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TABLE OF CONTENTS

1	INTRODUCTION	3
	About NAR's Green REsource Council, Green MLS Tool Kit and	
	Green MLS Implementation Guide	3
	About RESO and RETS Data Dictionary	
	Acknowledgments	
	Terms of Use (Disclaimer)	
	Purpose of This Implementation Guide	
	Development of the Green MLS Implementation Guide	
	Updates to the Green MLS Implementation Guide	
2	GETTING STARTED	9
	How to Use This Guide	10
3	GENERAL GUIDANCE AND	
	TECHNICAL ASSUMPTIONS	11
	Green MLS Implementation Guide Syntax	11
	Enumerations Overview	11
	Enumerations Syntax	11
	Criteria for Enumerations	12
	Climate Details	13
	Notes and Guidance to Consider	13
4	GUIDE TO GREEN FIELDS	14
	4a. Third-Party Verified Fields (certifications and labels)	14
	4b. Green Search/Marketing Fields (unverified)	29
	4c. Specific/Technical Fields	37
5	IMPLEMENTATION BEST PRACTICES	72
	Local Customization	72
	Documentation Required When Using	
	Third-Party Verified Fields	73
	Option for Green Addendum or Disclosure Attachment	74
6	VISION FOR AUTO-POPULATION OF FIELDS	75
7	FINAL RECOMMENDATIONS AND RESOURCES	76



1. INTRODUCTION

About NAR's Green REsource Council, Green MLS Tool Kit and Green MLS Implementation Guide

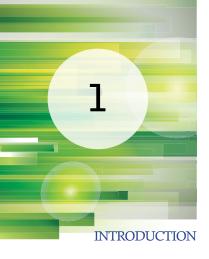
The National Association of REALTORS® (NAR) Green REsource Council was established in 2008 to develop awareness and understanding of green real estate principles and to encourage responsible practices for the marketing of third-party-verified, green-certified homes as well as homes with green features. The built environment consumes more energy than anything else in the United States. By providing the real estate community with the information on how homeowners can reduce consumption and implement sustainable practices, real estate professionals can help make a significant impact on the world around us. In order to advance the green building movement, multiple listing service (MLS) systems should include green data entry fields.

NAR's Green REsource Council has been actively leading the effort towards this goal via the Green MLS Tool Kit (www.GreentheMLS.org). The Green MLS Tool Kit was the result of a collaborative effort to define fields that helps buyers quickly find green homes, make it easy to fully promote the special features of a green home, and support apples-to-apples comparison when it is time to appraise a green home.

The Green MLS Implementation Guide supplements the Green MLS Tool Kit by focusing on the technical details MLS staff or their software system vendors need to implement the green data entry fields already defined by the Real Estate Transaction Standard Data Dictionary. The Green MLS Implementation Guide is the bridge between the Green MLS Tool Kit (which is geared toward real estate practitioners) and the Data Dictionary (which is geared toward technology experts). The guide provides technical details at the intersection of fields that are recommended in the Green MLS Tool Kit and also defined in the Data Dictionary.

About RESO and RETS Data Dictionary

The vision of the Real Estate Standards Organization (RESO) is to promote and enrich accepted data standards and processes utilized by all professionals in the fully automated real estate transaction through the Real Estate Transaction Standard (RETS). RESO focuses its efforts toward providing an environment for the development and implementation of data standards and processes that facilitate innovation, ensure portability, eliminate redundancies, and obtain maximum efficiencies for all parties participating in the real estate transaction. The NAR has been a primary contributor of intellectual property and financial support to RESO since its inception as an all-volunteer body in 1999. RESO incorporated in November 2011 as an independent, not-for-profit trade organization. The RESO membership currently includes the NAR, multiple listing services, real estate associations, and industry technology providers.

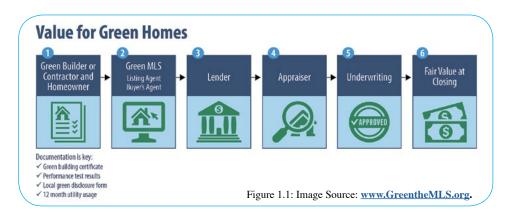


About RESO and RETS Data Dictionary (CONTINUED)

The Data Dictionary provides common definitions for real estate data based on the RETS, a protocol used by many MLS data exchange service providers. The Data Dictionary standardizes over 500 data terms and values that define the most common descriptions of property attributes in the United States as used by real estate brokers, multiple listing services, and software developers who create applications for consumers and REALTORS®. RETS <u>Data Dictionary Version 1.2</u> was released November 2013.

Acknowledgments

This guide represents the work of many individuals representing a range of organizations and programs fostering green homes. Stakeholders represented the entire value-chain for high-performance homes.



High-Performance Homebuilding

- NAR's Green REsource Council
- Home Innovation Research Labs, National Association of Home Builders
- IBACOS
- EPA—ENERGY STAR Certified New Homes, Indoor airPLUS, WaterSense, Indoor Environments Division
- DOE—Building America Program
- RESNET
- Passive House Institute US

Existing Home Remodeling/Upgrades

- Air Conditioning Contractors of America
- DOE—Home Performance with ENERGY STAR
- Elevate Energy
- Buildings Performance Institute
- National Home Performance Council
- Masco Home Services
- Vermont Green Homes Alliance

Other Programs

- Ingersoll Rand Residential Solutions
- HUD/EPA— Partnership for Sustainable Communities

- Walk Score®
- DOE EERE—
 Lawrence Berkeley and Sandia National Solar Labs

Real Estate Agents/MLSs

- Real Estate Standards
 Organization Robert
 Gottesman, CEO;
 Rob Larson, Chair,
 Data Dictionary
 Working Group
- Ben Kaufman (Keller-Williams, Seattle-area)
- John Rosshirt (Stanberry & Associates REALTORS®, Austin, TX)
- Northwest MLS (Seattle area)

- IRES—NET (northern Colorado)
- Traverse Area Association of REALTORS®
- LPS MLS Solutions

Appraisers

- Sandy Adomatis, Adomatis Appraisal Service
- Appraisal Institute

Consultants

- Social, Environmental & Economic Consulting, LLC
- Conservation Services Group (MLS Energy Project)



Terms of Use (Disclaimer)

The Green MLS Implementation Guide was created by NAR's Green REsource Council in cooperation with the Real Estate Standards Organization and the Real Estate Transaction Standard Data Dictionary. Consult the RESO End-User License Agreement for terms on using fields as defined in the Data Dictionary.

Purpose of This Implementation Guide

This guide is designed to provide a blueprint for MLS staff or their software vendors to implement Green MLS fields that are compliant with the Real Estate Transaction Standard.

Since 2010 the Green MLS Tool Kit (www.GreentheMLS.org) has been available to help interested MLS staff and various users like real estate agents, builders, appraisers, researchers, and the secondary market understand the approaches that work when implementing green fields. This guide addresses a subset of fields contained within the RETS Data Dictionary that relate to high-performance homes, often known as green homes. However, this guide is the first-of-its-kind focused exclusively on the technical implementation of fields by MLS staff and vendors. This is also the first guide mapped directly to the RETS Data Dictionary. Finally, this guide is significant as it defines details down to the enumeration or field-value level based on consensus input from the leading high-performance home programs and thought-leaders.

A high-performance home is a new or existing home that uses fewer resources as a result of deliberate design features that include the use of new technologies and building products throughout the entire building and site, taking into account one or more elements such as stormwater management, safety, disaster resistance and durability, air sealing and insulation, and indoor air quality. High-performance homes provide occupants with benefits such as better indoor air quality, lower operating costs, less maintenance, higher levels of comfort, less noise, pest management without pesticides, and durability against weather events, among others.

A Note on the Term "Green"

A green home is just one type of a high-performance home. Green homes are most commonly associated with a newly built home. But it is also possible to have a "brown" home (built before green codes were in practice) with "green" upgrades.

For the purposes of this guide the term "green" will be used to refer to fields for high-performance homes and in the term "Green MLS" which is the practice of making these fields available. This is because many relevant fields in the RETS Data Dictionary are named to include the term green.

This reflects currently popular use of the word, as well as an interest in conserving characters when naming fields.

"High-performance" will be used when referring to specific features and also when referring to building programs.



Purpose of This Implementation Guide (continued)

This guide represents preparation for a rapid change in our housing inventory. For example, in 2012 alone over 125,000 homes received a Home Energy Rating Score (HERS). Department of Energy (DOE) programs have helped to improve the efficiency of over one million *existing* homes to date. And this trend is projected to continue. The McGraw-Hill Construction Green Building Outlook foresees that green construction and remodeling will grow to 38 percent of the overall market by 2016.

This guide also represents the role of real estate agents and MLSs that contribute to the high-performance home sales transaction. Other related industries including lending, remodeling, and appraising are aggressively working to improve the quality of their processes and/or data to make the transaction progress more effectively. For example, the mortgage industry has begun to create the infrastructure of a true green mortgage. The Mortgage Industry Standards Maintenance Organization (MISMO) has agreed to add the fields to accommodate green verification details and green features, closely mirroring these same fields included in RETS. Likewise the energy efficiency remodeling industry is in the final approval process for a standard certificate to document these improvements made on existing homes. The Building Performance Institute's <u>BPI-2101-S-2013 Standard Requirements for a </u> Certificate of Completion for Residential Energy Efficiency Upgrades will accelerate a consistent, RETS-compliant certificate no matter where it is issued around the country. And the Appraisal Institute is providing leadership in that industry by issuing the Residential Green and Energy Efficient Addendum, which allows appraisers to record green field information that mirrors what is part of RETS, MIMSO, and the BPI certificate standard.

The Green MLS Implementation Guide provides support to multiple listing service (MLS) staff or their software system vendors seeking to implement fields for high-performance homes in a consistent manner that are:

- ✓ Compliant with the Real Estate Transaction Standard (RETS) and Data Dictionary
- ✓ Reflective of the most common high-performance features, technologies, and construction design, methods and/or materials that is or will be available in the U.S. housing inventory over the next three to five years
- Reflective of features, technology, and construction as promoted and encouraged by the leading national and federal high-performance home programs
- ✓ Designed to protect agents, appraisers, and other users from the liability of incorrect information either due to error, lack of training, or "greenwashing" (which is the practice of making something appear to be more environmentally friendly than it really is)
- ✓ Consistent with transaction standard efforts in sister industries

This version of the guide is written to be consistent with Version 1.2 of the Real Estate Standards Organization (RESO) Data Dictionary, published November 2013.



Development of the Green MLS Implementation Guide

This Green MLS Implementation Guide was developed by Elevate Energy and the National Association of REALTORS® Green REsource Council. The methodology to develop this guide consisted of:

- Assemble a panel of subject matter experts representing the major highperformance verification programs. See the list of panel organizations in Acknowledgments.
- Identify approximately 40 fields defined in the Real Estate Transaction Standard Data Dictionary version 1.0 that were deemed to have relevance to high-performance homes. These fields were referred to as potential Green MLS fields.
- Facilitate reviews with subject matter experts to review potential Green MLS fields. Each field was reviewed by a minimum of three subject matter experts. First, subject matter experts with deep experience on a high-performance homes topic area were consulted. Their input was then reviewed by a subject matter expert with a broader cross-perspective on multiple aspects of high-performance homes. The dual reviews allowed for detailed assessment as well as overall alignment.
- Select the final subset of Green MLS fields for this Implementation Guide based on subject matter expert consensus.
- Facilitate reviews with subject matter experts again to identify recommended enumerations for each field in this Implementation Guide.
- Identify national standards for each major Green MLS category as a reference for enumeration definitions:
 - Energy Efficiency References: EPA and DOE reference materials (ENERGY STAR, EERE Fact Sheets, Energy.gov, etc.)
 - Energy Generation Reference: Sandia Labs PV Value Tool™
 - *Indoor Air Quality* References: EPA Indoor AirPLUS specifications, National Center for Healthy Housing's National Healthy Housing Standard
 - Location Enterprise Green Communities' 2011 Enterprise Green Communities Criteria
 - Sustainability USGBC LEED for Homes (Materials specifications),
 Home Innovation Research Labs National Green Building Standard™ (Resource Efficiency specifications)
 - Water Conservation EPA WaterSense specifications, <u>EPA Green</u>
 Infrastructure webpage, <u>City of Lancaster Green Infrastructure</u>
 Plan Appendix
- Clarify enumeration definitions with subject matter experts. Each enumeration definition was reviewed by a minimum of three subject matter experts.
- Establish public comment review periods.
- Adjust to latest published version of RETS Data Dictionary as necessary.

As part of the version 1.0 development work, subject matter expert feedback also led to a set of recommendations to the Real Estate Standards Organization Data Dictionary Working Group. Feedback was reviewed by the working group for inclusion in RETS Data Dictionary version 1.2, released in November 2013.



Updates to the Green MLS Implementation Guide

The Green MLS Implementation Guide is designed to follow the current version of the RETS Data Dictionary. RESO uses a working group structure to continually improve the standard. The Data Dictionary Working Group typically does update cycles twice per year in conjunction with the RESO conference schedule. There is a winter public comment period prior to spring release and a summer public comment period prior to fall release.

Elevate Energy plans to facilitate two update strategies for the Green MLS Implementation Guide based on RESO cycles:

- Monitor latest Data Dictionary public comment version to assess how recommended changes relate to high-performance homes. Review with subject matter experts to update field definitions and related enumerations (field values or drop-down choices) as appropriate.
- Poll subject matter experts for insights on high-performance home technologies and features that have high impact and/or are trending mainstream. Update field definitions and related enumerations as appropriate.



2. GETTING STARTED

In 2009 only a handful of MLSs offered fields for green or high-performance homes. By 2010 over 125 MLSs offered these fields. This guide is designed to help MLSs and vendors implement green fields whether they have been released related fields or not.

- For MLSs that do not yet offer green fields: This guide represents a fast track, based on consensus input from experts who have helped to identify fields and their field values (or drop-down options) for high-performance home characteristics that are most prevalent in the housing stock, have the most significant impact on performance and/or value, and protect agents from liability.
- For MLSs that have already implemented green fields: This guide serves as a roadmap for migration to RETS-compliant fields. In many cases the early adopters of Green MLS implemented their fields before they were addressed in the RETS Data Dictionary. Therefore this guide can help MLSs address how to migrate the green fields as part of an overall RETS migration strategy.
- For MLSs software vendors: This guide serves as a template to work with as clients seek to add green fields. Because this guide strictly follows the RETS Data Dictionary, the fields addressed in this guide offer a consistent starting point for field design and minimize the time and expense of one-off custom design.

Implementation Guide Tips

- This guide follows published v1.2
 of the RETS Data Dictionary.
 If you are not already familiar with
 the dictionary you can review a copy
 at www.reso.org.
- Each section of field definitions starts with an "at-a-glance" that shows each field and all recommended enumerations or drop-down/pick-list values.
 The "At-A-Glance" is clearly highlighted and is a good place to start.
- Green MLS fields are offered in three tiers:
 - 1. Third-party verified fields
 - 2. Marketing/Green search fields (general, non-verified)
 - 3. Technical fields (green features embedded into existing fields)



How to Use This Guide

The Green MLS Implementation Guide follows exactly the fields defined in v1.2 of the RETS Data Dictionary, published November 2013. Please clarify field details listed here against the published information in the Data Dictionary.

Section 3, General Guidance and Technical Assumptions, highlights the technical schema and syntax previously defined in the Data Dictionary. For further information please consult the Data Dictionary version 1.2.

Section 4, Guide to Green Fields, provides detailed definitions for every field defined in the RETS Data Dictionary that may apply when describing a high-performance or green home. Definitions and recommended field values/enumerations (for drop-down pick lists) are also defined in detail as appropriate. The section starts with a summary overview of fields and recommended field values, followed by an "At-A-Glance" that maps fields and recommended field values (enumerations). Then each of the fields and enumerations are defined in detail. Section 4 addresses three categories of fields:

- 4a. Third-Party Verified Fields (certifications and labels)
- 4b. Green Search/Marketing Fields (unverified)
- 4c. Specific/Technical Fields

Section 5, Implementation Best Practices, offers advice on rules, both technology and business rules, to ensure the highest level of data integrity.

The adage "all real estate is local" applies especially to green homes and to this guide as well. The details outlined in this guide reflect national trends and building standards. But regional practices, popular building programs, and local climates should dictate the final set of fields implemented in any MLS. The local business case applies too—understanding the threshold where a field will be used regularly and thus warrants the investment in implementing it.

Section 6, Vision for Auto-Population of Green MLS Fields, presents thoughts on how standard fields could enable auto-population of Green MLS fields in the future.

Section 7, Final Recommendations and Resources, provides readers with recommendations on where to go for additional information.



GENERAL GUIDANCE AND TECHNICAL ASSUMPTIONS

3. GENERAL GUIDANCE AND TECHNICAL ASSUMPTIONS

RETS defines over 500 fields, with about 300 fields for single-family homes. Within that field set are a number of fields that relate to green homes and high-performance homes. This guide is designed to provide guidance for implementing the fields most commonly used for these homes. Within RETS are three levels of Green MLS fields..

- Third-Party Verified Fields (certifications and labels)
- Green Search/Marketing Fields (unverified)
- Specific/Technical Fields

Green MLS Implementation Guide Syntax

Each field in this guide is described using the following elements that expand on the expressions of fields in the RETS Data Dictionary:

- Standard Name
- · Field Definition
- Simple Data Type
- · Suggested Max Length
- Rules May Apply

Enumerations Overview

This guide is unique in that it defines both fields and typical enumerations or field values that can be displayed in a pick-list or drop-down box. The enumerations defined in this guide are common to nearly every high-performance home regardless of year built, style, or certain climate conditions. However, additional enumerations may be required based on common market practices and climate. See **Section 5**, **Implementation Best Practices**, for more information on how vendors and MLSs can use local building experts to understand the local requirements.

Enumerations Syntax

Each enumeration in this guide is defined based on the following elements:

- Enumeration Name
- Enumeration Definition
- · Primary Search Cross-Reference notations
- Rules May Apply—Any synonyms are listed with rules.



GENERAL GUIDANCE AND TECHNICAL ASSUMPTIONS

Criteria for Enumerations

Subject matter experts applied the following criteria when recommending field enumerations:

- **Observable** Can be readily identified and verified, ideally by a buyer or buyer's agent, or if not, then as part of a standard home inspection.
- **Common** Is a feature or measure that is readily available in the market or its supply is growing.
- Effective Is a feature or measure proven to deliver the results or outcomes it is designed for, such as saving energy or improving safety. It is not something that is simply trendy, but something that delivers significant outcomes to achieve desired performance and/or is a recommended approach in national building standard(s). Indicates climate zone if applicable.
- **Objective** Describes a thing without judgment or opinion; for example, "ventilation," not "advanced ventilation."
- Attached fixture Is a feature or equipment permanently fixed to the property and transfers with ownership; for example, an air cleaner installed into the HVAC system is fixed while a room air cleaner is personal property and is not.
- **32 characters** Should be presented in 32 characters or less as that is the limitation most MLSs have in representing enumerations.



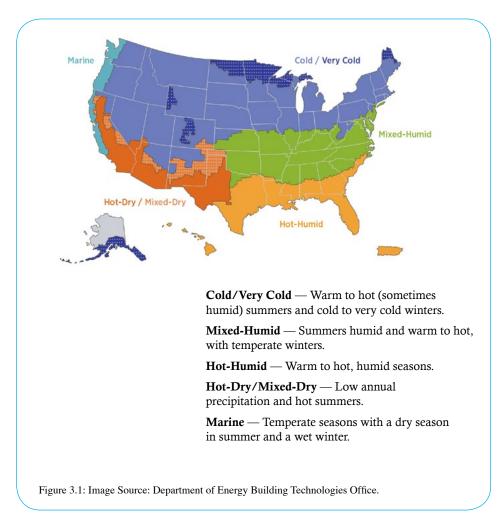
TECHNICAL ASSUMPTIONS

Climate Details

This guide is intended to provide field details and enumerations that are relevant to MLSs across the country. However, in a few cases some enumerations apply based on local climate conditions. This typically applies in fields related to heating,

cooling, and ventilation.

Climate is indicated where relevant based on definitions for the five major climate regions identified by the <u>Department of Energy Building Technologies Office</u> as shown in Figure 3.1.



When used, climate zones are indicated as shown in the example: << Cold/Very Cold Climate>>.

Notes and Guidance to Consider:

Where appropriate, guidance is provided as reflected in related national standards. Guidance is offered to help MLSs achieve the goals for this guide: *green fields* within the RETS that are also prevalent in the housing inventory and that protect agents, appraisers, and ultimately consumers from incorrect data.



4. GUIDE TO GREEN FIELDS

4a. Third-Party Verified Fields (certifications and labels)

Third-party verified fields are those that address certifications, labels, ratings, and scores offered by a program sponsor to confirm the process followed and/or outcome achieved when building a new high-performance home or upgrading an existing one.

The goal of this guide is to define green fields within the RETS that are also prevalent in the housing inventory and that protect agents, appraisers, and ultimately consumers from incorrect data. The fields most directly connected to this goal are those that define third-party labels and certifications from high-performance home programs.

From the perspective of addressing liability concerns for agents, the most essential green fields address third-party certifications and labels.

The fields in this section are intended to be used together. Elements are also designed to repeat. They are calibrated to other data standards in complimentary industries that make it important to implement them as a set of fields altogether and to allow for repeating elements.

Other industries include the Mortgage Industry Standards Maintenance Organization (MISMO), which defines data standards for appraisal and loan origination; the Appraisal Institute, which designed the Residential Green & Energy Efficiency data collection form; and the Building Performance Institute Standard 2101, which documents efficiency remodeling projects.

Third-Party Verified Field Tips

- Documentation is provided by program sponsors.
- Best practice is to require manual or digital sharing of these documents when third-party verified fields are used on a listing.
- See "Rules May Apply" column in the tables that follow.



4a. At-A-Glance: Third-Party Verified Fields

GreenBuildingVerification

WaterSense ENERGY STAR Certified Homes Indoor airPLUS LEED for Homes NGBS New Construction

NGBS Whole-Home Remodel NGBS Small Projects Remodel Passive/Net-Zero Home DOE Challenge Home Home Performance

with ENERGY STAR Home Energy Upgrade

Certificate of Energy
Efficiency Improvements

Home Energy Upgrade
Certificate of Energy

Efficiency Performance

HERS (Home Energy Rating System)

Home Energy Score <Local/Regional/State/

Utility programs may apply>

GreenVerificationBody

EPA (Environmental
Protection Agency)

DOE (U.S. Department of Energy)

USGBC (U.S. Green Building Council)

Home Innovation Research

Labs (Formerly NAHB

Research Center)

RESNET (Residential Energy

Services Network)

<Local/Regional/State/

Utility programs may apply>

Green[Type]YearVerified

Green[Type]VerificationRating

LEED (USGBC) In Process Certified Silver Gold Platinum

NGBS (Home Innovation Research Labs) In Process Bronze Silver Gold Emerald

<Local ratings may apply>

Green[Type]VerificationMetric

HERS Index Score Home Energy Score <Local programs may apply>

Green[Type]VerificationURL



GUIDE TO GREEN FIELDS

4a. Definitions: Third-Party Verified Fields

Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
GreenVerificationProgram Synonym: GreenBuildingVerification, GreenBuildingCertification	The name of the verification or certification awarded to a new or pre-existing residential or commercial structure. For example: HERS, ENERGY STAR, NGBS. In cases where more than one certification has been awarded, leverage multiple iterations of the green verification fields via the repeating element method.	String List, Multi	1024	Yes

${\bf Green Verification Program}$

Synonym: Green Building Verification

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
WaterSense	EPA WaterSense is a set of optional construction practices and technologies (above minimum code requirements) that builders can follow to ensure a home uses less water while still providing the same level of comfort and convenience. WaterSense also applies to specific plumbing fixtures (see InteriorFeatures) and should not be confused with the whole-house label.	GreenWaterConservation	GreenCertificationRating = N/A GreenVerificationStatus = Passed or In Process GreenYearRecord = required GreenYearVersion = 2009 (1.0), 2013+ (1.1) GreenProfileURL = not offered New Construction = Yes
ENERGY STAR Certified Homes	EPA ENERGY STAR Certified Homes is a set of optional construction practices and technologies (above minimum code requirements) that builders can follow to upgrade a new home's energy efficiency beyond minimum code requirements. Guidelines are outlined in the "National Performance Path" or the "National Prescriptive Path." This whole-house label differs from the ENERGY STAR products label. To achieve the ENERGY STAR Certified Homes label, a home's energy efficiency must be verified by a third-party organization.	GreenEnergyEfficiency	GreenCertificationRating = N/A GreenVerificationStatus = Passed or In Process GreenYearRecord = required GreenYearVersion = 1995-2006 (1.0), 2007-2011 (2.0), 2011 (2.5), 2012+ (3.0) GreenProfileURL = not offered New Construction = Yes
Indoor airPLUS	EPA Indoor airPLUS is a set of optional construction practices and technologies builders can follow to reduce indoor air pollutants and improve the indoor air quality in a new home beyond minimum code requirements. It is only available to homes that first meet ENERGY STAR Certified Homes certification.	GreenIndoorAirQuality	GreenCertificationRating = N/A GreenVerificationStatus = Passed or In Process GreenYearRecord = required GreenYearVersion = 2009-2012 (1.0), 2014 (1.1) GreenProfileURL = not offered New Construction = Yes



Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
LEED for Homes	USGBC's residential rating system, LEED for Homes, was launched in 2008. The LEED rating systems are developed through an open, consensus-based process led by LEED committees. LEED is a voluntary program that provides independent, third-party verification that a home was designed and built using methods for achieving high performance in multiple areas of sustainability including energy, water, waste management, indoor air quality, and sustainable site development. There are multiple rating systems for all types of buildings including Existing Buildings and Homes for residential projects. Homes may achieve different levels of certification (platinum, gold, silver, certified) depending on the number of LEED prerequisites and credits that are met.	All may apply	GreenCertificationRating = Required (Certified, Silver, Gold, or Platinum) GreenVerificationStatus = Passed or In Process GreenYearRecord = required GreenYearVersion = v2008, v2009, 2014+ (v4) GreenProfileURL = Offered New Construction = Yes Also applies to Gut Rehab (remodel)
NGBS New Construction	Home Innovation Research Labs certifies homes to the ICC-700 National Green Building Standard™ (NGBS), which has undergone the full consensus process and received approval from the American National Standards Institute (ANSI). Home Innovation Research Labs provides project certification to the NGBS. NGBS applies to both single-family homes and multifamily buildings. Certification options also exist for new construction, remodel projects (both whole-home and functional areas such as a kitchen or bathroom), and land development/subdivision. Homes may qualify for a bronze, silver, gold, or emerald certification level depending on the number of green building practices met.	All	GreenCertificationRating = Required (Bronze, Silver, Gold, or Emerald) GreenVerificationStatus = Passed or In Process GreenYearRecord = required GreenYearVersion = 2008, 2012+ GreenProfileURL = Not Offered New Construction = Yes
NGBS Whole-Home Remodel	Home Innovation Research Labs provides project certification to the NGBS. NGBS applies to both single-family homes and multifamily buildings. Certification options also exist for new construction, remodel projects (both whole-home and functional areas such as a kitchen or bathroom), and land development/subdivision. Homes may qualify for a bronze, silver, gold, or emerald certification level depending on the number of green building practices met.	All	GreenCertificationRating = Required (Bronze, Silver, Gold, or Emerald) GreenVerificationStatus = Passed or In Process GreenYearRecord = required GreenYearVersion = 2008, 2012+ GreenProfileURL = Not Offered New Construction = No

17



Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
NGBS Small Projects Remodel	Home Innovation Research Labs provides project certification to the NGBS. NGBS applies to both single-family homes and multifamily buildings. Certification options also exist for new construction, remodel projects (both whole-home and functional areas such as a kitchen or bathroom), and land development/subdivision. For the Small Projects Remodel, the functional area (kitchen, bathroom, basement, addition) is either certified or not. Unlike other NGBS certifications, multiple certification levels (bronze, silver, gold, or emerald) do not exist for this certification option.	All	GreenCertificationRating = Required (Certified) GreenVerificationStatus = Passed or In Process GreenYearRecord = required GreenYearVersion = 2008, 2012+ GreenProfileURL = Not Offered New Construction = No
Passive/Net-Zero Home	Local programs verify homes designed for ultra-low energy use. Note: Consult the local building or efficiency community for information on construction and remodeling programs with significant market share or growing scale. May include:	GreenEnergyEfficiency	Varies
	• <u>Passive Homes</u> (Super-insulated homes that require minimal or no heating and cooling system)—PHIUS+, PHIUS+ Retro, New York Passive House, Passive House California, Passive House NW (Washington & Oregon)		
	 Certified Net-Zero Homes (Homes that produce as much or more energy than they use)— Living Building Challenge 		
DOE Challenge Home	DOE Challenge Home program is a voluntary set of building guidelines designed to be at least 40 to 50% more energy efficient than a typical new home. The program builds upon the building science requirements of the ENERGY STAR Certified Homes Version 3. DOE Challenge Homes are verified by a third-party organization and must receive a HERS Index Rating. Since 2008, the DOE Builders Challenge program has resulted in over 14,000 highly efficient homes.	GreenEnergyEfficiency	GreenCertificationRating = N/A GreenVerificationStatus = Passed or In Process GreenYearRecord = required GreenYearVersion = required GreenSource = required New Construction = Yes
Home Performance with ENERGY STAR	The Home Performance with ENERGY STAR (HPwES) program is a national DOE program that promotes a comprehensive approach to reducing existing homes' energy consumption. The program currently operates in approximately 35 states across the country. An individual HPwES program covers a given market area, typically at the state or gas- or electric-utility level. Local sponsors must follow specific guidelines to participate as outlined in the HPwES Sponsor Guide and Reference Manual.	GreenEnergyEfficiency	GreenCertificationRating = N/A GreenVerificationStatus = Complete GreenYearRecord = required GreenYearVersion = 2011 (1.0), 2014+ (1.5) GreenProfileURL = Not Offered New Construction = No

_ 18



Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
Home Energy Upgrade Certificate of Energy Efficiency Improvements	Buildings Performance Institute BPI- 2101 Standard Requirements for a Certificate of Completion for Whole-House Energy Efficiency Upgrades specifies a standard way of describing the improvements made to an existing home through a home energy upgrade (HEU). Certificates are provided by a local energy efficiency program sponsor.	GreenEnergyEfficiency	GreenCertificationRating = N/A GreenVerificationStatus = Complete GreenYearRecord = required GreenYearVersion = required GreenProfileURL = <tbd -="" locally=""> New Construction = No</tbd>
Home Energy Certificate of Energy Efficiency Performance	Buildings Performance Institute BPI- 2101 Standard Requirements for a Certificate of Completion for Whole-House Energy Efficiency Upgrades specifies a standard way of describing the improvements made to an existing home through a home energy upgrade (HEU) and provides one or more measures of a home's performance. Measures of performance may include a HERS rating, a Home Energy Score, an indication of projected or actual energy consumption, or other systems. Certificates are provided by a local energy efficiency program sponsor.	GreenEnergyEfficiency	GreenCertificationRating = N/A GreenVerificationStatus = Complete GreenYearRecord = required GreenYearVersion = required GreenProfileURL = <tbd -="" locally=""> New Construction = No</tbd>
HERS (Home Energy Rating System)	The HERS Index is the nationally recognized scoring system for measuring a home's energy performance. To calculate a home's HERS Index Score, a certified RESNET home energy rater will do a home energy rating and compare the data against a reference home (a design-modeled home of the same size and shape as the actual home), so the HERS Index Score is always relative to the size, shape, and type of the house. The lower the number, the more energy efficient the home.		
Home Energy Score	The Home Energy Score, managed by the US DOE, is a national system that allows homes to receive an energy efficiency rating, similar to the MPG rating available for cars. The Home Energy Score uses a 10-point scale to reflect how much energy a home is expected to use under standard operating conditions. Homes that are expected to use the least amount of energy (and are considered the most energy efficient) score a 10, and homes that are expected to use the most amount of energy (and are considered the least energy efficient) score a 1. The Home Energy Score uses a standard calculation method and takes into account the home's structure and envelope (walls, windows, foundation) and its heating, cooling, and hot water systems. Only Qualified Assessors who pass a DOE exam are allowed to provide the Home Energy Score.	GreenEnergyEfficiency	GreenCertificationRating = N/A GreenVerificationStatus = Complete GreenYearRecord = required GreenYearVersion = required GreenProfileURL = Not Offered New Construction = Can be used on both existing and new homes

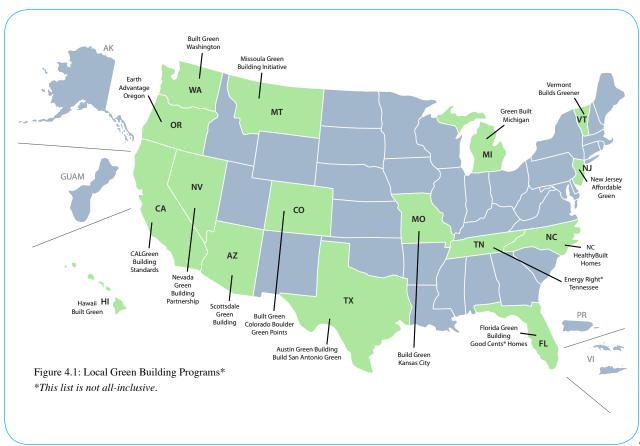


Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
Local/Regional/ State/ Utility Programs	While national programs are growing, some local communities offer their own labels or certifications for both new and existing high performance homes. In a few communities legacy inventory from large previous programs may also exist. Consult your local state energy office, homebuilders association, and local building or efficiency community for information on public or private third-party construction or remodeling programs with significant market share or growing scale.	Varies	Varies
	Some large local/regional programs include:		
	Build It Green (California) Built Green (Seattle) Earth Advantage (Portland, OR) Earthcraft (Southeast) Environments for Living (Southeast and Southwest) GreenBuilt Texas (Texas) Home Performance with ENERGY STAR program is sponsored locally across approximately 35 states.		



Notes and Guidance to Consider:

- To protect agents from liability issues, the leading best practices are to require supporting documentation when fields for GreenVerificationProgram and GreenVerificationRating are used. Leading examples include manual compliance-checking, automated compliance-checking, or member self-reporting.
- See more information in **Section 5**, **Implementation Best Practices**.
- For a sample library of programs, their certifications, and supporting documentation, see *Appendix: Document Samples for Major Green Building Verification Programs*.
- BPI- 2101 Standard Requirements for a Certificate of Completion for Whole-House Energy Efficiency was published September 2013.
- NAR's Green REsource Council has published a sample map (See Figure 4.1). indicating the diversity of local building programs across the country. Consult the state energy office, utilities, local building chapters, etc., to learn about current or legacy green verification programs in a given market area.



21



Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
GreenVerificationBody	The name of the body or group providing the verification or certification named in the GreenVerificationProgram field. This is a repeating element. If desired replace [Type] with the name of the certification from the GreenVerificationProgram list.	String List, Multi	1024	Yes

GreenVerificationBody

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
EPA (Environmental Protection Agency)	The Environmental Protection Agency offers three voluntary new home certification programs that support the mission to protect human health and the environment. These programs are WaterSense and Indoor AirPLUS, and the EPA-sponsored ENERGY STAR Certified Home program in cooperation with the Department of Energy. www.epa.gov/greenbuilding/pubs/components.htm	GreenWaterConservation GreenEnergyEfficiency GreenIndoorAirQuality	GreenVerificationProgram = Required
DOE (U.S. Department of Energy)	The US Department of Energy offers voluntary new and existing home programs that deliver significant energy savings over code-built homes. DOE coordinates with EPA to offer the ENERGY STAR Certified Home program. DOE maintains national standards for the Home Performance with ENERGY STAR program for existing homes that is sponsored and implemented locally. DOE also manages the Home Energy Score, a national system that allows homes to receive an energy efficiency rating similar to the MPG rating available for cars.	GreenEnergyEfficiency	GreenVerificationProgram = Required
USGBC (U.S. Green Building Council)	The US Green Building Council's mission is to transform the way buildings and communities are designed, built, and operated, enabling an environmentally and socially responsible, healthy, and prosperous environment that improves the quality of life. USGBC sponsors the Leadership in Energy & Environmental Design (LEED) program.	All	GreenVerificationProgram = Required
Home Innovation Research Labs	The mission of Home Innovations Research Labs (formerly NAHB Research) is to improve the quality, durability, affordability, and environmental performance of homes and homebuilding products. Home Innovation is the adopting entity for the ICC-700 National Green Building Standard™ (NGBS).	All	GreenVerificationProgram = Required



Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
RESNET (Residential Energy Services Network)	RESNET is a recognized national standards-making body for building energy efficiency rating and certification systems in the United States.	GreenEnergyEfficiency	GreenVerificationProgram = Required
<local <br="" regional="" state="">Utility programs may apply></local>	Consult the local building or efficiency community for information on public or private third-party construction or remodeling programs with significant market share or growing scale. Some large local/regional programs include: Build It Green (California) Built Green (Seattle) Earth Advantage (Portland, OR) Earthcraft (Southeast) Environments for Living (Southeast and Southwest) GreenBuilt Texas (Texas) Home Performance with ENERGY STAR program is a DOE program sponsored locally across approximately 35 states. Home Energy Score is a DOE program with local partners across the US offering the score.	TBD	GreenVerificationProgram = Required



Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
Green[Type]YearVerified	The version year used for certification or verification. This is a repeating element. If desired replace [Type] with the name of the certification from the GreenBuildingVerification list.*	String	4	Yes

Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
Green[Type]VerificationRating	Many verifications or certifications have a rating system that provides an indication of the extent of green features. When expressed in a numeric value, please use the GreenVerificationMetric field. Verifications and certifications can also be a name, such as Gold or Silver, which is the purpose of this field. This is a repeating element. If desired replace [Type] with a name from the GreenVerificationProgram list.*	String	50	Yes

Green[Type]VerificationRating

LEED - US Green Building Council

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
In Process	Indicates GreenVerificationProgram for new homes has been started but final verification documents are pending.	Varies	GreenVerificationProgram = Not Blank New Construction = Yes
Certified	Basic certification for LEED for Homes program. 45+ points earned.	NA	GreenVerificationProgram = LEED GreenYearCertified = required GreenYearVersion = required
Silver	Certification level for LEED for Homes program. 60+ points earned.	NA	GreenVerificationProgram = LEED GreenYearCertified = required GreenYearVersion = required
Gold	Certification level for LEED for Homes program. 75+ points earned.	NA	GreenVerificationProgram = LEED GreenYearCertified = required GreenYearVersion = required
Platinum	Certification level for LEED for Homes program. 90+ points earned.	NA	GreenVerificationProgram = LEED GreenYearCertified = required GreenYearVersion = required



Green[Type]VerificationRating

NGBS

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
In Process	Indicates GreenVerificationProgram for new homes has been started but final verification documents are pending.	Varies	GreenVerificationProgram = Not Blank New Construction = Yes
Bronze	Basic level of NGBS Compliance. Satisfies all applicable mandatory items and earns at least Bronze level point values in all categories.	NA	GreenVerificationProgram = NGBS GreenYearCertified = required GreenYearVersion = required
Silver	Second level of NGBS Compliance. Satisfies all applicable mandatory items and earns at least Silver level point values in all categories.	NA	GreenVerificationProgram = NGBS GreenYearCertified = required GreenYearVersion = required
Gold	Third level of NGBS Compliance. Satisfies all applicable mandatory items and earns at least Gold level point values in all categories.	NA	GreenVerificationProgram = NGBS GreenYearCertified = required GreenYearVersion = required
Emerald	Highest level of NGBS Compliance. Satisfies all applicable mandatory items and earns Emerald level point values in all categories.	NA	GreenVerificationProgram = NGBS GreenYearCertified = required GreenYearVersion = required

Local/Regional/State/Utility Programs

Enumeration Name	umeration Name Enumeration Definition		Rules May Apply
TBD	TBD	TBD	TBD

Notes and Guidance to Consider:

- Information on LEED for Homes certification: http://www.usgbc.org/leed/homes
- Information on Home Innovation Research Labs National Green Building Standard™ ICC 700: www.homeinnovation.com/green



Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
Green[Type]VerificationMetric	A final score indicating the performance of energy efficiency design and measures in the home as tested by a third-party rater. Points achieved to earn a certification in the Green[Type]VerificationRating field do not apply to this field. HERS Index Score is the most common metric, especially with new homes, and runs with a lower number being more efficient. Home Energy Score is a tool more common for existing homes and runs with a higher number being more efficient. This is a repeating element. If desired replace [Type] with the name of the certification from the GreenVerificationProgram list.*	String	50	Yes

${\bf Green [Type] Verification Metric}$

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
HERS Index Score (RESNET)	The Home Energy Rating System (HERS) Index Score is a number that is a measure of a home's energy efficiency. The lower a home's HERS Index Score, the greater its efficiency. The US Department of Energy has determined that a typical resale home scores 130 on the HERS Index, while a standard new home is rated at 100. A home with a HERS Index Score of 70 is 30 percent more energy efficient than a standard new home. A net-zero home has a HERS score of 0. A home that produces more energy than it uses has a negative score.	GreenEnergyEfficiency	Documentation backup required
Home Energy Score <sponsored by=""></sponsored>	The Home Energy Score is a rating for homes, based on the systems and fixtures installed and characteristics of the structure. It is developed and administered by the US Department of Energy and offered by a qualified local energy efficiency program sponsor. After conducting a brief walk-through of a home, a qualified assessor calculates a home's score on a 10-point scale using a standard scoring tool, with 10 reflecting homes that use the least amount of energy assuming standard operating conditions (US DOE).	GreenEnergyEfficiency	Documentation backup required
Local scores may be available	Consult your local state energy office to learn more. Other scoring programs tend to be available in the Northwest.	GreenEnergyEfficiency	Documentation backup required



Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
Green[Type]VerificationURL	Provides a link to the specific property's rating or scoring details directly from and hosted by the sponsoring body of the program. Typically provides thorough details; for example, which points where achieved and how, or in the case of a score what specifically was tested and the results. This is a repeating element. If desired replace [Type] with the name of the certification from the GreenBuildingVerification list.	String	80	Yes Green Verifi- cation- Program required

Notes and Guidance to Consider:

• Several large green data collectors provide a custom URL for verified projects that includes full details on features included, points achieved, etc. Contact verification sponsors for more information. As of the publication of this guide USGBC, RESNET, and Passive House offered or planned to offer such a URL. Others are expected to follow.



The following table defines common configurations of field values for several of the largest Green Verification Programs.

GreenVerificationBody	GreenBuildingVerification	Green[Type]VerificationRating					onRa	ting	Green[Type]Year Verified	Green[Type] VerificationMetric	Green[Type] VerificationURL
		In Process	Certified	Bronze	Silver	Gold	Platinum	Emerald			
EPA	WaterSense								2009 (1.0) 2013+ (1.1)	No	
EPA	Indoor airPLUS								2009–2012 (1.0), 2014+ (1.1)	No	
EPA with DOE	ENERGY STAR Certified Homes*								1995–2006 (1.0), 2007–2011 (2.0), 2011 (2.5), Fall 2013 (3.1)	HERS	
DOE	Challenge Home									HERS	
USGBC	LEED								v2008 v2009 2014+ (v4)	HERS is common; certification points labeled by name, not number.	Offered
Home Innovation Research Labs	NGBS New Construction								2008 2012+	HERS is common; certification points labeled by name, not number.	
Home Innovation Research Labs	NGBS Whole-Home Remodel								2008 2012+	Above	
Home Innovation Research Labs	NGBS Small Project Remodel								2008 2012+	No	
Passive/Net-Zero Home	PHIUS+, PHIUS+ Retro, NY Passive House, Passive House CA, Living Building Challenge, etc.									HERS is common.	
RESNET	HERS Index Score									Low (best) to High (worst). Negative numbers apply.	Available
<local sponsor=""> of DOE program</local>	Home Energy Score									1 (worst) to 10 (best).	
<local sponsor=""> of DOE program</local>	Home Performance with ENERGY STAR								2011 (1.0) 2014+ (1.5)	Varies	Varies
<local sponsor=""></local>	Certificate of Energy Efficiency Improvements									No	Varies
<local sponsor=""></local>	Certificate of Energy Efficiency Performance									Varies	Varies
<local sponsor=""></local>	Local/Regional/ State/ Utility									Varies	Varies

^{*}See also Northwest ENERGY STAR (covers WA, OR, ID, MT) and ENERGY STAR for Hawaii, New York, and Puerto Rico for standards specific to these areas.



4b. Green Search/Marketing Fields (unverified)

The number of specific/technical fields and their standard enumerations can be daunting. Also, specific features, such as dual-pane windows, may not always be considered green or efficient as technologies and methods evolve. So having the option of providing green search fields allows sellers to market these aspects in a simple way that will not require MLSs to frequently adjust fields and enumerations.

This approach also simplifies the search for buyers when looking for a specific performance category; for example, an agent working with the family of an asthmatic child that is particularly interested in extensive indoor air quality features.

Likewise, this approach benefits appraisers who are seeking a category of comparables. For example, instead of having to understand a number of different window types (and whether they are currently considered green), users merely need to know that they are interested in efficiency features.

Due to the nature of Green Search/Marketing Fields, the related enumerations or field values are stable over the long term and do not change much by climate, housing characteristics, or market practices. It is strongly recommended that the enumerations provided in this guide be implemented exactly as defined when implementing green search/marketing fields.

Green Search/Marketing Fields are unverified and therefore require important follow-up steps to confirm information provided.

Listing agents and sellers will need to provide explanations and backing of the green search and marketing green attributes they chose to display in the MLS.

Green Search/Marketing Fields should be qualified in the context of details provided in other fields. Third-Party Verified Fields provide all users with high-quality details on green and high-performance features from a neutral third party. Specific/Technical Fields provide an extra level of detail on individual attributes. Green Search/Marketing Field values should be used *only* when clarified against the context of Third-Party and/or Specific/Technical Field values.

Green Search/Marketing Field Tips

- Green Search/Marketing Fields are intended to be used in the context of related Specific/Technical fields.
- Use enumerations exactly as defined in RETS Data Dictionary and also listed here. It is not recommended that MLSs customize Green Search/ Marketing Field enumerations.
- See "Rules May Apply" column.



4b. At-A-Glance: Green Search/Marketing Fields

GreenEnergyEfficiency

Appliances
Construction/Materials
Electrical/Lighting
Exposure/Shade
Heating/Cooling/Ventilation
Home Energy Management
Incentives & Other

GreenEnergyGeneration

PV solar array(s) 3rd-Party Owned PV solar array(s) Direct ownership Pre-wired for PV solar Grid-Tied Off-Grid Wind turbine(s) Pre-wired for wind turbine(s) Net-Metering Renewable Energy Credits

GreenSustainability

Conserving Methods
Regionally Sourced Materials
Recycled Materials
Renewable Materials
Salvaged Materials
Onsite Recycling Center

GreenWaterConservation

Water-Smart Landscaping Green Infrastructure Water Recycling Efficient Hot Water Distribution Low-Flow Fixtures

GreenIndoorAirQuality

Contaminant Control Moisture Control Ventilation Integrated Pest Management

GreenLocation

Walkable Location Public Transit

Walk Score®



4b. Detailed Definitions: Green Search/Marketing Fields

Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
GreenEnergyEfficiency	Pick list of general green attributes such as energy- efficient doors or appliances without naming specific elements whose efficiency rating wanes over time.	String List, Multi	1024	Yes

GreenEnergy/Efficiency

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
Appliances	Property includes energy-efficient appliances and equipment such as water heaters, typically denoted by an ENERGY STAR label and/or a Consortium for Energy Efficiency (CEE) tier. www.cee1.org/content/cee-tiers-and-energy-star	Related Specific Field(s): Appliances, Other Equipment, Laundry fields	
Construction/Materials	Indicates the property was built or remodeled using advanced construction practices to encourage reduced energy loads. Includes exterior details and methods of construction used, windows, doors, roof, etc.	Related Specific Field(s): ConstructionMaterials, FoundationDetails, ExteriorFeatures, Roof, WindowFeatures	
Electrical/Lighting	Property includes energy-efficient electrical systems or lighting fixtures, typically labeled ENERGY STAR. Does not apply to individual lightbulbs installed on the property.	Related Specific Field(s): InteriorFeatures, Appliances, Other Equipment, Laundry	
Exposure/Shade	Plan for the structure on the lot encourages reduced energy load through orientation of front of home, window plans, or landscaping. These features are important elements of passive solar building design and net-zero buildings.	Related Specific Field(s): DirectionFaces, YardandGrounds Features	
Heating/Cooling/ Ventilation	Property includes energy-efficient heating, air-conditioning, or mechanical ventilation system(s), typically labeled ENERGY STAR.	Related Specific Field(s): Heating, Cooling, Insula- tion, Ventilation fields	
Home Energy Management System	Property includes programmable thermostat, smart home monitoring system, or other controls to efficiently manage heating, cooling, lighting, and other systems.	Related Specific Field(s): OtherEquipment field	
Incentives & Other	Indicates one or more of the following: energy efficiency rebates are available (specific to the property for existing features or specific optional upgrades); energy guarantee is available (transferrable energy guarantee programs are provided by a builder or efficiency program and cover the additional utility costs that exceed the guaranteed energy usage); net metering is available (utility is able to provide retail credit for at least a portion of the electricity generated).	Related Specific Field(s): None	

31



Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
GreenEnergyGeneration	Pick list of methods of generating energy such as solar, wind or geothermal.	String List, Multi	1024	Yes

GreenEnergyGeneration

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
PV solar array(s) 3rd-Party Owned	A photovoltaic array (or solar array) is a linked collection of solar panels. The power that one module can produce is seldom enough to meet requirements of a home or a business, so the modules are linked together to form an array. Third-party array(s) indicate the equipment is leased.	GreenEnergyGeneration	Disclosures = Not Blank
PV solar array(s) Direct ownership	As above. Indicates the array(s) are real property and transfer with the property.	GreenEnergyGeneration	Disclosures = Not Blank
Pre-wired for PV solar	Indicates the infrastructure is in place on the property to incorporate a photovoltaic system in the future.	GreenEnergyGeneration	
Grid-Tied	Grid-Tied solar PV or wind systems include equipment to connect to the local utility. The investment in a power line to the utility grid allows for energy backup on cloudy days. It also allows excess power to be fed back to the utility for net credits where allowed.	GreenEnergyGeneration	
Off-Grid	Off-Grid solar PV or wind systems are not connected to the local utility grid. These systems are more common in remote locations.	GreenEnergyGeneration	
Wind turbine(s)	A wind turbine is provided on the property to generate electricity.	GreenEnergyGeneration	Disclosures = Not Blank
Pre-wired for wind turbine(s)	Indicates the infrastructure is in place on the property to incorporate wind turbines in the future.	GreenEnergyGeneration	
Net-Metering/ Renewable Energy Credits	Net metering is an electricity policy for consumers who own (generally small) renewable energy facilities (such as wind, solar power, or home fuel cells) or V2G electric vehicles. "Net" refers to "what remains after deductions"—in this case, the deduction of energy outflows from metered energy inflows. Under net metering, a system owner receives retail credit for at least a portion of the electricity the system generates.	GreenEnergyGeneration	

Notes and Guidance to Consider:



Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
GreenSustainability	Pick list of sustainable elements used in the construction of the structure.	String List, Multi	1024	Yes

GreenSustainability

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
Conserving Methods	Construction is planned to require fewer materials while maintaining structural integrity. May include advanced wall framing as documented in several major green building programs. May also include indigenous construction methods such as straw bale, sod, clay, etc., based on local climate, materials, and practices.	Related Specific Field(s): ConstructionMaterials	
Regionally Sourced Materials	Refers to building materials that were manufactured, extracted, harvested, or recovered within 500 miles of the building. Several major green building programs define regionally sourced as within a 500-mile radius.	Related Specific Field(s): ConstructionMaterials	
Recycled Materials	Structure includes multiple products that have a significant amount of postconsumer recycled content. Major green building programs tend to use 25 percent postconsumer recycled content as a threshold. Postindustrial recycled content tends to count toward overall content, but to a less scale. Some more common examples of recycled content materials include masonry, paving stones, or foundations with fly ash; aluminum gutters and downspouts; decking; drywall fibers, insulation, and house wrap; vinyl plastics; countertops; and cabinets, interior doors, or trim. More details are available on Home Innovation Research Labs "Browse Green Certified Products" tool or LEED Environmentally Preferred Products credit table.	Related Specific Field(s): ConstructionMaterials, Flooring	
Renewable Materials	Structure includes materials that are naturally occurring, abundant, and/or fast-growing materials. Some products are certified to come from fast-growing or otherwise renewable sources such as flooring and wood products. Some materials may be bio-based, which means they have been processed from once-living materials such as paper, straw, soy, natural fibers, and crops.	Related Specific Field(s): ConstructionMaterials, Flooring	
Salvaged Materials	Structure incorporates materials that were diverted from a landfill and/or sourced to give an otherwise unused item fresh use as an attached fixture. May include bricks, timbers, roofing, flooring, walls, cabinets, doors, etc.	Related Specific Field(s): ConstructionMaterials, Flooring	
Onsite Recycling Center	Property includes sufficient built-in storage space and/ or containers for temporary storage of recyclable materi- als and/or compost collection.	Related Specific Field(s): InteriorFeatures	

33



Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
GreenWaterConservation	Pick list of general water conserving attributes of the property such as landscaping or reclamation.	String List, Multi	1024	Yes

GreenWaterConservation

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
Water-Smart Landscaping	Water-smart landscapes are designed to require less water and fertilizer treatments. These landscapes feature regionally appropriate plants that require low water and are native to the local climate. Plants are organized by hydrozones (watering needs). Any irrigation system is qualified for high water-efficiency. Turfgrass is minimized and grown to the tallest height recommended. Strategic maintenance includes mulching and soil aeration. Other details are documented in EPA's Water-Smart Landscape Design Tips .	Related Specific Field(s): YardandGroundFeatures	
Green Infrastructure	Green Infrastructure is a set of strategies and specifically designed systems to manage stormwater runoff through a variety of small, cost-effective landscape features located on a property. Green Infrastructure employs infiltration (allowing water to slowly sink into the soil), evaporation/transpiration using native vegetation, and rainwater capture and reuse (storing runoff to water plants, flush toilets, etc.). May include green roof, rain gardens, rain barrels, permeable paving, etc. EPA Green Infrastructure webpage has more information.	Related Specific Field(s): Roof, ExteriorFeatures, YardandGroundFeatures, FoundationDetails	
Water Recycling	The property includes a system to reuse stormwater via rain barrels or cisterns for landscaping, or to treat and reuse water from bathroom sinks, showers, and clothes washing drains for landscape irrigation and/or toilet flushing.	Related Specific Field(s): YardandGroundFeatures	
Efficient Hot Water Distribution	Efficient hot water distribution systems are designed to generate hot water using fewer fuel resources, and to get hot water to low-flow faucets and fixtures more quickly. These systems often feature carefully designed plumbing lines that are less redundant and/or shorter. Rather than measuring time to hot water at a fixture in gallons, efficient distribution systems can be measured in cups. EPA WaterSense Guide for Hot Water Distribution as well as several green building programs have further details. This may also be known as Structured Plumbing.	Related Specific Field(s): InteriorFixtures, Water- Heater, LaundryFeatures	
Low-Flow Fixtures	Toilets, bathroom faucets, showerheads, irrigation controllers, and other products can be manufactured to use less water than minimum standards. Some products are qualified by third-party programs like the EPA WaterSense and are typically at least 20 percent more water-efficient than standard products. EPA WaterSense website has additional information.	Related Specific Field(s): InteriorFixtures	



GREEN FIELDS

4b. Detailed Definitions: Green Search/Marketing Fields (continued)

Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
GreenIndoorAirQuality	Pick list of indoor air quality measures.	String List, Multi	1024	Yes

GreenIndoorAirQuality

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
Contaminant Control	Property has been carefully designed to prevent, monitor, and suppress pollution issues. Carefully selected low-emission materials have been used in the home. May include passive or active radon control, carbon monoxide monitoring, and high-efficiency sealed combustion for equipment such as furnaces and water heaters. May include elimination of materials that contain lead or asbestos. May include reduction of materials that contain volatile organic compounds (VOCs, including formaldehyde) and pesticides.	Related Specific Field(s): ConstructionMaterials, FoundationDetails, Flooring	
Moisture Control	Every foundation, roof, roofing component, exterior wall, door, skylight, and window is designed and maintained to be watertight and free of persistent dampness or moisture.	Related Specific Field(s): ConstructionMaterials, FoundationDetails, ExteriorFeatures, Roof, WindowFeatures	
Ventilation	Furnaces, water heaters, woodstoves, and other devices that employ combustion-burning fuel are vented to the outside in a manner that meets manufacturer specifications to prevent back-drafting. Natural and/or mechanical ventilation delivers fresh air to every habitable room and bathroom to remove moistureladen air and other contaminants generated during cooking and bathing/showering. The air exhausted from a bathroom, toilet room, or kitchen does not vent into habitable space or an attic.	Related Specific Field(s): Heating, Cooling, FireplaceFeatures, Insulation, Ventilation fields	
Integrated Pest Management	Property is designed for systematic management of pests that uses prevention, exclusion, monitoring, and suppression.	Related Specific Field(s): ConstructionMaterials, FoundationDetails, Ventilation	

Notes and Guidance to Consider:

• See National Healthy Housing Standard Section 5, Heating, Ventilation, and Energy Efficiency, and Section 7, Chemical and Radiological Agents, for more information. http://nchh.org/Portals/0/Contents/National-Healthy-Housing-Standard Public-Comment-Draft 2013-06-10.pdf



Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
GreenLocation	Pick list describing efficiencies involved with the property's location such as walkability or transportation proximity.	String List, Multi	1024	Yes

GreenLocation

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
Walkable Location	Property is accessible to local amenities. In many locations this information can be verified with a publicly available score like Walk Score®. Some thresholds that are used in building standards and national formulas may include less than 0.25-mile walk to at least two OR a 0.5-mile walk to at least four amenities (urban), less than 0.5-mile walk to at least three OR a 1-mile walk to at least six amenities (suburban).	Related Specific Field(s): Walk Score®, CommunityFeatures	
Public Transit	Property is closely accessible to public transit. In some locations this information can be verified with a publicly available score like Transit Score®. Some thresholds that are used in building standards and national formulas may include less than 0.5-mile walk to transit (city/suburb) and less than 5 miles to transit (rural).	Related Specific Field(s): Community Features	

Notes and Guidance to Consider:

• Enterprise Green Communities' 2011 Enterprise Green Communities Criteria

Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
Walk Score®	A walkability index based on the time to walk from a property to near by essentials such as grocery stores, schools, churches, etc. See www.walkscore.com for more information and requirements for using WalkScore®.	Number	3	No



4c. Specific/Technical Fields

Many fields within the RETS Data Dictionary are not specifically related to green homes, but common features, technologies, or construction may be relevant as enumerations. Groupings available in the RETS Data Dictionary are used as category headers below and provide some context for how fields relate to each other.

Unlike the third-party fields previously mentioned, enumerations for specific/ technical fields are more difficult to verify. When implemented, the Green MLS Specific/Technical enumerations defined below are inter-mingled with existing or traditional fields.

Enumerations for specific/technical fields represent the greatest need for user education, and the greatest risk for error.

4c. At-A-Glance: Specific/Technical Fields

REMARKS/LISTING CONTRACT FIELDS

(documentation fields)

Documents Available

Al Green & EE Addendum

(Appraisal Institute Green

& Energy Efficiency Addendum)

MLS Green Addendum

Green Verification/Cert/Label

(See GreenBuildingVerification)

Combustion Safety Test on file

Blower Door test results on file

12-Month Utility History

NFRC Window Rating

ENERGY STAR/ACCA

Quality Installation

HERS Insulation Grading

Insulation above DOE Levels

PROPERTY FIELDS

Utilities

Heating

Air Source Heat Pump

Ground Source Heat Pump

Hydronic Radiant Flooring

ENERGY STAR Qualified

Equipment

ENERGY STAR/ACCA

RSI Qualified Installation

High-Efficiency Sealed Combustion

Duct leakage test results on file

Ducts professionally air-sealed

Cooling

Air Source Heat Pump

Ground Source Heat Pump

Evaporative Cooling

ENERGY STAR Qualified

Equipment

ENERGY STAR/ACCA

RSI Qualified Installation

Duct leakage test results on file

Ducts professionally air-sealed

LotFeatures

WaterSense labeled

irrigation controller

Used WaterSense irrigation partner

South/West Shading

North Windbreaks

Water-Smart Landscaping

Native Plants

Permeable Paving

Vegetated Swale

Certified Wildlife Landscape

Gray Water System

PoolFeatures

SpaFeatures

Pool cover

ENERGY STAR pool pump

Energy-efficient pool heater



4c. At-A-Glance: Specific/Technical Fields (continued)

STRUCTURE FIELDS

NewConstructionYN

DirectionFaces

South-Facing Living Areas

InteriorFeatures

WaterSense labeled

bathroom faucet(s)

WaterSense labeled toilet(s)

Dual-flush toilet(s)

WaterSense labeled urinal(s)

WaterSense labeled showerhead(s)

ENERGY STAR qualified

light fixture(s)

ENERGY STAR qualified

ceiling fan(s)

ENERGY STAR qualified

exhaust fan(s)

Onsite Recycling Center

ExteriorFeatures

Cement Siding

Gutter Guard System

Functional Shutters

Awnings/Overhangs

Exterior Blinds

Chimney Caps

ENERGY STAR qualified

solar light tubes

ENERGY STAR qualified

skylights

Gutter Guard System

Gutters/Downspouts Disconnected

Rain Barrel/Cistern

DoorFeatures

ENERGY STAR qualified doors

Storm doors

WindowFeatures

ENERGY STAR qualified

windows

Storm windows

Roof

ENERGY STAR qualified

roof shingles

White Roof

Green Roof

Radiant Barrier

ConstructionMaterials

Low VOC paints/finishes

Low VOC wood products

Lead-free paint

KCMA ESP Cabinetry

Pest-Resistant Materials

Regional Materials

Advanced Framing

Structured Insulated Panels

Insulated Concrete Forms

Indigenous Construction

Low VOC Insulation

Recycled/Bio-based Insulation

Batt Insulation

Blown Insulation

Spray Foam

Rigid Insulation

Insulated Exterior Duct-Work

Insulated Attic/Crawl Hatch(es)

ICAT Recessed Lighting

FoundationDetails

Sealed Foundation

Passive Radon Mitigation

Active Radon Mitigation

Drainage System

Sump Pump

Pest Prevention Design

FireplaceFeatures

EPA Qualified Fireplace

EPA Certified Wood Stove

Sealed Combustion

Flooring

CRI Green Label Plus

Certified Carpet

FloorScore® Certified Bamboo

FloorScore® Certified Cork

FloorScore® Certified Linoleum

FloorScore® Certified

Laminate Wood

FloorScore® Certified

Recycled Rubber

FSC or SFI Certified Source

hardwood

FSC or SFI Chain-of-Custody

Certified Hardwood

Reclaimed Wood



4c. At-A-Glance: Specific/Technical Fields (continued)

STRUCTURE FIELDS (continued)

OtherEquipment

Carbon Monoxide alarm(s)

Home Energy Management System

Programmable Thermostat

Utility smart-meter

HRV/ERV (Heat/Energy Recovery Ventilator)

Whole-House Supply Ventilation

Whole-House Exhaust Ventilation

Whole-House Air Cleaning System

Direct Vent Fans

Appliances

ENERGY STAR qualified dishwasher

ENERGY STAR qualified refrigerator

ENERGY STAR qualified freezer

Heat Pump Water Heater

Solar Water Heater

Tankless Water Heater

ENERGY STAR Qualified Water Heater

High-Efficiency/Sealed Water Heater

AGENT/OFFICE FIELDS

ListAgentDesignation

CoListAgentDesignation

BuyerAgentDesignation

CoBuyerAgentDesignation

NAR Green

EcoBroker Certified

LEED Green Associate



GREEN FIELDS

4c. Definitions: Specific/Technical Fields

REMARKS/LISTING CONTRACT FIELDS (documentation fields)

Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
DocumentsAvailable	A list of the Documents available for the property. Knowing what documents are available for the property is valuable information.	String List, Multi		

Documents Available

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
Al Green & EE Addendum (Appraisal Institute Green & Energy Efficiency Addendum)	The Appraisal Institute (AI) Green & Energy Efficiency Addendum serves as a worksheet for valuing green homes. The form can be completed in advance of an appraisal by the homeowner, builder, etc. This addendum is very similar to an MLS addendum above, but captures details for valuation, unlike the MLS addendum, which captures details for marketing. The AI addendum may increase the buyer's ability to be assigned an appraiser who is competent with green homes if it is attached to the purchase contract. This field indicates an attachment is on file.	All	Recommended: Attachment required
MLS Green Addendum	Some MLSs provide an addendum, disclosure form, or worksheet to capture details on high-performance features, methods, or technologies. This field indicates that an attachment is on file.	All	Recommended: Attachment required
Green Verification/ Cert/Label	Indicates that a copy of the certification, score, or other documentation provided by the independent, third-party program or verifier is available. This is usually the documentation provided by the program identified in the GreenVerificationProgram field.	All	Recommended: Attachment required; GreenVerificationProgram = not blank
Combustion Safety Test on File	A combustion safety test evaluates how a structure performs under the worst-possible conditions. This involves running all combustion equipment like stove, furnace, water heater, and dryer while simultaneously depressurizing the house (i.e., creating excessive exhaust conditions) using existing home exhaust fans as well as additional temporary exhaust. Testers look for backdrafting issues and release of carbon monoxide.	GreenIndoorAirQuality	Recommended: Attachment required; GreenVerificationProgram = Certificate of Energy Efficiency Improvements



Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
Blower Door test results on file	Professional energy auditors use blower door tests to help determine a home's airtightness.	GreenEnergyEfficiency	Recommended: Attachment required; GreenVerificationProgram = Certificate of Energy Efficiency Improvements
12-month utility history	Indicates a report that summarizes utility usage for the previous 12-month period is available. May be a report from the utility or simply a copy of a recent utility bill that shows 12 months of usage.	GreenEnergyEfficiency	Recommended: Attachment required
NFRC Window Rating	National Fenestration Rating Council (NFRC) testing protocols involve testing of the full window, including glass, frame, and other components. Ratings are acquired through independent testing of the product. The NFRC label provides the manufacturer name, the type of window, as well as the full CPD number, providing a way to verify that the certified ratings provided on the NFRC Label are accurate. See more at http://www.nfrc.org/Windowratings/	GreenEnergyEfficiency	Recommended: Attachment required
ENERGY STAR/ACCA Quality Installation	index.html. Documentation indicates that the heating equipment has been installed by a qualified contractor according to Air Conditioning Contractors of America's (ACCA) HVAC Quality Installation Specification, and is recognized as an American National Standard. Both ENERGY STAR Qualified Installation (ESQI) and ACCA Residential Service and Installation (ACCA RSI) program ensure that high-efficiency equipment performs to its advertised capacity and efficiency. Proper installation lowers energy bills, increases comfort, and extends the useful life of equipment. http://www.energystar.gov/index.cfm?c=hvac_install.hvac_install_index http://www.acca.org/education/residential-design/qi/	GreenEnergyEfficiency	Recommended: Attachment required



Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
HERS Insulation Grading	Since 2006 RESNET has offered a national standard for grading certified assessors to document the quality of how insulation is installed. Poorly installed insulation dramatically decreases the effectiveness of insulation. Grade I indicates the highest-quality of installation, which follows manufacturers guidelines and provides highly effective insulation in the structure. Grade II indicates some moderate defects are noted See RESNET Mortgage Industry National Home Energy Rating System Standards—Appendix A, Building Element—Walls.	GreenEnergyEfficiency	Recommended: Attachment required
Insulation above DOE Levels	The Department of Energy (DOE) provides guidance on minimum code requirements for insulation levels based on climate. Insulation requirements are typically highest in the attic. Requirements are also provided for wall cavities and floors (basements, crawlspace, slab, etc.). Existing homes may also choose to apply new home code insulation levels. Minimum requirements are published on DOE website: www1.eere.energy.gov/consumer/tips/m/insulation.html.	GreenEnergyEfficiency	Recommended: Attachment required; GreenVerificationProgram = Certificate of Energy Efficiency Improvements

Notes and Guidance to Consider:

• The above enumerations represent the most common disclosures for green homes currently in practice today. The disclosures defined above are typically available in the same format as other disclosures—either digitally attached to the listing or paper-based. See examples in the **Section 5**, **Implementation Best Practices**.



PROPERTY FIELDS

Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
Utilities	A list of the utilities for the property being sold/leased.	String List, Multi		

Notes and Guidance to Consider:

• Utility information is especially important in markets where smart-metering or net-metering is available. These services vary by utility. Smart-metering creates energy savings through more precise usage calculations and billing. Net-metering allows properties with energy-generation equipment to receive reimbursement for putting surplus energy back on the power grid.

Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
Heating	A list describing the heating features of the property.	String List, Multi		

Heating

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
Air-Source Heat Pump	< <mixed-humid climate="">> Heat pumps are an energy-efficient alternative to furnaces and air conditioners. The most common type of heat pump uses electricity to transfer heat between a house and the outside air. Best in moderate climates or in cold climates in very low heat load homes such as homes built to the Passive House Standard. For homes without ducts, mini-split heat pumps are a ductless option, providing zoned or room heating and cooling. http://energy.gov/energysaver/articles/heat-pump-systems.</mixed-humid>	GreenEnergyEfficiency	Synonyms: Ductless Mini-Split



GUIDE TO GREEN FIELDS

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
Ground-Source Heat Pump	< <all climates="">> Ground-source heat pumps transfer heat between a house and the ground or a nearby water source. Although installation costs are high, ground-source heat pumps have low operating costs because they take advantage of relatively constant ground or water temperatures. These heat pumps can be used in extreme climates (as opposed to air-source heat pumps, which are best in moderate climates or for homes designed to Passive House standards). Also known as water-source heat pumps, or incorrectly called geothermal. For residential heating and cooling ground- or water-source is a better term since the true definition of geothermal applies to commercial energy generation. http://energy.gov/energysaver/articles/heat- pump-systems</all>	GreenEnergyEfficiency	Synonyms: Water-Source geothermal (not recommended)
Hydronic Radiant Floors	< <cold climate="" cold="" very="">> Hydronic or liquid systems are the most cost-effective type of heat supplied directly to the floor. Hydronic systems pump heated water from a boiler through tubing laid in a pattern under the floor. In some systems, room temperatures may be regulated by controlling the flow of hot water through each tubing loop by using zone valves or pumps and thermostats.</cold>	GreenEnergyEfficiency	
ENERGY STAR Qualified Equipment	Indicates that the heating equipment has earned the ENERGY STAR label for energy efficiency. Energy consumption and product performance are rigorously tested and evaluated prior to being released as an ENERGY STAR qualified product.	GreenEnergyEfficiency	
ENERGY STAR or ACCA RSI Qualified Installation	Indicates that the heating equipment has been installed by a qualified contractor according to Air Conditioning Contractors of America's (ACCA) HVAC Quality Installation Specification, and is recognized as an American National Standard. Both ENERGY STAR Qualified Installation (ESQI) and ACCA Residential Service and Installation (ACCA RSI) program ensure that high-efficiency equipment performs to its advertised capacity and efficiency. Proper installation lowers energy bills, increases comfort, and extends the useful life of equipment. http://www.energystar.gov/index.cfm?c=hvac_install.hvac_install_index http://www.acca.org/qa/verifier/	GreenEnergyEfficiency	Recommendation: Documentation on file



Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
High-Efficiency Sealed Combustion	Fuel-fired equipment like furnaces or water heaters can be configured to draw combustion air directly into the burner via sealed inlets connected to the outside and also include a fan-assisted exhaust. This design improves indoor air quality. http://apps1.eere.energy.gov/buildings/publications/	GreenIndoorAirQuality	
	pdfs/building_america/26464.pdf		
Duct Leakage test results on file	The duct leakage test uses pressure testing to identify the amount and location of any air leakage in a duct system. Tests results can verify that the duct system has been professionally sealed.	GreenEnergyEfficiency	Recommended: Attachment required; GreenVerificationProgram = Certificate of Energy Efficiency Improvements
Ducts professionally air-sealed	All leaks and connections are sealed by a professional with mastic, metal tape, or an aerosol-based sealant according to established work guidelines.	GreenEnergyEfficiency	Recommended: Attachment required; GreenVerificationProgram = Certificate of Energy Efficiency Improvements

Notes and Guidance to Consider:

• The true definition of "geothermal" refers to non-residential electric delivery, heating, and cooling. Geothermal is used in practice to describe residential heating and cooling. To avoid confusion, "ground-source heat pump" is a better term. Source for DOE information: https://www1.eere.energy.gov/geothermal/heatpumps.html.



Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
Cooling	A list describing the air-conditioning features of the property.	String List, Multi		

Cooling

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
Air-Source Heat Pump	< <mixed-humid climate="">> Heat pumps are an energy-efficient alternative to furnaces and air conditioners. The most common type of heat pump uses electricity to transfer heat between a house and the outside air. Best in moderate climates or in cold climates in very low heat load homes such as homes built to the Passive House Standard. For homes without ducts, mini-split heat pumps are a ductless option, providing zoned or room heating and cooling. http://energy.gov/energysaver/articles</mixed-humid>	GreenEnergyEfficiency	Synonyms: Ductless Mini-Split
Ground-Source Heat Pump	< <all climates="">> Ground-source heat pumps transfer heat between a house and the ground or a nearby water source. Although installation costs are high, ground-source heat pumps have low operating costs because they take advantage of relatively constant ground or water temperatures. These heat pumps can be used in extreme climates (as opposed to air-source heat pumps, which are best in moderate climates or for homes designed to Passive House standards). Also known as water-source heat pumps, or incorrectly called geothermal. For residential heating and cooling ground- or water-source is a better term since the true definition of geothermal applies to commercial energy generation. http://energy.gov/energysaver/articles</all>	GreenEnergyEfficiency	Synonyms: Water-Source geothermal (not recommended)
Evaporative Cooling	< <hot-dry mixed-dry="">> Evaporative cooling provides an efficient means of cooling in low humidity areas by evaporating water into the air. They cool outdoor air by passing it over water-saturated pads causing the water to evaporate into the cooler. The cooler air is then directed into the home, and pushes warmer air out through windows, which must remain partly opened to allow warm air to escape. Evaporative coolers are generally more efficient than central air conditioners, cost half as much to install, and use less energy.</hot-dry>	GreenEnergyEfficiency	Synonyms: Swamp Cooler

46



Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
ENERGY STAR Qualified Equipment	Indicates that the cooling equipment has earned the ENERGY STAR label for energy efficiency. Energy consumption and product performance are rigorously tested and evaluated prior to being released as an ENERGY STAR qualified product.	GreenEnergyEfficiency	
ENERGY STAR or ACCA RSI Qualified Installation	Indicates that the cooling equipment has been installed by a qualified contractor according to Air Conditioning Contractors of America's (ACCA) HVAC Quality Installation Specification, and is recognized as an American National Standard. Both ENERGY STAR Qualified Installation (ESQI) and ACCA Residential Service and Installation (ACCA RSI) program ensure that high-efficiency equipment performs to its advertised capacity and efficiency. Proper installation lowers energy bills, increases comfort, and extends the useful life of equipment. http://www.energystar.gov/index.cfm?c=hvac_install.hvac_install_index http://www.acca.org/qa/verifier/	GreenEnergyEfficiency	
Duct Leakage test results on file	The duct leakage test uses pressure testing to identify the amount and location of any air leakage in a duct system. Tests results can verify that the duct system has been professionally sealed.	GreenEnergyEfficiency	Recommended: Attachment required; GreenVerificationProgram = Certificate of Energy Efficiency Improvements
Ducts professionally air-sealed	All leaks and connections are sealed by a professional with mastic, metal tape, or an aerosol-based sealant according to established work guidelines.	GreenEnergyEfficiency	Recommended: Attachment required; GreenVerificationProgram = Certificate of Energy Efficiency Improvements

Notes and Guidance to Consider:

• The true definition of "geothermal" refers to non-residential electric delivery, heating, and cooling. Geothermal is used in practice to describe residential heating and cooling. To avoid confusion, "ground-source heat pump" is a better term. Source for DOE information: https://www1.eere.energy.gov/geothermal/heatpumps.html.



Field Definition Standard Name Simple Suggested Rules Max Length Data Type Apply LotFeatures A list of features or description of the lot included in the String List, sale/lease. Multi

4c. Definitions: Specific/Technical Fields (continued)

LotFeatures

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
WaterSense labeled irrigation controller	Indicates the device controlling the watering schedule of the irrigation system was independently certified to meet the WaterSense specification for weather-based irrigation controllers.	GreenWaterConservation	
Used WaterSense Irrigation Partner	Indicates that an individual certified through a Water- Sense-labeled program designed, installed, maintained, and/or audited the site's irrigation system.	GreenEnergyEfficiency	
South/West Shading	Indicates that landscaping is included for the part of a building that receives the most sun exposure. The DOE estimates that carefully positioned trees can save up to 25 percent of the energy a typical household uses.	GreenEnergyEfficiency	
North Windbreaks	Indicates that non-deciduous landscaping is included for the part of a building that receives the most winter wind exposure in cold or temperate climates. The DOE estimates that carefully positioned trees can save up to 25 percent of the energy a typical household uses.	GreenEnergyEfficiency	
Water-Smart Landscaping	Water-smart landscapes are designed to require less water and fertilizer treatments. These landscapes feature regionally appropriate plants that require low water and are native to the local climate. Plants are organized by hydrozones (watering needs). Less turf grass is used. Any irrigation system is qualified for high water-efficiency. Turfgrass is minimized and grown to the tallest height recommended. Strategic maintenance includes mulching and soil aeration. Other details are documented in EPA's Water-Smart Landscape Design Tips .	GreenWaterConservation	
Native Plants	Native plants are those that evolved naturally in a particular area and were growing there before humans introduced plants from distant places. Native plants require no fertilizer and fewer pesticides and water. Native trees help with stormwater management. They save time and money due to reducing water, fertilizer, and maintenance needs. The Alliance for Water Efficiency Resource Library has more information.	GreenWaterConservation	

48



Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
Permeable Paving	Permeable surfaces are designed to be installed over top of infiltration areas to mitigate stormwater runoff while directing it away from structures and adjacent properties. May include sidewalks, alleys, patios, parking lots, driveways, etc. Surfaces may include specially designed asphalt, concrete, permeable paver blocks, reinforced turf/gravel, or other emerging types of pavement. EPA Green Infrastructure webpage has more information.	GreenWaterConservation	
Rain Garden	A term frequently applied to bioretention areas, rain gardens are shallow surface depressions with carefully selected native plants that have deep root systems and provide species diversity and habitat. May include amendment of soil with sand or gravel to allow increased infiltration and absorption by nearby vegetation. Such bioretention areas also treat stormwater runoff by filtering chemicals leached from roofing and road materials and other pollutants. EPA Green Infrastructure webpage has more information.	GreenWaterConservation	
Vegetated Swale	A swale is a shallow channel, typically with a saucer-like profile designed to slow, filter, and infiltrate stormwater runoff. Vegetated swales are emerging as an alternative to curb and gutter design on new residential or commercial streets; they are not typically an option for retrofit on existing streets. They are densely planted with grasses, shrubs, and trees over an infiltration trench. May also include check dams made of wood, stone, or concrete. EPA Green Infrastructure webpage has more information.	GreenWaterConservation	NewConstruction = Yes
Certified Wildlife Landscape	Various programs certify gardens and landscaping that attracts wildlife such as butterflies, birds, etc. Wildlife landscapes are planned to provide appropriate plants, water and food source, ground cover, and/or places to raise young. Certification programs include International Monarch Waystation Registry, NABA Certified Butterfly Garden, NWF Certified Wildlife Habitat®.	GreenSustainability	
Gray Water System	The property includes a system to treat water from bathroom sinks, showers, and clothes washing drains to be reused for landscape irrigation and/or toilet flushing. NSF/ANSI Standard 350-1: On-site Residential and Commercial Graywater Treatment Systems has more information.		

Notes and Guidance to Consider:

- Source for DOE information: http://energy.gov/energysaver/articles/landscaping-energy-efficient-homes
- Source for EPA water-efficient landscaping information:
 http://www.epa.gov/WaterSense/docs/water-efficient_landscaping_508.pdf



Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
PoolFeatures	A list of features or description of the pool included in the sale/lease.	String List, Multi		
SpaFeatures	A list of features or description of the spa included in the sale/lease.	String List, Multi		

PoolFeatures SpaFeatures

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
Pool cover	Indicates a custom pool cover is included with the property. The DOE states that covering a pool when it is not in use is the single most effective means of reducing pool heating costs.	GreenEnergyEfficiency	
ENERGY STAR Qualified pool pump	Indicates an ENERGY STAR qualified pool pump is included with the property.	GreenEnergyEfficiency	
Energy-efficient pool heater	Indicates an energy-efficient pool heater is available with the property. The DOE states that the most efficient gas pool heaters on the market have 89–95 percent efficiency. The most efficient heat pump pool heaters have a coefficient of performance (COP) from 3.0 to 7.0 (higher is better). Solar pool heaters are measured by Btu (British thermal unit) per square foot per day: Btu/(ft2day); higher is better.	GreenEnergyEfficiency	

Notes and Guidance to Consider:

• Source for DOE information: http://energy.gov/energysaver/articles/swimming-pool-heating



4c. Definitions: Specific/Technical Fields (continued) STRUCTURE FIELDS

Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
NewConstructionYN	ls the property newly constructed and not been previously occupied?	String List, Multi	1	

Notes and Guidance to Consider:

Rules May Apply when New Construction = Yes.
 See Third-Party Verified Field section above for guidance.

Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
DirectionFaces	The compass direction that the main entrance to the building faces; for example, north, south, east, west, southwest, etc. It may also be known as the building exposure.	String List, Multi	25	

DirectionFaces

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
South-Facing Living Areas	Indicates the main living areas of the property have an unobstructed view of the sun. This orientation creates energy savings by taking advantage of a building's site, climate, and materials to minimize energy use. Typically, windows or other devices that collect solar energy should not be shaded during the heating season by other buildings or trees from 9 a.m. to 3 p.m. each day. During the spring, fall, and cooling season, the windows should be shaded to avoid overheating.	GreenEnergyEfficiency	

Notes and Guidance to Consider:

• DOE information on solar orientation: http://energy.gov/energysaver/articles/passive-solar-home-design



Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
InteriorFeatures	A list of features or description of the interior of the property included in the sale/lease.	String List, Multi	1024	

InteriorFeatures

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
WaterSense labeled bathroom faucet(s)	Indicates the bathroom sink faucets or faucet accessories are independently certified to meet the WaterSense specification for lavatory faucets and faucet accessories. WaterSense-labeled bathroom sink faucets and accessories can reduce a sink's water flow by 30 percent from standard models without sacrificing performance. Additional fixtures that meet specific requirements may be labeled "low flow" but without the third-party verification of WaterSense.	GreenWaterConservation	
WaterSense labeled toilet(s)	Indicates the tank-type toilet models in the home are independently certified to meet the WaterSense specification for high-efficiency toilets. WaterSense-labeled toilets use 20 percent less water and perform as well or better than standard models. Additional fixtures that meet specific requirements may be labeled "low flow" but without the third-party verification of WaterSense. An additional source for information is:	GreenWaterConservation	
	www.allianceforwaterefficiency.org/Maximum_ Performance (MaP) Testing.aspx		
WaterSense labeled urinal(s)	Indicates any urinals in the home are independently certified to meet the WaterSense specification for flushing urinals. Non-water-using urinals or non-flushing urinals do not apply. Additional fixtures that meet specific requirements may be labeled "low flow" but without the third-party verification of WaterSense.	GreenWaterConservation	
Dual-Flush Toilet(s)	A dual-flush toilet includes two different buttons or levers to provide two different levels of water per flush to conserve water. Some dual-flush toilets are also WaterSense labeled.	GreenWaterConservation	
WaterSense labeled showerhead(s)	Indicates the showerhead models in the home are independently certified to meet the WaterSense specification for high-efficiency showerheads. The average family could save 2,900 gallons of water per year by installing WaterSense-labeled showerheads. Additional fixtures that meet specific requirements may be labeled "low flow" but without the third-party verification of WaterSense.	GreenWaterConservation	



Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
ENERGY STAR qualified light fixture(s)	ENERGY STAR qualified light fixtures use at least one quarter of the energy of traditional lighting; distribute light more efficiently and evenly than standard fixtures; deliver features that may include dimming, automatic daylight shut-off, and motion sensors; and carry a three-year warranty, which is above the industry standard.	GreenEnergyEfficiency	
ENERGY STAR qualified ceiling fan(s)	ENERGY STAR qualified ceiling fan/light combination units are over 50 percent more efficient than conventional units.	GreenEnergyEfficiency	
ENERGY STAR qualified exhaust fan(s)	Ceiling Fans Key Product Criteria: ENERGY STAR ENERGY STAR qualified ventilation fans provide better indoor air quality as well as better efficiency and comfort with less noise. They feature high-performance motors and improved blade design, providing better performance and longer life.	GreenEnergyEfficiency GreenIndoorAirQuality	
Onsite Recycling Center	Property includes sufficient built-in storage space and/or containers for temporary storage of recyclable materials.	Related Specific Field(s): InteriorFeatures	

Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
ExteriorFeatures	A list of features or description of the exterior of the property included in the sale/lease.	String List, Multi	1024	

ExteriorFeatures

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
Cement Siding	Cement siding is a composite material made of sand, cement, and cellulose fibers. Cement siding is considered high-performance because it is durable and may last 50+ years. Cement siding is manufactured with pulp fibers that protect endangered trees and do not contain toxic materials.	GreenSustainability	Hardie Plank
Functional shutters	Structure includes external shutters that are either hinged with louvers or aluminum, or plastic roller shutters (hurricane-prone areas) that reduce unwanted heat from the sun. They may also increase privacy, security, and storm protection. http://energy.gov/energysaver/articles/energy-efficient-window-treatments	GreenEnergyEfficiency	



GUIDE TO GREEN FIELDS

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
Awnings/Overhangs	Structure includes awnings that are attached canvas or vinyl fixtures, or overhangs that are a protruding element of the structure. Awnings save the most energy on the south and west sides of a building. Overhangs are most effective on the south side. These shades control the amount of heat and light admitted to a building, reducing the need for heating or air-conditioning by maintaining a more even temperature despite varying climatic conditions.	GreenEnergyEfficiency	
	http://energy.gov/energysaver/articles/energy- efficient-window-treatments		
Exterior Blinds	Structure includes wood, steel, aluminum, or vinyl blinds attached to the exterior of the structure. They can be lowered and raised, with slats to allow for air and some daylight to pass through.	GreenEnergyEfficiency	
	http://energy.gov/energysaver/articles/energy- efficient-window-treatments		
Chimney caps	Chimney caps help keep the chimney and flue in working condition by preventing moisture, debris, and pests from getting into and damaging the chimney.	GreenIndoorAirQuality	
ENERGY STAR qualified solar light tubes	Solar tubes are tubes that run from the ceiling of a room to the roof, where they collect light that is reflected down the tube and then diffused into the attached room. Solar tubes work like skylights but are less expensive, require less roof/ceiling space, and can be easily installed in almost all buildings. Solar tubes also have moisture control so that water does not leak into the home. ENERGY STAR qualified solar tubes must meet several energy-efficiency criteria and are tested for product performance.	GreenEnergyEfficiency	
ENERGY STAR qualified skylights	ENERGY STAR qualified skylights must have NFRC certified U-factor and Solar Heat Gain Coefficient (SHGC) ratings at levels that meet or exceed the current minimum criteria. Products must also be rated under the NFRC 2010 procedures or the most recent procedures available from NFRC. Current criteria and climate requirements are kept up-to-date by ENERGY STAR. https://www.energystar.gov/index.cfm?c=windows	GreenEnergyEfficiency	
	doors.pr anat window		
Gutter Guard System	Systems that keep gutters free of leaves and other debris are considered high-performance since they prevent gutter overflow that can reduce the lifespan of fascia boards and create wall and siding water or mold damage.	GreenIndoorAirQuality	



Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
Gutter/ Downspout Disconnect	Downspouts can be physically disconnected from the sewer system, allowing the water to run over pervious surfaces and soak into the ground. Roof runoff is directed away from the building structure toward garden, yard, rain barrel, etc., and does not flow toward adjacent foundation or property. Design may also include scuppers, drip or "rain chains," or other elements. EPA Green Infrastructure webpage has more details.	GreenWaterConservation	
Rain Barrel/ Cistern	Containers that collect and store roof runoff for later reuse can provide an alternative source of water for irrigation or toilet flushing, thus reducing the property's potable water use while also mitigating stormwater runoff. Rain barrels typically hold about 60 gallons, and provide water for landscape irrigation. Because of their small size and potential to remain full, however, their impact on stormwater management is limited. Cisterns are typically larger and may include pumps and filtration systems that allow them to be used to supplement gray water needs such as toilet flushing. Because of their size and ability to supplement gray water needs, they can be more effective for stormwater volume reduction than rain barrels.	GreenWaterConservation	

Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
DoorFeatures	A list of features or description of the doors included in the sale/lease.	String List, Multi	1024	

DoorFeatures

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
ENERGY STAR qualified doors	ENERGY STAR qualified doors are built and tested for superior efficiency performance. Any windows must include multiple panes. Features of the door itself must include high-quality core materials, tighter fit, and improved weather-stripping.	GreenEnergyEfficiency	
	Windows, Doors & Skylights Key Product Criteria		
Storm doors	Storm doors are installed on the exterior of a primary door. They reduce air movement into and out of the existing door, reducing heating and cooling costs.	GreenEnergyEfficiency	



Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
WindowFeatures	A list of features or description of the windows included in the sale/lease.	String List, Multi	1024	

WindowFeatures

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
ENERGY STAR qualified windows	ENERGY STAR qualified windows are built and tested for superior efficiency performance. Windows must have quality frame materials, multiple panes, low-e glass, gas fills, and warm edge spacers. Specific ratings for efficiency vary based on climate zone.	GreenEnergyEfficiency	
	Windows, Doors & Skylights Key Product Criteria		
Storm windows	Storm windows are installed on the interior or exterior of a primary window. They reduce air movement into and out of existing windows, reducing heating and cooling costs.	GreenEnergyEfficiency	

Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
Roof	A list describing the type or style of roof. For example Spanish Tile, Composite, Shake, etc.	String List, Multi	1024	

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
ENERGY STAR qualified roof shingles	ENERGY STAR qualified roof products are performance tested for solar reflection qualities and durability. They can help reduce the amount of air-conditioning needed in buildings, and can reduce peak cooling demand by 10–15 percent. Products do not include insulation. Roof Products Key Product Criteria: ENERGY STAR	GreenEnergyEfficiency	
White Roof	Sometimes referred to as "cool roofs," white and light-colored roofs have a high solar reflectance that helps reflect sunlight and heat away from a building, reducing roof temperatures.	GreenEnergyEfficiency	



Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
Green Roof	"Green roof" is a common term for vegetated roofing or roof covering. It is a system of waterproofing, insulation, growing medium, fabrics, and plant materials. Extensive vegetated roofing has shallow layers and usually features grasses, mosses, herbs, and drought-tolerant succulents. Extensive vegetated roofing is less load-bearing, can work on flat or pitched roof, and mitigates rain runoff. Intensive vegetated roofing has deeper layers and more plants and may include trees; typically for commercial or large attached single-family roofing. Semi-intensive vegetated roofing falls between the depths and weights of these other systems and is ideal for flat, accessible roofs. City of Lancaster Green Infrastructure Plan Appendix	GreenWaterConservation	Vegetated Roof
	has more details. http://www.dcnr.state.pa.us/cs/groups/public/documents/documents/dcnr 004822.pdf		
Radiant Barrier	A radiant barrier is a foil sheet or coating designed to reflect heat rays or retard their emission. Installation requirements may vary based on climate and the location on the structure where the barrier is installed. See the Oak Ridge National Lab Fact Sheet on radiant barriers for more information. http://www.ornl.gov/sci/ees/etsd/btric/RadiantBarrier/	GreenEnergyEfficiency	



Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
ConstructionMaterials	A list of the materials that were used in the construction of the property.	String List, Multi	1024	

ConstructionMaterials

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
Low VOC paints/ finishes	Product was used on at least 90 percent of interior surfaces. Volatile organic compounds (VOCs) are emitted as gases from certain solids or liquids. Products like paints, coatings, and finishes are now manufactured to have no or low VOCs.	GreenIndoorAirQuality	
Low VOC wood products	Structural plywood, oriented strand board (OSB), and composite wood products (i.e., hardwood plywood, particleboard, medium density fiberboard [MDF], and cabinetry made with these products) are third-party certified to meet EPA Indoor airPLUS requirements for low emission, including moisture-resistant adhesives and formaldehyde. Requirements to earn additional industry certifications or labels may apply. See details in EPA Indoor airPLUS Construction Specifications for Low-Emission Products: http://www.epa.gov/indoorairplus/construction Or see the program website: www.greencabinetsource.org/	GreenIndoorAirQuality	
Lead-free paint	Interior or exterior paint was applied after 1978 or tests or other documents confirm there is no presence of lead in or around the property.	GreenIndoorAirQuality	Test results recommended, or confirmed date of construction
KCMA ESP Cabinetry	Cabinetry in the property meets or exceeds the Kitchen Cabinet Manufacturers Association Environmental Stewardship Program (KCMA ESP). KCMA ESP addresses both indoor air quality and harvesting methods. It is a recognized certification for EPA Indoor airPLUS; see Low-Emission Products: http://www.epa.gov/indoorairplus/construction	GreenIndoorAirQuality GreenSustainability	



Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
Pest-Resistant Materials	Materials are proven to exclude pests from entering a structure, or to deny pests harborage if they get inside. See Pest Barriers recommendations in EPA Indoor airPLUS specifications for more details.	GreenIndoorAirQuality	
	http://www.epa.gov/indoorairplus/construction		
Regional Materials	Refers to building materials that were manufactured, extracted, harvested, or recovered within 500 miles of the building. Several major green building programs define regionally sourced as within a 500-mile radius. According to The Appraisers Research Foundation, use of local materials supports the local economy and reduces the harmful environmental impacts of long-distance transport.	GreenSustainability Construction	Documentation recommended
	http://www.appraiserresearch.org/research-results/ green-guide/green-features-in-homes/resource- conservation/locally-sourced-materials.html		
Advanced Framing	Advanced house framing reduces lumber used and waste generated in the construction of a wood-framed house, while maintaining the structural integrity of the home. Advanced framing improves overall effectiveness of insulation through better installation and a larger cavity to accommodate more insulation.	GreenEnergyEfficiency GreenSustainability	
	http://energy.gov/energysaver/articles/		
SIPs (Structural Insulated Panels)	Factory-built insulated wall assemblies that consist of an insulating foam core sandwiched between two structural facings. Composed of insulated foam board glued to both internal and external layers of sheathing (typically OSB or plywood). Many SIPs are manufactured with precut window and door openings. See ENERGY STAR definition:	GreenEnergyEfficiency	
	http://www.energystar.gov/ia/partners/bldrs_lenders_		
ICFs (Insulated Concrete Forms)	ICFs are factory-built wall system blocks that are made from extruded polystyrene insulation. Steel reinforcing rods are added and concrete is poured into the voids, creating a very air-tight, well-insulated, and sturdy wall. See ENERGY STAR definition:	GreenEnergyEfficiency	
	http://www.energystar.gov/ia/partners/bldrs_lenders_		



Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
Indigenous Construction	Indigenous construction uses traditional building practices based on local practices and/or climate, and may also use abundant local materials. Synonyms may include straw bale, sod, clay, etc., based on local climate, materials and practices. http://www.jetsongreen.com/2013/06/green-building-links-indigenous-americans-to-past-with-key-to-future.html	GreenSustainability	
Low VOC Insulation	Volatile organic compounds (VOCs) are emitted as gases from certain solids or liquids. Different types of insulation can be certified for having low VOC content by third-party verifiers such as GreenGuard.	GreenSustainability, GreenEnergyEfficiency	
Recycled/Bio-based Insulation	Insulation can be made from natural or recycled materials ranging from paper to soy to denim, using sustainable materials to improve energy efficiency.	Green Sustainability, Green Energy Efficiency	
Batt Insulation	Rolls and batts, or blankets, are flexible products made from mineral fibers such as fiberglass and rock wool. Can also be made of cotton and wool. They are available in widths suited to standard spacing of wall studs and attic or floor joists.	GreenEnergyEfficiency	
Blown Insulation	Blown-in or loose-fill insulation is usually made of fiberglass, rock wool, or cellulose in the form of loose fibers or fiber pellets installed using special pneumatic equipment. The blown-in material conforms readily to odd-sized building cavities and attics with wires, ducts, and pipes, making it well suited for places where it is difficult to effectively install other types of insulation.	GreenEnergyEfficiency	
Spray Foam	Spray foam or foam-in-place insulation can be sprayed into walls, on attic surfaces, or under floors to insulate and reduce air leakage. There are two types of foam-in-place insulation: closed-cell and open-cell. Both are typically made with polyurethane. Closed-cell foam has a greater insulation value and provides stronger resistance against moisture and air leakage. Open-cell foam is lighter and less expensive but should not be used below ground level where it could absorb water.	GreenEnergyEfficiency	



Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
Rigid Insulation	Foam boards—rigid panels of insulation—can be used to insulate from the roof down to the foundation. They provide good thermal resistance and reduce heat conduction through structural elements like wood and steel studs. The most common types of materials include polystyrene, polyisocyanurate (polyiso), and polyurethane. May also include cork. Sometimes referred to as EPS or XPS.	GreenEnergyEfficiency	
Insulated Exterior Duct-Work	DOE estimates that heating and cooling ducts located in unconditioned spaces such as attics and garages can underperform by 60–75 percent. Exterior ducts that are properly insulated can save energy and reduce overall equipment sizing. Insulation standards are clearly defined: http://apps1.eere.energy.gov/buildings/publications/	GreenEnergyEfficiency	Recommended: Attachment required; GreenVerificationProgram = Certificate of Energy Efficiency Improvements
Insulated Attic/Crawl Hatch(es)	When not insulated, a home's attic hatch or crawlspace hatch creates one of the biggest gaps in the building envelope, increasing heat loss in winter and heat gain in summer, and making indoor living areas uncomfortable. Insulation standards are clearly defined:	GreenEnergyEfficiency	Recommended: Attachment required; GreenVerificationProgram = Certificate of Energy Efficiency Improvements
ICAT Recessed Lighting	ICAT recessed light fixtures are rated both to safely come in contact with insulation and are better airsealed. ICAT is an acronym for Insulation Contact/AirTight. They can be installed safely with insulation and air sealing. These lights are different from IC (Insulation Contact) fixtures, which are not very airtight. They can also be identified by the wording "Washington State Approved." Documentation on the installation is recommended because ICAT rating often requires multiple components be used as specified by the manufacturer. Substitutions of components can negate the rating. http://energy.gov/energysaver/articles/tips-lighting.http://energy.gov/energysaver/articles/tips-insulation	GreenEnergyEfficiency	Recommended: Attachment required; GreenVerificationProgram = Certificate of Energy Efficiency Improvements



Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
FoundationDetails	A list of the type(s) of foundation on which the property sits.	String List, Multi	1024	

FoundationDetails

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
Sealed Foundation	All leaks and connections are sealed by a professional with caulking, sealants, weather stripping, and other methods according to established work guidelines. EPA recommends sealing foundations to control moisture and as a first step to reduce radon. DOE recommends sealing to reduce drafts and improve furnace efficiency.	GreenEnergyEfficiency GreenIndoorAirQuality	Recommended: Attachment required; GreenVerificationProgram = Certificate of Energy Efficiency Improvements
Passive Radon Mitigation	Mitigation system installed during the property's construction. Suction pipe(s) below foundation draw radon gas into the outdoor air using natural pressure differentials and air currents. Radon-Resistant New Construction (RRNC) also includes a junction box allocated for motorized fan in the future if needed. More than 1.5 million homes have been built since 1990 using radon-resistant techniques.	GreenIndoorAirQuality	RRNC Checklist on file: http://www.epa.gov/radon/rrnc/ pdf/rrnc_checklist.pdf
Active Radon Mitigation	Mitigation system that includes suction pipe(s) below foundation and uses motorized fan to draw radon gas into the outdoor air.	GreenIndoorAirQuality	
Drainage System	Landscaping of lot is designed to control movement of stormwater away from basement or foundation by providing adequate sloping of patio, walks, and driveway away from structure and adjacent properties. May include dry wells (i.e., French or Dutch drains, or infiltration basins, berms, or trenches). City of Lancaster Green Infrastructure Plan Appendix has more details. http://www.dcnr.state.pa.us/cs/groups/public/ See Moisture Control recommendations in Indoor airPLUS specifications for additional details: http://www.epa.gov/indoorairplus/technical/moisture/1_1.html#1.1_c	GreenIndoorAirQuality GreenWaterConservation	



Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
Sump Pump	Structure has interior water-management controls such as floor drains and/or sump pump. See Moisture Control recommendations in Indoor airPLUS specifications for more details:	GreenIndoorAirQuality	
	http://www.epa.gov/indoorairplus/technical/ moisture/1_1.html#1.1_c		
Pest Prevention Design	Foundation includes strategically implemented features based on understanding of local pest trends that may include moisture control, advanced crack sealing, sufficient separation between foundation and wooden structural elements, and termite-resistant materials beneath a slab. For detailed specifications see Pest Prevention by Design, SF Environment: http://www.sfenvironment.org/sites/default/files/fliers/	GreenIndoorAirQuality	



Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
FireplaceFeatures	A list of features or description of the fireplace(s) included in the sale/lease.	String List, Multi	1024	

FireplaceFeatures

Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
Wood-burning fireplaces can be manufactured to meet voluntary emission standards set by EPA. The program covers new masonry and prefabricated (low-mass) fireplaces and retrofit devices for existing fireplaces. Fireplace retrofits can reduce pollution by approximately 70 percent if installed properly. More information on the program and qualified models is available on the Burnwise webpage:	GreenIndoorAirQuality	
http://www.epa.gov/burnwise/choosing.html		
EPA-certified appliances must adhere to regulatory emission requirements established by EPA. Only woodstoves may be considered EPA certified. EPA-certified stoves produce 2 to 7 grams of smoke per hour as opposed to uncertified, older stoves that produce between 15 to 30 grams of smoke per hour. Look for the permanent metal EPA certification label on the back of the stove. More information on the program and certified models is available on the Burnwise webpage: http://www.epa.gov/burnwise/choosing.html	GreenIndoorAirQuality	
A sealed combustion fireplace draws combustion air		
	Wood-burning fireplaces can be manufactured to meet voluntary emission standards set by EPA. The program covers new masonry and prefabricated (low-mass) fireplaces and retrofit devices for existing fireplaces. Fireplace retrofits can reduce pollution by approximately 70 percent if installed properly. More information on the program and qualified models is available on the Burnwise webpage: http://www.epa.gov/burnwise/choosing.html EPA-certified appliances must adhere to regulatory emission requirements established by EPA. Only woodstoves may be considered EPA certified. EPA-certified stoves produce 2 to 7 grams of smoke per hour as opposed to uncertified, older stoves that produce between 15 to 30 grams of smoke per hour. Look for the permanent metal EPA certification label on the back of the stove. More information on the program and certified models is available on the Burnwise webpage: http://www.epa.gov/burnwise/choosing.html	Wood-burning fireplaces can be manufactured to meet voluntary emission standards set by EPA. The program covers new masonry and prefabricated (low-mass) fireplaces and retrofit devices for existing fireplaces. Fireplace retrofits can reduce pollution by approximately 70 percent if installed properly. More information on the program and qualified models is available on the Burnwise webpage: http://www.epa.gov/burnwise/choosing.html EPA-certified appliances must adhere to regulatory emission requirements established by EPA. Only woodstoves may be considered EPA certified. EPA-certified stoves produce 2 to 7 grams of smoke per hour as opposed to uncertified, older stoves that produce between 15 to 30 grams of smoke per hour. Look for the permanent metal EPA certification label on the back of the stove. More information on the program and certified models is available on the Burnwise webpage: http://www.epa.gov/burnwise/choosing.html A sealed combustion fireplace draws combustion air



Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
Flooring	A list of the type(s) of flooring found within the property.	String List, Multi	1024	

Flooring

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
CRI Green Label Plus Certified Carpet	Carpets and padding used in the property are labeled through Carpet & Rug Institute's Green Label Plus or Green Label program as low-VOC products. Volatile organic compounds (VOCs) are emitted as gases from certain solids or liquids. CRI program is recognized by several green building programs. http://www.carpet-rug.org/commercial-customers/	GreenIndoorAirQuality	
FloorScore® Certified Bamboo	Bamboo flooring is considered sustainable because the material is fast-growing. It is typically sourced from Asia, not locally. FloorScore®-Certified products use low-VOC materials and may or may not use low-VOC installation adhesives. http://www.rfci.com/index.php?option=com_	GreenIndoorAirQuality GreenSustainability	
FloorScore® Certified Cork	Cork flooring is considered sustainable because the material is fast-growing. It is naturally mold, moisture, and rot resistant, durable, biodegradable, and non-toxic. May be recycled. May be sourced from Mediterranean countries, not locally. FloorScore®-Certified products use low-VOC materials and may or may not use low-VOC sealers or installation adhesives. May be certified through FloorScore® or other programs. http://www.rfci.com/index.php?option=com	GreenIndoorAirQuality GreenSustainability	
FloorScore® Certified Linoleum	Linoleum flooring is a low-VOC alternative to vinyl flooring. It is considered sustainable because it is made by reusing manufacturing by-products such as linseed oil, pine rosin, wood or cork flour, limestone, and pigments. Also, linseed oil is a natural antimicrobial agent. All-natural linoleum may be sourced from Europe, not locally. FloorScore®-Certified products use low-VOC materials and may or may not be finished and installed with low-VOC materials. http://www.rfci.com/index.php?option=com_	GreenIndoorAirQuality GreenSustainability	



Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
FloorScore® Certified Laminate Wood	Laminate wood flooring is considered sustainable because it is made by reusing manufacturing byproducts such as sawdust, wood chips, and other reused wood residues. Durable. FloorScore®-Certified products use low-VOC materials and may or may not be finished and installed with low-VOC materials. http://www.rfci.com/index.php?option=com_	GreenIndoorAirQuality GreenSustainability	
FloorScore® Certified Recycled Rubber	Recycled rubber flooring is considered sustainable because it is durable, can be installed without adhesives, uses lower energy to convert, and diverts materials from landfills. FloorScore®-Certified products use low-VOC materials and may not be hypoallergenic. http://www.rfci.com/index.php?option=com_	GreenIndoorAirQuality GreenSustainability	
FSC or SFI Certified Source Hardwood	Hardwood flooring stamped with a chain-of-custody label indicates that sustainable practices were used throughout harvesting and production of the flooring. Label may also indicate hardwood source and recycled content. Certifiers include Forest Stewardship Council (FSC) and Sustainable Forestry Initiative (SFI).	Green Sustainability	
	https://us.fsc.org/become-certified.198.htm http://www.sfiprogram.org/sfi-standard/labels-claims/		
FSC or SFI Chain-of-Custody Certified Hardwood	Hardwood flooring stamped with a chain-of-custody label indicates that sustainable practices were used throughout harvesting and production of the flooring. Label may also indicate hardwood source and recycled content. Certifiers include Forest Stewardship Council (FSC) and Sustainable Forestry Initiative (SFI).	GreenSustainability	
	https://us.fsc.org/certification-types.200.htm http://www.sfiprogram.org/sfi-standard/labels-claims/		
Reclaimed Wood	Salvaged flooring is considered sustainable because it does not deplete virgin forests, avoids the energy cost of growing and harvesting new wood, and diverts materials from landfills.	Green Sustainability	



Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
OtherEquipment	A list of other equipment that will be included in the sale of the property.	String List, Multi	1024	

OtherEquipment

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
Carbon Monoxide alarm(s)	Carbon monoxide detectors trigger an alarm based on an accumulation of carbon monoxide over time. Detectors may be based on a chemical reaction causing a color change, an electrochemical reaction that produces current to trigger an alarm, or a semiconductor sensor that changes its electrical resistance in the presence of CO.	GreenIndoorAirQuality	
Home Energy Management System	Home energy or smart-home monitoring systems allow occupants to manage their water and energy usage by providing real-time energy usage data.	GreenEnergyEfficiency	
Programmable Thermostat	Programmable thermostats combine a clock with a thermostat and can save a significant amount of energy, particularly for occupants who are not at home during the day. Models manufactured before 2009 may be ENERGY STAR qualified, indicating they have been performance tested.	GreenEnergyEfficiency	
Utility smart meter	A smart meter is usually an electrical meter that records consumption of electric energy in intervals of an hour or less and communicates that information at least daily back to the utility for monitoring and billing purposes.	GreenEnergyEfficiency	
HRV/ERV (Heat/Energy Recovery Ventilator)	<all climates=""> A mechanical system to remove stale air from inside a property while adding fresh air. HRVs use temperature of outgoing stale air to heat incoming air in winter or cool incoming air in summer. ERVs also transfer moisture, so they transfer humidity to incoming winter air and remove humidity from incoming summer air. In moderate and warmer climates this transfer reduces heating/cooling costs and improves comfort. See ENERGY STAR® Mechanical Ventilation for more info. http://www.energystar.gov/ia/new_homes/features/</all>	GreenIndoorAirQuality	



Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
Whole-House Supply Ventilation	< <hot-humid>> <<hot-dry mixed-dry="">> A mechanical system to add fresh air to a property. May be connected to main return art duct or separate ducting. See ENERGY STAR® Mechanical Ventilation for more information.</hot-dry></hot-humid>	GreenIndoorAirQuality	
	http://www.energystar.gov/ia/new_homes/features/		
Whole-House Exhaust Ventilation	< <cold climate="" cold="" very="">> A mechanical system to remove stale air from inside a property. See ENERGY STAR® Mechanical Ventilation for more information.</cold>	GreenIndoorAirQuality	
	http://www.energystar.gov/ia/new_homes/features/		
Whole-House Air Cleaning System	A mechanical system used to control the levels of airborne particles including those associated with allergens and, in some cases, gaseous pollutants in a home. Most effective when low-emission products, fixtures, and materials are installed in the home and whole-house ventilation is available first. Whole-house air cleaners are installed in return ducts of HVAC systems. Whole-house air cleaning may include HEPA or high-scoring MERV filters (8+), electrostatic precipitators, UV lamps, and/or gasphase filters. See EPA Residential Air Cleaners for more information. http://www.epa.gov/iaq/pdfs/residential_air_	GreenIndoorAirQuality	
Direct Vent Fan(s)	Kitchens, bathrooms, and garages produce high levels of indoor contaminants, including excessive moisture that can lead to rot, mildew, mold, and pests. The individual exhaust fans in all these areas vent outside the structure with a motorized fan and not into habitable space or an attic.	GreenIndoorAirQuality	



Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
Appliances	A list of the appliances that will be included in the sale/lease of the property.	String List, Multi	1024	

Appliances

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
ENERGY STAR qualified dishwasher	Dishwasher has earned the ENERGY STAR label, which indicates that it is 10 percent more efficient than non-qualified models (models that simply meet the federal minimum standard for energy efficiency).	GreenEnergyEfficiency GreenWaterConservation	
ENERGY STAR qualified refrigerator	Refrigerator has earned the ENERGY STAR label, which indicates that it is 15 percent more efficient than non-qualified models and 20 percent more efficient than models that simply meet the federal minimum standard for energy efficiency.	GreenEnergyEfficiency	
ENERGY STAR qualified freezer	Freezer has earned the ENERGY STAR label, which indicates that it is at least 10 percent more efficient than non-qualified models and more efficient than models that simply meet the federal minimum standard for energy efficiency.	GreenEnergyEfficiency	
Heat pump water heater	< <mixed-humid climate="">> <<hot-humid climate="">> Heat pump water heater takes energy from the air to heat water. At the same time, the heat pump water heater dehumidifies the air, saving the cost of buying and operating a separate dehumidifier. http://www.aceee.org/consumer/water-heating</hot-humid></mixed-humid>	GreenEnergyEfficiency	
Solar water heater	Solar water heaters are classified as either active or passive, and are usually connected to backup water heaters in case of cloudy weather. Solar hot water systems have different configurations from collecting solar energy and storing and delivering hot water. Solar hot water systems are very different from and should not be confused with solar photovoltaic systems that generate electricity. http://energy.gov/energysaver/articles/solar-water-heaters	GreenEnergyEfficiency	



Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
Tankless Water Heater	Tankless water heaters use a gas burner or electric element to heat water only when there is a demand for hot water. They save energy because they do not constantly heat and store water and tend to last longer. Hot water never runs out, but the flow rate (gallons of hot water per minute) is limited. http://www.aceee.org/consumer/water-heating	GreenEnergyEfficiency	
ENERGY STAR Qualified Water Heater	Indicates that the water heater has earned the ENERGY STAR label for energy efficiency. Energy consumption and product performance are rigorously tested and evaluated prior to being released as an ENERGY STAR qualified product.	GreenEnergyEfficiency	
High-Efficiency/ Sealed Water Heater	Fuel-fired equipment like furnaces or water heaters can be configured to draw combustion air directly into the burner via sealed inlets connected to the outside and also include a fan-assisted exhaust. This design improves indoor air quality. http://apps1.eere.energy.gov/buildings/publications/	Green Energy Efficiency, Green Indoor Air Quality	

Notes and Guidance to Consider:

• Solar hot water does not generate energy, but rather it heats water in a more efficient way using sunshine instead of other power. Equipment and valuation for electrical generation via solar is much different—and higher—than for solar hot water. Thus it is important to keep solar water heater appliance distinct from equipment that generates electricity.

Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
LaundryFeatures	Add this pick list of features and locations where the laundry is located in the property being sold. i.e. Gas Dryer Hookup, In Kitchen, In Garage, etc.			

LaundryFeatures

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
clothes washer	Clothes washer has earned the ENERGY STAR label. Only front and top loader clothes washers with capacities of greater than 1.6 ft3 are eligible to earn the ENERGY STAR.	GreenEnergyEfficiency GreenWaterConservation	

70



AGENT/OFFICE FIELDS

Standard Name	Field Definition	Simple Data Type	Suggested Max Length	Rules Apply
ListAgentDesignation	Designations and certifications acknowledging experience and expertise in various real estate sectors are awarded by NAR and each affiliated group upon completion of required courses.	String List, Multi		
CoListAgentDesignation	Designations and certifications acknowledging experience and expertise in various real estate sectors are awarded by NAR and each affiliated group upon completion of required courses.	String List, Multi		
Buyer Agent Designation	Designations and certifications acknowledging experience and expertise in various real estate sectors are awarded by NAR and each affiliated group upon completion of required courses.	String List, Multi		
CoBuyer Agent Designation	Designations and certifications acknowledging experience and expertise in various real estate sectors are awarded by NAR and each affiliated group upon completion of required courses.	String List, Multi		

Enumeration Name	Enumeration Definition	Primary Search Cross-Reference	Rules May Apply
NAR Green	NAR's Green Designation is the only NAR-recognized real estate designation designed for agents looking to learn about issues of energy efficiency and sustainability in the various facets of real estate. Successful completion of 18-hour training course required.	NA	
EcoBroker Certified	Successful completion of 18-hour training course required. Not an NAR program.	NA	
LEED Green Associate	LEED Green Associate credential demonstrates a solid, current understanding of green building principles and practices. This credential is earned by passing a two-hour, computer-based exam comprising 100 randomly delivered multiple-choice questions.	NA	



5. IMPLEMENTATION BEST PRACTICES

With more than 125 multiple listing services (MLSs) implementing green fields to date, several clear best practices have emerged. Early adopters have learned that careful planning and design of fields is important, but it is also critical to think about the process users follow when relying on these fields and business rules that may apply. These leading best practices include:

- Local customization based on climate and business practices
- Attachment required when using Third-Party Verified Fields (Section 4a)
- Option for green addendum or disclosure attachment
- Vision for auto-population of fields

Local Customization

Based on Climate and Business Practices

The field and field values/enumerations defined in this implementation guide represent a core set of fields that are most common in the housing stock and are recognized by building experts for improving the performance of a home in one or more building categories and recognized by valuation experts for adding value. They also represent the features, materials, and approaches that apply to larger climate categories.

While this information is likely to represent a core starting point for any MLS, local customization is required. This is especially important for fields related to resource efficiency because approaches, weather patterns, and even local legislation vary greatly in terms of what is appropriate—or allowed—when working toward greater water, energy, or other efficiencies.

Early adopters of Green MLS found that building experts were often coming to them and were interested in recommending fields. Now with this Implementation Guide as a starting point, MLSs are now in a position to establish an overall strategy for local fields and then turn to the local building experts to refine rather than generate the list of field values or pick-list options that are most applicable for the local real estate market. The Green MLS Tool Kit (www.GreentheMLS.org) suggests the categories of local business that are important to include when designing green fields.

The local building community can also support MLSs by helping them understand how proposed features are represented in the existing housing stock and in local new construction trends. The building community can help with data for a business case that helps an MLS prioritize when to implement proposed fields and enumerations. This approach makes the most of the technology spending, but also leads to better data in the system as users tend to make fewer errors with fields and enumerations that they use regularly.



MPLEMENTATION BEST PRACTICES

Documentation Required When Using Third-Party Verified Fields

The most complicated part of deploying high-performance fields in an MLS has been simultaneously ensuring highest data quality while protecting users from liability risk. Third-Party Verified Fields (Section 4a) offer MLSs the greatest opportunity to control data, whereas Specific/Technical Fields (Section 4b) and Green Search/Marketing Fields (Section 4c) offer the greatest chance for error.

By far, a best practice is for an MLS to implement business rules that require a listing agent to upload third-party certifications when the listing agent opts in to certain Green MLS fields. This improves the data integrity and accuracy of the claimed certification level.

Third-Party Verified Fields offer the best data control because the information in these fields points buyer's agents, appraisers, and others toward the third party providing information about the extent of high-performance features in the home. Also, programming rules that can link these fields together greatly reduce the chance for data-entry error and increase data quality. This set of fields is used more accurately when tied together with rules. (See the table on page 33.) Please see field and enumerations details in Section 4 to clarify related rules; for example, GreenYearVersion is always required when GreenVerificationProgram is selected.

Rules are a big step to protect both data and users.

Several leading MLSs have also looked to business rules to take data protection to an additional level. MLSs such as MRED and IRES-NET have added business rules so that if the GreenBuildingVerification field is selected, a supporting document must be attached to the listing within a defined period of time. MRED uses the same attachment time frame as is required for listing photos in order to start with a business rule users are already familiar with. Best practice is to define both business and programming rules to link GreenBuildingVerification with the Disclosures field.

The method for document attachment can follow the same process the MLS uses for other disclosures like lead or radon. If the MLS offers digital attachment right to the listing for access by either other members or the public, the green verification documents should be handled the same way. And if this document sharing is handled manually or outside the MLS system, the same business process would apply.

See Appendix: Document Samples for Major Green Building Verification Programs for detailed information on all of the programs listed as enumerations/field values for the GreenVerificationProgram field.



Option for Green Addendum or Disclosure Attachment

The sheer number of features, materials, approaches, and even categories (there are six!) of high-performance building can be complicated when designing a suite of green fields to implement—and then to keep up with as practices and technologies evolve.

In addition to implementing green fields or as an alternative to implement fewer Specific/Technical Fields (Section 4b), many MLSs also offer a field to indicate that an attachment with the details on green features and approach is attached or on file. This can be implemented by using the Disclosures field in the Specific/Technical Fields (Section 4c).

The advantage to offering such an attachment is that the form can be modified more easily than fields as technologies and practices evolve. It can also be designed to be clear that builders or homeowners should complete the form and acknowledge that they are the source of both the information and its accuracy, thus protecting the listing agent from being liable for this information.

Disadvantages include the lower use of these forms due to the extra step of obtaining information from the client separate from the listing process and the need to digitally or manually share this information with buyer's agents or prospective buyers.

Searching is also limited when this approach is used. Searching in some ways is simplified because buyer's agents or appraisers can quickly identify the broad populations of homes that attach an additional addendum. However, the nuances of the information entered on such a form exist only on the attachment so the details themselves are not searchable.

The original example of a green disclosure documentation process still remains one of the best practices. Traverse Area Association of REALTORS® introduced the first-known green disclosure form, and many other MLSs now use the same or a similar format. A <u>TAAR sample disclosure form</u> is published at <u>GreenREsourceCouncil.org</u>. There is some variety in how MLSs approach an additional green attachment. Some MLSs implement this as an addendum. Others approach it as a disclosure.

MLSs just getting started with a green attachment may wish to look to the Appraisal Institute's Green and Energy Efficiency Addendum. This form was designed to be a supplement to Fannie Mae's Uniform Residential Appraisal Report 1004. It captures much of the same information that most MLS attachments include today. Using the appraiser addendum has many benefits:

- ✓ Off-the-shelf and ready-to-use
- ✓ Space to indicate source of information on the addendum (builder, seller, etc.)
- ✓ Space available to collect specifics related to the local market or climate
- ✓ Standard solution already vetted by experts and being used in the real estate transaction
- ✓ Improved appraisal/valuation process when attached to a contract (The presence of this form with a contract may increase the chance of having an appraiser competent with high-performance homes assigned to the valuation job, thus increasing the chance high-performance features will be reflected in the final appraised value as appropriate.)
- ✓ Reduced duplicate work for appraiser members of the MLS



AUTO-POPULATION OF FIELDS

6. VISION FOR AUTO-POPULATION OF FIELDS

As the consistent implementation of a RETS-compliant Green MLS grows, it has inspired green verification program sponsors, MLSs, MLS system vendors, and public records aggregators to explore new opportunities for working together. Data about high-performance homes is increasing and becoming richer, more standardized, and accessible as this segment of the construction industry evolves.

For example, RESNET has verified over a million homes. Data collection happening through LEED for Homes, the National Green Building Standard, and BPI- 2101 Standard Requirements for a Certificate of Completion for Whole-House Energy Efficiency Upgrades is creating large data sets of details on high-performance homes that is available directly by verification sponsors.

MLSs interested in auto-populating Green MLS fields should find robust information available that simplifies data entry for listing agents while protecting them from liability if the sponsor can be identified as the source of the information. Local building programs in a given market can help the MLS assess the quality and quantity of data available to determine when auto-population may make sense.

Some preliminary thinking on the concept is as follows:

- The fields in "Section 4a—Third-Party Verified Fields" represent the best opportunity for auto-population of fields. It is a succinct list and the mapping to green verification sponsor data is very clear.
- MLSs wishing to pursue auto-population of fields should first make a GreenSource field available. See definitions for related fields such as LotAreaSource for specifications. GreenSource enumerations might include Verification Program Sponsor, Builder, Property Owner.
- Several large green data collectors are exploring options to make their Third-Party Verified Field data available for auto-population to an MLS. This may be via a direct API-type feed or to public record data aggregators. Contact verification sponsors for more information.
- The National Home Performance Council has a mapping available that shows how fields in the current version of the RETS Data Dictionary map to the current version of the Appraisal Institute's Residential Green & Energy Efficiency Addendum as well as the BPI- 2101 Standard Requirements for a Certificate of Completion for Whole-House Energy Efficiency Upgrades data elements. This mapping is a starting point to understand auto-population options.



RECOMMENDATIONS AND RESOURCES

7. FINAL RECOMMENDATIONS AND RESOURCES

This guide provides the resources needed to quickly and effectively deploy green fields. It provides a starting point for MLSs to specify fields with both vendors and the local user and building community to ensure quality fields and data. The guide reflects the thinking of experts and programs that know the features, materials, and approaches that are or will be most common and stable in the housing inventory over the immediate short term (three- to five-year time frame). This guide gives MLSs the confidence to implement these fields now, without concern for frequent modification and adjustments.

More important, this guide reflects the experience and learnings from early-adopter MLSs. These MLSs have been untiring in their interest in knowledge-sharing both as input to resources such as this guide and the Green the MLS Tool Kit and to peer-to-peer sources. MLSs beginning the process of green MLS implementation can look to these resources to guide their own design as well as to MLSs that have already done so.

RESO

- Real Estate Standards Organization
- RETS Data Dictionary
- Data Dictionary Working Group

NAR Green REsource Council

• NAR Green REsource Council

Green MLS Tool Kit

• Green MLS Tool Kit