feature – Description

- | | |
|----------|-------|
| a. _____ | _____ |
| b. _____ | _____ |
| c. _____ | _____ |
| d. _____ | _____ |

5. If requested we will allow NJHMFA staff access to the project site pre-, during and post-construction for the purpose of but not limited to: project monitoring, performance testing, interviews, surveys and photographs.
6. I am an authorized representative of the organization.

Signature: _____ Date: _____

Name of signer: _____

Title: _____

Project Name: _____

Organization: _____

ENERGY STAR LETTER OF INTENT – for CHOICE:



**New Jersey Housing and Mortgage Finance Agency
Single Family CHOICE Green Requirements 2010
ENERGY STAR**

Please Fax a signed copy of this page to NJHFMA Green Homes Office and include in CHOICE Application.

By signing this document, I certify the following (“we” refers to the applicant organization):

1. We understand that ENERGY STAR certification is a prerequisite to participation in the CHOICE program, we agree to complete the ENERGY STAR certification process, and will comply with the submission requirements listed in the ‘Guide to NJHMFA ENERGY STAR Requirements’ document.
2. We understand that no projects are exempt from this requirement and have reviewed the documentation as applicable in the ‘Guide to NJHMFA ENERGY STAR Requirements’ document. More specifically, we understand that for (a) new construction and gut rehabilitation projects we are required to participate in the ‘ENERGY STAR Homes’ program and for (b) substantial rehabilitation projects we are required to participate in the ‘NJ Home Performance with ENERGY STAR Homes’ program.
3. If requested we will allow the NJHMFA Green Homes Office, or designee, access to the project site pre-, during and post-construction for the purpose of but not limited to confirming ENERGY STAR compliance.
4. I am an authorized representative of the organization.

Signature: _____ Date: _____

Name of signer: _____

Title: _____

Project Name: _____

Organization: _____

NJHMFA ENERGY STAR Requirement Program we are participating in:

GREEN FUTURE CHECKLIST – for CHOICE

Complete and submit for Green Future Review

To be signed once finalized by the Single Family Green Advisor

| Green Future Checklist– for CHOICE | | |
|---|--|---------------------------|
| Dev. Name | | |
| Project Name | | |
| * Required element (listed in BOLD face) | | |
| ** Required for multi-story, multi-unit properties (list in BOLD Italic face) | | |
| <i>Elective elements are in ITALICS. Participants must choose four (4) elective elements to complete.</i> | | |
| Item # | Green Feature | Location in Plans & Specs |
| Siting & Land Use | | |
| SL-1 | PASSIVE SOLAR, VENTILATION & SHADING DESIGN | |
| SL-2 | PRESERVATION PLAN | |
| SL-3a* | PEDESTRIAN PATHS (SIDEWALKS) & BIKE TRAILS | |
| SL-3b | SECURE & SAFE BIKE RACKS** | |
| SL-3c | SAFE SHELTER FOR COMMUTERS | |
| SL-3f SF | CLUSTERED DEVELOPMENT | |
| Indoor Air Quality | | |
| IA-1 SF* | COMPLETELY CLEAN ALL DUCTS PRIOR TO OCCUPANCY | |
| IA-2* | LOW VOC INTERIOR PAINTS & FINISHES | |
| IA-3* | LOW VOC ADHESIVES & SEALANTS | |
| IA-4 | DURABLE, HEALTHY FLOORING | |
| IA-5 | MERV 8 OR HIGHER AIR FILTERS | |
| IA-6* | COMBUSTION DEVICES | |
| IA-7* | AUTOMATIC BATHROOM VENTILATION | |
| IA-8* | DIRECT VENT OF KITCHEN | |
| IA-9 | ENCAPSULATION OF NON-UF-FREE CABINETS | |
| IA-10* | INSULATION WITH LOW FORMALDEHYDE CONTENT | |
| IA-11 SF | OPERABLE DOUBLE-HUNG WINDOWS | |
| IA-12* | ACCESS TO DAYLIGHTING & VIEW FROM EACH BEDROOM | |
| Building Durability & Moisture Control | | |
| DM-1 | EXTERIOR WALL DRAINAGE PLANE | |
| DM-2 | WINDOW FLASHING DETAILS | |
| DM-3* | GUTTER DOWNSPOUTS DISCHARGE 3' FROM FOUNDATION | |
| DM-4* | INSTALL 30-YR FOR PITCHED & 20-YR FOR FLAT ROOF | |
| Energy Efficiency | | |
| EE-1* | ALL UNITS ENERGY STAR RATED | |
| EE-2* | ENERGY STAR APPLIANCES | |
| EE-3 SF* | ENERGY STAR LIGHTING FIXTURES AND/OR BULBS | |
| EE-4 | WINDOWS WITH LOW-E COATING | |
| EE-5 | INSULATION OF BASEMENT CEILING | |
| EE-6 | DUCTWORK IN CONDITIONED SPACE | |
| EE-7 SF | OCCUPANCY & DAYLIGHTING CONTROLS, WHERE POSS. | |
| EE-8 | HIGH-ENERGY FACTOR WATER HEATER | |
| EE-9* | EASY TO USE PROGRAMMABLE THERMOSTATS | |
| EE-10 SF | HIGH & LOW REGISTERS (OR CEILING FAN) IN EACH ROOM | |

| Resource Efficiency | | |
|--------------------------|---|--|
| RE-1* | RECYCLE / SALVAGE CONSTRUCTION DEBRIS | |
| RE-3* | RECYCLING PLAN FOR EACH UNIT | |
| Water Conservation | | |
| WC-1* | LOW-FLOW FIXTURES | |
| WC-2* | HIGH-EFFICIENCY TOILETS | |
| WC-3 | WATER EFFICIENT LANDSCAPING | |
| WC-4 | HIGH-EFFICIENCY IRRIGATION | |
| WC-5 | PERVIOUS PAVERS FOR OUTDOOR PATIOS & WALKWAYS | |
| Operations & Maintenance | | |
| OM-2* | HOMEOWNER O&M MANUAL AND TRAINING | |
| OM-3 | INTEGRATED PEST MANAGEMENT | |

Acknowledgement of Green Future Checklist – for CHOICE
 DEVELOPER

Signed: _____ Date: _____

Name: _____ Title: _____

Acknowledgement of Green Future Checklist – for CHOICE
 ARCHITECT

Signed: _____ Date: _____

Name: _____ Title: _____

Acknowledgement of Green Future Checklist – for CHOICE
 GENERAL CONTRACTOR

Signed: _____ Date: _____

Name: _____ Title: _____

Approval of Checklist Completion
 FOR AGENCY USE ONLY

Signed: _____ Date: _____

Name: _____ Title: _____

GREEN FUTURE SUBMITTAL CHECKLIST - for CHOICE

Some items may be indicated in other submitted documents (e.g. plans, elevations, landscape plans). Please include a sheet referencing the drawing number and location on the page if not including the item within the submittal binder.

SITING AND LAND USE**SL-1 Passive Solar, Ventilation & Shading Design**

- Site plan with north arrow clearly displayed and nearby buildings noted with the number of floors for each. Locate the placement or maintenance of desirable trees to utilize passive design.
- Engineer's narrative describing roof durability and structural integrity to carry a reasonably-sized solar array,
- Plan indicating conduit runs for solar electric and location of inverter.
- Elevation with exterior shading devices, where applicable.
- If the project is in an infill lot with no alternate site options, or there is something that precludes the project from incorporating passive solar design, please submit a narrative to this effect and what attempts have been made to comply.

SL-2 Preservation Plan

- Site plan with tree/plant preservation plan and note
- Tree preservation details in plans
- Include tree demarking and preservation procedures in Specifications

SL-3a Pedestrian Paths (Sidewalks) & Bike Trails (REQUIRED)

- Submit plans and specifications
- During construction:** Submit photographs of, at least, connections between living and parking spaces; site and neighborhood; walking trails and different buildings.

SL-3b Secure & Safe Bike Racks (REQUIRED for Multi-story, Multi-unit properties)

- Submit plans and specifications
- During construction:** Submit photographs of bike lock signage and bike lock areas.

SL-3c Safe Shelter for Commuters

- Submit plans and specifications indicating transit stop and commuter shelter
- During construction:** Submit photographs of commuter shelter

SL-3f SF Compact and Clustered Development (Single Family)

- Plans with indication of open space preserved by design

- Calculation of density per acre.

INDOOR AIR QUALITY

IA-1 SF Completely clean all ducts and equipment prior to occupancy (Single Family) (REQUIRED)

- Contract language indicating duct and equipment cleaning requirement and method
- Signed statement by GC indicating acknowledgement of requirement
- During construction:** Submit 3 dated photos of cleaned ductwork and equipment

IA-2 Low VOC Interior Paints & Finishes (REQUIRED)

- Complete list of all paints and sealants with VOC content in g/l for each item in specifications
- During construction:** Submit photographs of paint cans, with label and VOC content clearly visible

IA-3 Low VOC Adhesives & Sealants (REQUIRED)

- Complete list of all adhesives and sealants with VOC content in g/l for each item in specifications
- During construction:** Submit photographs of product labels and VOC content clearly visible

IA-4 Durable, Healthy Flooring (REQUIRED)

- Floor plan highlighting flooring type in each area of building.
- Cut sheets for all flooring installed clearly highlighting (1) Green-Label-Plus status and tack-down installation procedures for carpet; (2) Recycled content; and (3) Registration Number of FloorScore® Certified products.

IA-5 MERV 8 (or higher) air filters in ducted forced air systems (REQUIRED)

- Filter cut sheet showing MERV value
- For homeownership units signed statement indicating box (minimum 6) filters left on site near furnace
- During construction:** Submit photographs of MERV filters used during construction, filters replaced prior to occupancy, and filters left for regular maintenance.

IA-6 Combustion Devices Directly Vented or Sealed (REQUIRED)

- Venting detail in plans and specifications
- Combustion equipment cut sheets, with model numbers highlighted

- Clothes dryer exhaust: Clothes dryers must be vented directly to the outside
- During construction:** Submit photographs of vented devices with seal to exterior indicated.

IA-7 Automatic Bathroom Ventilation (REQUIRED)

- Spec Sheet and note on mechanical plans.
- During construction:** Submit photographs of equipment installed, with label clearly visible.

IA-8 Direct Vent of Kitchen (REQUIRED)

- Venting details in plans and specifications
- Equipment cut sheets, with model numbers
- Engineering calculations that address kitchen venting, bathroom venting, and HVAC fresh air supply
- During construction:** Submit photographs of kitchen exhaust direct venting

IA-9 Encapsulation of non-UF (Urea Formaldehyde) free composite cabinets (REQUIRED)

- Contract language indicating what items will be sealed,
- A list of all interior wood composites, indicating which is zero formaldehyde, and/or how non-zero formaldehyde composites are being encapsulated.
- Provide cut sheets for zero-formaldehyde products or encapsulating finish – see above
- During construction:** Submit photograph of person sealing edges of cabinetry and final result prior to final installation

IA-10 Insulation with Low Formaldehyde Content (REQUIRED)

- Cut sheet for insulation used.
- During construction:** Submit photographs of insulation installation and of insulation labels.

IA-11 SF Operable Double-Hung Windows (Single Family)

- Cut sheets of windows selected
- During construction:** Submit photographs of open windows

IA-12 Access to Daylighting & View from Each Bedroom

- Unit plans
- Whole-building plans that indicate nearby buildings and visual obstructions.

BUILDING DURABILITY & MOISTURE CONTROL**DM-1 Exterior Wall Drainage Plane**

- Section drawing showing detail
- Specification indicating method and products
- During construction:** Submit photographs of installation

DM-2 Window Flashing Details

- Section drawing showing window flashing detail
- Specification indicating flashing method and products
- During construction:** Submit photographs of window opening and window flashing installation

DM-3 Gutter Downspouts discharge at least 3' from Foundation (REQUIRED)

- Specifications & Drawing detail
- During construction:** Submit photographs of gutter discharge and where the water will drain.

DM-4 Roof: Install 30-yr for pitched & 20-yr for flat (REQUIRED)

- During construction:** Specification and Copy of Roof Warranty

ENERGY EFFICIENCY**EE- 1 All Units ENERGY STAR Certified (REQUIRED)**

- If not already included in the initial application for funding, submit the ENERGY STAR Partnership Agreement.
- With your 95% complete plans and specifications, submit a signed ENERGY STAR Builder Upgrade Packet (or equivalent).
- During construction:** Submit a copy of your Pre-Drywall ENERGY STAR inspection (including the Thermal Bypass Checklist – to be completed by ENERGY STAR inspector).
- At Final Construction Meeting:** Submit copies of ENERGY STAR Certificates and any incentives received.

More about these guidelines are covered in the 'Guide to NJHMFA ENERGY STAR Requirements'

EE-2 ENERGY STAR Appliances (REQUIRED)

- Refrigerator, clothes washer and dishwasher specs with model number and ENERGY STAR rating
- During construction:** Submit photographs of appliances installed, with ENERGY STAR label clearly showing.

EE-3 SF ENERGY STAR Lighting Fixtures & Bulbs (Single Family) (REQUIRED)

- Plans and Specifications will clearly state that all lighting fixtures and lamps will be ENERGY STAR labeled
- During construction:** Submit photographs of a good sampling of ENERGY STAR fixtures and the lamps installed.

EE- 4 Windows w/ Low-E coating

- Spec Sheet
- During construction:** Submit photographs of windows installed, with ENERGY STAR label and low-E label clearly showing

EE-5 Insulation of Basement Ceiling

- Contract language indicating encapsulated insulation,
- Section drawing showing cut sheet for encapsulated batts
- During construction:** Submit photographs of installed insulation.

EE- 6 Ductwork in Conditioned Space (except plenum) (REQUIRED)

- Mechanical plans for building, which must show duct location
- During construction:** Submit photographs of ductwork in various places and mastic sealing.

EE-7 SF Occupancy & Daylighting Controls, where possible (Single Family)

- Include locations of all occupancy sensors and daylighting controls in plans
- Submit cut sheets for products
- During construction:** Submit photographs of occupancy sensors

EE-8 High Energy Factor Water Heaters beyond ENERGY STAR (REQUIRED)

- Provide equipment cut sheets, with model number and efficiency information as required above highlighted.
- During construction:** Submit photographs of equipment installed and of equipment labels with relevant information clearly visible.

EE-9 Easy to Use Programmable Thermostats (REQUIRED)

- Cut sheet with exact model highlighted
- Sample programming instructions
- During construction:** Submit photographs of models installed
- See Operations & Maintenance OM-2 for training requirement*

EE-10 SF High & Low Registers (or Ceiling Fan) in Each Room (Single Family)

- HVAC plan noting the requirement for high and low registers at each location.
- During Construction:** Submit photographs of installed registers (or fans) in each room
- See Operations & Maintenance OM-2 for training requirement*

RESOURCE EFFICIENCY

RE-1 Recycle or salvage construction & demolition debris (REQUIRED)

- Copy of on-site recycling and waste management plan.
- During construction:** Submit copies of tipping receipts and a tally indicating total weight or volume recycled, weight or volume in landfill and % recycled by weight or volume. All receipts and tally must be in EITHER weight or volume, not mixed.
- During construction:** Dated photograph of dumpsters labeled for separation
- During construction (alternate to previous):** Submit contract with hauler/recycler indicating off-site separation method.
- At Final Construction Meeting:** Submit photographs of various dumpsters with materials separated and one photograph of final hauler facility where materials are recycled.
- At Final Construction Meeting:** Summary of project waste diverted and recycled. Include final breakdown of recycled vs. non-recycled construction materials by weight and dumpster.

RE-3 Recycling Plan for Each Unit (REQUIRED)

- Plans highlighting recycling areas
 - Cut sheet or other information for bins
 - During construction:** Submit invoice for recycling bins
 - During construction:** Submit photographs of each unit’s recycling area.
- At Final Construction Meeting:** Deliver Operations & Maintenance info sheet about municipal recycling plan (e.g. type of service, pickup dates) and recommended best waste practices.

WATER CONSERVATION

WC-1 Low-Flow Fixtures (REQUIRED)

- Cut sheet for fixtures
- During construction:** Submit photographs of plumber(s) installing aerators.

WC-2 High Efficiency Toilets (REQUIRED)

- Cut sheet for toilets
- Indicate model type in plans and specifications
- During construction:** Submit photographs of installed toilets, product label, and dual flush feature if installed.

WC-3 Water Efficient Landscaping (Native and/or drought tolerant plants and turf)

- Landscaping plan with list of plants and turf (if applicable) including native habitat.
- If applicable, designation on plans of any recreation areas that will be seeded with turf, including graphic of signage designating recreation area, or section of code listing requirement for turf.**
- During construction:** Submit photographs of landscaping, showing recreation areas with signage (if applicable), planting beds, and significant trees.

WC-4 High Efficiency Irrigation

- Written explanation
- Include in specifications
- Site Plan indicating placement, type, and details
- During construction:** Submit photographs of installed drip irrigation, lack or irrigation, or greywater recycling system.

OPERATIONS AND MAINTENANCE

OM-2 Tenant (or Homeowner) Manual & Training (REQUIRED)

- Due at final construction meeting - Copy of manual, including an overall description of controls, the importance of energy efficiency, sustainable design ideals, reference and direction for at least the following Green Future items (SL-3a-f; IA-2; IA-3; IA-4; IA-5; IA-7; IA-8; IA-9; IA-11; EE-1; EE-2; EE-3; EE-7; EE-9; EE-10; RE-2; RE-3; WC-1; and WC-2); and additional general green building information

OM-3 Integrated Pest Management

- Sign and submit an IPM plan (see example under Green Future resources) with 95% complete plans and specs.
- In IPM plan, illustrate how the building will be constructed according to IPM best management.
- Reference IPM plan in project specifications.
- Also, include plan in final Operations & Maintenance Manual (OM-2).
- Alternatively, have the building Green Shield Certified.