

GREEN DATA BEST PRACTICES



CMLS BEST PRACTICES GUIDE FOR THE MLS

CMLS Best Practices bring together emerging and proven practices from across real estate to align and advance professional standards within the MLS industry.

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CMLS



All organizations must change their business plans to anticipate and adapt to changes in the marketplace.

— Jon Feltheimer

BACKGROUND

CMLS Best Practices began as a work group initiative that grew out of an idea submitted in 2013. From that initial workshop spark, the group curated the best ideas submitted by attendees, added policies and procedures gathered from CMLS members, and recruited Ann Bailey of Pranix Inc. to refine, organize, and add further insights. The result was the publication of seven documents capable of guiding any MLS organization to meet industry standards and recognized benchmarks.

The objective of these documents is to help MLSs of all sizes make the market work by encouraging them to adopt the best practices of a community that consists of leading MLSs and business partners. In sum, best practices help MLSs and subscribers succeed.

In an effort to assist MLSs to meet growing consumer-driven demand for information related to home performance, CMLS began work on a new comprehensive document that would help MLSs deliver the tools, tactics, and technologies their customers need.

The result was the creation and publication of the Green Data Best Practices document, a guide that addresses the implementation and continued success of the “green data” initiative through technical implementation, change management, and impact measurement. Its development was spearheaded by Laura Stukel with contributions from the CMLS Green MLS Section Council, numerous contributing organizations referenced at the end of the document, and CMLS staff member Richard R. Becker.

DEVELOPMENT

More than two dozen contributing organizations and countless MLS professionals are responsible for the development of the Green Data Best Practices Guide. For a full list of those organizations providing research, insight, and authorship, please see the references page at the end of the guide. Thank you.

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EXECUTIVE SUMMARY

A trend that began as early public interest in energy efficiency has matured into mainstream consumer demand for better home performance. Environmentally friendly homes increased from two percent of the market in 2005 to 23 percent in 2013.* The market is expected to grow as, according to one study*, 93 percent of builders recognize energy and water efficiency as an important building practice.

Green features are not the only ones gaining traction. Smart, durable, and sustainable homes make up an inventory that commands about 10 percent or more value* and sell up to 18 days faster.* And with a market share exceeding 25 percent in some markets*, it's time to recognize such features as mainstream.

High performance, resource efficient homes are healthier, more comfortable, and cost less to maintain. However, such homes are not always easy to find because listing data hasn't kept pace with consumer demand. In these cases, home buyers are forced to rely on less reliable sources of information, home sellers accept offers below real market value, agents work longer for reduced commissions, and whole markets remain undervalued.

In order to mitigate such discrepancies, MLSs are the best equipped to protect market confidence by including green data and the broader definition of home performance as part of the information they safeguard and processes they govern. By adopting standards around high performance homes that are supported by the greater real estate industry, MLSs will ensure consistency and continuity.

To assist in this effort, CMLS has brought the real estate industry together to explore issues and provide solutions around the implementation, adoption, management, and measurement of green data initiatives and home performance indicators. The outcome of this work is the Green Data Best Practices, a guide for market success.



WHY IT MATTERS

Demand for home performance, comfort, savings, and safety became a consumer-driven phenomenon in the early 2000s. Now, as new features and technologies become more accessible and affordable — and various benefits appeal to more market segments and across all generations — evidence suggests that the demand for such features will continue to grow.

Knowing this, builders, remodelers and manufacturers are already responding to what consumers want. Many homes that have been recently listed on MLSs have green features and smart technologies. All too often, the only difference between one listing and another is whether or not these features have been identified and promoted.

CMLS has been publishing resources related to the pervasiveness of green features for several years. At the time, more than one million Energy Star homes had been built. In addition, 1.4 million homes featured solar power systems and 52 million homes included Energy Star dryers. [Figure 1]

According to “Profile of Home Buyers and Sellers” by the NATIONAL ASSOCIATION OF REALTORS®, the average home is sold every 10 years. This means more homes with green features and smart technologies are hitting the market, making it important to offer the fields, forms, and property reports that support such features. MLSs must also help agents and appraisers know how to use them.

NATIONAL ASSOCIATION OF REALTORS®

MLS Green Fields Deliver

Today's hottest buyer trends include:

- ✓ COMFORT
- ✓ SAFETY
- ✓ AFFORDABILITY

More homes deliver than ever before.

MILLIONS OF HOMES

- ENERGY STAR HOMES: 1+
- SOLAR HOMES: 1.4
- ENERGY STAR: 52

GREENER HOMES ARE BETTER HOMES

MLSs provide the tools to support this valuable niche.

900,000+
real estate professionals have access today!

- ✓ Higher client satisfaction
- ✓ Sell faster
- ✓ Sell for more money

Ask your MLS about green fields today!

For more information: Visit booth #4135 or nar.realtor/topics/sustainability

In collaboration with **CMLS**
Council of Multiple Listing Services

Figure 1: NAR/CMLS poster, 2017.

In fact, the likelihood of listing a home with green features has grown. In 2018, approximately 27 percent of NAR members have experienced at least one transaction with a home that included green features, which coincides with the increasing market share of sustainable, energy efficient homes.

More than 70 percent of NAR members also report that promoting the energy efficiency of a home as valuable¹. Recent valuation reports indicate that homes with green features typically sell faster and for 2-5 percent more² than comparable homes without such features.

To ensure market efficiency, it is more critical than ever for MLSs to link the benefits buyers want with the investments sellers have made, and provide real estate agents and appraisers with the information and tools they need to manage these transactions. To assist, CMLS has developed a four-part approach to meet consumer demand, better track inventory trends, and provide a mechanism for MLSs to build a better marketplace.

This approach also recognizes that front-end solutions (those provided by MLSs) are aligned with back-end standards (those offered by the Real Estate Standards Organization), and professional practices for property disclosure, Code of Ethics and professional development (those provided by NAR). Together, each collaborator has made significant contributions to meet consumer demand.



Figure 2: Green Data Collaboration.

DEFINING GREEN DATA

Green data includes a variety of information: Future trends, popularity, and availability may all change based on market climate, building practices, and consumer interest. As technology evolves, green data will include a broader scope of home performance.

Green data answers questions that buyers ask. Has a home been weatherized? What kinds of heating and cooling systems are installed? What are the benefits of various features? Can we expect improved comfort, safety or utility bill savings? How are these benefits delivered — through water usage, energy efficiency and air quality?

Simply stated, green data is a collection of home performance indicators (HPIs) — information that highlights technologies that sellers want to showcase in terms that a buyer can easily understand. By recognizing and reporting HPIs, MLSs can include this data in fields, forms, reports, flyers and data feeds and share the story across the market.

1. "REALTORS and Sustainability" NATIONAL ASSOCIATION OF REALTORS®

2. Adomatis Appraisal Service Published Studies

Developing an effective green data initiative calls for more than creating and filling in MLS data fields. It requires an integrated approach that links data entry (manual or automated) across various support tools. These tools may include listing entry forms, property reports, marketing flyers, website data feeds, third-party applications, and any other communication vehicle or technology employed. The data — HPIs — can then be highlighted and linked together, ensuring a smooth user and consumer experience.

When combined with support from third-party verification programs such as scores, certifications, automated energy models (AEMs), or details about power production systems, the information becomes even more valuable. There are many options.



TERMINOLOGY TIP: Home Performance Indicators

- Individual Features
- Power Production Details
- Automated Efficiency Models (AEMs)
- General Categories for Marketing and Searches
- Home Energy Information from Third-Party Programs

Individual Features. More and more new and existing homes possess a variety of green features, ranging from energy efficient appliances and low-flow toilets to smart temperature control systems and vehicle charging stations. How does an MLS get started? The best way to describe individual features is to simply add “lookup values” to existing MLS fields. Lookup values are the most efficient transitional practice. See the [CMLS Quick Start: MLS Green Field Guide](#) for additional guidance.



Power Production Details. As more homes generate electricity using the sun and wind, power production may become increasingly valuable. For example, the market for solar-powered homes — also known as photovoltaic (PV) homes — hit its stride in 2016. These homes employ new technology that use the power of the sun to generate electricity. CMLS published the [CMLS Green Sheet: Solar Power Fields](#) in early 2018 to keep MLSs up to date. See the [CMLS Green Sheet: Solar Power Fields](#).

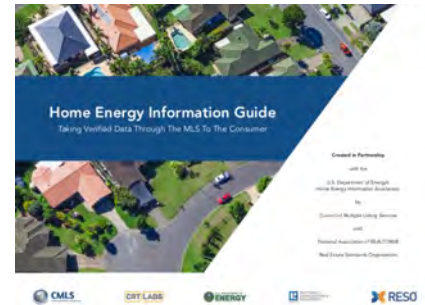


Automated Energy Models. Automated Efficiency Models (AEMs) are not all that different from Automated Valuation Models (AVMs). They use public data, algorithms, and proprietary formulas to estimate home efficiency. This sometimes includes access to transportation, energy usage, and the potential for adding solar systems. See [CMLS Green Sheet: Automated Efficiency Models](#).



General Categories. Green homes and smart homes can have many different features, leaving some consumers at a loss. By providing a green search and marketing framework, sellers will have an easier time highlighting high-level search categories such as indoor air quality or water efficiency. Many of these general marketing and search categories have already been defined. See the CMLS Quick Start: MLS Green Field Guide for additional guidance.

Home Energy Information. Advanced home performance indicators such as efficiency scores, ratings, and certifications are provided by a variety of trusted third parties. Since documentation usually supports any scores, ratings, and certifications issued, third-party data can sometimes help reduce liability exposure. To learn more about the various types of verifications and several other national programs, see the CMLS Home Energy Information Guide.



STRATEGIES FOR SUCCESS

There are three strategic components to every successful green data initiative: consumer experience, risk management, and outcome measurement. Considering all three components early on in the planning process will help support a seamless transition.

Specifically, keeping the consumer experience in mind means thinking about the users (agents and appraisers) and their customers. As green housing trends and the adoption of smart technologies accelerate, MLSs have an opportunity to support smoother transactions by providing the best possible data on such features.

As part of the consumer experience, MLSs also need to assist in risk management. Since some market trends are relatively new, there are many features that may go unnoticed, unlisted because the agent might not understand the benefit, or under promoted because some brokers are sensitive to intentionally or unintentionally over promoting certain claims (sometimes called 'greenwashing'). By developing specific processes and assigning some responsibility to trained staff members, MLSs can stay ahead of liabilities related to errors and omissions by tracking compliance, adopting best practices, training users, and developing communication metrics. This can all be accomplished with sound business rules, and properly designed fields, forms, and reports.

Through it all, MLSs are best served by considering the outcome measurement on the front end. The more an MLS understands which home performance indicators might be popular in the local marketplace, the more likely they will be able to meet predetermined objectives. This might include the number of local agents that specialize in green homes, the number who enroll in green education, or the number who adopt the tools and technologies provided by the MLS over a multi-year plan.

TERMINOLOGY TIP

Home Performance Indicator (HPI) is a term that can help MLSs convey information about specific home features without labeling them "green." This term can also reflect different types of home performance, including: health, comfort, security, operations, and convenience.



CMLS held several informal focus groups, consisting of CMLS members, to ask members how they felt about green data and home performance indicators. Member responses provide some existing market insight.

POLARIZED EXPERIENCES

“Early adopters are passionate and interested in advancing the market.”

“Some MLSs are confused by the trend and feel that they have already fallen too far behind.”

DEPENDENCE ON THE FAMILIAR

“Home performance indicators usually look pretty much the same as their traditional counterparts (e.g., better insulation in a wall or a highly efficient kitchen appliance).”

“Agents are familiar with standard listings, selling processes, and typical home inspections. Some inadvertently overlook home performance indicators and data fields because they don’t know what green data to look for.”

RESISTANCE TO CHANGE

“MLS green data simply reflects inventory trends around the construction and remodeling techniques, and features and equipment common in a given market, as well as the buyer demand for these features.”

“Some find the idea of home performance to be a political topic more than an inventory topic, which may be why they shut down.”

LEGAL CONCERNS

“Agents tend to instinctively question whether working with green fields, forms and reports will help or hinder their ability to communicate *accurate* information.”

“Much like with information about square footage, agent practices and broker policies sometimes omit green data from listing information because they believe omission may reduce liability.”

“Agents need to possess a comfort level with the features and equipment in a home. They also need to know how fields, forms, and reports are designed before being able to fully integrate home performance indicators into day-to-day activities like marketing flyers or buyer reports.”

RISK MITIGATION

“By relying on consistent standards, terms, and features, there is a real potential to reduce confusion in the marketplace and minimize any errors.”

“As long as we insist on supporting documents, even invisible home performance indicators (such as the efficiency of a window) can lend to the value of home and be validated by third-party verification programs.”

“MLSs can encourage agents to ask for and share supporting documents.”



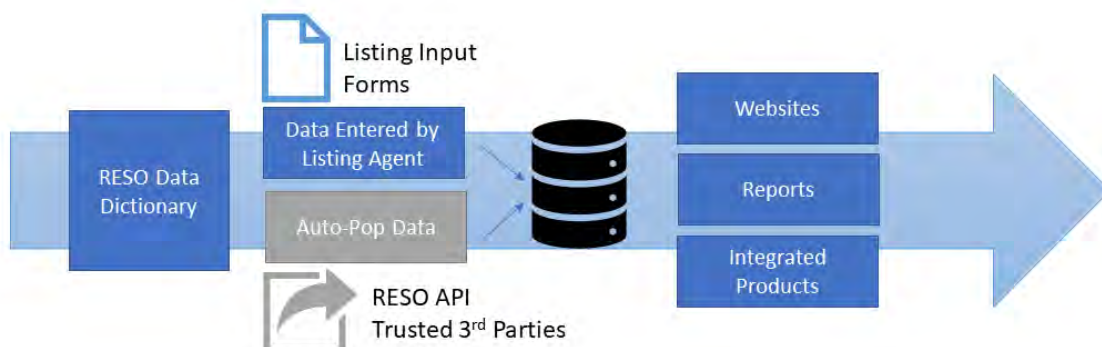
TECHNICAL IMPLEMENTATION

A green data initiative is like any other initiative. As such, it is important to think about how data is entered into the MLS, how it is managed, and how it is shared with an ever-present customer service philosophy — one that meets the needs of consumers and customers, industry partners and service providers.

While this Best Practice assumes familiarity with key industry concepts like RESO, IDX, etc., anyone can learn more by referring to the CMLS Best Practices White Paper: [Partnering With Data Consumers](#). The document is helpful as it reflects a consensus of industry leaders, MLSs, technology vendors, and licensed real estate professionals.

For the purpose of getting started, consider data management as three key elements.

- **Data collection.** Most data is provided to an MLS by agents who manually add information via a listing form. Some MLSs allow trusted third parties to automatically populate select data fields. Some accept data collected by a property records vendor (much like some tax data is handled).
- **Data storage.** The MLS protects these home performance indicators and other records that are stored in key fields as defined by the RESO Data Dictionary.
- **Data presentation.** Home performance indicators can be presented with other tax, listing and property data. It can also be presented on websites, in property reports, and any broker-approved tools like CMA tools, member-only applications, or tax databases.



The diagram above provides a working model of how green data or home performance indicators are collected, stored, and shared. It is guided by the RESO Data Dictionary.



Creating A Plan.

Based upon the experience of CMLS members who have already created a green data implementation plan, technology implementation can be designed in five basic steps.

- Step 1.** Update applicable existing fields with home performance indicator lookup values.
- Step 2.** Implement select green fields and test for RESO Data Dictionary certification.
- Step 3.** Implement MLS compliance procedures and ensure high-quality data entry.
- Step 4.** Align forms and data displays for a seamless listing data entry experience.
- Step 5.** Align data feeds to reach additional data consumers as directed.

1

Update applicable existing fields with home performance indicator lookup values.

Features like vehicle charging units, LED lighting, and smart thermostats can be easily described by introducing new lookup values to existing MLS fields. Use the [CMLS Quick Start: MLS Green Fields](#) as a checklist and see how they have been defined in the RESO Data Dictionary and the wiki resource. Anytime new lookup values are introduced, refer to RESO standards.

2

Implement select green fields and test for RESO Data Dictionary certification.

In recent years, the RESO Data Dictionary has been updated to reflect three new collections of fields that leading MLSs are using to address green data. The CMLS Quick Start: MLS Green Fields includes tips on how to implement these field groups as they are defined in the RESO Data Dictionary:

Green Search and Marketing Group.

This is a set of high-level search categories and supporting lookup values that address topics such as indoor air quality or water efficiency. The RESO definitions have been carefully vetted to make sure they do not duplicate technical field lookup values. [Figure 3]

Green Verification Group.

These are fields that include scores, ratings, and certifications as provided by a trusted third party. Documentation is usually available from these third parties, which can help to reduce liability risk. The CMLS Home Energy Information Guide provides background on several verifications and highlights national programs. [Figure 4]

Power Production Group.

These fields include solar and wind systems. For more information, refer to the CMLS Green Sheet: Solar Power Fields, which explains what MLSs need to know about solar homes. [Figure 5]

The RESO Data Dictionary for field specifications is considered a best practice for any MLS green data initiative.



Figure 3: NEREN example of RESO compliant Green Search Group and energy efficient lookup values.

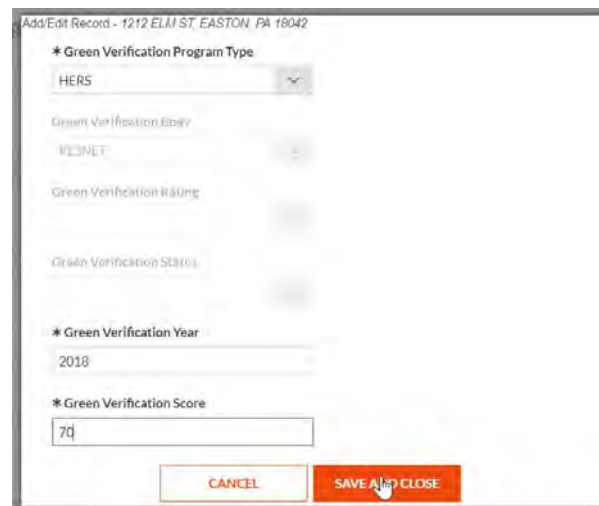


Figure 4: Bright MLS example of RESO compliant Green Verification Group.



Figure 5: CRMLS example of RESO compliant Power Production Group for solar power.

TERMINOLOGY TIP

Drop-downs. Lookup values. Pick-list options. Feature sets. Enumerations.

Depending on where your MLS is located or your role within an MLS, you may know some terms, but not all of them. They all refer to a pre-programmed list of options that a user can choose from when entering data into a controlled field. The RESO Data Dictionary wiki defines them all as “lookup values,” a term that CMLS has adopted too.

The RESO Data Dictionary is also mandated for any MLS owned by a board of REALTORS®. This means that if a field is defined in the RESO Data Dictionary, then it must follow RESO standards. It's also important to test green data fields as part of the implementation process to maintain RESO certification.

RESO-compliant fields are only the beginning. It is also important for MLSs to align the RESO fields with their overall data structures. Make sure the front end, where the listing agent enters data or reviews property reports, maps on the back end with a RESO-certified field.

3

Implement MLS compliance procedures and ensure high-quality data entry.

Prioritizing a set of fields for a green data implementation is an excellent foundation. Once that step is complete and the fields are selected, it is important to ensure that MLS technology design, rules, and compliance processes are also aligned in order to provide the highest quality of data possible. This is an important step for any MLS data initiative, and is especially important for a green initiative as it is an emerging topic and may carry liabilities.

During the MLS compliance phase of implementation, it is extremely beneficial to answer questions that fall under four different categories. These categories include: MLS technology design, MLS rules, compliance process, and compliance helpers.

MLS Technology Design Questions

- Will any data stand alone in a 'green' section?
- What data should be intermingled with existing fields? (e.g., a new lookup value under a field that is already live)
- Will any fields be coded with conditional logic? (e.g., adding Coding Power Production Collection in a way similar to how coding for room size, floor level, and window treatments are added.)
- Is your MLS remaining compliant with NAR Mandated RESO Standards?
- Is your MLS using the Data Dictionary's option that allows each MLS to grow and adopt as local inventories require?

MLS Rules Questions

- Will any of the fields be required?
- Will any supporting documentation be required?
- Will any fields be restricted for auto-population only?
- How can you mitigate confusion or misuse of green information?

Compliance Process Question

- If fields or documents are required, how will this be monitored and reported?

Compliance Helpers Questions

- Will any fields be coded to check for errors? (e.g., ensure numbers only are entered in numeric fields)
- Will user help be implemented? (e.g., hover help/tool tip such as a question mark icon users can click for more information) [Figure 6]

A leaf icon or bold text to call attention to popular green data fields or home performance indicators improves efficiency.

Avoid colored text as a standalone call out, keeping in mind that some segments of the population are color blind and may not notice it.

Refer to the compliance quick-start checklist in Appendix A for more information.



Figure 6: NNRMLS uses a leaf and lightbulb icon to help users identify fields that highlight specific data.

4

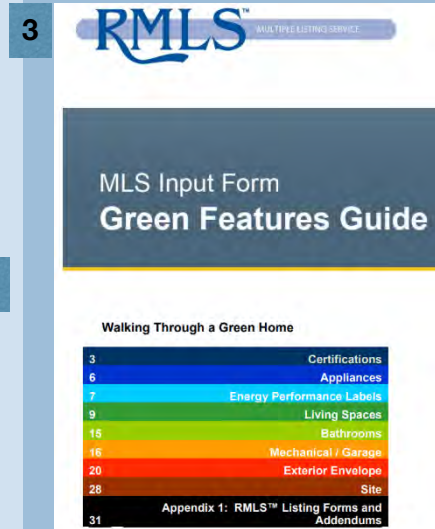
Align forms and data displays for a seamless listing data entry experience.

Once fields, tech design, rules, and MLS policies are set, develop a plan to fine tune listing data entry and the listing maintenance experience. This is the step in the process where an MLS can focus on listing entry forms and data display design.

While there are several paths to completion, the process RMLS developed to align the RESO Green Verification Group to forms and display is recognized as a best practice. The following page provides snapshots of the case study, presented as a series of screenshots. [Figure 7]

RMLS Case Study Screenshots

- 1 RESO Green Verification Group:
 - [GreenBuildingVerificationType](#)
 - [GreenVerificationStatus](#)
 - [GreenVerificationRating](#)
 - [GreenVerificationYear](#)
 - [GreenVerificationVersion](#)
 - [GreenVerificationMetric](#)
 - [GreenVerificationSource](#)



GREEN VERIFICATION TYPE:	CERTRET	EARTHAD	EN-STAR	LEEDND	LEEDHMS	NGBSNEW
	NGBS-SP	NGBS-WH	PSVHAUS	EPS	HERS	HES
TYPE (1)	OBTAINED (1)	RATING (1)	YEAR	VERSION	SCORE	DATE
TYPE 1	INPROCESS COMPLETE	BRONZE CERTIFIED EMERALD GOLD PLATINUM SILVER	---	---	---	MM DD YYYY
TYPE (1)	OBTAINED (1)	RATING (1)	YEAR	VERSION	SCORE	DATE
TYPE 2	INPROCESS COMPLETE	BRONZE CERTIFIED EMERALD GOLD PLATINUM SILVER	---	---	---	MM DD YYYY

- 4
1. Standard fields for the RESO Green Verification Group.
2. RMLS listing input form.
3. RMLS user guide.
4. RMLS listing entry display.

Figure 7: RMLS Case Study Screenshots, 2018.

5 Align data feeds to reach additional data consumers as directed.

Green data initiatives are being fueled by consumer demand. Therefore, MLSs should not only consider how green data will be provided to the MLS, but also how green data will be shared beyond the MLS.

Most MLSs work with software providers to make this happen. See the CMLS Best Practices White Paper: *Partnering With Data Consumers* for more information. Consult RESO for other available resources.

Whether the MLS assigns this task to an in-house team or trusted software provider, the basic principle is the same. New standardized fields are added to data feeds so they deliver consistent data to all approved brokers, agents, and data consuming technology companies. This ensures the fields are the same across all products and services. There are three primary ways MLSs share data with consumers.

Websites

- IDX/VOW/Broker Sites
- Back Office
- MLS Consumer Sites [Figure 8]
- Portals/Third-Party Listing Syndications [Figure 9]

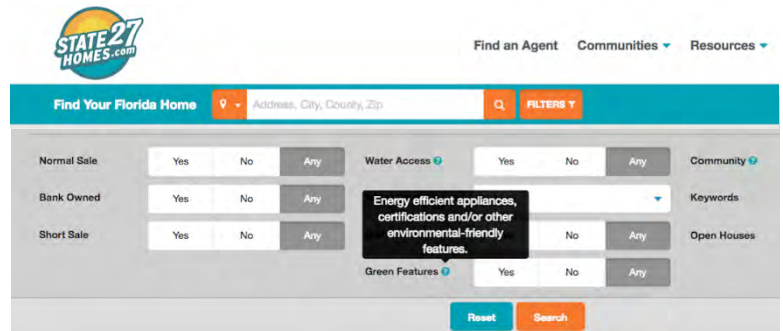


Figure 8: My Florida Regional MLS allows consumers to search by HPIs on their consumer-facing website.

MLS Property Reports

- Agent Only, Client
- Marketing Flyers

Products with MLS Data

- CMA Tools
- Member-Only Apps
- Member-Only Platforms
- Tax Database

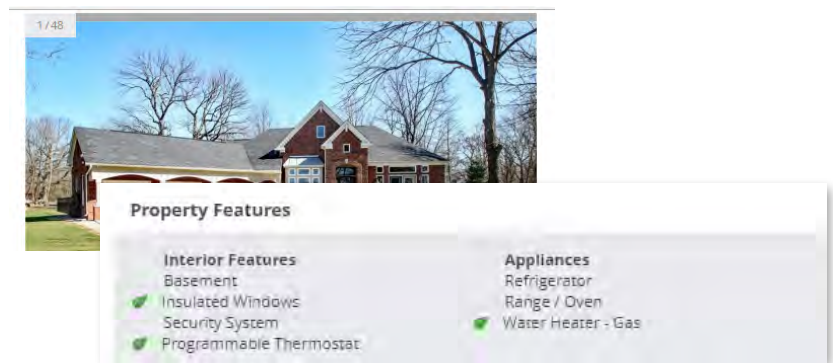


Figure 9: Home with HPI icons as syndicated by MIBOR to Homes.com.

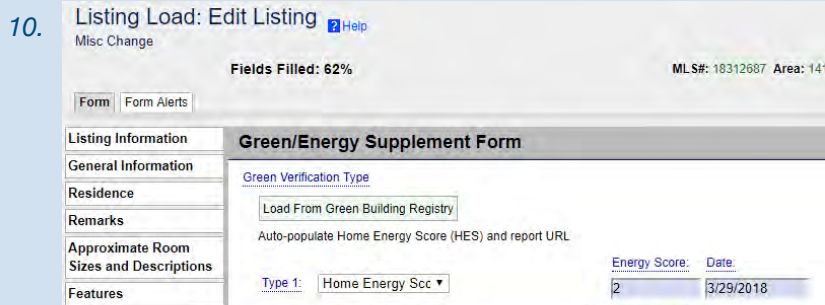


Figure 10: RMLS Auto-pop of DOE Energy Score for Portland compliance.



Figure 11: NEREN Auto-pop of solar power data by Vermont Energy Atlas.

Figure 12: MRED Auto-pop of utility costs for Chicago compliance.

Auto-Pop Case Study Screenshots

11. **Load Tax Data**

Include	#	Description	Values
<input checked="" type="checkbox"/>	(142)	SPAN#	
<input checked="" type="checkbox"/>	(245)	Acres	10.500000
<input type="checkbox"/>	(152)	TaxGrosAmt	0.00
<input checked="" type="checkbox"/>	(150)	AssmntYr	2016
<input type="checkbox"/>	(315)	BedsTot	0
<input type="checkbox"/>	(279)	SqftApxTI	0
<input type="checkbox"/>	(94)	UnitLot#	
<input type="checkbox"/>	(393)	BathsFull	0
<input type="checkbox"/>	(394)	Baths1/2	0
<input checked="" type="checkbox"/>	(93)	Address	
<input type="checkbox"/>	(246)	LotSqft	0
<input checked="" type="checkbox"/>	(453)	Mount Loc	Ground
<input checked="" type="checkbox"/>	(487)	MountType	Tracker
<input checked="" type="checkbox"/>	(470)	PowerProdA	5816.000000
<input checked="" type="checkbox"/>	(472)	PowerPSiz	4.20
<input checked="" type="checkbox"/>	(452)	Power Prod	Photovoltaics
<input checked="" type="checkbox"/>	(490)	PowrPVSrc	Public Records

Some MLSs are automatically populating HPIs from trusted energy partners. The screenshots above are some best-in-class examples.



CHANGE MANAGEMENT

Implementing technology can only take a green data initiative so far. It is equally important to prepare users so they may take advantage of home performance indicators in fields, on forms, and in reports. Change management becomes an important part of the process.

This section provides an overview of change management concepts and a three-step approach to implement a change management plan specific to a green data initiative:

Step 1. Audience Targeting

Step 2. Initiate a Green Data Change Management Plan

Step 3. Enhance Green Data Change Management Plan

Change Management Overview

Change occurs at a rapid pace in the real estate industry, ranging from new tools like showing schedulers to complete system provider changes. MLSs that adopt best practices regularly embrace change, recognizing that their organization must respond, adapt, and innovate to meet the market demands of tomorrow.

Including change management as part of the overall green data initiative plan increases the likelihood of a successful implementation. As agents, appraisers, and other users recognize how they will benefit from the implementation, it is more likely they will look forward to the changes being made rather than resist them.

MANAGEMENT TIPS

Three Core Functions

- Compliance Training
- Communications
- Help Desk Support

Four Daily User Tasks

- Listing Entry
- Property Search
- Property Reports
- CMA

Some theories advise that change management as an organizational function can be best understood by observing how people respond to the major changes in their lives such as the death of someone close to them and subsequent grieving³. This kind of change is called transformational.

By studying the effects of such transformational change — the loss of a loved one or major merger between two MLSs — managers become better equipped to facilitate other kinds of change. This includes strategic change, such as introducing a new property record vendor; and incremental change, such as introducing modifications to fields and forms within the existing system. They learn that, in most cases, people undergoing change will experience a six stage cycle: denial, frustration, depression, experimentation, acceptance, and integration.

How People Respond to Change

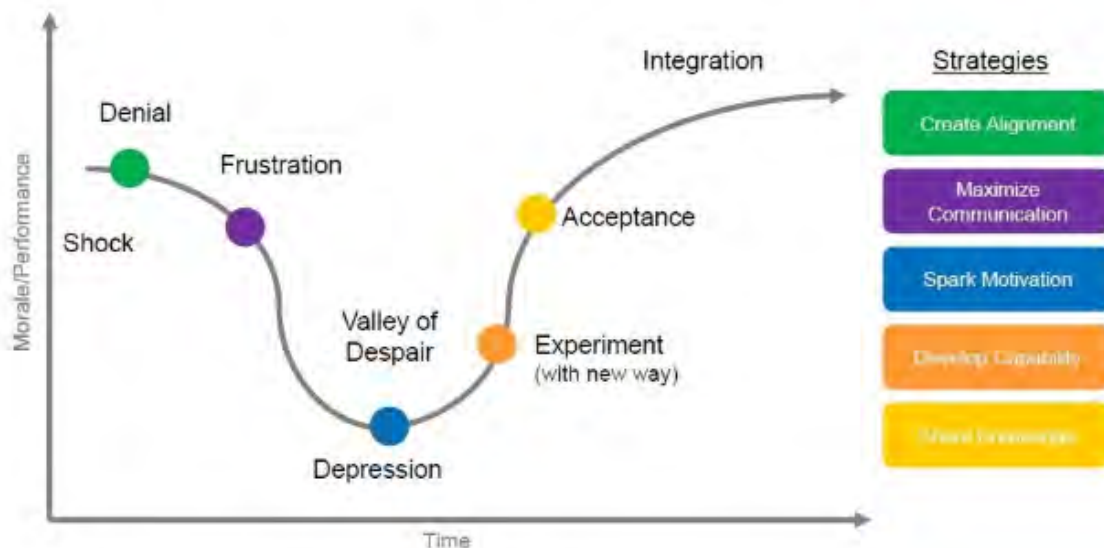


Figure 13: The change cycle as presented by Rutgers University.⁴

The primary difference between transformational change that affects all people and systems interacting with the MLS and incremental change, such as a green data initiative, is generally confined to the period of time that morale or proficiency is impacted. The good news is that the anticipated change cycle timeframe can be shortened with proper planning, management, and support.

MLSs, for example, can encourage a successful integration by anticipating the scope of the response, implementing tactics that help people work through the cycle, and then shortening the cycle by providing resources from an MLS change management toolkit. Providing such support throughout the process cannot be underestimated.

3. Organizational change theory is based on research by Elisabeth Kübler-Ross.

4. Six Phases Of Change by Rutgers University.

Even with people who typically adopt to change in different ways or at a different pace, support mechanisms and resources can make all the difference. In fact, MLSs can expect faster adoption when such support mechanisms and resources are provided at critical times during the change cycle.

Change Cycle Matrix

Response	What does it sound like?	Priority Tactics	Resources in an MLS Change Toolkit
Denial	“Meh, this doesn’t apply to me.” “This won’t work in our market.” “Things are fine the way they are.”	Create Alignment	Market Statistics Compliance procedures Help Desk Context-sensitive help/error checking
Frustration	“I don’t like this.” “I’m not interested.”	Maximize Communication	Resource Library Communication Campaigns
Depression	“This is too hard.” “This will never work.”	Spark Motivation	Embrace early adopters One-on-one coaching
Experimentation	“It’s starting to make sense.”	Develop Capacity	Webinars Classroom
Acceptance	“I see the benefit.”	Share Knowledge	Extended staff training & development BOR Programming
Integration	“This is the way we do things around here.”		

Green Data Initiatives Are Unique

As long as people are not stuck in a prolonged state of denial, proper planning can ensure a green data initiative change cycle remains relatively flat and short.

What to expect when introducing a green data change initiative:	
<ul style="list-style-type: none"> ✓ Prolonged denial phase ✓ Prolonged frustration phase ✓ Prolonged depression phase 	<i>Why? - Confusion, perceived liability concerns, perceived thorniness</i>
<ul style="list-style-type: none"> ✓ Quick rebound upon experimentation phase 	<i>Why? - Incremental changes to fields, forms and reports</i>

Based on the experiences of green data initiative early adopters, following a three-step approach to change management will shorten the change cycle timeframe.

1

Audience Targeting.

The CMLS Best Practices Survey Report⁵ suggests that it becomes easier to track adoption and integration during a rollout if audience targeting occurs during the planning phase. This process includes identifying and prioritizing various audiences that will be impacted by the implementation of a green data initiative.

Target by User Type

- Listing agents, with a focus on listing input and property reports
- Buyer agents, with a focus on search, property reports, CMA
- Appraisers, with a focus on search and property reports

Target by User Background (best practice)

- Top producers
- Tenured agents

Target by User Psychographics

- Early adopters
- Eco-minded
- New adopters

2

Initiate a Green Data Change Management Plan.

Once the audiences are prioritized, define all change management expectations. For most green data initiatives, there is often an emphasis on those who experience prolonged phases of denial or frustration.

Provide Evidence For Denial

- Early adopters
- Eco-minded
- New adopters

Provide Support For Frustration

- Resource libraries
- Context-sensitive help/error checks
- Communication campaigns

5. CMLS Best Practices Survey Report, page 31.

Marketing Statistics. Facts about trends in the local industry can provide context around the importance of green data initiatives and can be a stepping point for agents and appraisers to seek more information. Partners such as local professionals affiliated with green verification programs mentioned in the [Home Energy Information Guide](#) can be good resources for industry trends.

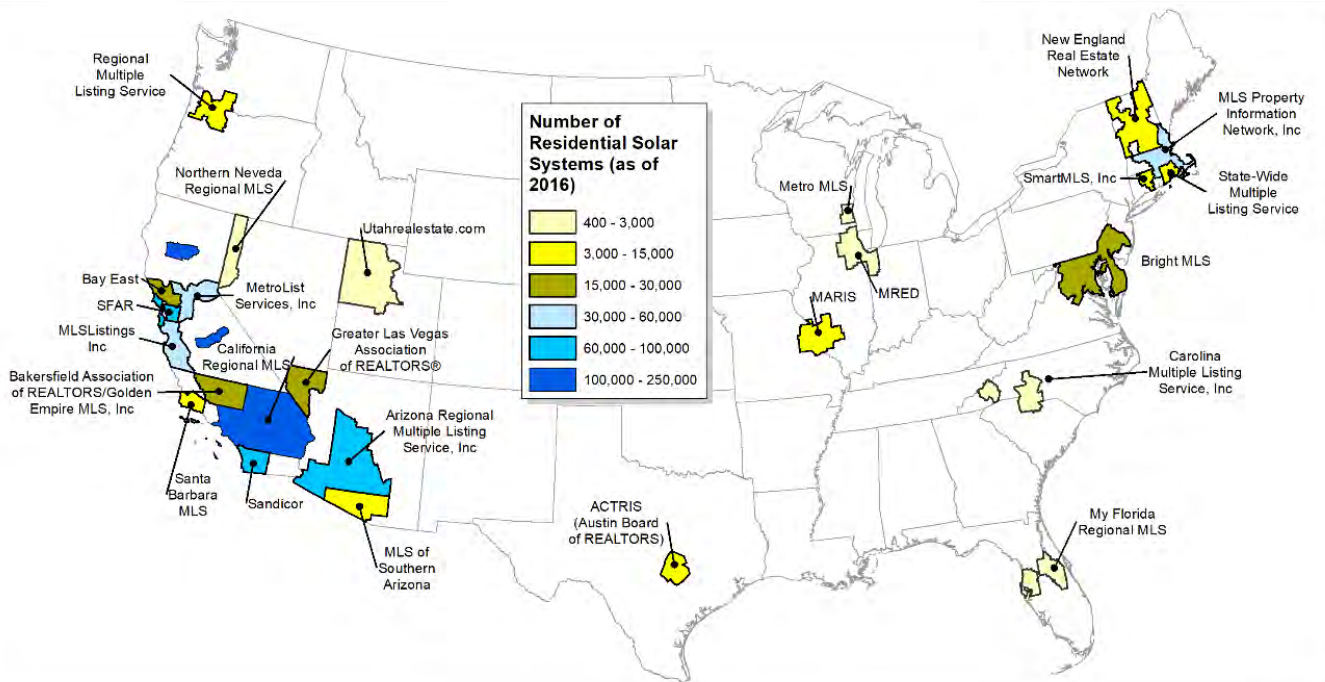


Figure 14: Residential solar installations compared to selected CMLS member coverage areas.

The map above shows a summary of national PV solar inventories for CMLS members. It was prepared for CMLS by the Lawrence Berkeley National Laboratory. It represents the kind of information that will resonate with specific audiences. Specifically, such data helps reveal features — especially energy efficient features — that are otherwise hidden from plain sight.

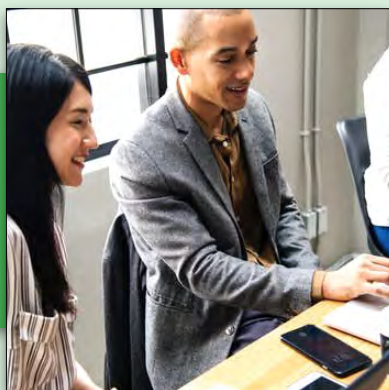
Compliance Procedures/Context-Sensitive Help/Error Checking. Compliance processes and tools are important resources during the launch of any green data initiative. They remain vital throughout implementation and adoption, catching emerging problems, checking for and reporting on errors, and capturing feedback.

6. Sources: Lawrence Berkeley National Laboratory; U.S. Census Bureau; Solar Energy Industries Association and Green Tech Media, Solar Market Insight.

As an emerging trend in many markets and with new home performance indicators that may not be recognized, early adopters among MLSs have experienced agent avoidance on the front end. Compliance procedures help alleviate avoidance by proactively monitoring and providing support to those agents, encouraging adoption.

Help Desk Support. Help Desk plays a vital role in answering questions, providing resources, and collecting feedback from members, selling agents, and buyer agents. There are three key knowledge points that any Help Desk should be familiar with.

- **Information available in the MLS.** This includes which home performance indicators are included in the system, what the fields and data collected mean, and how this benefits selling agents, buyer agents, appraisers, sellers, and buyers.
- **Documentation feedback and member requests.** Monitoring requests for green fields that are not currently included and refer new fields to the RESO Data Dictionary for future consideration. Provide documentation when available.
- **How to list and search for information.** Walking members through the process of uploading green information into listings and how this information is displayed are among the most common requests made by users after implementation. Other examples include knowing what reports contain this information, which statistical reports are made available regarding home performance indicators, what data feeds beyond the MLS include green fields such as IDX or VOW, etc.



CMLS held several informal focus groups, consisting of CMLS members, and asked them about what it means to address low to high level user support needs.

Starting Support

“Include Help Desk staff on all green data initiative communication.”

Best Practice Support

“Provide Help Desk with green data initiative communication in advance and a well thought out question and answer section.”

Best In Class Support

“Include Help Desk training during rollout plans, including 2-3 session choices so staff can rotate through the program quickly.”

“Identify green data subject matter enthusiasts for advanced questions and follow ups.”

“Conduct regular meetings between Help Desk and development staff.”

Tools To Maximize Communication

Resource Libraries. Make documents and help texts available to members, helping them to better understand all field and data entry requirements:

- How-to guides that provide step-by-step instructions
- Knowledge base, including searchable database of user questions and answers
- Online green glossary or wiki that answers questions without Help Desk support
- Links to resources, including blogs and videos that are part of any campaign

Home performance indicators in a listing can help make invisible value visible. Knowing what fields are available and how to correctly use them is critical for accurate representation of the property.

When asked about which resources MLSs turned to as a foundation of their green data resource libraries, many included the following:

- Home Energy Information Guide for third-party home scores, ratings and certifications
- CMLS Green Sheet: Solar Power Fields for key fields related to homes with solar
- NAR Green Building Glossary for an overview of key terms
- RESO Property Green Verification Collection for performance ratings
- RESO Property Power Production Collection for solar and wind systems
- Residential Green & Energy Efficiency Addendum for appraiser information
- U.S. Department of Energy PV Value Tool to determine the value of solar power

Communication Campaigns. Market home performance indicators like a member business tool. There were many communication trends highlighted in the [2017 CMLS Best Practices Survey Report](#); several would be worthwhile in support of green data.

- Blog posts
- Video posts
- Social networks
- Log-in screen messages

Early adopters also noted that successful campaigns are those that were scheduled over time, with supporting inventory statistics. This will help support green data awareness, confidence in the fields, and use of forms, reports, and tools available.

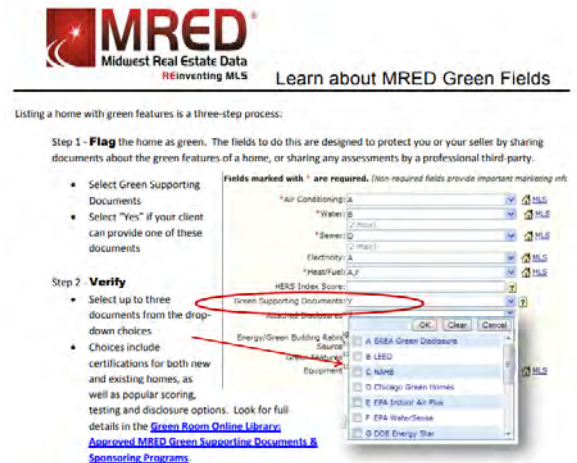


Figure 15: MRED provides a how-to guide that helps agents search for green home listings.



3

Enhance Green Data Change Management Plan.

Although some MLSs might experience a prolonged period in the early phases of the change cycle, the late phases tend to speed up exponentially. MLSs can take advantage of these phases by focusing on tools that encourage the daily use of home performance indicators on fields, forms, and reports:

Spark Motivation - Mitigate Depression

- Embrace early adopters
- Provide one-on-one coaching

Develop Capacity - Encourage Experimentation

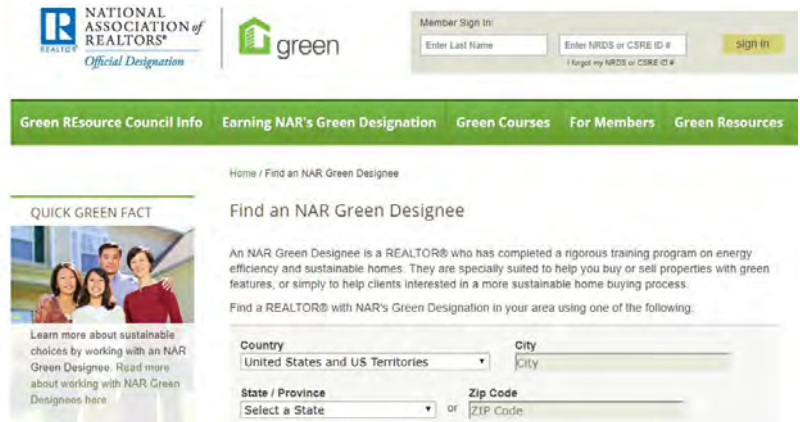
- Host webinars
- Promote classes

Share Knowledge - Inspire Acceptance

- Extend staff training
- Support BOR programming

Tools To Spark Motivation

Embrace Early Adopters. CMLS members report that many green data ideas come from NAR Green-designated agents and others with a specialized understanding of the green market inventory. These early adopters and green enthusiasts are often willing to share their passion and knowledge to support the adoption of green data initiatives.



Some early adopters can be easily found in the [NAR Green Designation Directory](#). In addition to reaching out to these early adopters, they are also likely to know other enthusiasts who are ready to assist with a rollout.

One-On-One Coaching. By scheduling one-on-one coaching, group sessions or office visits, MLSs can deliver a personal touch to their members or subscribers. There is no better way to share some excitement. It also makes it easier to support incremental changes to fields, forms, and property reports — delivering small changes that users will find easier to learn as time goes on. NNRMLS has a best-in-class solution, allowing members to schedule one-on-ones and office visits with a designated green data subject matter expert.

Tools To Develop Capacity

Education Initiatives. By offering webinars and online or onsite classes that focus on home performance indicators, MLSs can effectively work green data initiatives into educational programs they already support. These classes would be different in that they could focus on listing inputs, rules surrounding specific fields, and resources from trusted third parties.



Educational content can be reinforced in computer labs, webinars, and traditional settings. Such programs can be provided in tiers:

- Home Performance Indicator Introductions - Getting Started
- Training on Fields, Forms, and Reports - Best Practice
- Training on Tasks and Field Applications (CMAs, flyers, etc.) - Best In Class

What is most important to remember is that green data is not just another piece of software — this is a unique initiative that grew out of market demand. It's important to provide agents with the information, tools, and rules they need to make a better marketplace.

Tools To Share Knowledge

Extend Staff Training. By providing advanced training and development to staff members, MLSs can build a team of subject matter experts who are ready to help users during every phase of implementation. Ideas for such training can be exhaustive.



- Join the [CMLS Green Section Council](#)
- Earn [NAR's Green Designation](#)
- Learn from [CMLS HEIG identified programs](#)

By facilitating the ease of delivery, accuracy, and efficiency, MLSs improve the marketplace. Much of this begins with the depth of knowledge possessed by staff and organizational leadership. By demonstrating proficiency, MLSs inspire sustainable futures in support of Boards of REALTORS® engaging local markets.

- Reporting green market trends
- Continuing education credits
- Consumer resources such as [NAR Core Standards](#)
- Promoting eco-home tours by consumers



MEASURE IMPROVEMENT

Successful green data initiatives deliver quality data through the MLS system and share it effectively, empowering agents and appraisers to meet the needs of the consumer. The only way for an MLS to know whether it is meeting this objective is to measure the impact of their work, providing a mechanism to benchmark success, make improvements, and respond to changes in the marketplace.

By implementing a green data impact and continuous improvement plan, MLSs will be better able to align goals and produce meaningful outcomes. While there are many ways to develop such a plan, best practices suggest including industry comparisons, RESO benchmarks, local market metrics, and success targets:

- Stay current with RESO Standards
- Monitor usage, user compliance, and feedback
- Monitor and mitigate risk locally and nationally
- Pursue new partners and opportunities

Stay Current

Real estate isn't the only industry experiencing change. Green building is evolving with new technologies, products, and standards being introduced every day. It is more important than ever for MLSs to remain current and anticipate change by making more connections within the industry.

Partners with a good handle on green building features and remodeling trends often include leaders such as [NAR Green Designees](#) in local markets and professionals affiliated with any of the green verification programs mentioned in the [Home Energy Information Guide](#). Some verification program managers can even provide reports that pinpoint the number of participating homes in a given market area.

It has been noted that some area experts can identify customization or clarification about product specifications that can help the MLS improve various fields. Some can even clarify how local climate can influence which features are most important.

These experts are not alone. The building community can also provide data to an MLS, helping it prioritize when to implement proposed fields and lookup values. By embracing such hands-on techniques, MLSs can reduce their investments in technology and improve the quality of data.



Naturally, RESO is an important partner in knowledge acquisition. It manages an annual consensus process to keep fields in the Data Dictionary up to date with industry trends. RESO typically releases Data Dictionary updates in the summer, with compliance required for all REALTOR® owned/affiliated MLSs within one year.

Consult the [RESO compliance webpage](#) and work with staff or MLS software providers. When trends begin to take place in a local market, submit information to RESO for possible inclusion in the next iteration of the RESO Data Dictionary.

Monitor Usage

According to the CMLS 2017 Best Practices Survey, most MLSs consider technological adoption and participation to be important metrics when evaluating marketing efforts. Since green data initiatives should also be tied to strategic planning, it is equally important to measure outcomes. Common considerations include:

- Compliance notices and violations
- Participation in training events
- Click-through metrics for communication
- Customer satisfaction, including forms, fields and reports
- Adoption and usage of designated home performance indicators



The CMLS Green Section Council has made a recommendation that the MLS community begin working together to develop an industry-recognized tracking process to build a better marketplace.

Call To Action

The CMLS Green Section Council recommends an industry-wide commitment to implementing, tracking, and reporting on the adoption and analysis of home performance indicators. By developing an industry standard, MLSs would be better able to benchmark performance against peers, within specific geographic regions, and as a means to project future national trends, including sold prices, and days on market.

Early measurements could include the following metrics:

- Green Search and Marketing
- GreenBuildingVerificationType (preferred) or GreenBuildingVerification (backup)
- PowerProductionType (preferred) or PowerProduction (backup)

Long-term outcomes could include the following targets:

- **Support Trend Reporting and Comparison.** Industry consistency enables customers such as brokers, appraisers, and partners like green verification programs to track, report and compare local or national trends.
- **Support Boards of REALTORS®/Core Standards.** Green data trends are compelling to consumers and provide MLSs a natural opportunity to become a data resource to any affiliated Boards of REALTORS® focused on “Voice of Real Estate” initiatives as part of NAR Core Standards requirements.

Tracking & Reporting Insights

There are three types of agents who are especially helpful to any adoption process.

- Top producers
- Tenured agents
- Listing agents

Support these groups by providing market trends.

- Report home performance market trends.
- Track days on market, listing and closing prices.

Partner with others to develop valuation studies.

- Appraisers can produce valuation studies for alternative support.
- Bright MLS worked with local partners to produce one such study called [What Is Green Worth?](#)



Figure 16: Bright MLS participated in a valuation study based on green homes listed for sale.

Monitor Risks

Good planning and design up front allows MLSs to track green data initiatives effectively. Use feedback available from compliance procedures, Help Desk inquiries, response to training and communications campaigns, and other data to determine any open areas of potential ongoing risk.



The CMLS Green Section Council held several informal focus groups, consisting of CMLS members, and asked them about monitoring and mitigating risks given that green data is still an emerging trend.

Green Washing

“It is important to understand the details so an untrained agent doesn’t select the US EPA Energy Star New Home indicator just because the home has new Energy Star appliances. It creates the impression of greenwashing or exaggerating the greenness of the home.”

Omission

“Sometimes missing an opportunity to utilize eligible fields can be just as problematic as exaggerating them. Root cause analysis may be needed to determine if there is an education issue, liability concern, or field avoidance.”

Error Checking

“It brings to mind a case study where MRED noticed some agents were trying to be thorough and entering a zero in the field for the HERS Score (a measure of energy efficiency) if they had no score. This was consistent with what some users do in the market if they do not want to list square feet. Unfortunately, while a house cannot actually have zero square feet thereby causing the field to be blank, it can have a zero HERS Score, which is one of the best scores possible.

MRED communicated the issue to Help Desk and compliance staff. The team, in turn, published an article that brought the issue to light and helped facilitate a market correction.”

Pursue Opportunities

Green verification programs, state energy offices, and other energy partners may be the catalyst for developing new research opportunities, auto-pop data like those highlighted in the Technology Implementation section, or auto-pop listing like those referenced in “[Capturing The Sun: A Roadmap for Navigating Data-Access Challenges and Auto-Popping Solar Home Listings](#)” by Lawrence Berkeley National Lab.



CONCLUSION

A green data initiative is simply a means for an MLS to meet consumer demand while serving customer needs. This is a fundamental part of the MLS value proposition to build a better marketplace. This can be accomplished in the sections outlined herein.

- Implement the technology
- Integrate for agents and appraisers
- Track the impact and continuously improve

For better technology implementation, always rely on RESO to help define home performance indicators in the RESO Data Dictionary. There are several supplements that can help bring an MLS up to speed, including the CMLS Quick Start: MLS Green Field Guide. While these guides can help jump start an initiative, always remember that fields are only the beginning of a successful plan. MLSs must look at the entire user data experience.

This means that the best plans focus on integration as much as implementation. By supporting MLS users like agents and appraisers, it is much more likely these assets will become part of their day-to-day business. Yes, it will take time. Some users will struggle during the adoption process and change cycle.

Fortunately, there are tools that can help alleviate some of the challenges associated with change, including market statistics, Help Desk support, and online resources. Combined with communication campaigns, educational initiatives, and evidence that home performance indicators add a tangible value to the transaction, what began as “green data” now represents one of the most promising iterations of the real estate industry in years.

By following these best practices, an MLS is making a conscious effort to step up and become identified as a best-in-class organization. When you accomplish this goal, CMLS will be among the first to recognize your efforts while providing new resources to help move the industry forward.

APPENDIX A

COMPLIANCE TIPS

Consult CMLS Quick Start: Guide to Green MLS Fields for a list of fields.

For existing fields being updated with green lookup values:

- Intermingle with traditional fields
- Consider flagging with an icon such as a leaf

For new green fields:

- Offer in standalone green section
- Consider grouping with logic
- Show help when a user hovers over the field

Additional suggestions:

	Documentation?	Compliance Options	Error Check
Green Verification Group	Yes	<ul style="list-style-type: none">• Staff review• Member reporting	Yes
Power Production Group			Yes

APPENDIX B

SELF-ASSESSMENT

Green Data Initiatives	Getting Started	Best Practice	Best In Class	Comments
MANAGE RISKS				
Use RESO standards.	Y / N			
TECHNICAL IMPLEMENTATION - SEE CMLS QUICK START: GREEN FIELDS				
<i>Implement Fields</i>				
Update nine existing core RESO fields with HPI lookup values.	Y / N			
Implement Green Search and Marketing Group.	Y / N			
Update six existing RESO fields with HPI lookup values.	Y / N			
Implement at least one set of Green Verification Group.		Y / N		
Implement Power Production Group for PV solar.		Y / N		
Implement additional set(s) of Green Verification Group.			Y / N	
Implement Power Production Group for wind.			Y / N	
<i>Align and implement compliance procedures and ensure high-quality data entry.</i>				
Define related business rules and compliances processes.	Y / N			
Align forms and data display to create a seamless listing data entry experience.	Y / N			
Align with data feeds to reach additional data consumers.	Y / N			

Consistent, user-friendly naming process at front end and mapped to a RESO-standard name on the back end.		Y / N		
Implement coding logic and error controls.			Y / N	
Implement business rule(s) addressing any required supporting documentation.			Y / N	
Auto-pop green data from trusted third parties.			Y / N	
CHANGE MANAGEMENT/USER INTEGRATION				
Target Users				
Target by user type (listing agents, buyer agents, appraisers).	Y / N			
Target by user background (top producers, tenured vs. newer agents).		Y / N		
Target by green background (early adopters/ eco-minded, new to green).			Y / N	
Change Management Plan Infrastructure				
Publish green inventory/market statistics.	Y / N			
Design compliance procedures.	Y / N			
Publish resource library.	Y / N			
Design context-sensitive help/error checking.		Y / N		
Design communication campaigns.		Y / N		
Help Desk Change Management Plan				
Train Help Desk; include Help Desk staff on all green data initiatives communication.	Y / N			
Provide Help Desk with green data initiatives communications in advance, plus time for Q&A.		Y / N		
Include training of Help Desk in rollout plans.		Y / N		
Offer 2-3 session choices so Help Desk staff can rotate through			Y / N	
Identify a green data subject matter enthusiast for advanced questions and follow ups.			Y / N	

Conduct regular meetings between Help Desk and development staff.			Y / N	
<i>Training & Education Change Management Plan</i>				
Design webinars/classes: training on fields, forms and reports (input and search).		Y / N		
Design webinars/classes: training on tasks and practical application of fields (CMAs, flyers, etc.).			Y / N	
Design continuing education classes with BOR.			Y / N	
Embrace early adopters.			Y / N	
Provide one-on-one coaching.			Y / N	
Offer extended staff training & development.			Y / N	
Coordinate with local board(s) of REALTORS® on programming.			Y / N	
MEASURE IMPACT & CONTINUOUSLY IMPROVE				
Stay current with building trends.	Y / N			
Stay current implementing the latest RESO standards.	Y / N			
Monitor user compliance and feedback.	Y / N			
Monitor usage of key home performance indicators: Green Marketing & Search, Green Verifications, Power Production.		Y / N		
Measure adoption by key audience targets.		Y / N		
Report market trends.			Y / N	
Support valuation studies.			Y / N	
Pursue new partners and opportunities.			Y / N	

APPENDIX C

REFERENCES

Reference List

Adomatis Appraisal Service

Council of MLS Resources

- CMLS Home Energy Information Guide
- CMLS Quick Start: Guide to Green MLS Fields
- CMLS Green Sheet: Solar Power Fields
- CMLS Green Sheet: Automated Efficiency Models
- Partnering With Data Consumers
- 2017 CMLS Best Practices Survey Brief

Elevate Energy

- The Visible Value Blueprint
- Solar Education For Real Estate Professionals

Elisabeth Kübler-Ross Foundation

Lawrence Berkeley National Lab

National Association of REALTORS®

- REALTORS® and Sustainability 2018 Report
- Sustainability Program
- Green Designation

Real Estate Standards Organization

Rutgers University

Contributing Organizations

Arizona Regional Multiple Listing Service, Inc.

Aspen Glenwood MLS

Austin Board of REALTORS®

Bright MLS

California Regional MLS

Coastal Carolina Association of REALTORS®

First Multiple Listing Service (FMLS)

Heartland MLS

Homes.com

Lawrence Berkeley National Lab

MIBOR REALTOR® Association

Midwest Real Estate Data (MRED)

MetroList

MLS of Hilton Head Island, Inc.

MLS Property Information Network, Inc.

My Florida Regional MLS

National Association of REALTORS®

NAR's Green Resource Council

The New England Real Estate Network, operator of NEREN® MLS

Northern Nevada Regional MLS

Picket Fence

Santa Barbara MLS

Real Estate Standards Organization

REALTOR® Association of Acadiana

Regional Multiple Listing Service, Inc.



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