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2017 Fall Conference

GETTING DOWN TO BUSINESS
UTILIZING DATA STANDARDS

Easy Being Green:
A New Generation of Auto-Pop

SPEAKER BIO PAGE

Laura Stukel | Consultant

Laura is a change management expert in the real estate, energy efficiency, and technology industries over the past 25 years. She is a third-generation REALTOR with L.W. Reedy Real Estate. Laura serves in national and local roles for the National Association of REALTORS®, including as lead developer for the CMLS Green Data Best Practices Guide.

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Auto-Pop: The Green Data Opportunity

Agents

Brokerages

Aggregators

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RESO Standards Guide the Way

- Silver level designated fields include “Green” standardization
- Over 400 MLSs have already certified on Silver or higher!
- Data Dictionary maps to Building Energy Data Exchange Specification
  - Standard used by energy companies nationwide

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RESO Standards Guide the Way

Data Dictionary Wiki / … / GreenBuildingVerificationType Lookups

Zero Energy Ready Home

Created by RESO DD Workgroup on Jun 13, 2016

Lookup Value[?]: Zero Energy Ready Home

From Lookup Field[?]: GreenBuildingVerificationType Lookups

Definition (May contain conditions that must apply)

DOE Zero Energy Ready Home is a set of optional construction practices and technologies (above minimum code and ENERGY STAR Certified Home requirements) that builders can follow to ensure high-performance homes so energy efficient all or most annual energy consumption can be offset with renewable energy. Guidelines are outlined in the "DOE Zero Energy Ready Home National Program Requirements."

Synonym(s)[?]:

BEDES[?]: Assessment Program = "ENERGY STAR Certified Homes"

References[?]: RESI, RLSE, RINC, MOBI, FARM, COMS, COML

Lookup Status[?]: Active

Lookup Field ID[?]: 347000

LookupID[?]: 347012

Lookup Status Change Date[?]: Jun 21 2016

Revised Date[?]: Sep 17 2015

Added in Version[?]: 1.5.0

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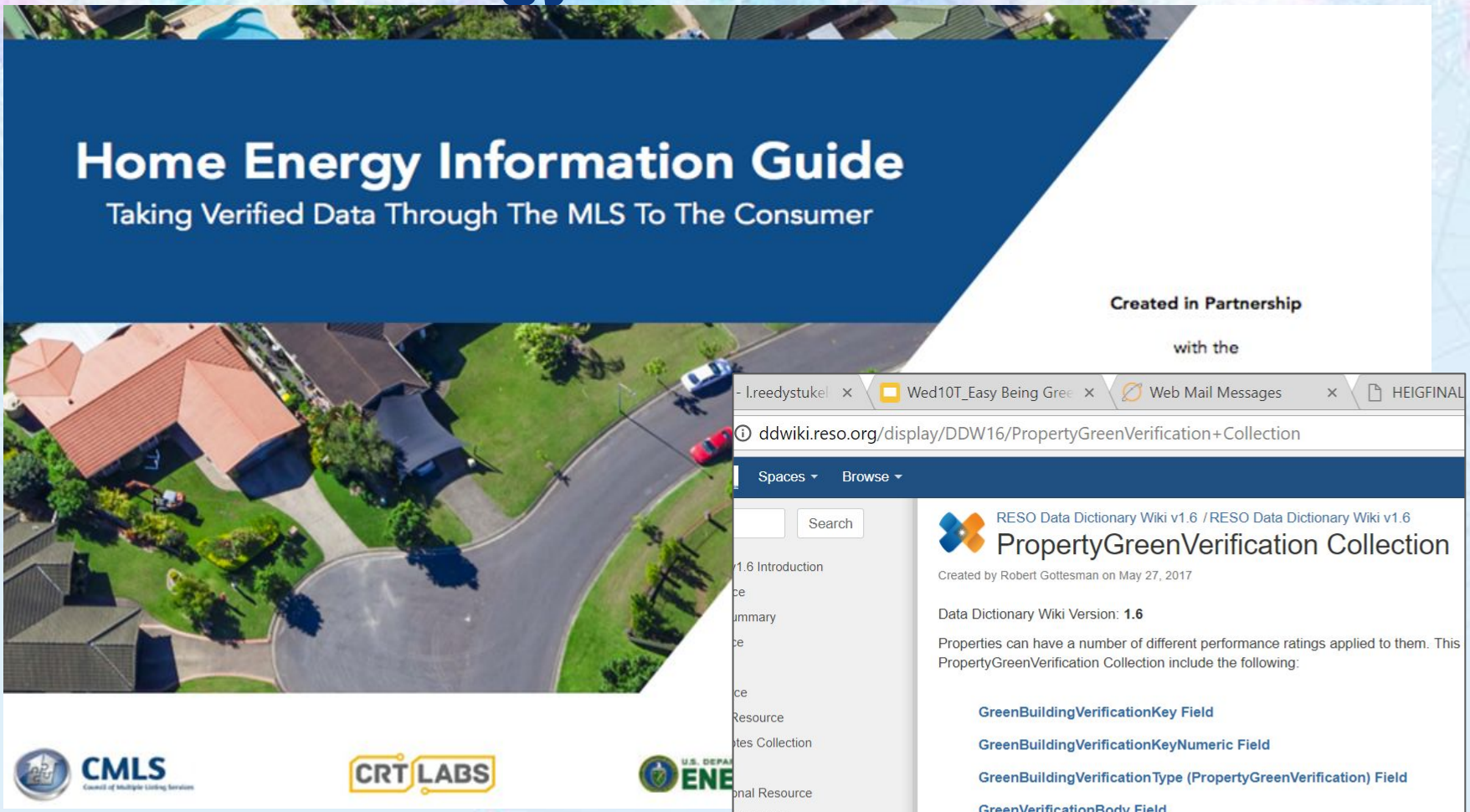
Auto-Pop Types: Verified Home Energy Info



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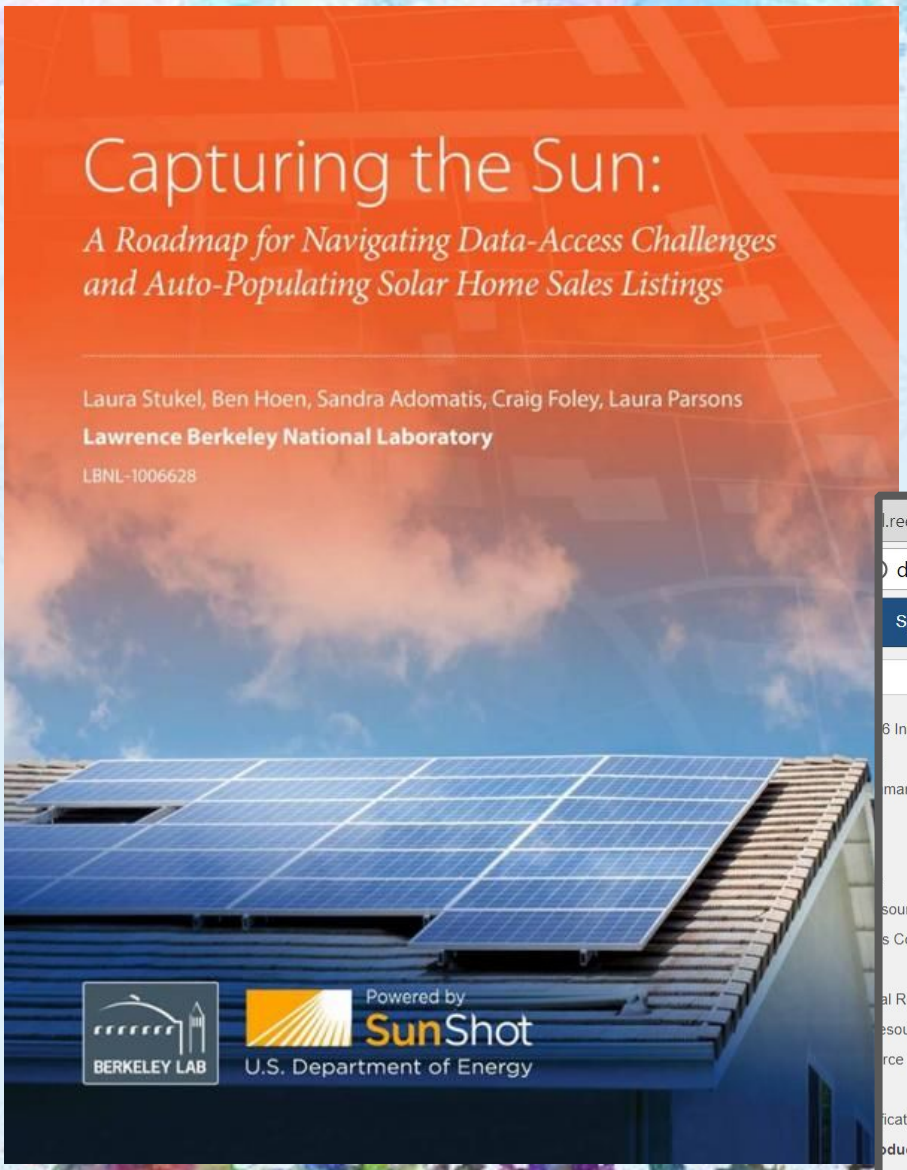
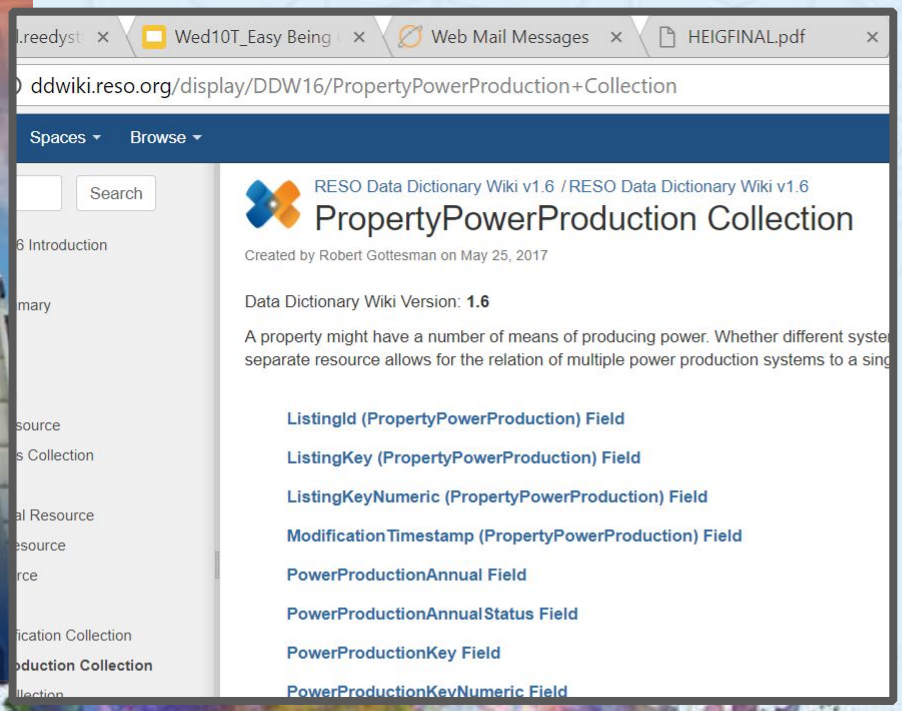
Auto-Pop Types: Photovoltaics





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Next Steps

- Watch for CMLS Green Data Best Practices
- Implement green Data Dictionary fields into your MLS listing input forms
- Work with energy entities to integrate data
- Provide feedback to RESO

SPEAKER

BIO PAGE

Bob Burns | CEO

Steven Klass | CTO

Bob and Steven are co-founders and CEO/CTO of Pivotal Energy Solutions respectively, a technology company and provider of the AXIS software platform. AXIS is a cloud-hosted data and workflow management tool used for the validation, aggregation, and sharing of energy efficiency and green building data.

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TYPES OF DATA

Aggregation and Distribution of Verified
Energy Efficiency, Water Efficiency, Indoor Air Quality, and Solar Data

New Construction

Home Innovation NGBS GREEN CERTIFIED™

ENERGY STAR HOMES

RESNET HERS INDEX

ZERO ENERGY READY HOME U.S. DEPARTMENT OF ENERGY

LEED FOR HOMES

EPA Indoor airPLUS QUALIFIED HOMES

EPA WaterSense

Existing Homes

HOME PERFORMANCE WITH ENERGY STAR

U.S. DEPARTMENT OF ENERGY Home Energy Score

Solar

SEIA Solar Energy Industries Association®

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BASELINE DEMO DATA

Data Field	Example(s)
Green Certification Program	NGBS Single-Family New Construction 2015 LEED Home Performance with ENERGY STAR
Green Certification [Type] Body	NGBS: Home Innovation Research Labs LEED: USGBC HPwES: U.S. Environmental Protection Agency
Green Certification [Type] Year	2016
Green Certification [Type] Rating	NGBS: Bronze, Silver, Gold, Emerald LEED: Certified, Silver, Gold, Platinum
Green Certification [Type] Version	NGBS: 2015 ENERGY STAR: V3.1
Green Certification [Type] Source	Program Sponsor Program Verifier Public Record

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ADDITIONAL DATA

Energy Data

Green Verification [Type] Status
Green Verification [Type] URL
Green Energy Generation
Power Production (multiple)
Gas
Cooling
Heating
Fuel Expense (modeled)
Green Energy Efficient
Green Indoor Air Quality

Verified Property Data

Building Area Total
Above Grade Finished Area
Below Grade Finished Area
Foundation Area
Foundation Details
Basement
Roof
Stories
Bedrooms Total
Direction Faces
New Construction (Y/N)
Builder Name
Builder Model

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DATA ACCESS & USES

- Data Access Methods (from MLS/end-point perspective)
  - Directly from AXIS via API
  - From AXIS through data aggregators (CRS Data, CoreLogic, etc.)
  - From AXIS through intermediate third-party (Bridge Interactive, etc.)

- Uses of Data
  - Auto-population of MLS listings, portals, and IDX
  - Feed for appraisal comps
  - Feed for lenders/mortgage brokers
  - Feed for Virtual/Augmented Reality
  - Source for web site with documentation unique to each property ("RESO Green Verification [Type] URL" field)

SPEAKER

BIO PAGE

Matt Casey | CEO & President

- Since 1989, CRS Data has put the power of clear and current property record information in the hands of real estate's leading professionals.
- We currently provide our service to over 75 MLS' as well as other real estate related industries such as appraisal and lending.
- We are focused on quality data, intuitive software and exceptional customer service.

CRS Data

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Phone: 865-584-8017

Website: www.crsdata.com

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Benefits of integrating Green Data and Property Record Information

- Property record services have information on all properties, not just properties with active or recent listings
- Property record services have experience with data manipulation and matching; including tools for address standardization/certification and geographical (X,Y) based matching
- Because the property record service is integrated with the MLS software, Green Data can be incorporated into listing auto population, without the MLS having to connect to additional data sources

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Options for Integrating Green Data and Property Record Information

- Bulk Data:
  - Allows for greater data manipulation and matching
  - Reduces the number of data calls during auto population and display
  - Requires higher level of data integration and may present licensing issues

- API:
  - Provides direct access to data source
  - Reduces the level of data manipulation and matching
  - May be preferred from a licensing standpoint in some situations

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Integration of PV Data

- Data overview: Photovoltaic (PV / Solar) data for Vermont from the Vermont Energy Atlas

Steps	Results
Import data and perform basic address cleaning and standardization	All records (5,958)
Match PV data to USPS database	4,648 of 5,958 78% match rate
Match PV records with matched address to CRS parcel database	4,071 of 4,648 87% match rate
Run GIS/Geocode based matching on unmatched records	Matched an additional 182 records

- Overall: Matched 4,253 of 5,958 records for a 71% match rate

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Integration of Green Building Certification Data

- Data overview: National Green Build Standard Data (NGBS 2008 & 2012) from Pivotal Energy Solutions

Steps	Results
Import data and perform basic address cleaning and standardization	All records (207)
Match NGBS data to USPS database	198 of 207 95% match rate
Match NGBS records with matched address to CRS parcel database	153 of 198 77% match rate
Run GIS/Geocode based matching on unmatched records	Did not match any additional records

- Overall: Matched 153 of 207 records for a 74% match rate

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PV and Green Building Certification Data - Property Report Display

LEGAL DESCRIPTION

Subdivision		**Plat Book/Page**	
Block/Lot		**District/Ward**	1
Description	House Bldgs & Land		

POWER PRODUCTION

Type	Mount Location	Mount Type	Size (kw)	Annual (kwh)	Verification Source
Photovoltaics	Ground	Tracker	8.00	13558	Public Records

GREEN VERIFICATION

Type	NGBS New Construction	**Rating**	Bronze
Year	2014	**Source**	Program Sponsor
Body	Home Innovation Research Labs		

SPEAKER BIO PAGE

Meg Garabrant | NEREN

Meg is the Director of Marketing & Communications for the NEREN® MLS serving all of NH and VT with listings and members also in MA and ME. Meg oversees third party integrations, product, and member training & education. She is responsible for ensuring RESO field compliance and she has been greening the MLS since 2008. Meg is Chair of the CMLS Green Section Council.

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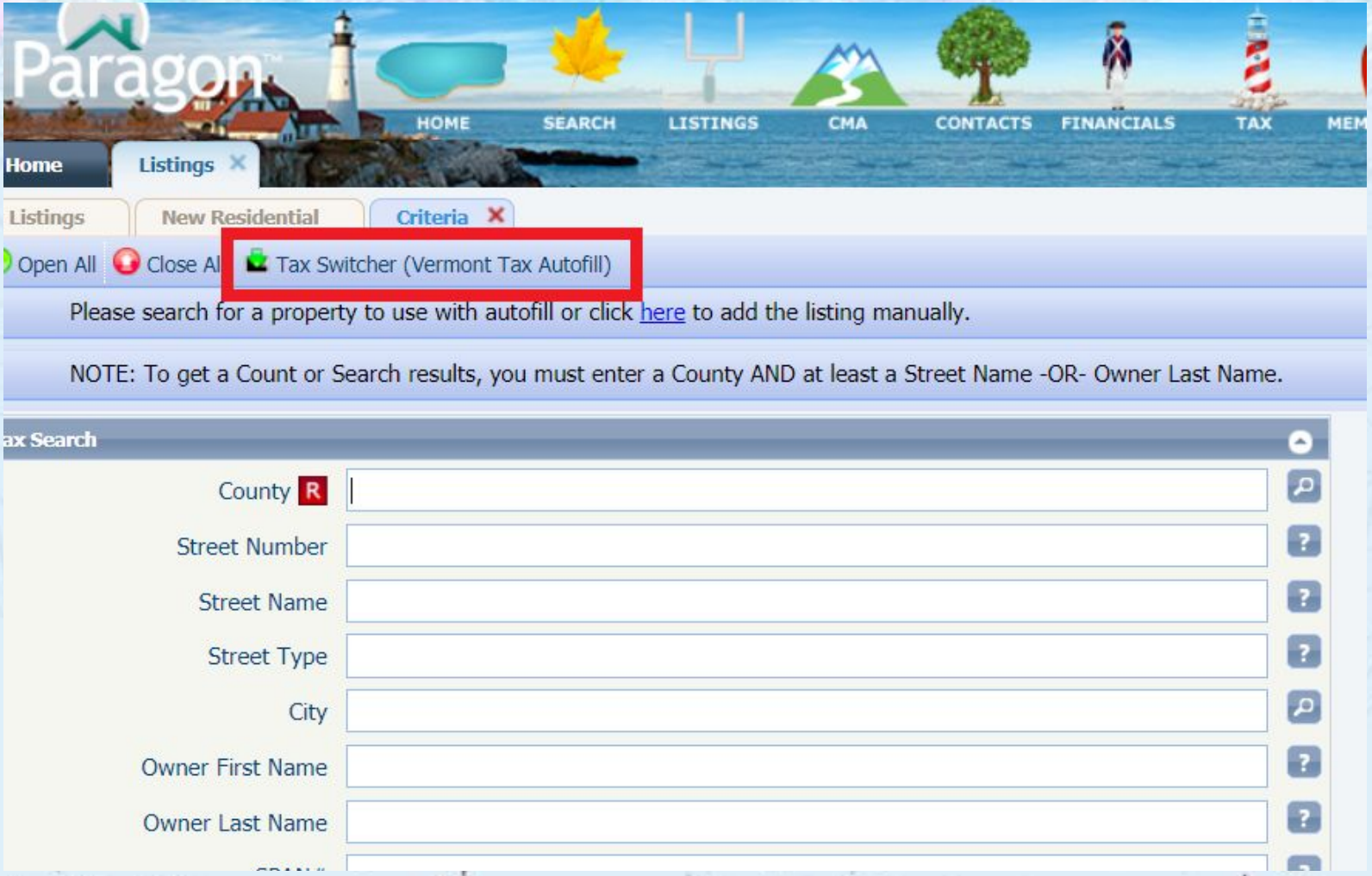
PV Auto-Pop - NEREN MLS



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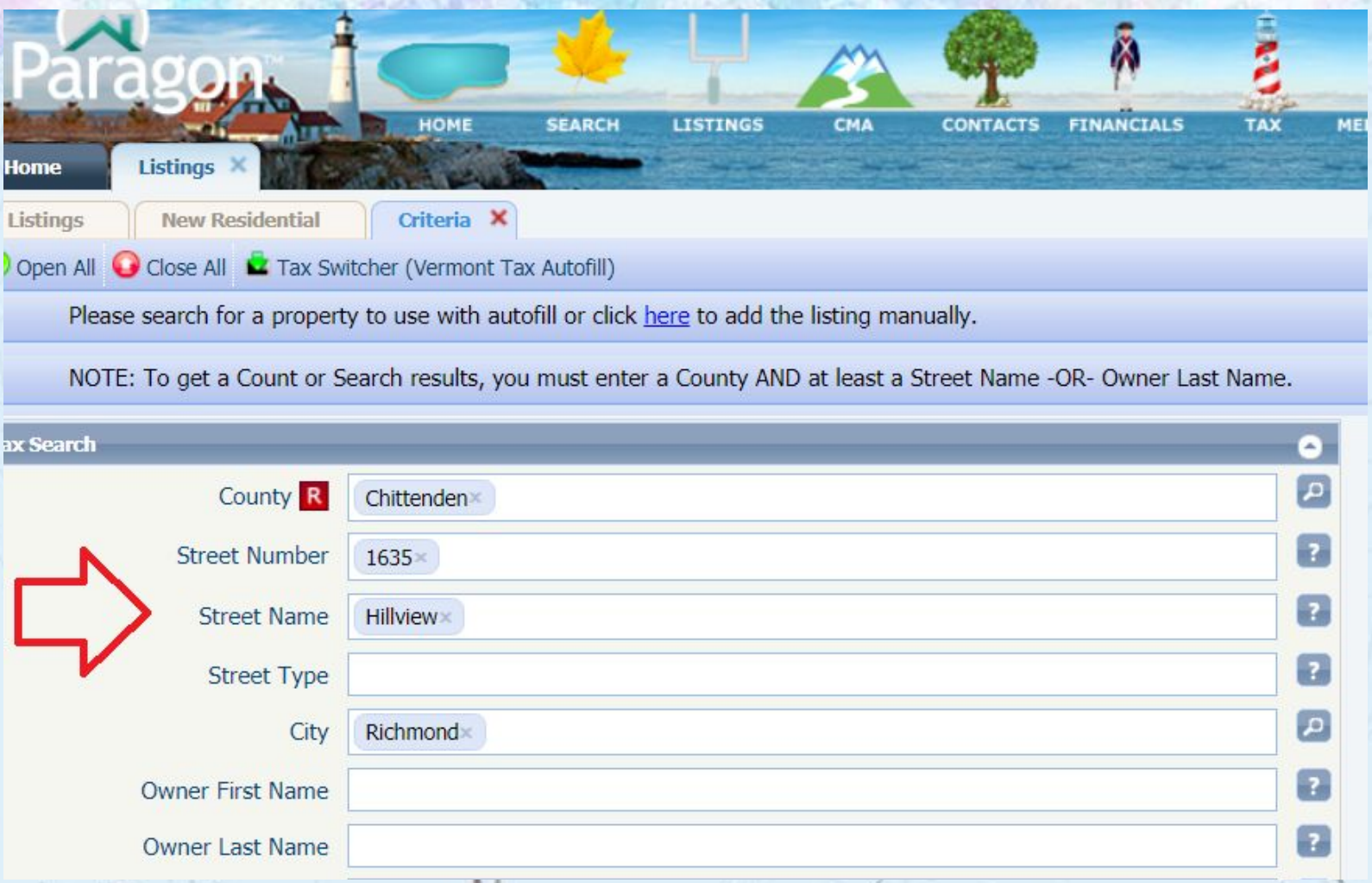

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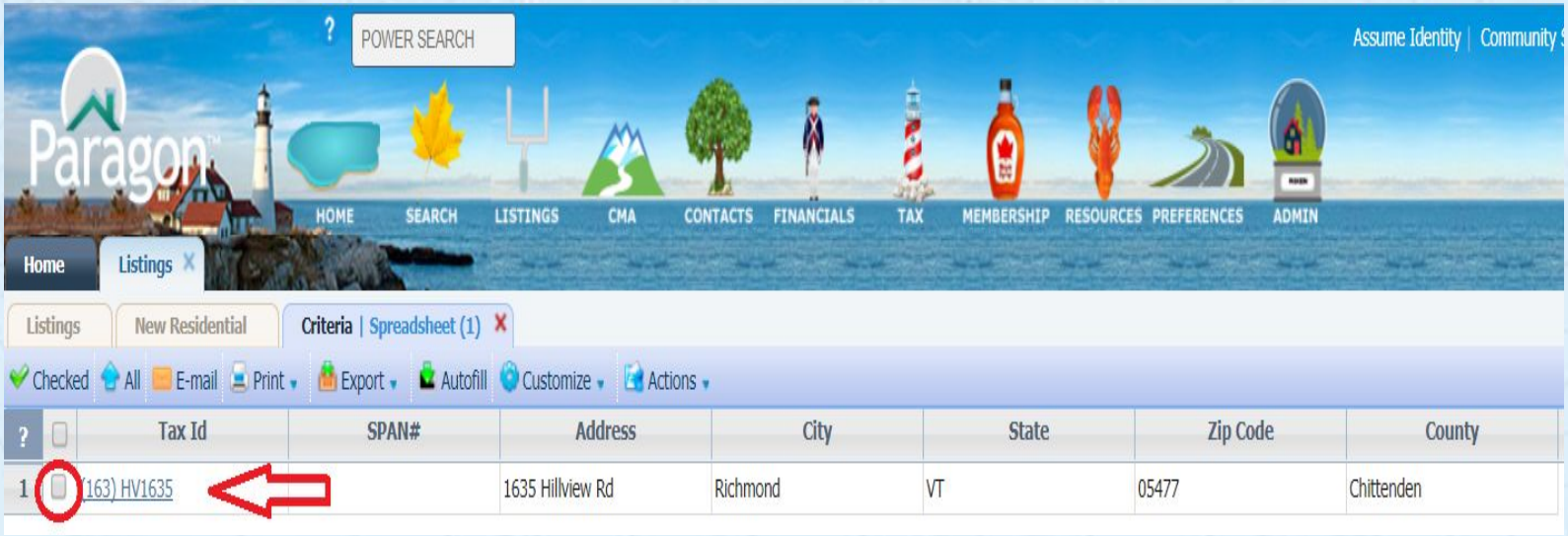
PV Auto-Pop - NEREN MLS



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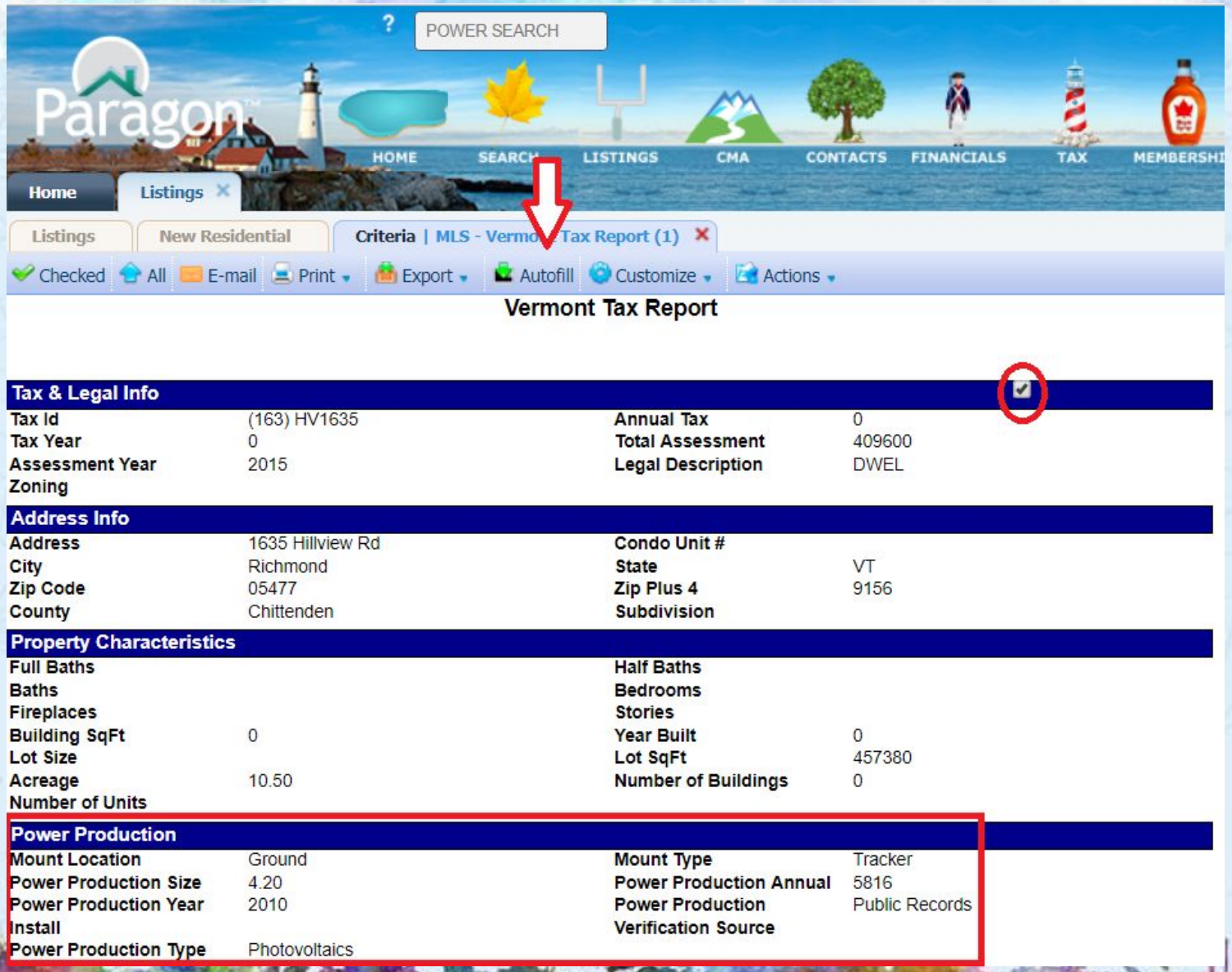
PV Auto-Pop - NEREN MLS



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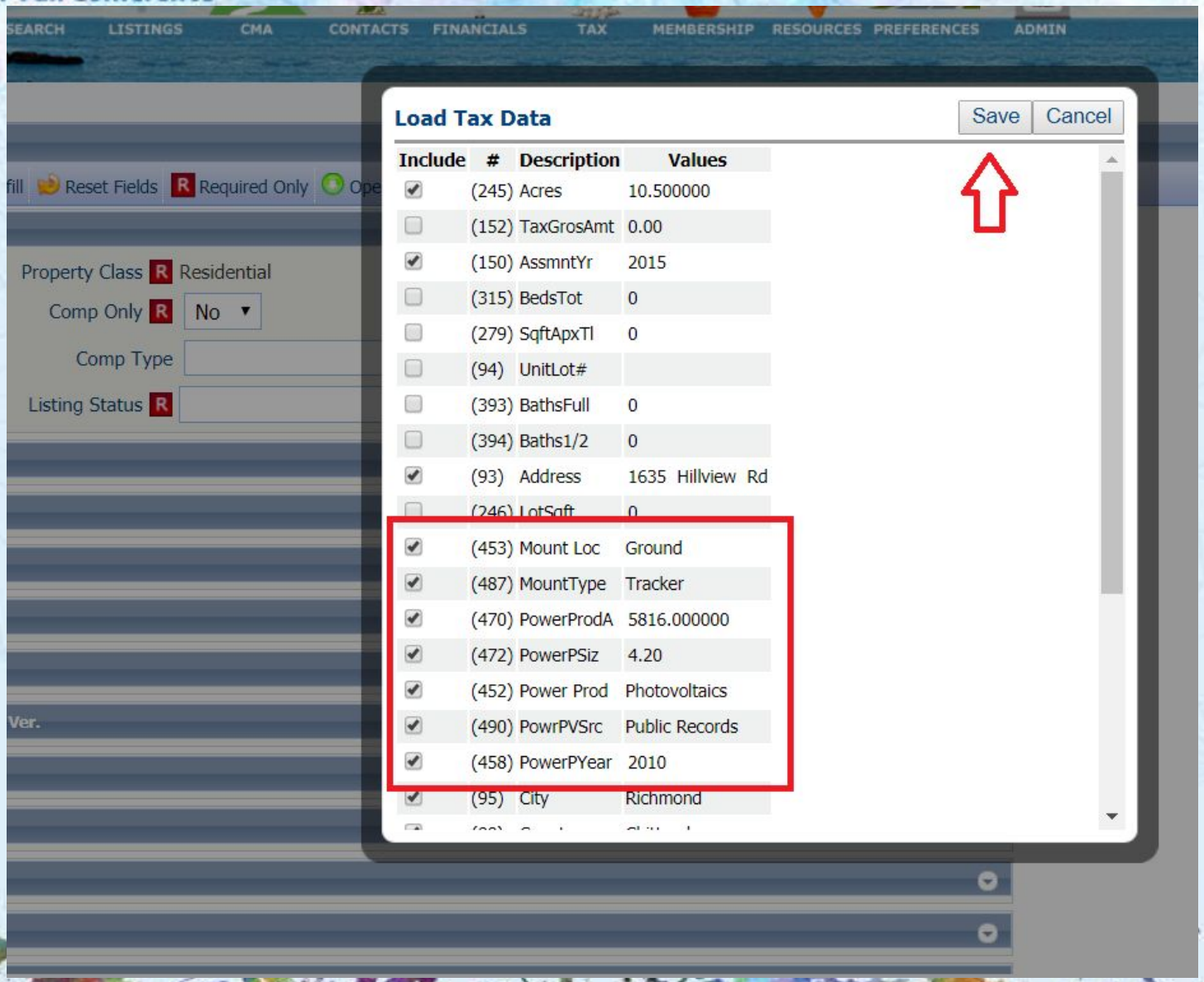
PV Auto-Pop - NEREN MLS



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PV Auto-Pop - NEREN MLS

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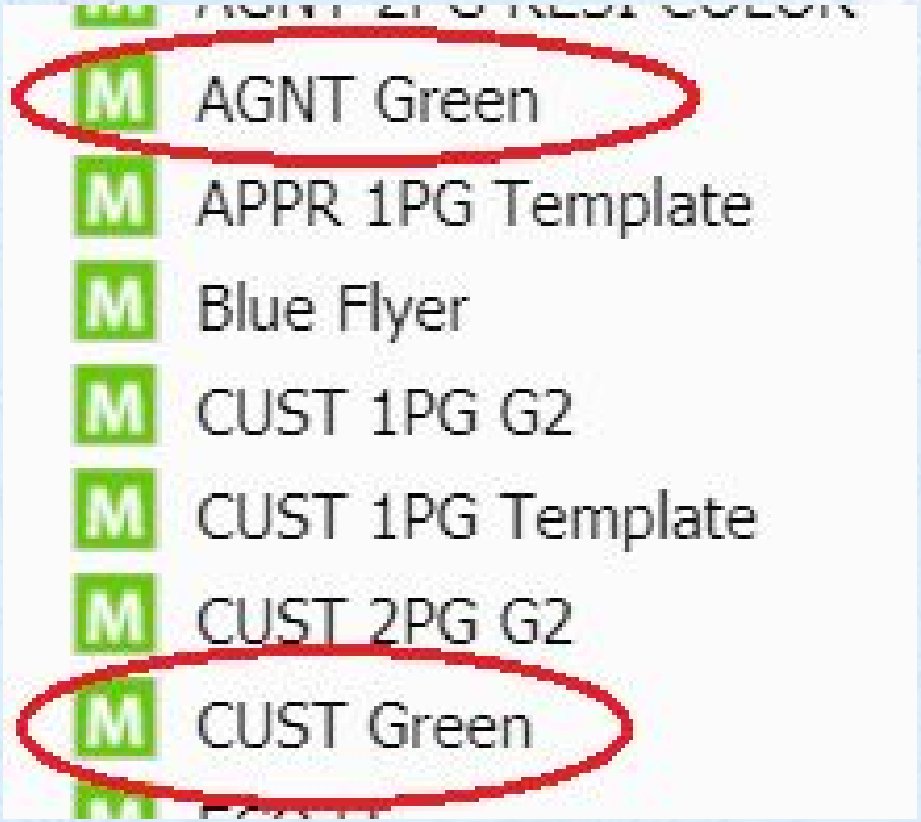
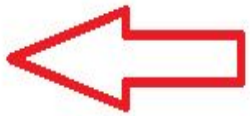
Viewing Green Data - NEREN MLS



RESO 2017 Fall Conference Property Report View - NEREN MLS

Green Verification Progrm OTHER
Green Verification Body Passive House Institute Quality Approved
Green Verification Status Preliminary
Green Verification Year 2016
Green Verification Rating Vermont High Performance Home
Green Verification Metric 9999Z
Green Verification Source Contractor/Installer
Green Verification New Construction No
Green Verification URL http://012345678901234567890123456789green.com
Green Verificatn Progrm 2 LEED for Homes
Green Verificatn Body 2 DOE
Green Verificatn Status 2 Official
Green Verificatn Year 2 2017
Green Verificatn Rating 2 Certified
Green Verificatn Metric 2 9999Z
Green Verification Source 2 Program Sponsor
Green Verificatn NewCon 2 Yes
Green Verificatn URL 2 http://012345678901234567890123456789green.com
Green Verificatn Progrm 3 ENERGY STAR Certified Homes
Green Verificatn Body 3 EPA
Green Verificatn Status 3 Preliminary
Green Verificatn Year 3 2015
Green Verificatn Rating 3 Vermont High Performance Home
Green Verificatn Metric 3 9999Z
Green Verification Source 3 See Remarks
Green Verificatn NewCon 3 No
Green Verificatn URL 3 http://012345678901234567890123456789green.com

Power Production Type Photovoltaics
Mount Location Roof
Mount Type Fixed Rack
Power Production Size 123.560000
Power Production Annual 123.560000
Power Production Annual Status Partially Estimated
Power Production Year Install 2000
Power Production Verification Source Builder
Power Production Type 2 Wind
Mount Location 2 Ground
Mount Type 2 Pole
Power Production Size 2 123.56
Power Production Annual 2 123.560000
Power Production Annual Status 2 Estimated
Power Production Year Install 2 2010
Power Production Verification Source 2 Contractor/Installer



Green Energy Efficient Exposure/Shade, HVAC, Incentives
Green Energy Generation Solar, Wind
Green Indoor Air Quality Contaminant Control, Moisture Control
Green H2O Sustainability Recyclable Materials, Regionally-Sourced Materi, Salvaged Materials
Green H2O Conservation Green Infrastructure, Low-Flow Fixtures, Water Recycling

ROW - Parcel Access Yes
ROW - Length 1500
ROW - Width 75
ROW to other Parcel Unknown

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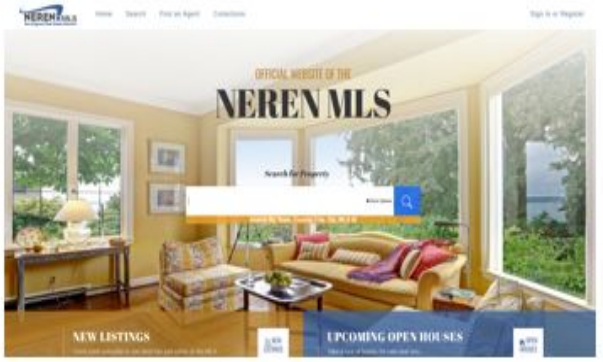
Green Data Distribtuion - NEREN MLS

Data Authorizations

(65)	Display Listing - Internet	R	Yes
(205)	Display Address - Internet	R	Yes
(48)	Realtor.com	R	Yes
(52)	Zillow Group	R	Yes
(448)	Homes.com	R	Yes
(46)	RPR	R	Yes
(47)	ListHub	R	Yes



Intra-Office

IDX

VOW

Specialty Feeds

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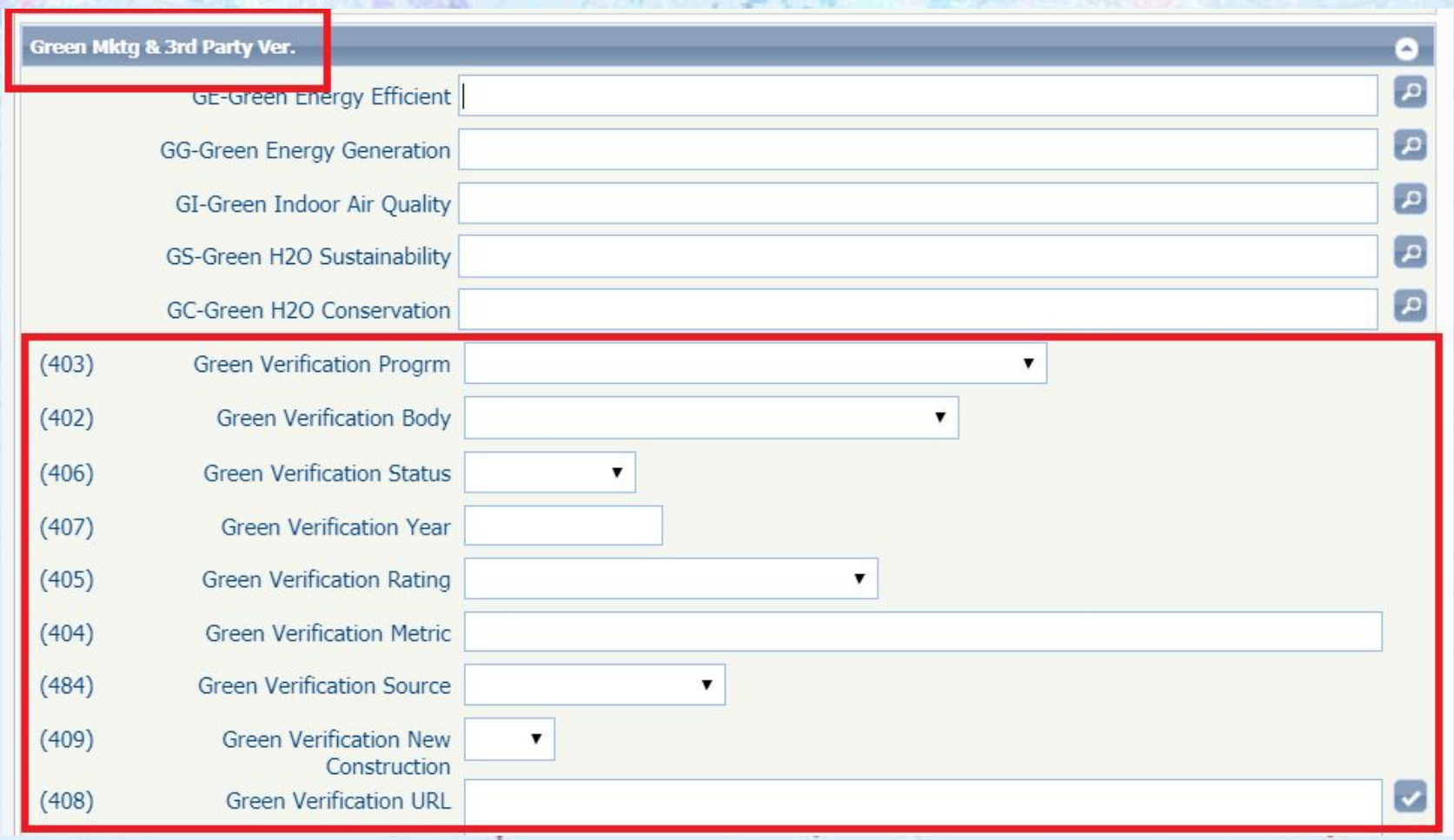
Third Party Verifications - NEREN MLS



QUESTIONS?

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THANK YOU EVERYONE

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