Standard Energy Efficiency Data Platform™

SEED STANDARD ENERGY EFFICIENCY DATA PLATFORM™ U.S. DEPARTMENT OF ENERGY

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

SEED PLATFORM™ 2.0

January 23, 2017

V 2.0 Database / Data Model Refactoring

Use Case to Cover

- **Energy Benchmarking**
  - Commercial Buildings

Outcomes

- **Annual Disclosure Report**
  - By Tax Parcel ID
- **List of Building Violations**
  - By Tax Parcel ID
- **Annual Report of Building Stock Performance**
  - By energy (Portfolio Manager data)

Database / Data Model Refactoring

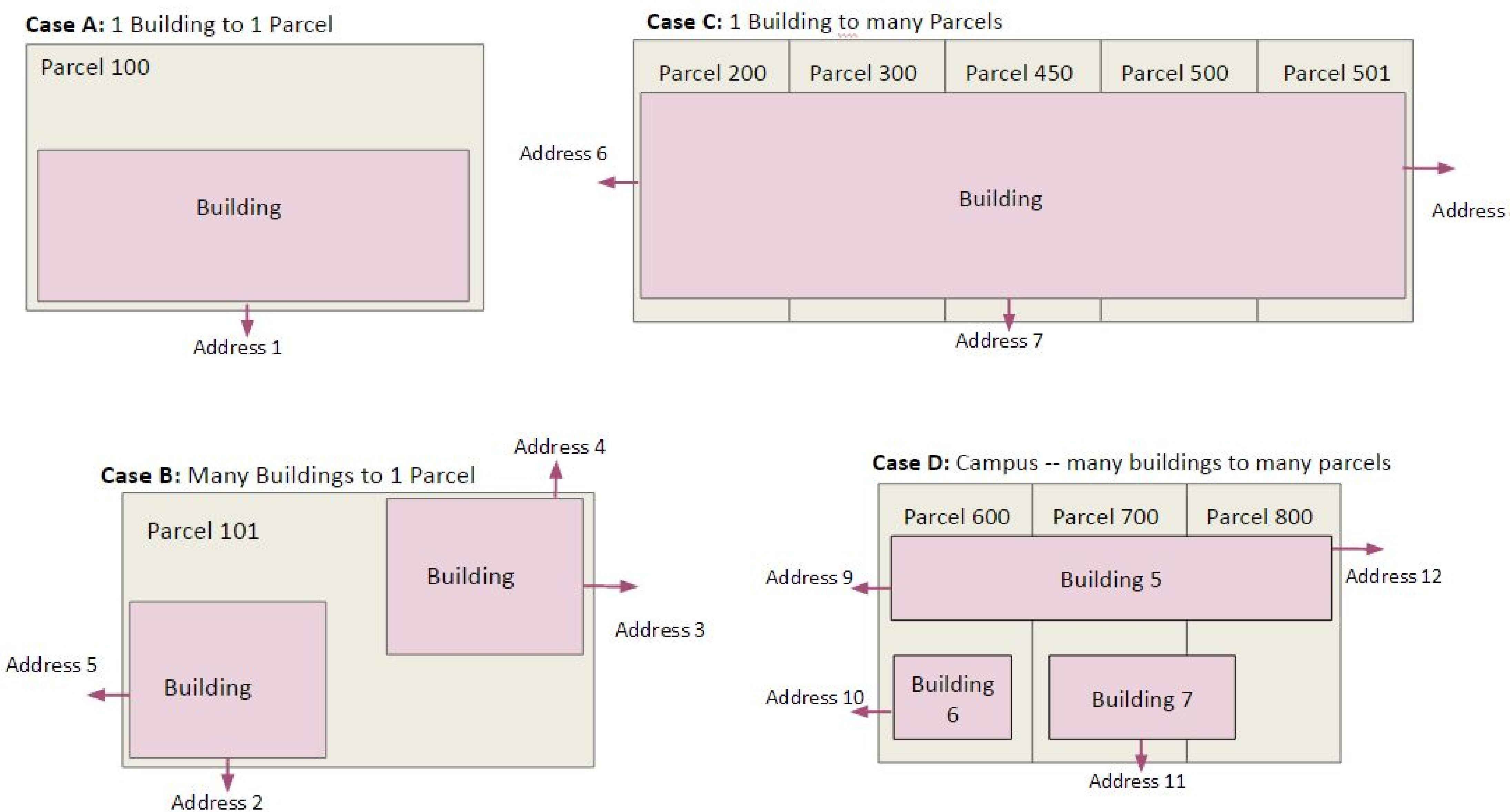
Tasks to achieve outcomes:

- **Import data from different sources**
  - Tax assessor lists
  - Costar Data
  - Portfolio Manager Data
- **Match data from different sources**
- **Handle data with different types of relationships**
  - Tax Assessor data defined by Lot/Parcel

    vs
  - CoStar or Portfolio Manager data defined by buildings
- **Maintain data based on compliance year**

Physical reality of the data

The relationship of Buildings to Parcels/Tax Lots can be complicated



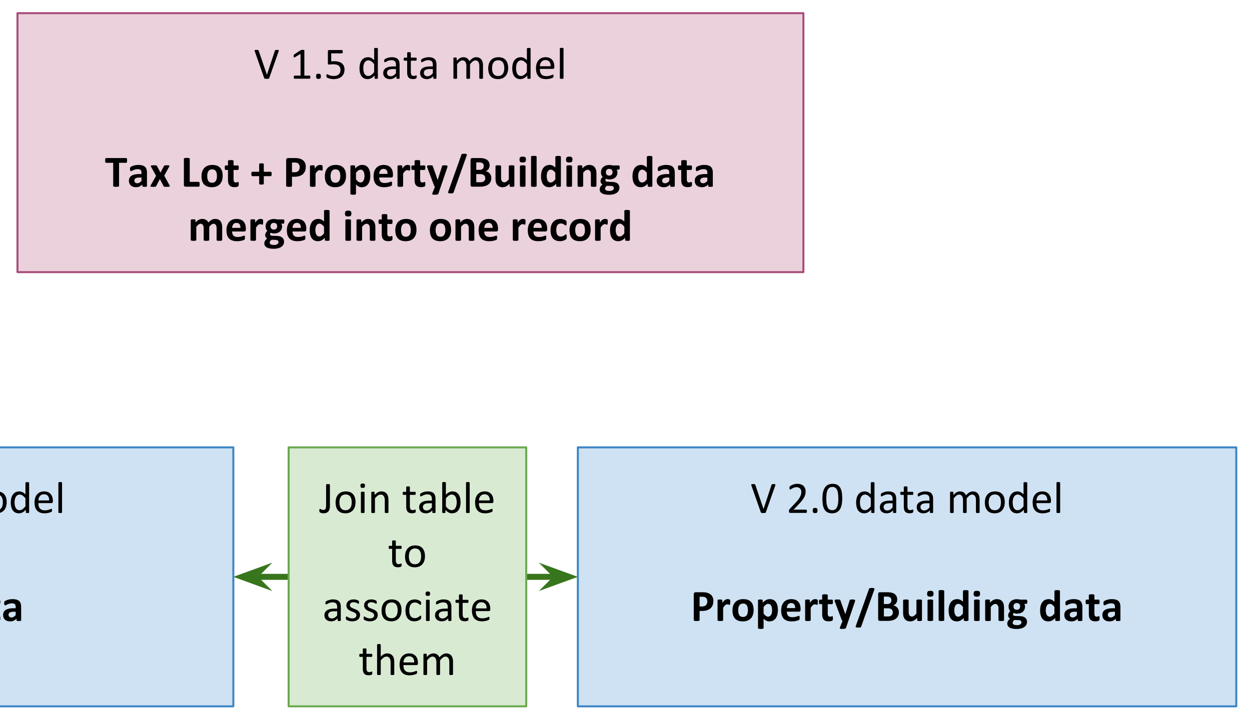
Comparing Data Models Between Versions 1.5 and 2.0

V 1.5 Data Model

- Tax Lot and Property/Building data were merged together into one record

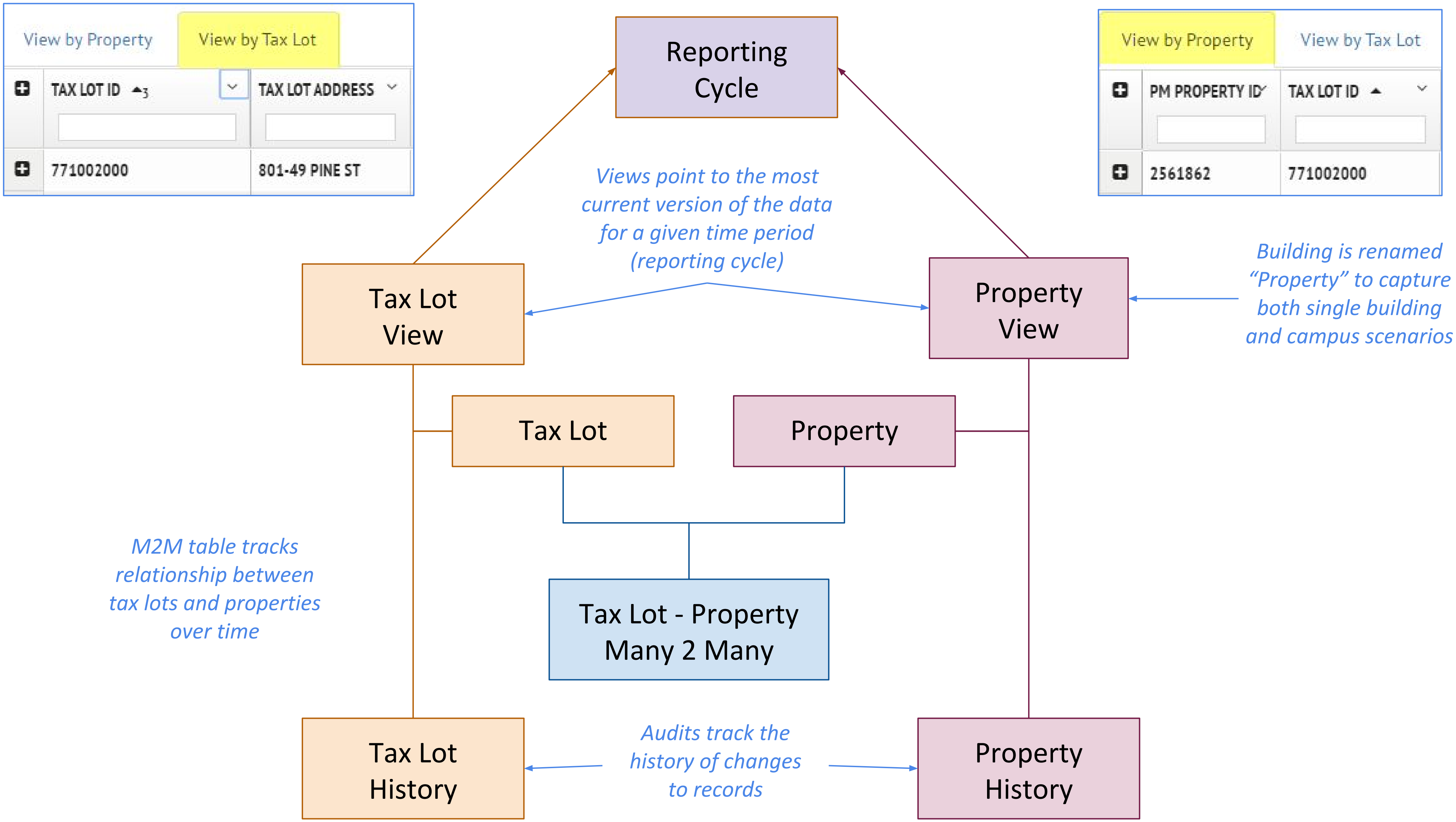
V 2.0 Data Model

- Tax Lot data and Property/Building data are kept in separate records and the relationship between them is stored in a separate "Join" table



Data Model Schematic

- View different states in time
- Many to many relationship between Tax Lot data and Building/Portfolio Manager data
- Viewing Tax Lot and Property data combined / rolled up

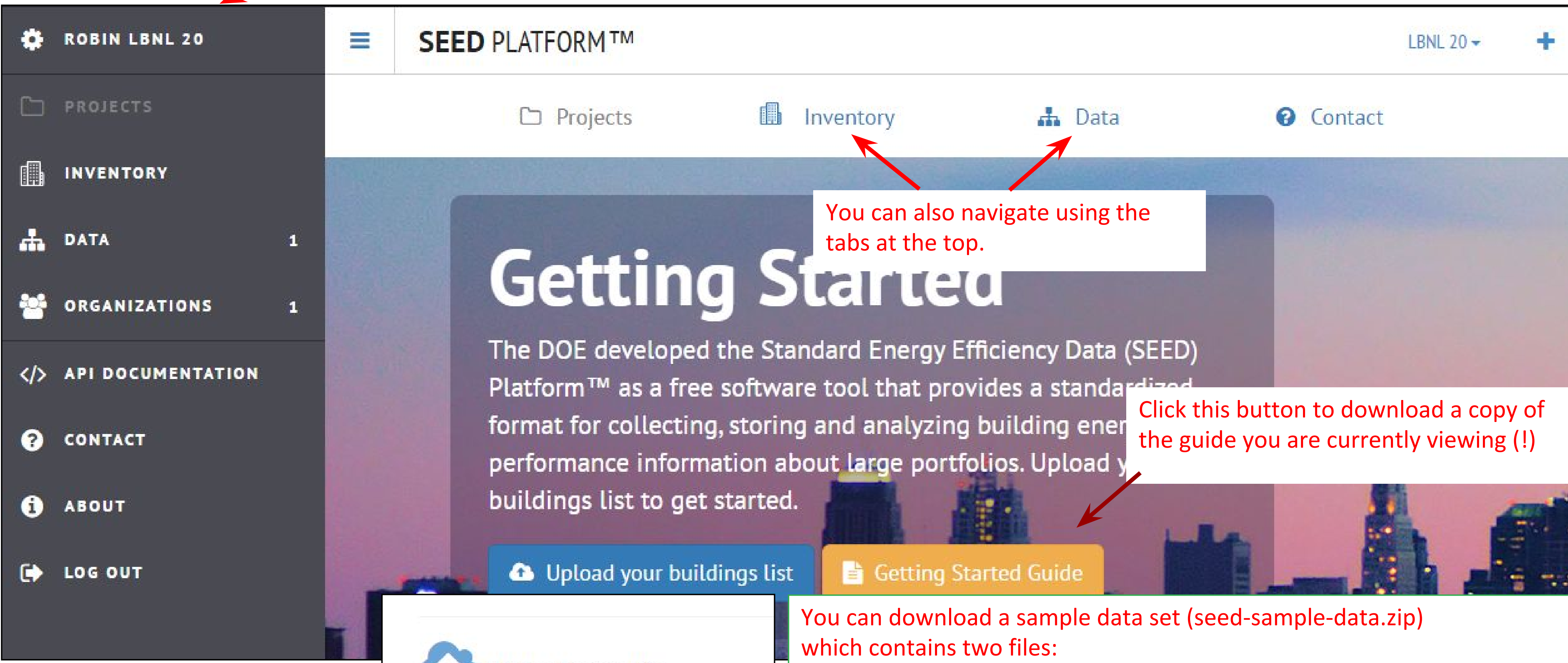


SEED Workflow

1. **Import data**
   (Tax Lot & Property by Cycle)
2. **Map fields**
3. **Merge & pair data**
4. **View Inventory**
   (Tax Lot and Property data)
5. **Filter / Label Inventory**
6. **Export Data**

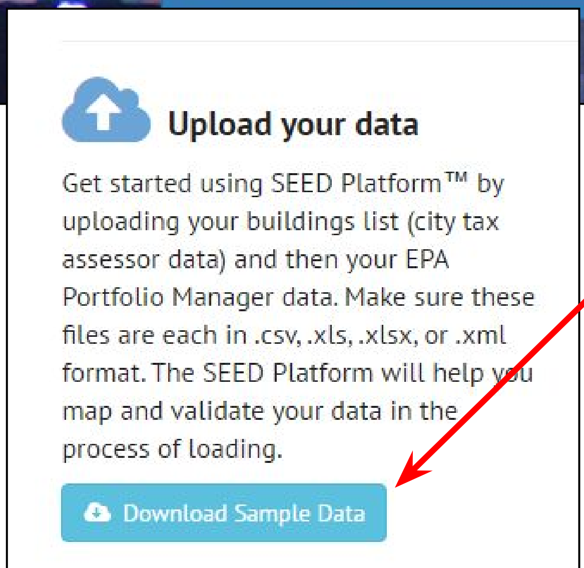
Home Page

You can open the Navigation Side Bar to view different program areas



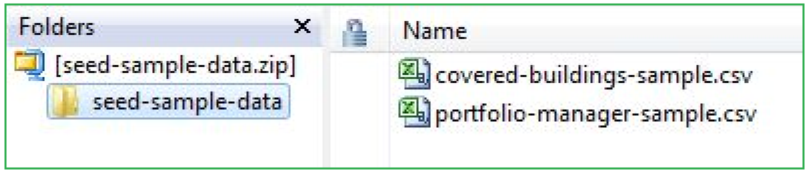
You can also navigate using the tabs at the top.

Click this button to download a copy of the guide you are currently viewing (!)



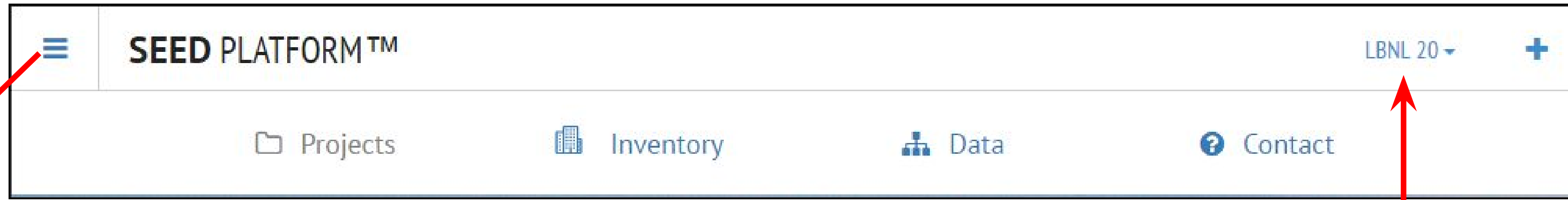
You can download a sample data set (seed-sample-data.zip) which contains two files:

- Covered-buildings-sample.csv
  (tax assessor building list)
- Portfolio-manager-sample.csv
  (custom report data from ENERGY STAR Portfolio Manager)



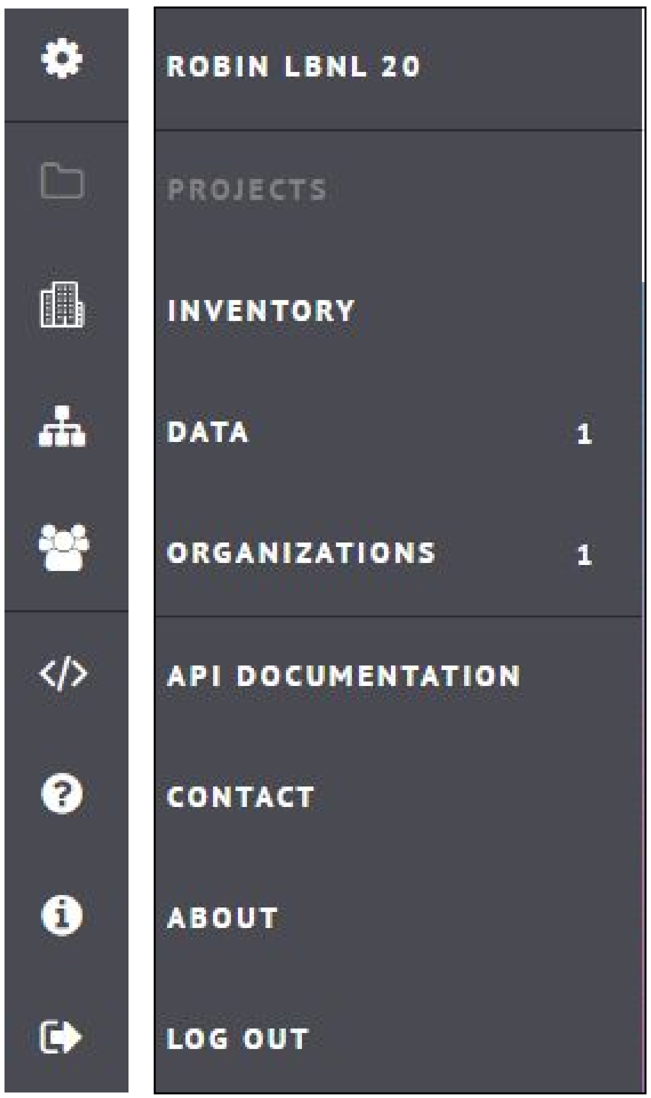
Navigation

Click to Expand and Contract the Navigation Side Bar



Organization

contracted expanded



User Account Name: Click to view information about the account

Projects: Disabled in V 2.0

Inventory: Click to view of the Tax Lot / Parcel and Property / Building data, by Cycle / Time Period

Data: Click to import data into SEED that will become records in the Inventory

Organizations: Click to view the organizations associated with the user account

API Documentation: Click to view the Swagger API documentation

Contact: Click to view SEED contact info, including a link to user documenation and the User and Developer Forums, and a link to the Github code repository

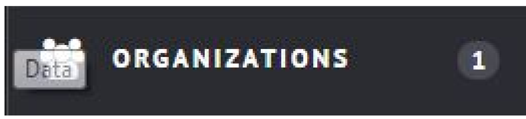
About: Click to view information about SEED development and funding

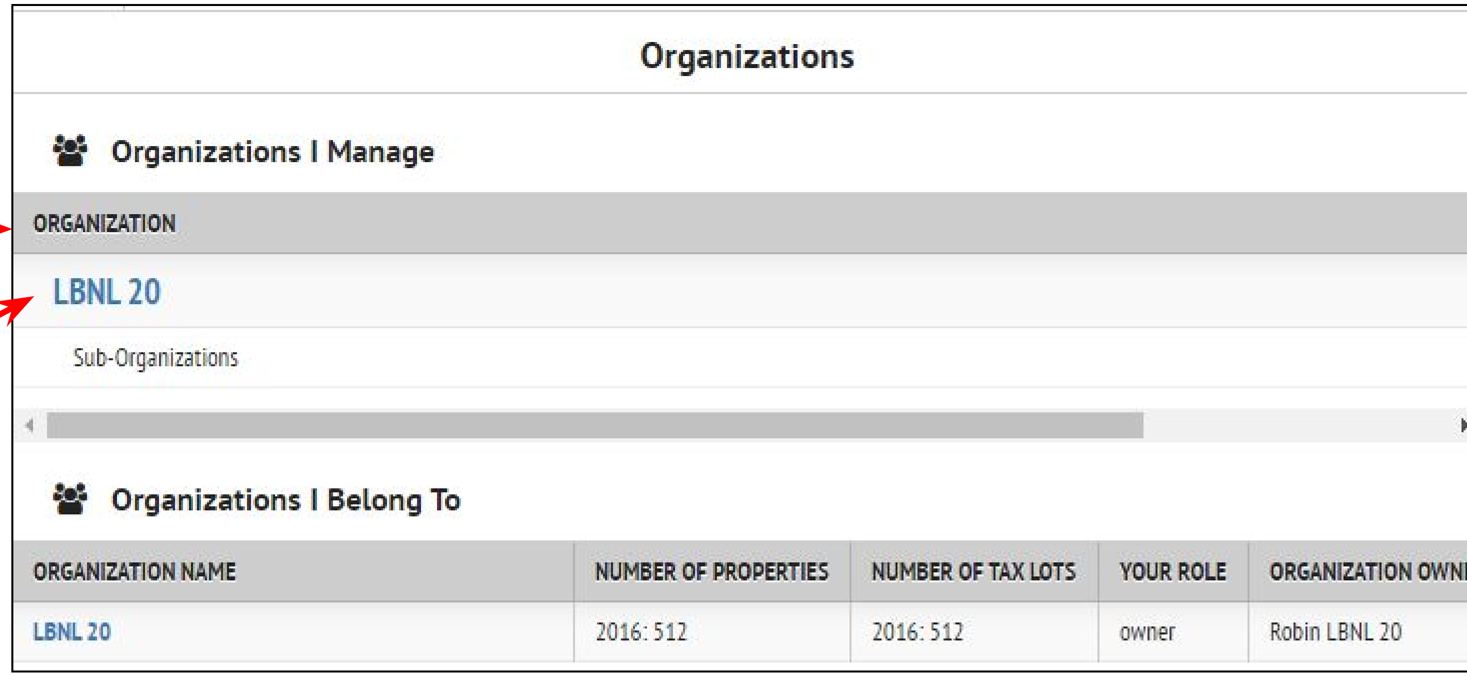
Log out: Click to log out of the program

Create Cycle in Organizations (before uploading data)

At least one cycle must be defined before importing data.

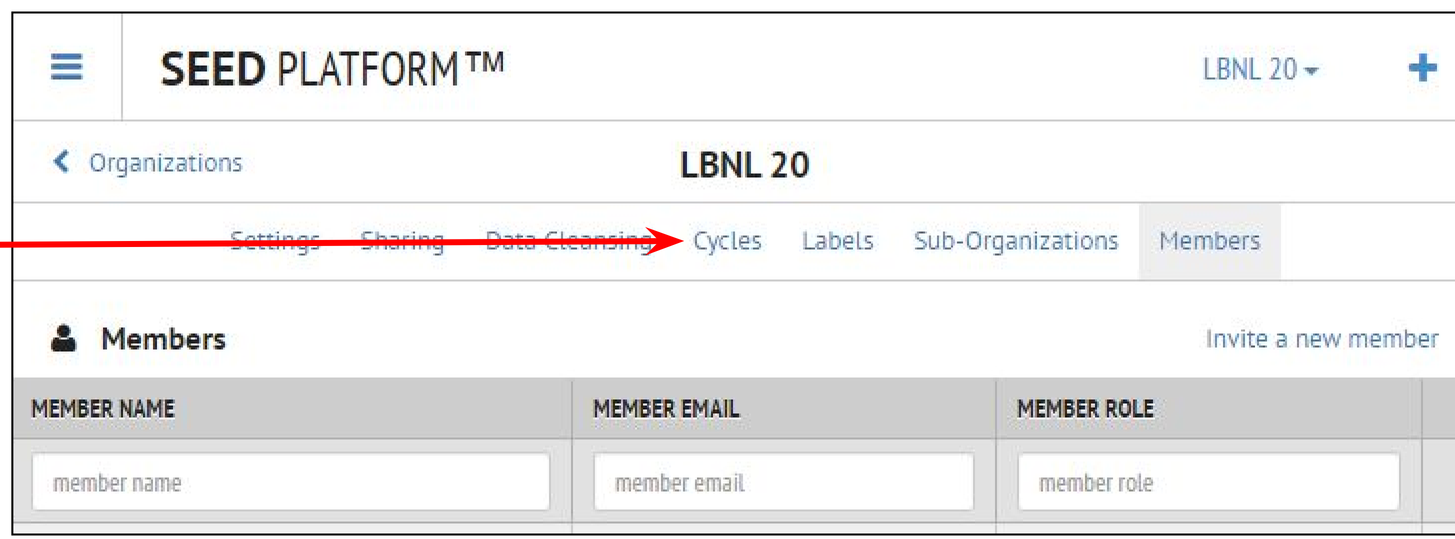
To define a new cycle, go to the Organizations navigation bar to see the organizations that you manage and belong to.





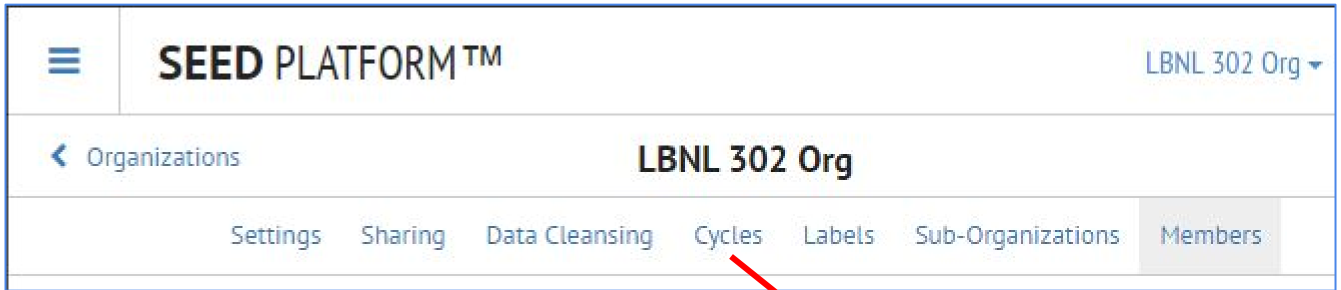
Click on the Organization that you want to make a cycle for

The program will open up a view of that Organization.



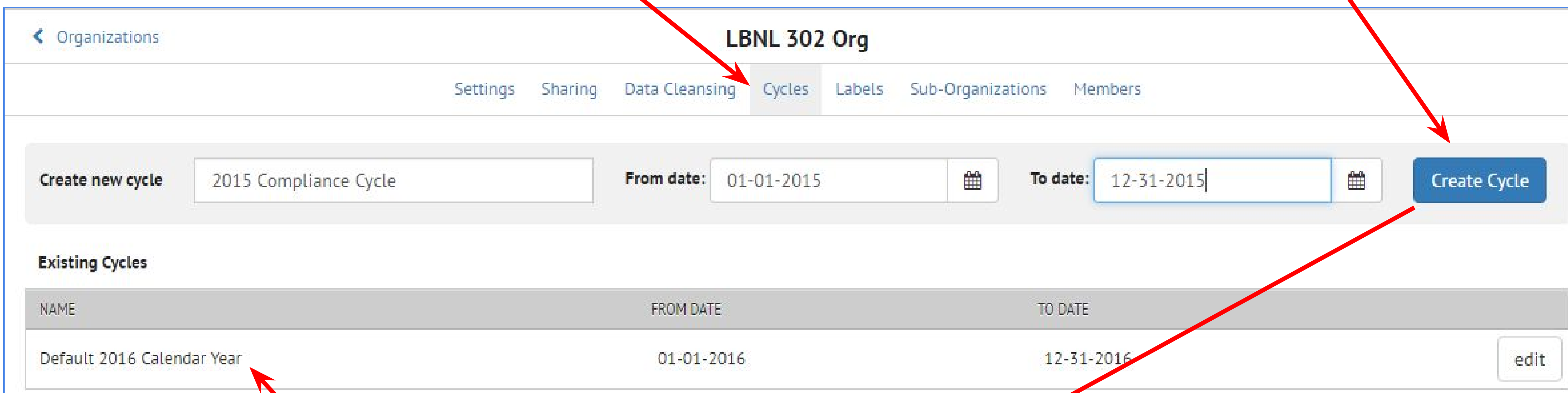
Click on the "Cycles" link to view and edit existing cycles, and define new cycles

View, Edit and Create Cycles



Click on **Cycles** link to view the **Cycles** page

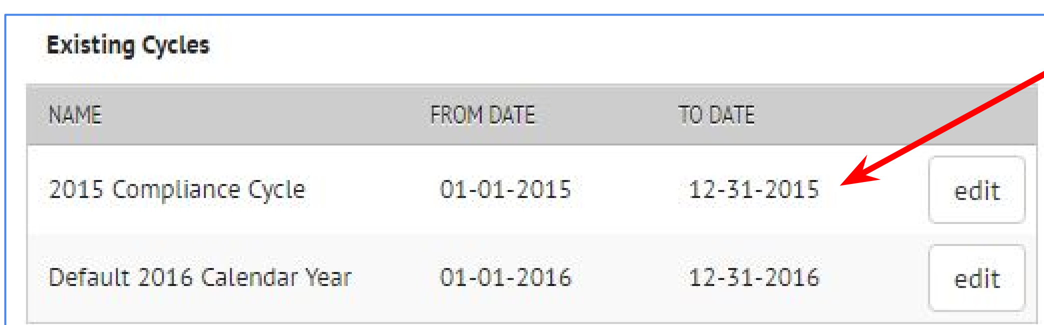
To make a new **Cycle**, enter the Cycle **name**, **From date** and **To date**, then click **Create Cycle**

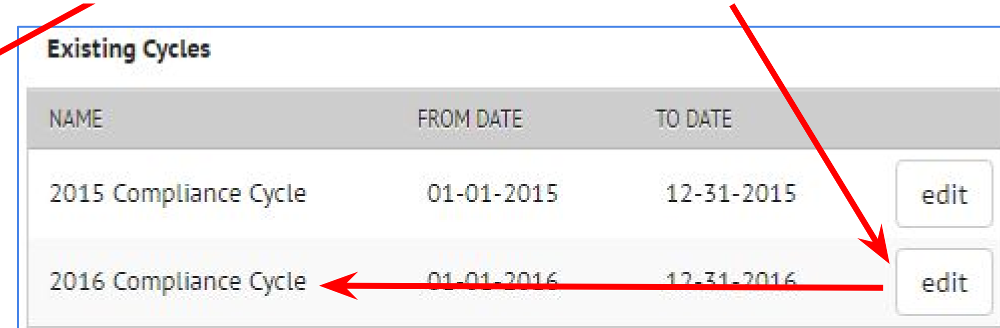


There is a default Cycle provided by the program called **Default 2016 Calendar Year**

The new **Cycle** is added to the **Existing Cycles** list

Click **Edit** to change the default **Cycle** name if desired



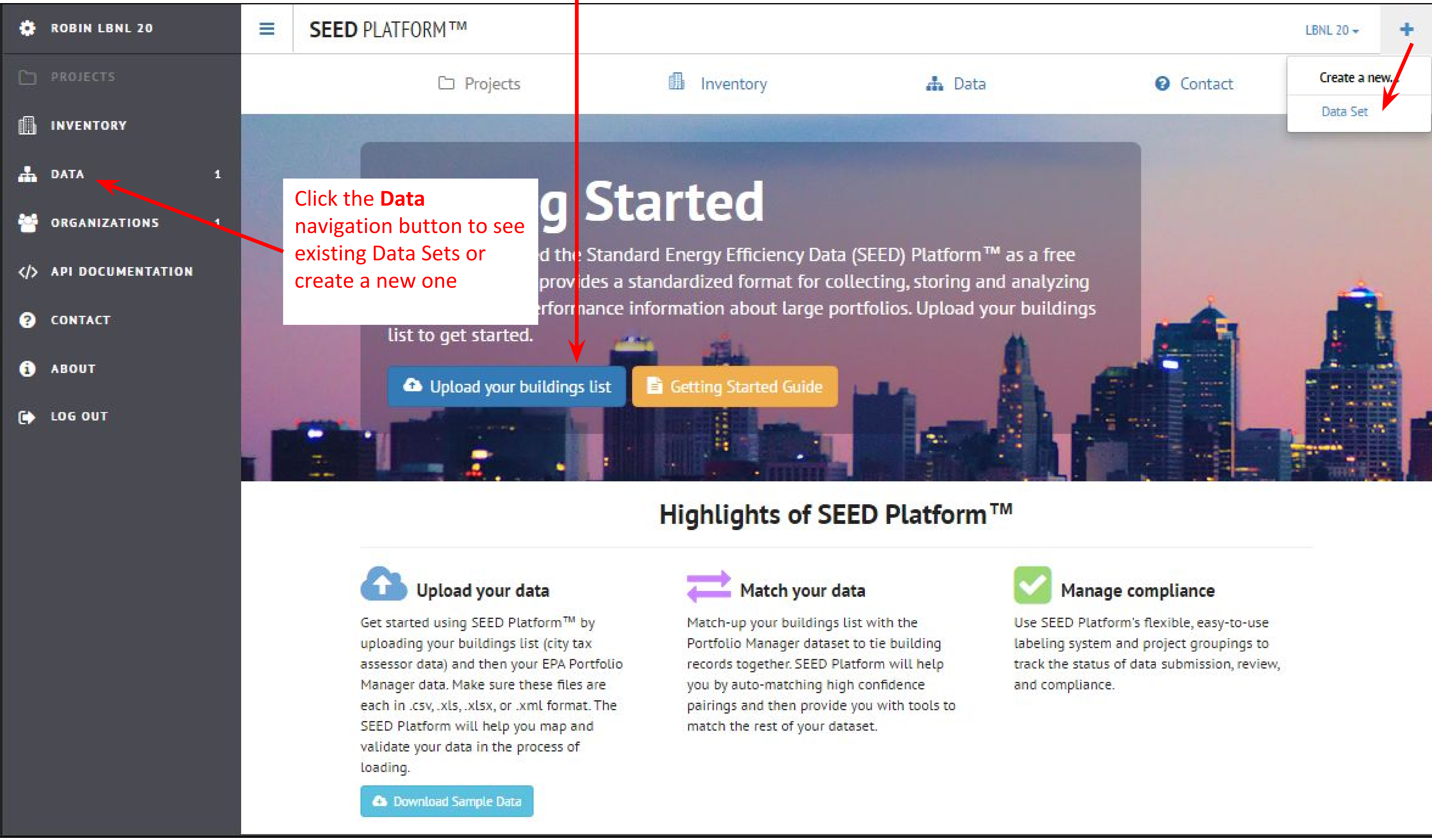


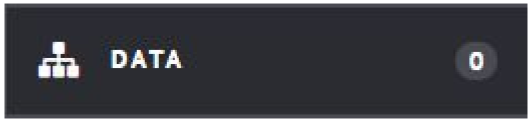
Uploading Data - There are many ways to start

To start loading data, click the blue button labeled "**Upload your buildings list**"

Or click the "**+**" icon at the and then select "**Data Set**"

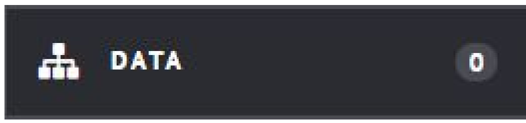
Click the **Data** navigation button to see existing Data Sets or create a new one

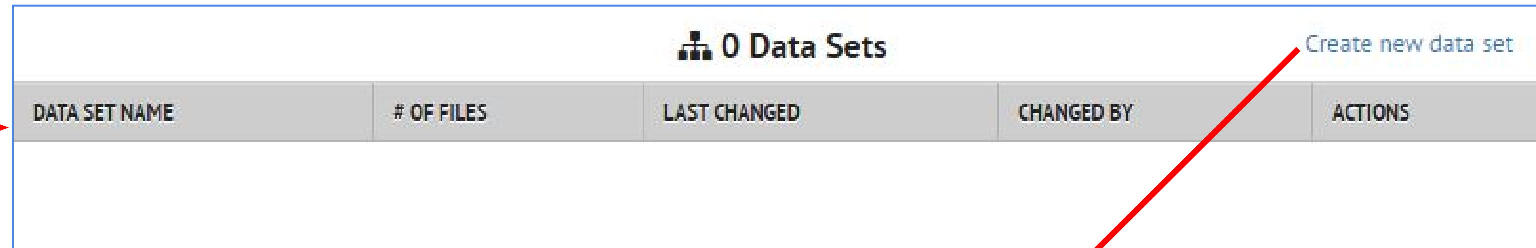




Create a New Data Set

Clicking the Data Navigation option will open the Data Sets view, to display existing Data Sets and create new Data Sets

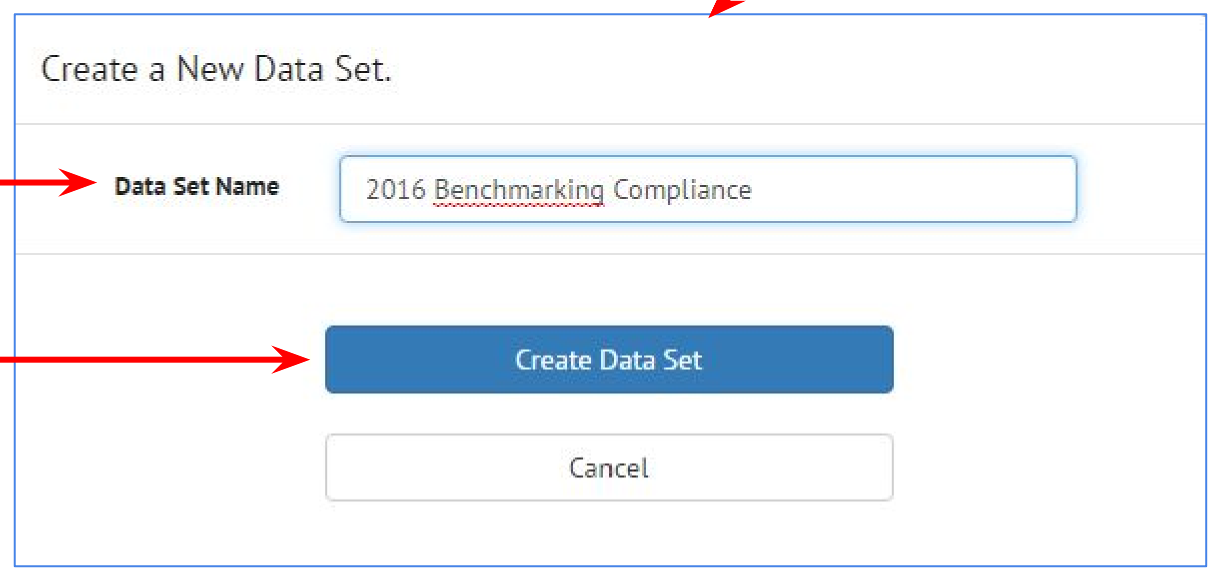


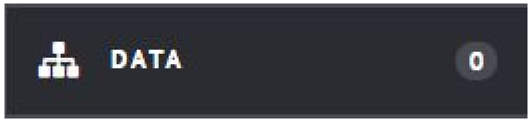


Click the **Create new data set** link to open this dialog box

Give the new data set a name

Click the Create Data Set button

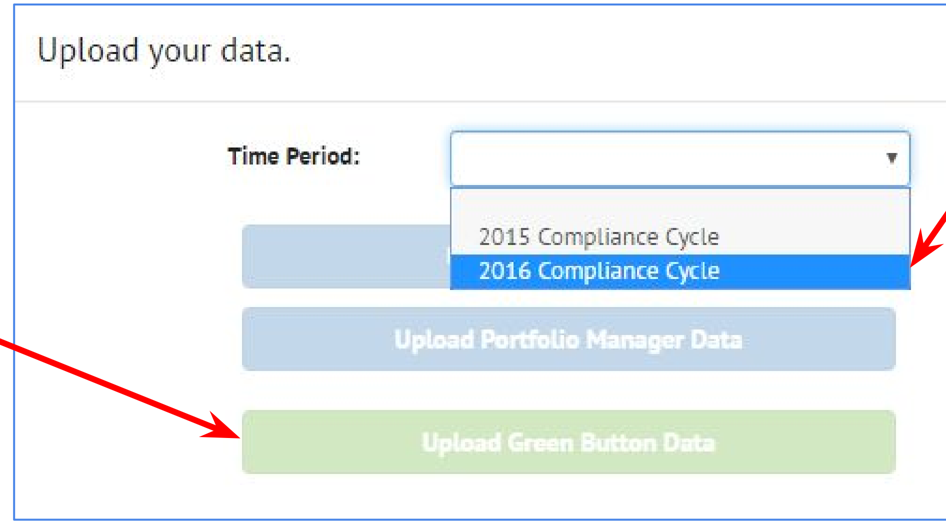




Add a file to the data set

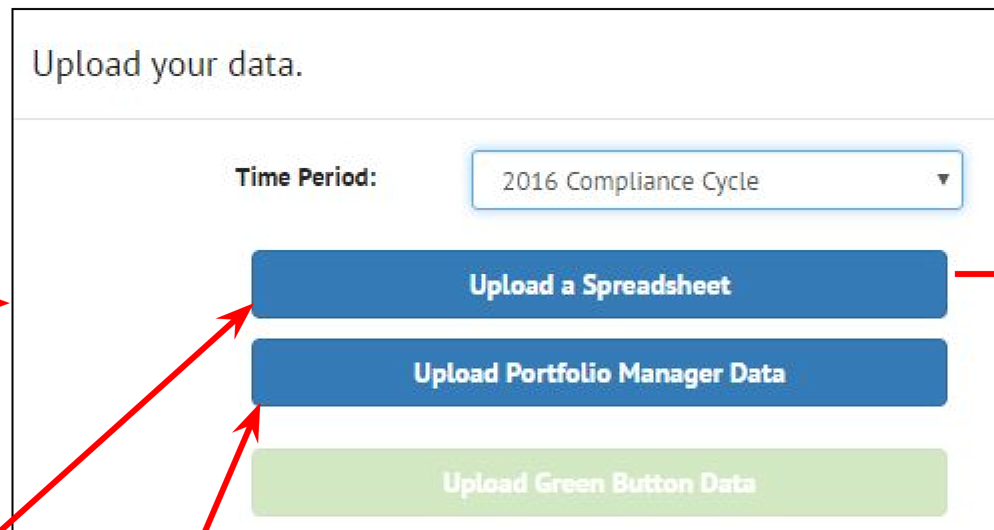
Select the data type to upload, either:

- Spreadsheet (CSV, XLS, XLSX)
- Portfolio Manager (CSV, XLS, or XLSX)
- Green Button Data (XML) -- disabled



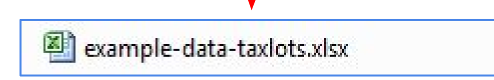
Select a **Time Period** to associate with the data

When a **Time Period** (Cycle) is selected, the **Upload** buttons become active



A browser window will open to select a file to upload

In this example, a **Tax Lot / Parcel** data file is uploaded



Click **Upload a Spreadsheet** to import

- Tax / Parcel lists
- Building lists

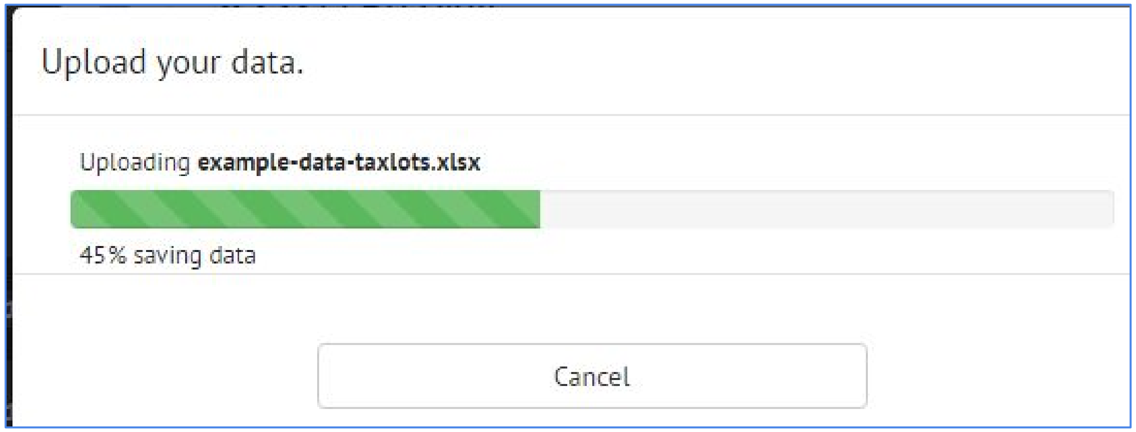
Click **Upload Portfolio Manager Data** to import

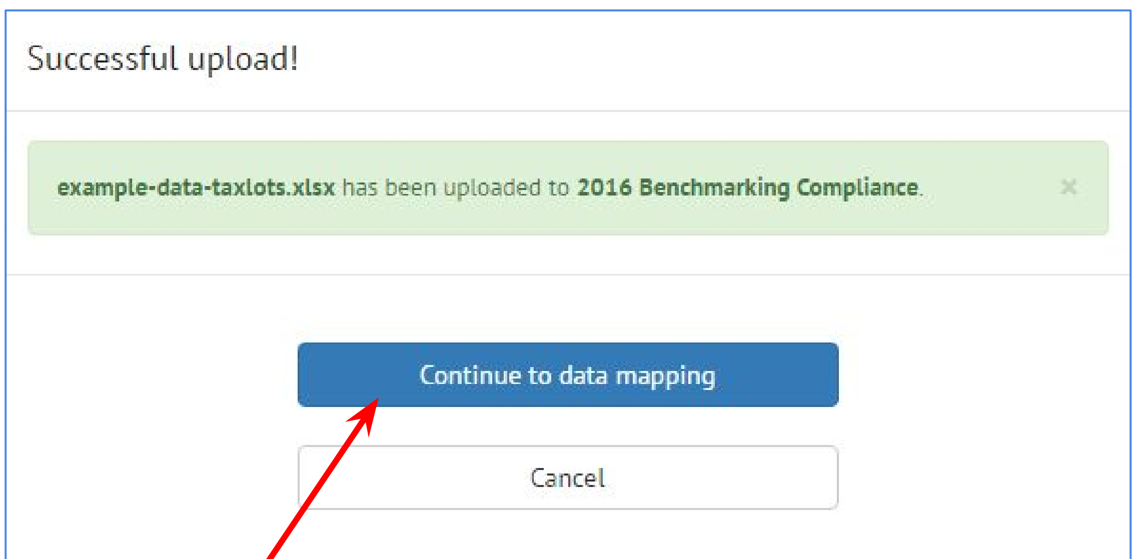
- Custom Report files generated from Portfolio Manager

DATA 0

Upload Data

During the data upload, SEED reports the progress and the success of the upload





After you click the "**Continue to data mapping**" button, you may see a spinning circle if the data file is large

When the data upload is complete, click the "**Continue to data mapping**" button

DATA 0

Mapping Fields

Directions for mapping data are at the top of the Mapping page.

2016 Benchmarking Compliance

Data Mapping & Validation (example-data-taxlots.xlsx)

STEP 1: Map Your Data | STEP 2: Review Your Data Mappings | BEDES | Collapse Tabs

MAPPING YOUR DATA TO SEED

It is necessary to map your field names to SEED field names. You can select from the list that appears as you start to type, which is based on the Building Energy Data Exchange Specification (BEDES), or you can type in your own name, as well as typing in the field name from the original datafile.

In addition, you need to specify where the field should be associated with Tax Lot data or Property data. This will affect how the data is matched and merged, as well as how it is displayed in the Inventory view.

Field names for matching: The following fields are used by SEED to match records: **Jurisdiction Tax Lot ID**, **PM Property ID**, **Custom ID 1**, **Address Line 1**. If there are fields in a datafile mapped to these names, the program will attempt to match on those same names in existing records.

For Portfolio Manager files, SEED has a default set of field names which can be used without extra user editing unless desired.

When you click the **Map Your Data** button, the program will show a grid with the new field names as the column headings and your data in the rows. In that view, you can still come back to the initial mapping screen and change the field mapping.

Duplicate -- if fields are marked as duplicates they need to be resolved to have different names

Matching Fields:
SEED matches records between files (such as Tax Lot and Building lists and ENERGY STAR Portfolio Manager data) based on these four fields so it is **very important** to map your data's fields to at least one of these SEED fields. Pick a field that is common between the files you plan to match to each other

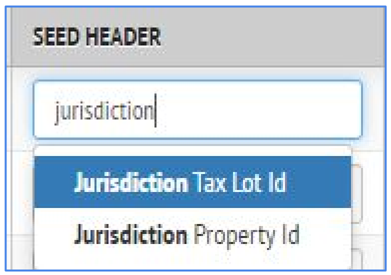
- **Jurisdiction Tax Lot ID**
- **PM Property ID** (Portfolio Manager ID)
- **Custom ID**
- **Address Line 1**

DATA 0

Mapping Fields

Map the field names in the **imported file** to standardized field names in the **SEED database**

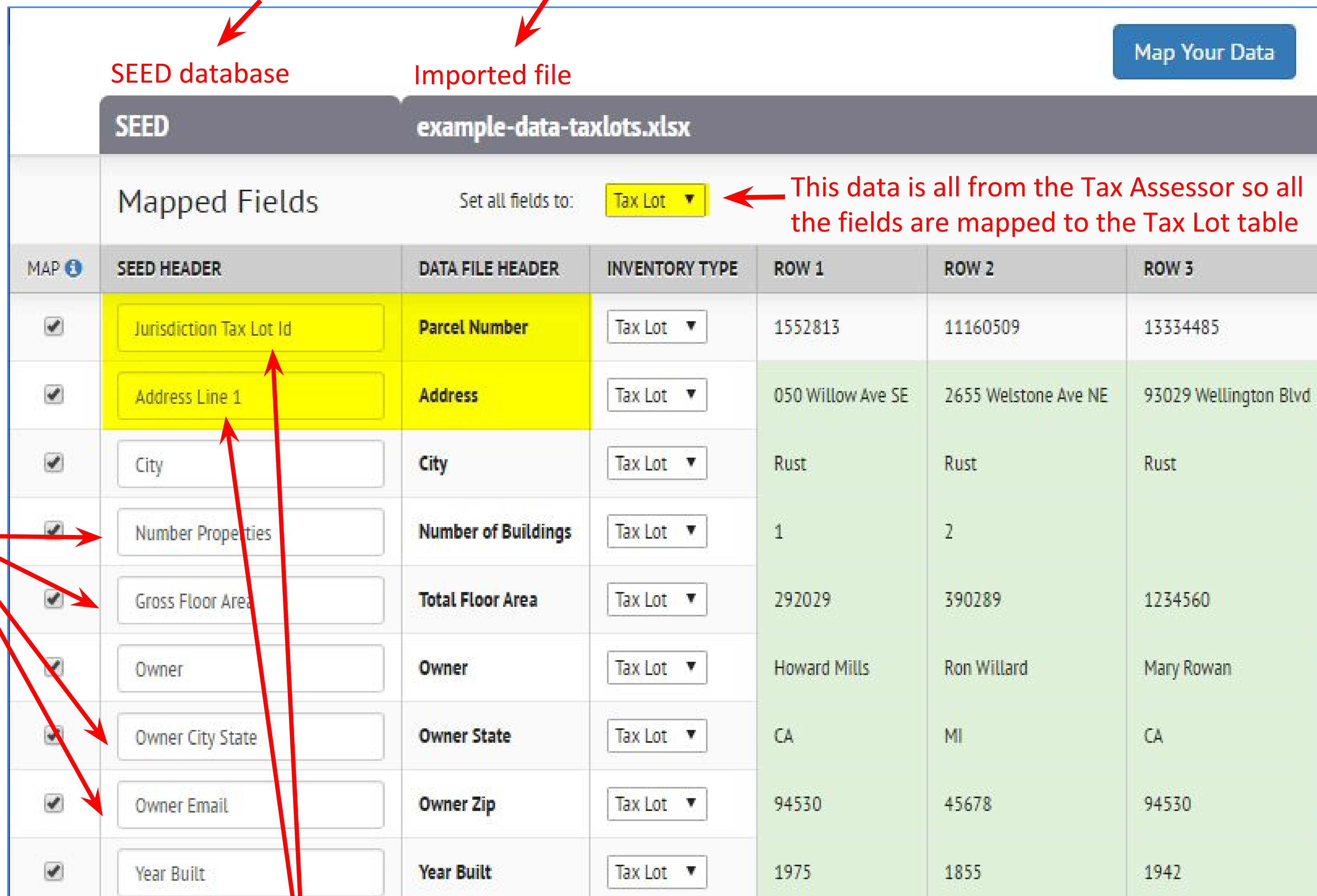
Start typing in the SEED field input to see a list of fields containing that word



SEED database

Imported file

This data is all from the Tax Assessor so all the fields are mapped to the Tax Lot table



Map Your Data

SEED	example-data-taxlots.xlsx

Mapped Fields — Set all fields to: Tax Lot

MAP	SEED HEADER	DATA FILE HEADER	INVENTORY TYPE	ROW 1	ROW 2	ROW 3
✔	Jurisdiction Tax Lot Id	Parcel Number	Tax Lot	1552813	11160509	13334485
✔	Address Line 1	Address	Tax Lot	050 Willow Ave SE	2655 Welstone Ave NE	93029 Wellington Blvd
✔	City	City	Tax Lot	Rust	Rust	Rust
✔	Number Properties	Number of Buildings	Tax Lot	1	2	
✔	Gross Floor Area	Total Floor Area	Tax Lot	292029	390289	1234560
✔	Owner	Owner	Tax Lot	Howard Mills	Ron Willard	Mary Rowan
✔	Owner City State	Owner State	Tax Lot	CA	MI	CA
✔	Owner Email	Owner Zip	Tax Lot	94530	45678	94530
✔	Year Built	Year Built	Tax Lot	1975	1855	1942

The program will make a guess at an appropriate field name, which is not always correct or desired. The field names can get changed to another name if desired (see next page)

These fields were mapped to **reserved field names** to specify the fields the program will use to match records in files

- Parcel Number ⇒ **Jurisdiction Tax Lot ID**
- Address ⇒ **Address Line 1**

Matching

- In this case, the program will match two records if the data in either the **Jurisdiction Tax Lot ID** field **OR** the **Address Line 1** field are the same

DATA 0

Mapping Fields

Unchecking the Map field means the program will not include the field in the data import

Click **Map Your Data** when all the fields are mapped as desired

Map Your Data

SEED | example-data-taxlots.xlsx

Mapped Fields

Set all fields to: Tax Lot

MAP	SEED HEADER	DATA FILE HEADER	INVENTORY TYPE	ROW 1	ROW 2	ROW 3
✔	Jurisdiction Tax Lot Id	**Parcel Number**	Tax Lot	1552813	11160509	13334485
✔	Address Line 1	**Address**	Tax Lot	050 Willow Ave SE	2655 Welstone Ave NE	93029 Wellington Blvd
✔	City	**City**	Tax Lot	Rust	Rust	Rust
✔	Number Of Buildings	**Number of Buildings**	Tax Lot	1	2	
✔	Total Floor Area	**Total Floor Area**	Tax Lot	292029	390289	1234560
✔	Owner	**Owner**	Tax Lot	Howard Mills	Ron Willard	Mary Rowan
✔	Owner State	**Owner State**	Tax Lot	CA	MI	CA
✔	Owner Postal Code	**Owner Zip**	Tax Lot	94530	45678	94530
✔	Year Built	**Year Built**	Tax Lot	1975	1855	1942

Some of the field names are changed from the default program suggestions

DATA 0

Field Mapping Review

Map Your Data → View the mapped fields populated with the data

Click **Save Mappings** if the mapping is correct

You can click **Back to Mapping** if it is not correct

Click **Data Cleansing Results** to see data errors (see next page)

Back to Mapping | Data Cleansing Results | Save Mappings

View by Tax Lot

9 Tax Lots

Address Line 1 (Tax Lot)	City (Tax Lot)	Owner	Year Built	Owner Postal Code	Jurisdiction	Total Floor Area
050 Willow Ave SE	Rust	Howard Mills	1975	94530	1552813	292029
2655 Welstone Ave NE	Rust	Ron Willard	1855	45678	11160509	390289
93029 Wellington Blvd	Rust	Mary Rowan	1942	94530	13334485	1234560
94000 Wellington Blvd	Rust	Frank Stone	1933	21564	23810533	5312
11 Ninth Street	Rust	Dave Franklin	1961	31625	24651456	45135
525 Elm Street	Rust	Susan Anthony	1955	94530	33366125	954652
530 Elm Street	Rust	Heidi Folk	1965	94530	33366148	154623
521 Elm Street	Rust	Buildings LLC	2002	94530	33366555	15213
39929 Ranch 99 Road	Rust	Ward Thatcher	1948	91235	55039309	331235

Back to Mapping | Save Mappings

Mapping – Review – Data Cleansing

DATA 0

From the **Data Mapping** screen, click **Data Cleansing Results** to see what the program discovered about the data

Data Cleansing Results

Data Cleansing Results

File Name: covered-buildings-sample.csv

Date Uploaded: Invalid date

ADDRESS LINE 1	PM PROPERTY ID	TAX LOT ID	CUSTOM ID	FIELD	ERROR MESSAGE
Address Line 1	PM Property ID	Tax Lot ID	Custom ID	Field	Error Message
44871 SW Orange Highway	--	10103572BC	--	Year Built	Value [0] < 1700
158538 S Monroe Court	--	101104DF66	--	Year Built	Value [0] < 1700
97036 N Eisenhower Road	--	101041BD08	--	Year Built	Value [0] < 1700
98737 NW Van Buren Court	--	10101528FC	--	Year Built	Value [0] < 1700
143991 SW Harrison Way	--	101013F4F9	--	Year Built	Value [0] < 1700
92910 NW Papaya Court	--	101105F905	--	Year Built	Value [0] < 1700
236009 SW Oak Road	--	10102C424E	--	Year Built	Value [0] < 1700
99348 NE Locust Street	--	101047EF71	--	Year Built	Value [0] < 1700

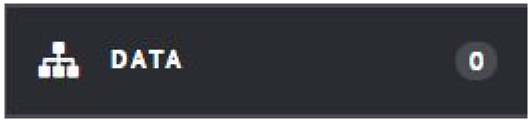
Click **Export** to export the contents of the Data Cleansing screen to a CSV file

Export

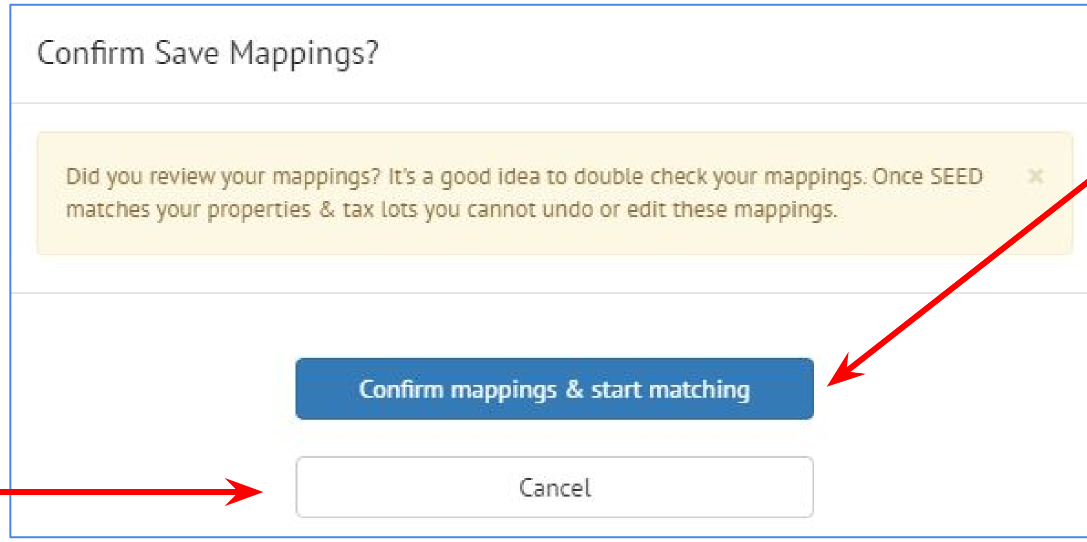
Close

Click **Close** to return to the **Data Mapping** Screen

Data Cleansing Results.csv



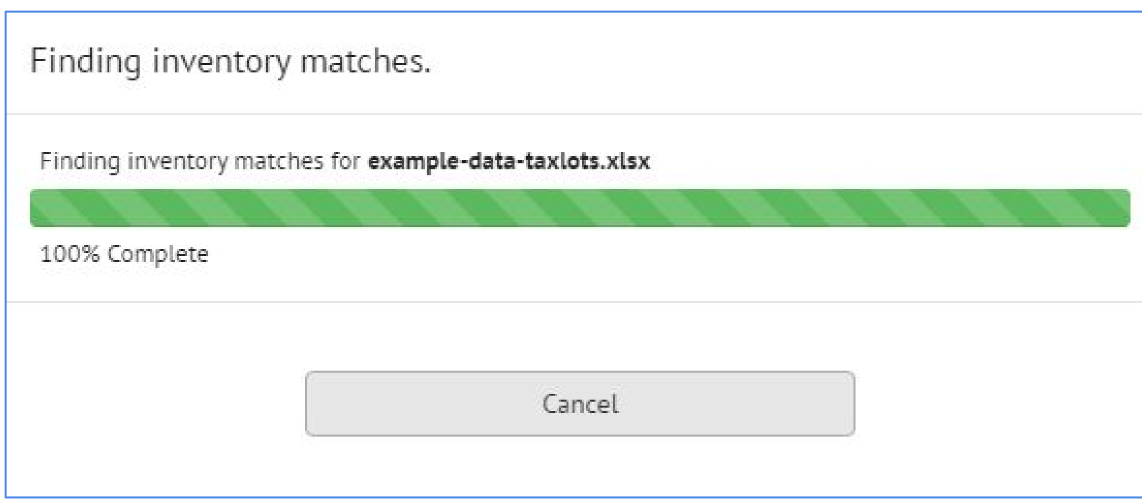
Mapping – Confirm and Start Matching



Click **Confirm mappings and start matching** if you are happy with the data mapping

SEED will check to see if any records match within the file (or across other files if they have already been imported)

You have one more chance to review the mapping



Program checks to see if any records match within the file based on the matching fields set in Mapping, such as Address or Tax Lot ID

The program checks for matching even if there is no data already loaded into the program to match to, in case there are matches within the file being imported

DATA 0

Matching - View Results / Add a File

Load More Data

SEED could not locate any non-duplicate matches and found **0 duplicates**. Would you like to add another file?

Add another file

View my buildings

Cancel

The program reports on any matches that it found. In this example, there were no matches within the Covered Buildings data being imported.

Click **Add another file** to upload ENERGY STAR Portfolio Manager data (or other data) and you can then add more data to match to the records that were just created

Click **View my buildings** to see the Building list

Upload your data.

Time Period: 2016 Compliance Cycle

Upload a Spreadsheet

Upload Portfolio Manager Data

Upload Green Button Data

Cycle: 2017 Compliance

View by Property | View by Tax Lot | 9 Tax Lots

Jurisdiction Tax Lot ID	Address Line 1 (Tax Lot)	City (Tax Lot)	Gross Floor Area	Owner	Number Properties
11160509	2655 Welstone Ave NE	Rust	390289	Ron Willard	2
55039309	39929 Ranch 99 Road	Rust	331235	Ward Thatcher	
13334485	93029 Wellington Blvd	Rust	1234560	Mary Rowan	
1552813	050 Willow Ave SE	Rust	292029	Howard Mills	1
33366125	525 Elm Street	Rust	954652	Susan Anthony	
33366555	521 Elm Street	Rust	15213	Buildings LLC	
23810533	94000 Wellington Blvd	Rust	5312	Frank Stone	
33366148	530 Elm Street	Rust	154623	Heidi Folk	
24651456	11 Ninth Street	Rust	45135	Dave Franklin	5

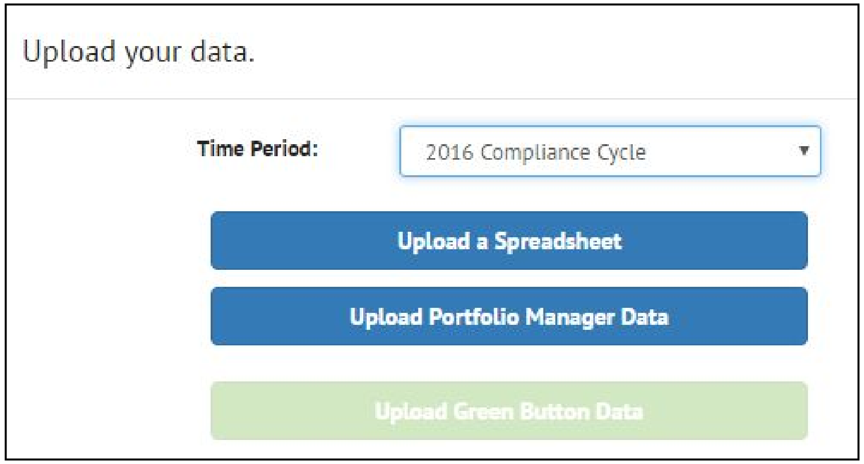
After a data file has been mapped and matched, the records can be viewed in the Inventory list view.

In this example, Tax Lot data was imported, so the data can be viewed in the View by Tax Lot tab, for the appropriate Cycle

DATA 0

Upload - Property / Portfolio Manager

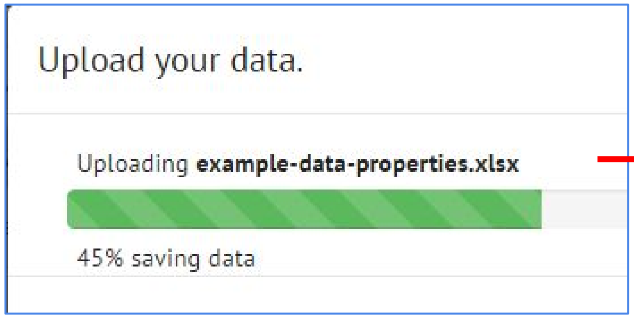
ENERGY STAR Portfolio Manager data

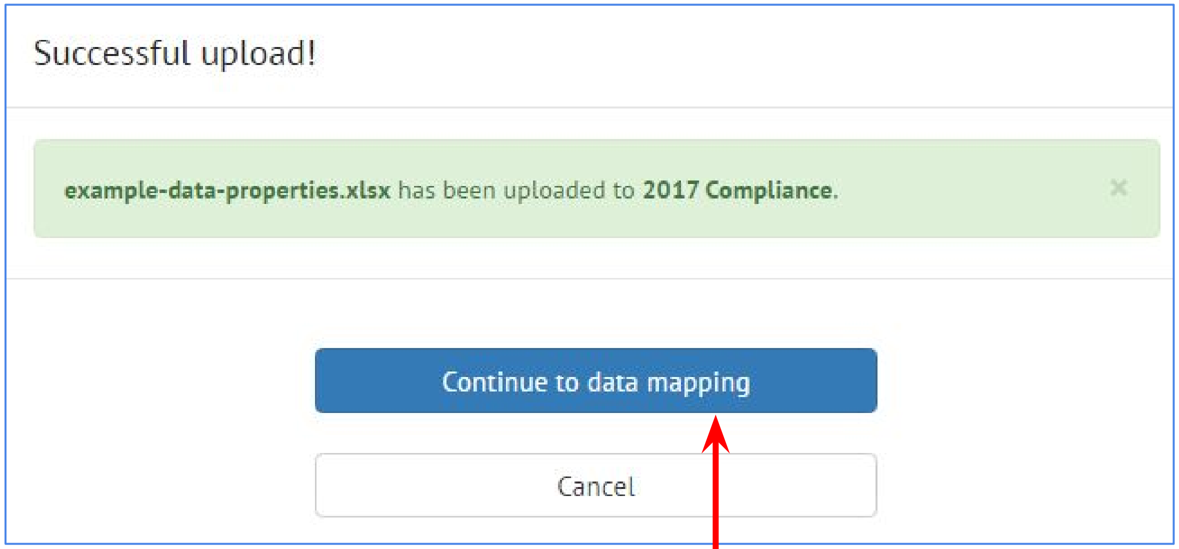


To upload Portfolio Manager data:

- Select the appropriate Cycle
- Click the **Upload Portfolio Manager data** button

Browse to the appropriate file to upload





Click
Continue to data mapping
(See next page)

DATA 0

Mapping - Property / Portfolio Manager

Property / Building / Portfolio Manager

Custom ID 1

- Matching field
- Use for any unique building ID or other ID matching between data

PM Property ID

- Matching field
- Map to **Property ID** in PM file

PM Parent Property ID

- Map to **Parent Property ID** in PM file to define the campus relationship

Address Line 1

- Matching field
- Map to address field to match records on address; otherwise, map to another name (including keeping the original name)

Lot Number

- Map to a field containing Tax Lot / Parcel ID data to set up the relationship between Tax Lot and Property; it can contain multiple IDs separated by comma or semicolon

SEED example-data-properties.xlsx

Mapped Fields — Set all fields to: Property

SEED HEADER	DATA FILE HEADER	INVENTORY TYPE	ROW 1
Custom Id 1	**Unique Building ID**	Property	1
Pm Property Id	**Property ID**	Property	2264
Pm Parent Property Id	**Parent Property ID**	Property	
Property Name	**Property Name**	Property	University Inn
Address Line 1	**Address 1**	Property	50 Willow Ave SE
City	**City**	Property	Rust
Lot Number	**Tax Lot ID**	Property	1552813
Property Type	**Property Type**	Property	Hotel

DATA 0

Mapping Review - Property / Portfolio Manager

ENERGY STAR Portfolio Manager data

Click **Data Cleansing results** button to see if there are any errors or warnings.

Click **Save Mappings** if mapping is correct

Back to Mapping   Data Cleansing Results   Save Mappings

View by Property   12 Properties

PM Property ID	Associated Building Ta...	Address Line 1 (Proper...	City (Property)	Property Name	PM Parent Property ID
1311523	24651456	11 Ninth Street	Rust	Lucky University	1311523
1311524	24651456	12 Ninth Street	Rust	Grange Hall	1311523
1311525	24651456	20 Tenth Street	Rust	Biology Hall	1311523
1311526	24651456	35 Tenth Street	Rust	Rowling Gym	1311523
1311527	13334485;23810533	93029 Wellington Blvd	Rust	East Computing Hall	1311523
1311528	13334485;23810533	93031 Wellington Blvd	Rust	International House	1311523
3020139	11160509	2655 Welstone Ave NE	Rust	Hilltop Condos	
				hool	

Data Cleansing Results

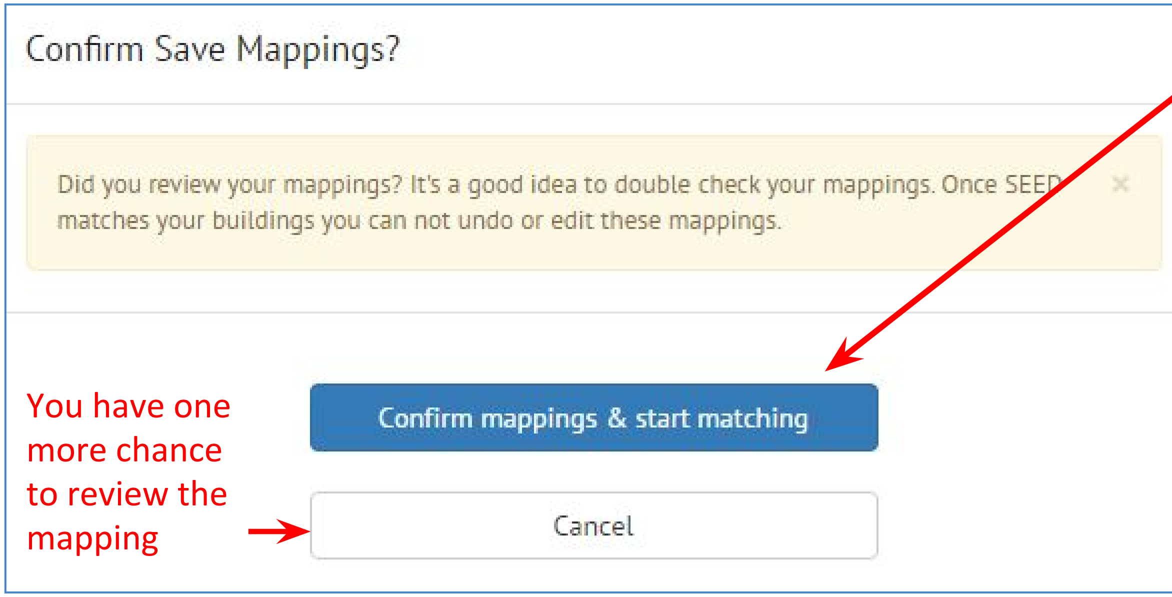
File Name: example-data-properties.xlsx

Date Uploaded: January 31st 2017, 1:34:19 PM -08:00

ADDRESS LINE 1	PM PROPERTY ID	TAX LOT ID	CUSTOM ID	FIELD	ERROR MESSAGE
Address Line 1	PM Property ID	Tax Lot ID	Custom ID	Field	Error Message
2700 Welstone Ave NE	1154623	--	--	Site EUI	Site EUI [1202.0] > 1000.0
2655 Welstone Ave NE	3020139	--	--	Energy Star Score	Energy Star Score [1] < 10.0
521 Elm Street	5233255	--	--	Site EUI	Site EUI [1358.0] > 1000.0

DATA 0

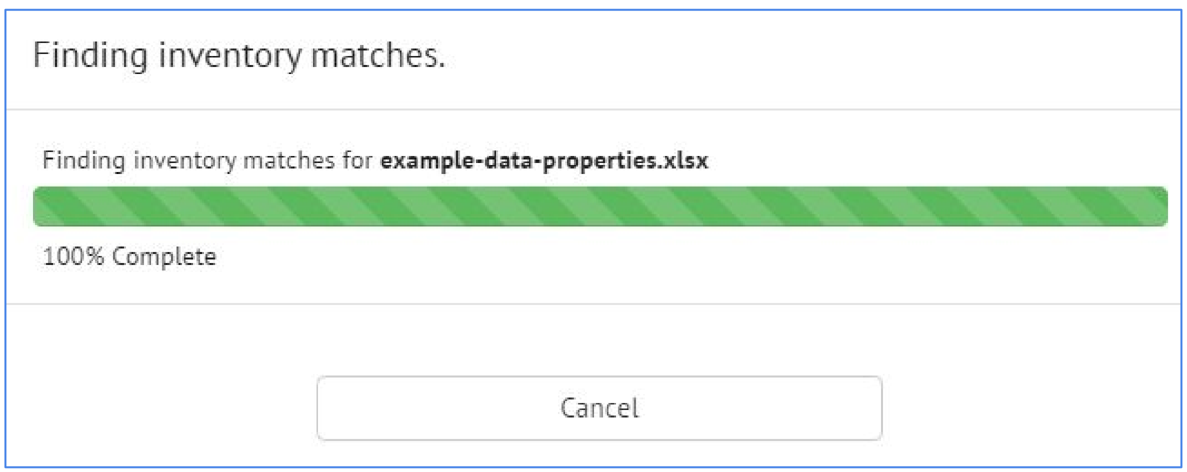
Mapping – Confirm and Start Matching



You have one more chance to review the mapping

Click **Confirm mappings and start matching** if you are happy with the data mapping

SEED will check to see if any records match within the file (or across other files if they have already been imported)



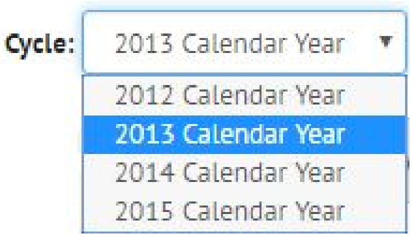
Program checks to see if any records match within the file (such as Address Line 1 or Tax Lot ID)

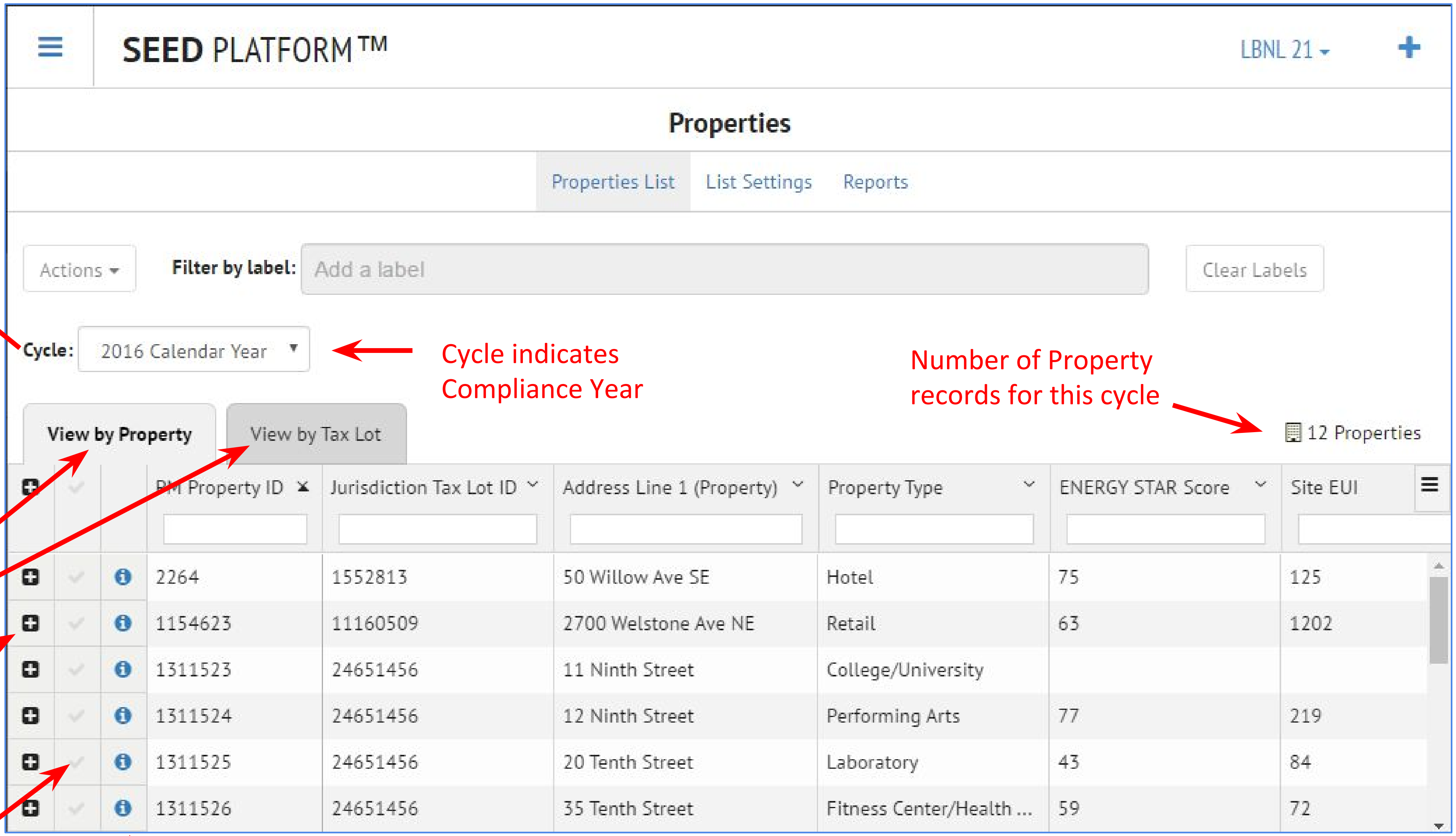
In this example, using the Sample data, the **matching field** that is common between the two data files, Tax Lot data and the Portfolio Manager data is **Address Line 1.**

INVENTORY

Main Screen - List Views

- View by Cycles
- View by Property and View by Tax Lot tabs





Cycle indicates Compliance Year

Number of Property records for this cycle

Two tabs
- Property
- Tax Lots

Click **+** to see related records

Toggle checkmark on and off to select records for "Actions"

Click on **i** to go to Detailed record view

INVENTORY

Property & Tax Lots - List View

View by **Property**

For a Cycle

Data grouped by PM Property ID

Shows associated Tax Lots

Cycle: 2016 Calendar Year

View by Property | View by Tax Lot

12 Properties

			PM Property ID	Jurisdiction Tax Lot ID	Address Line 1 (Property)	Property Type	ENERGY STAR Score	Site EU
+		i	2264	1552813	50 Willow Ave SE	Hotel	75	125
−		i	5233255	33366148; 33366125; 33366555	521 Elm Street	K-12 School	55	1358
		i		33366148				
		i		33366125				
		i		33366555				
+		i	3020139	11160509	2655 Welstone Ave NE	Multifamily Housing	1	652.3

View by **Tax Lot**

For a Cycle

Data grouped by Tax Lot ID

Shows associated Properties

Cycle: 2016 Calendar Year

View by Property | View by Tax Lot

9 Tax Lot

			Jurisdiction Tax Lot ID	PM Property ID	Address Line 1 (Tax Lot)	Address Line 1 (Property)	City (Tax Lot)
+		i	33366148	5233255	530 Elm Street	521 Elm Street	Rust
−		i	23810533	1311528; 1311527	94000 Wellington Blvd	93031 Wellington Blvd; 93029 Wellington Blvd	Rust
		i		1311528		93031 Wellington Blvd	
		i		1311527		93029 Wellington Blvd	
+		i	33366555	5233255	521 Elm Street	521 Elm Street	Rust
+		i	33366125	5233255	525 Elm Street	521 Elm Street	Rust
+		i	1552813	2264	050 Willow Ave SE	50 Willow Ave SE	Rust

List Grid Functionality

Implemented a new UI Grid with a lot of functionality built in

- **Filtering**
- **Sorting** -- click in the middle of the column header to see the small up and down arrows to sort ascending and descending; alternatively select the right menu arrow in the column to see the Sort Ascending, Sort Descending and Remove Sort options
- **Selecting fields to view** -- click on the right menu arrow in an individual field to turn it on or off, or click on List Settings to see a list of columns to display or hide (see following pages for details)
- **Field order by dragging columns** -- click in the middle of a column header and drag it right or left to place it the desired order
- **Pinning columns** -- click on the right menu arrow in an individual column to see the Pin Left, Pin Right and Unpin options for that column (see following pages for details)
- **Resizing columns** - click on the right hand side of the column header and drag it right and left to the desired width
- **Fixed column headers** -- the column headers are fixed, so scrolling down keeps the column headers visible.
- **Single page with all the data --** All the records for a view are loaded at once -- there is no data view “pagination
    - Depending on performance, we may add in the user option to have the program have “pages” of data

INVENTORY

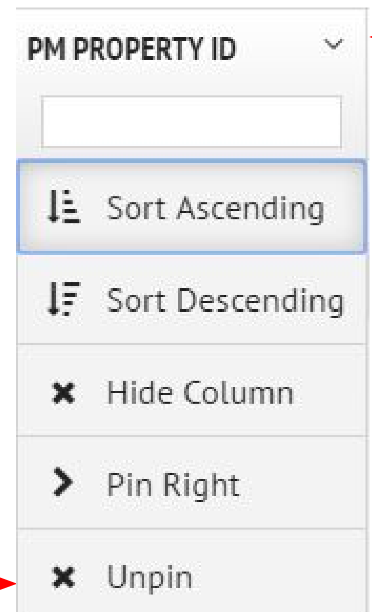
List Grid Functionality

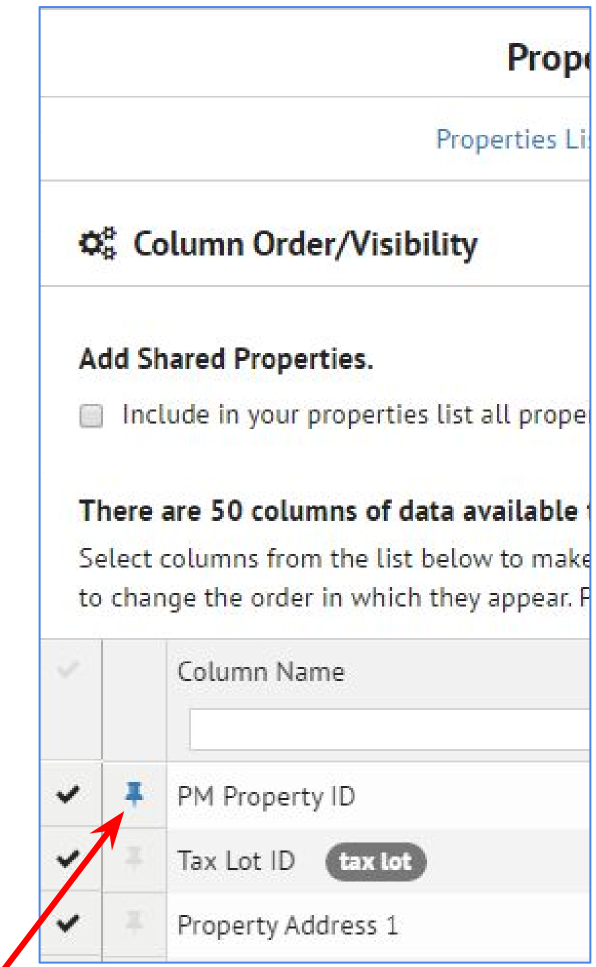
Pinning columns left and right

- Individual columns can be pinned either to the right or the left
- Multiple columns can be pinned

The down arrow to the right of the field shows a menu of sort options, including **Hide Column**

If a column is already pinned, click on the field right hand pulldown to select the **Unpin** option

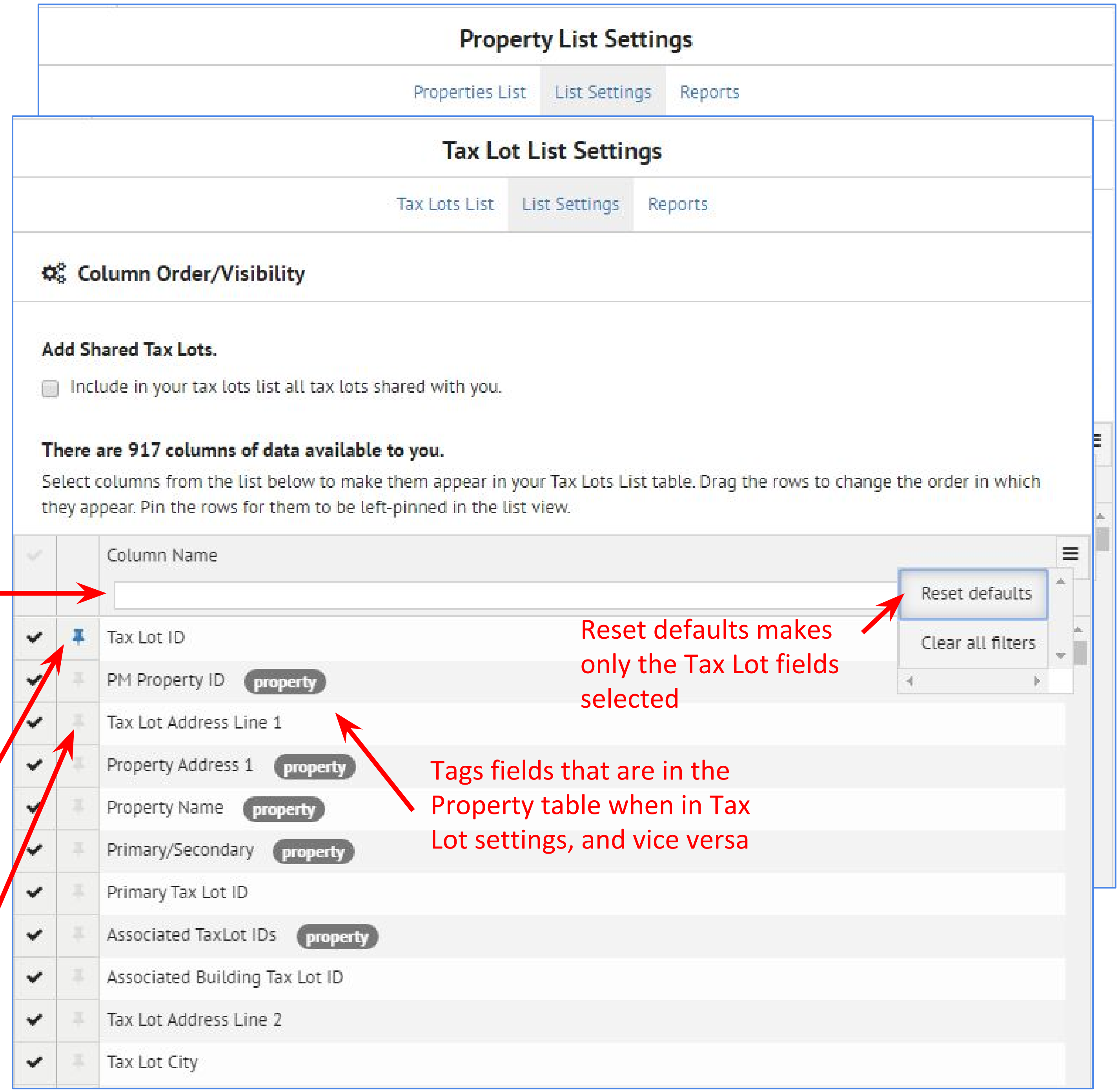




List Settings also has feature to pin columns to the right side

List View - Settings

- Displays all possible fields between Tax Lot and Property
- Tax Lot and Property Settings can be different
- Tags fields that are in table NOT being viewed
- Changes made here are reflected in the View by Tax Lot tab, and vice versa
- Field display and order are on one screen
- Changes are saved automatically



Enter values to search the list of fields

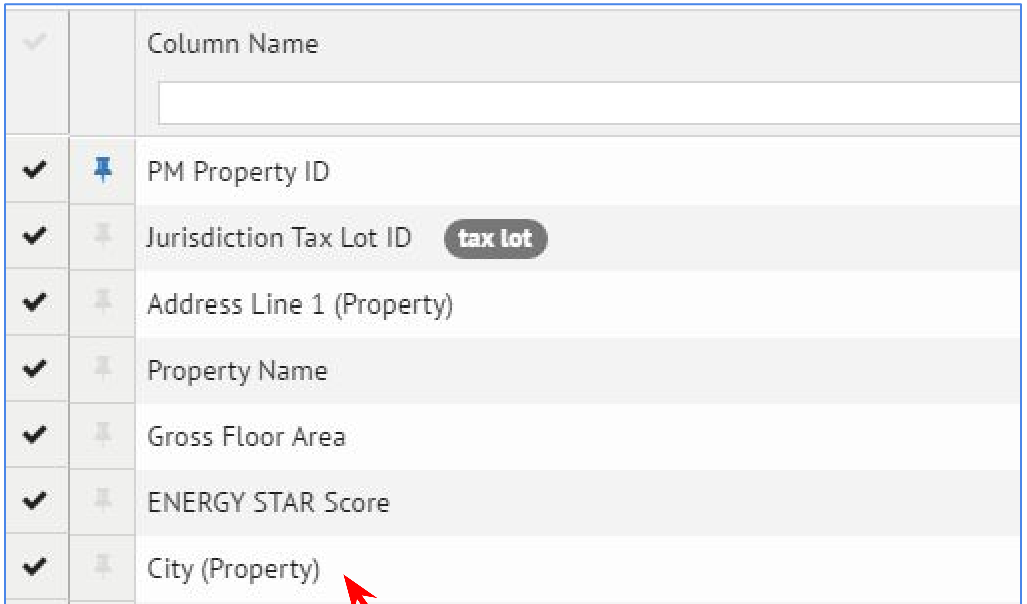
Reset defaults makes only the Tax Lot fields selected

Tags fields that are in the Property table when in Tax Lot settings, and vice versa

Shows which fields are pinned left

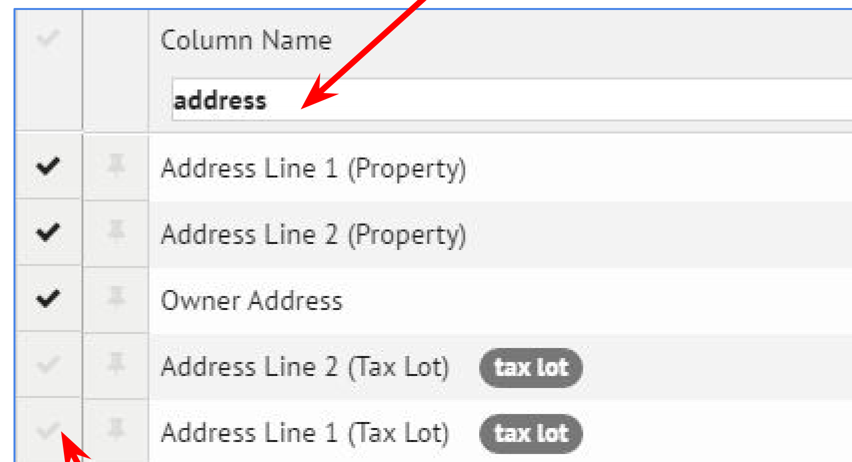
Can set more fields to be pinned left

List View – List Settings – Reorder Columns

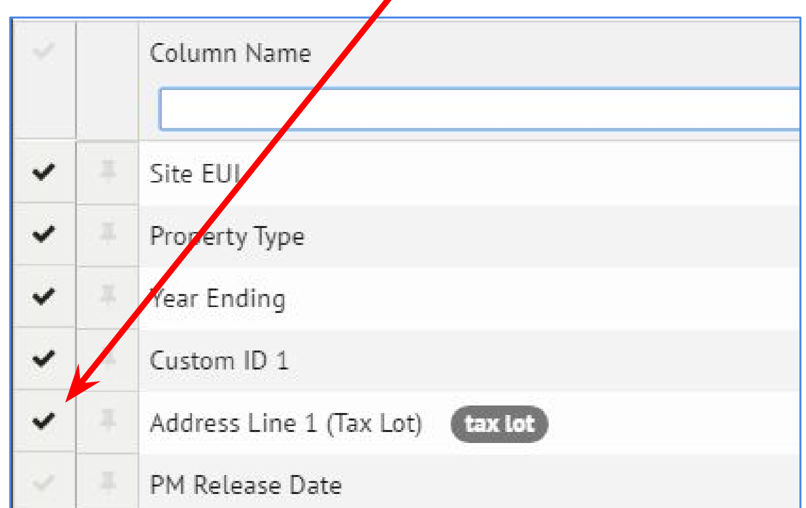


Click and hold down the left mouse button, and drag the Column Names around to change the order

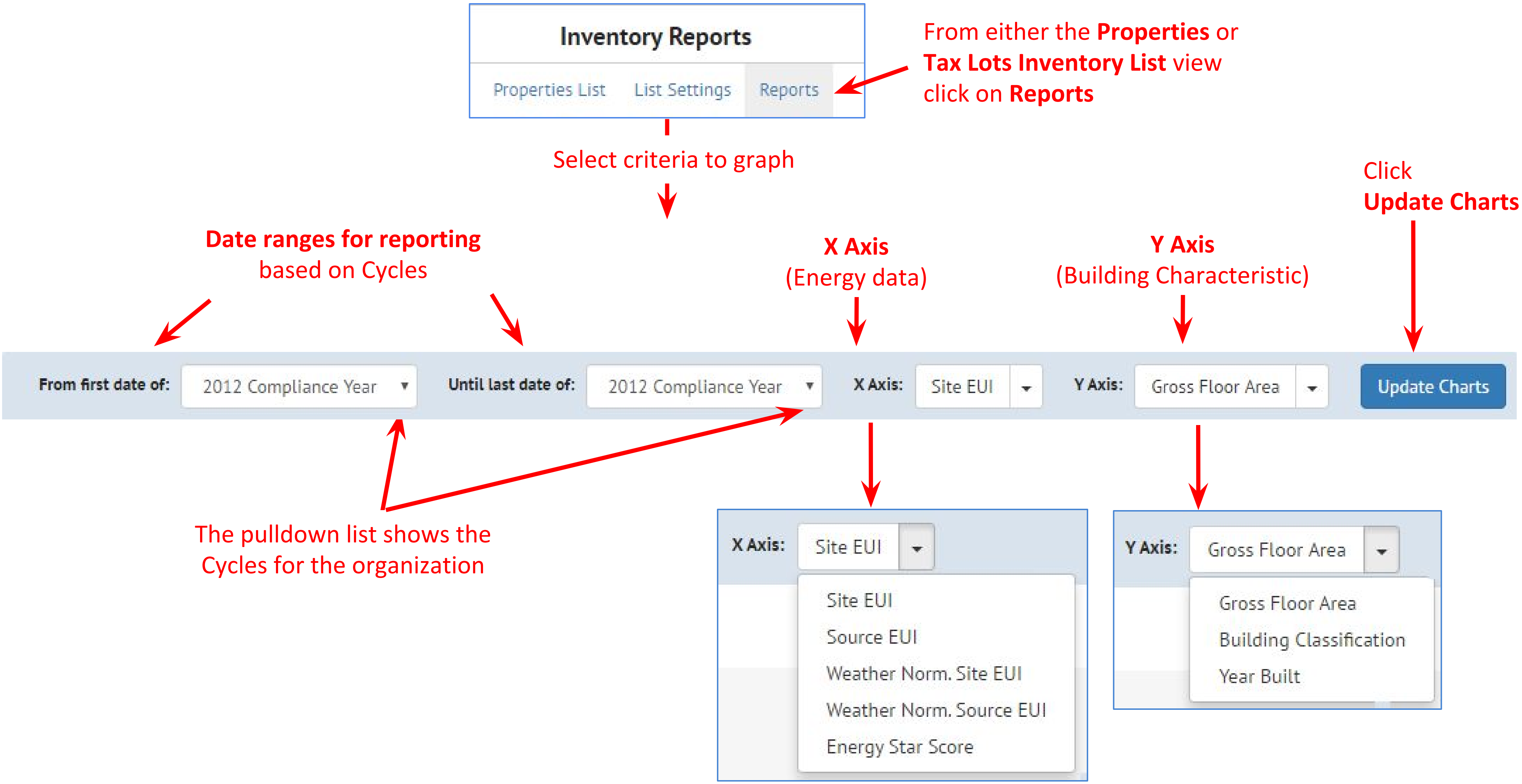
Type into the input box to filter the list of fields



Adding a checkmark to an unchecked field adds it to the end of the checked fields. It can then be dragged to the desired position



List View – Reports



INVENTORY

List View – Reports

Scatter Plot with all buildings

Bar Graph with Median Values

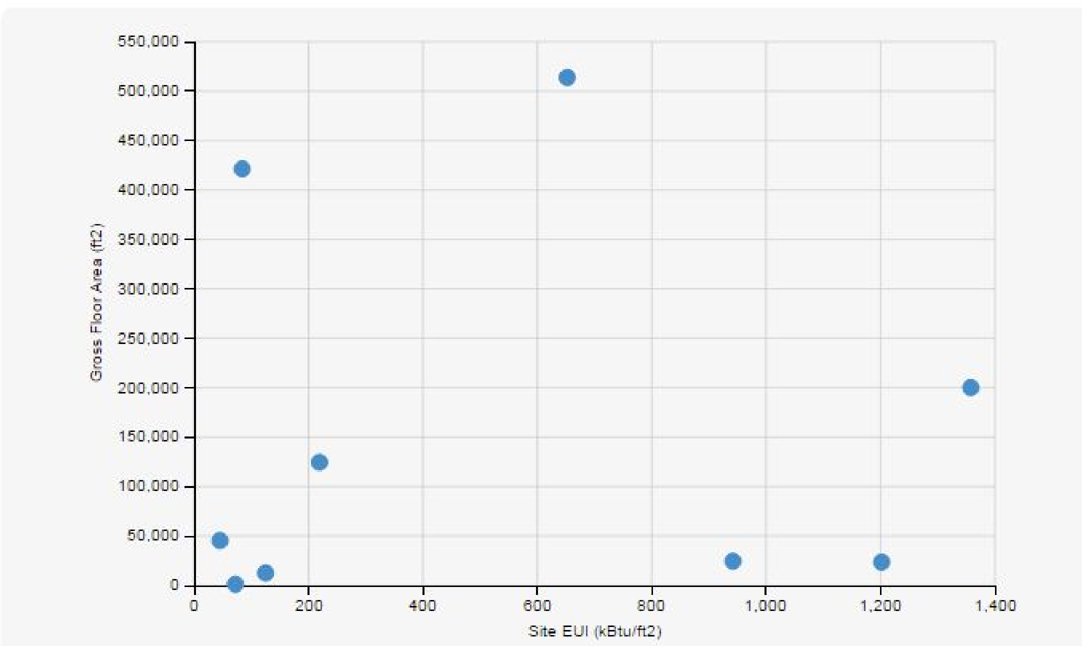
Inventory Reports

Properties List | List Settings | Reports

Property Reports

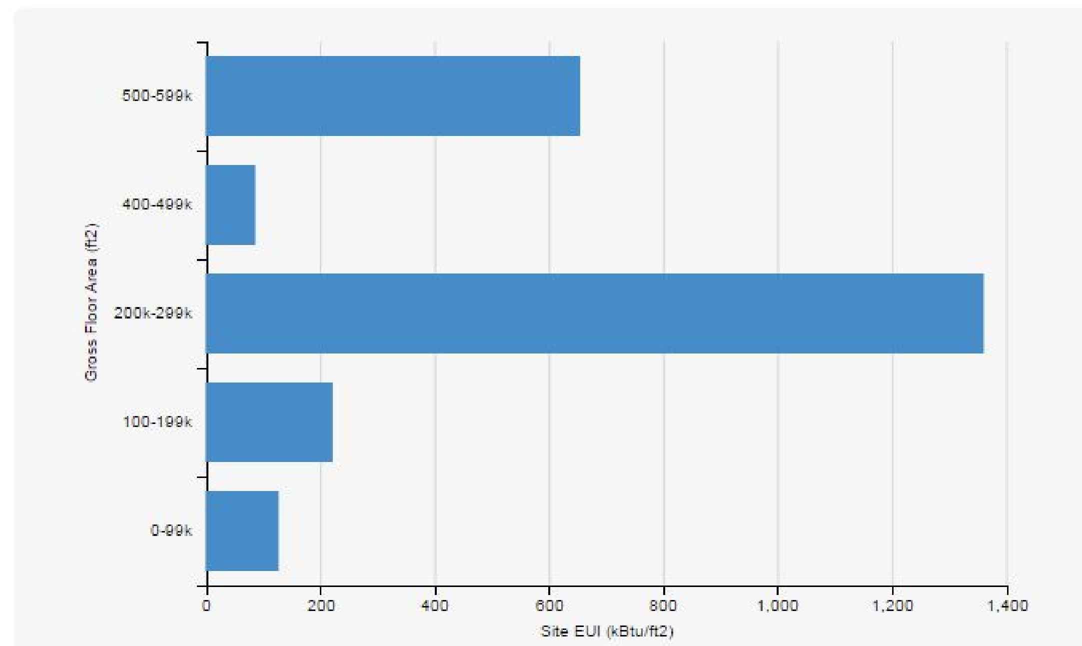
From first date of: 2017 Compliance | Until last date of: 2017 Compliance | X Axis: Site EUI | Y Axis: Gross Floor Area | Update Charts

Site Energy Use Intensity vs. Gross Floor Area



Year Ending	Properties with Data	Total Properties
2017	9	12

Site Energy Use Intensity vs. Gross Floor Area (Aggregated)

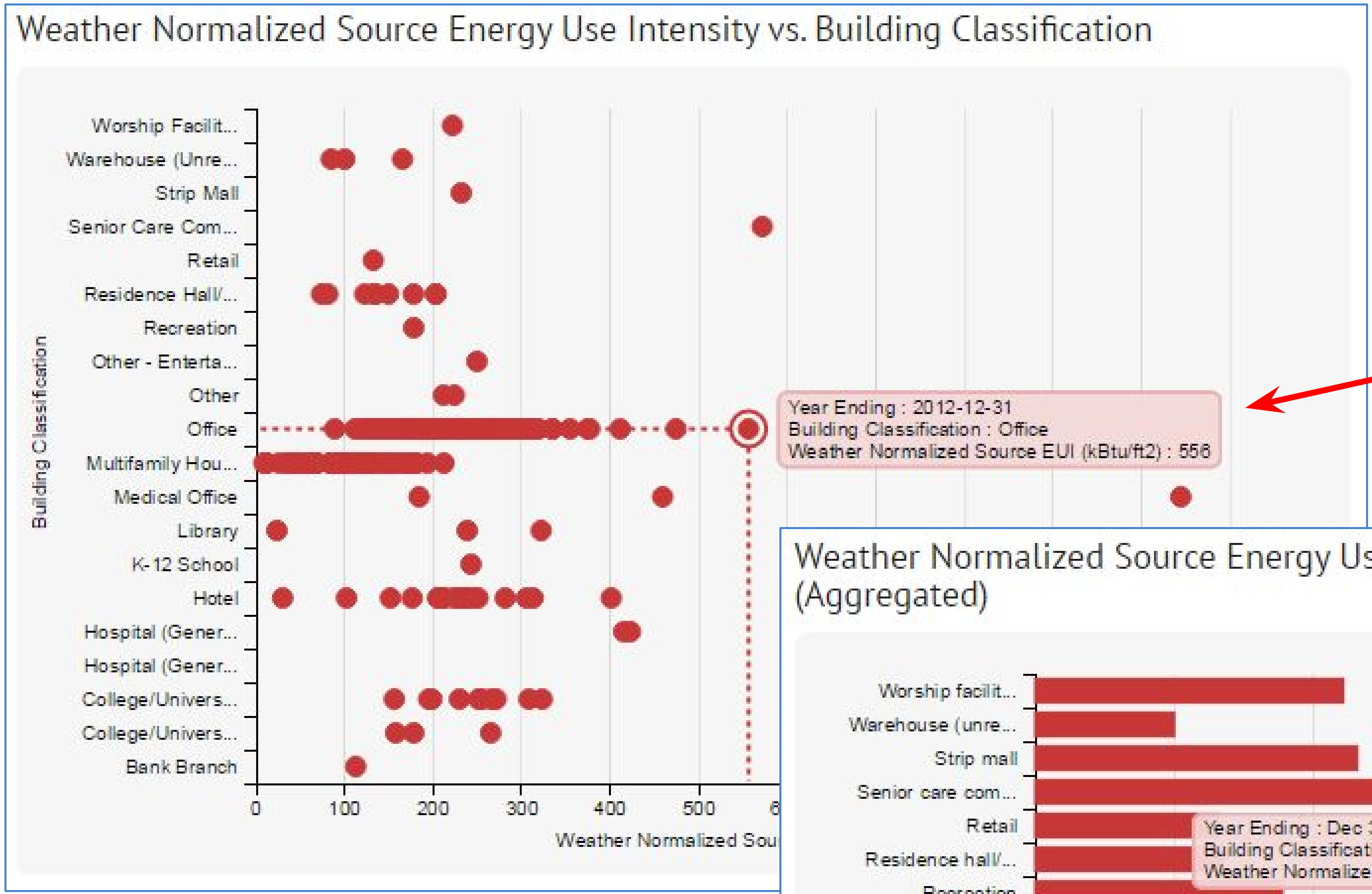


Year Ending	Properties with Data	Total Properties
2017	9	12

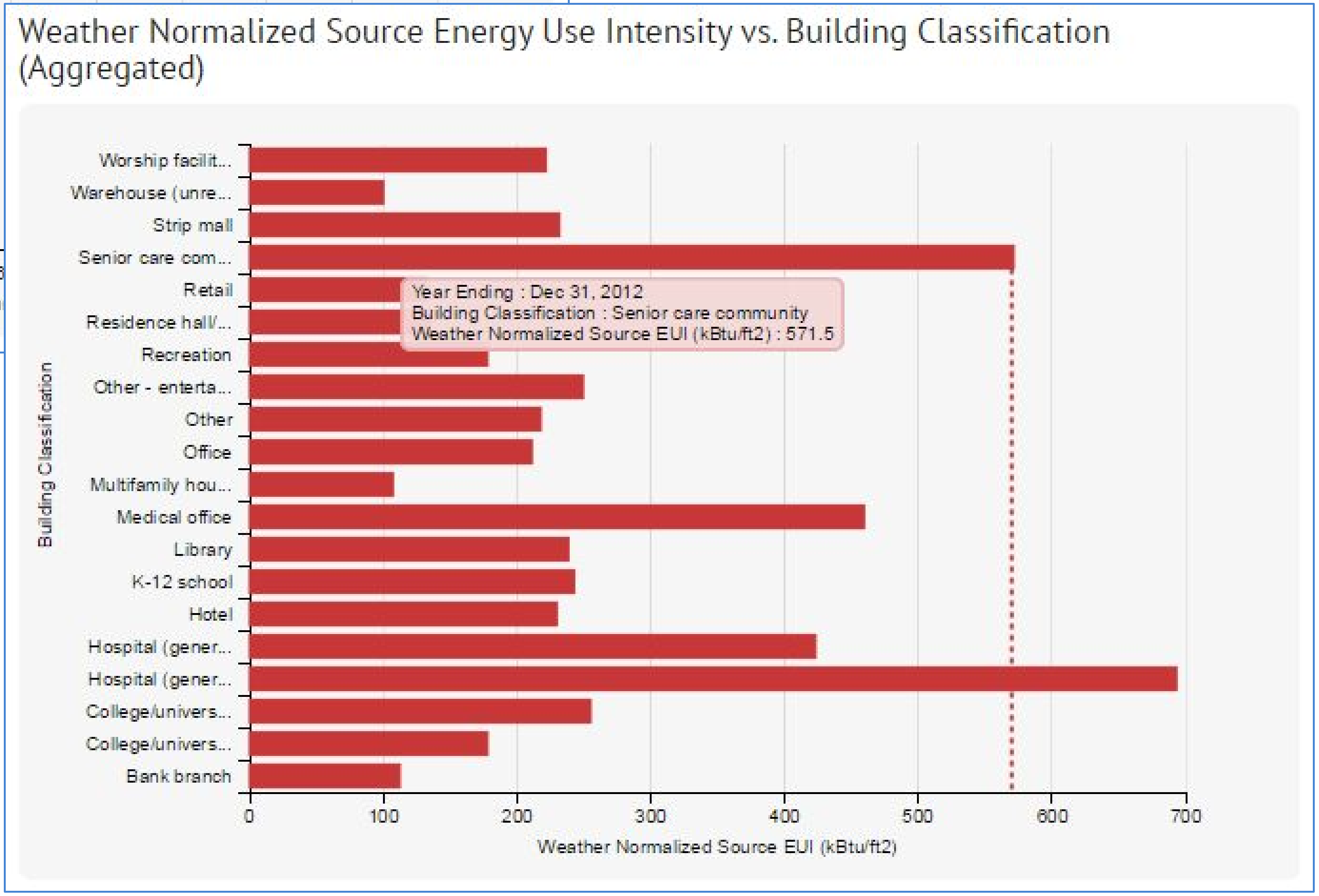
Program reports # data points actually used for graphs

INVENTORY

List View – Reports



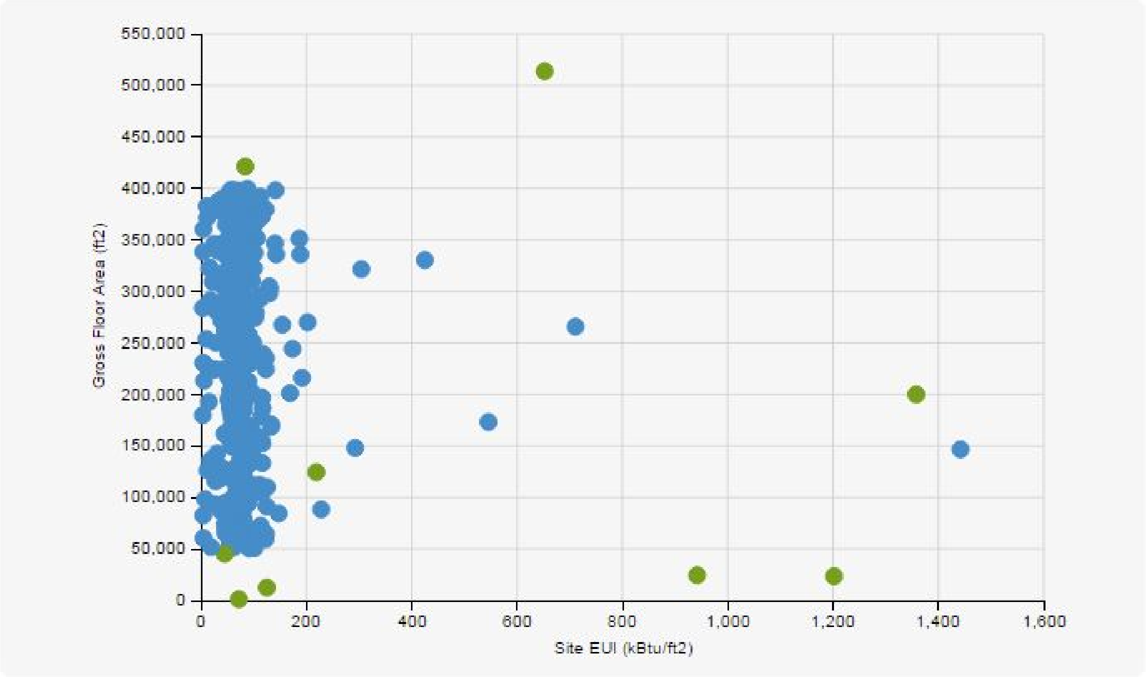
Mouse over point to display exact data for that point



List View – Reports - Multiple Years of Data

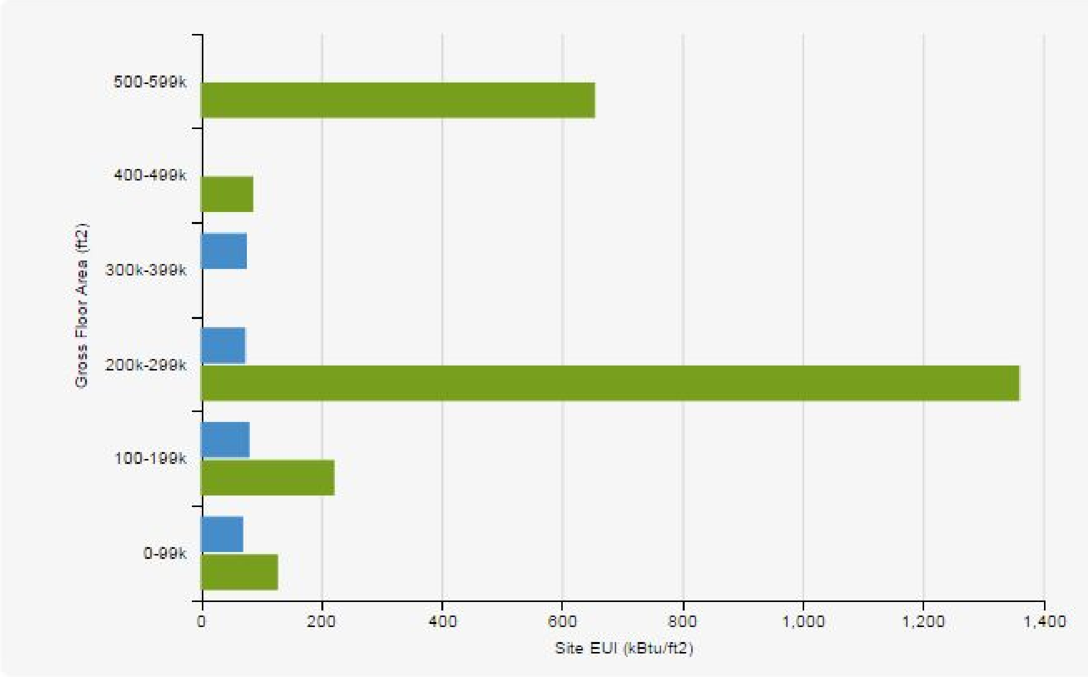
Multiple years of data
(based on Cycles)

Site Energy Use Intensity vs. Gross Floor Area



Year Ending	Properties with Data	Total Properties
2016	392	512
2017	9	12

Site Energy Use Intensity vs. Gross Floor Area (Aggregated)



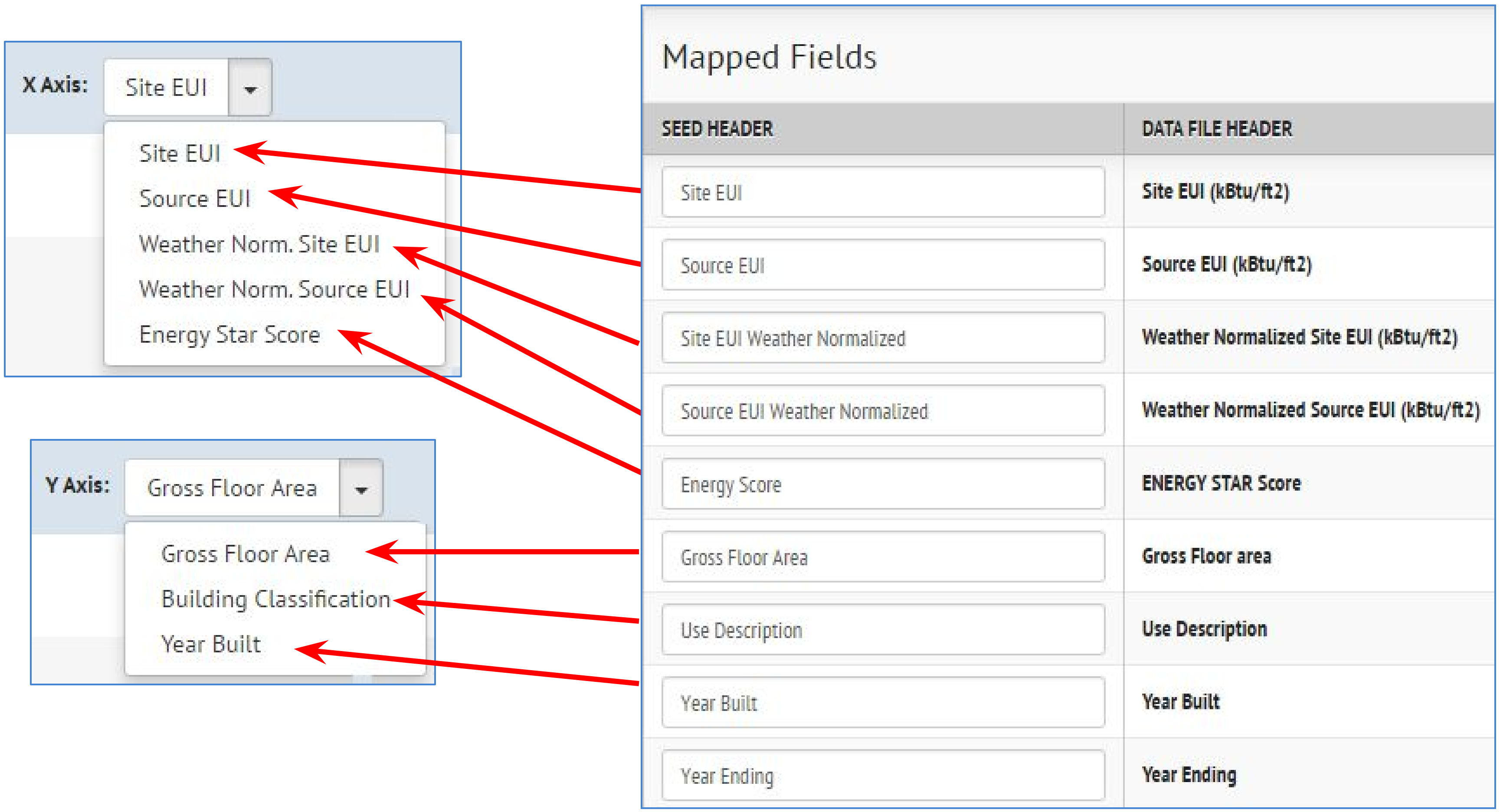
Year Ending	Properties with Data	Total Properties
2016	392	512
2017	9	12

INVENTORY

List View – Reports – Field Mapping

You need to map the following fields in order for the reports to work

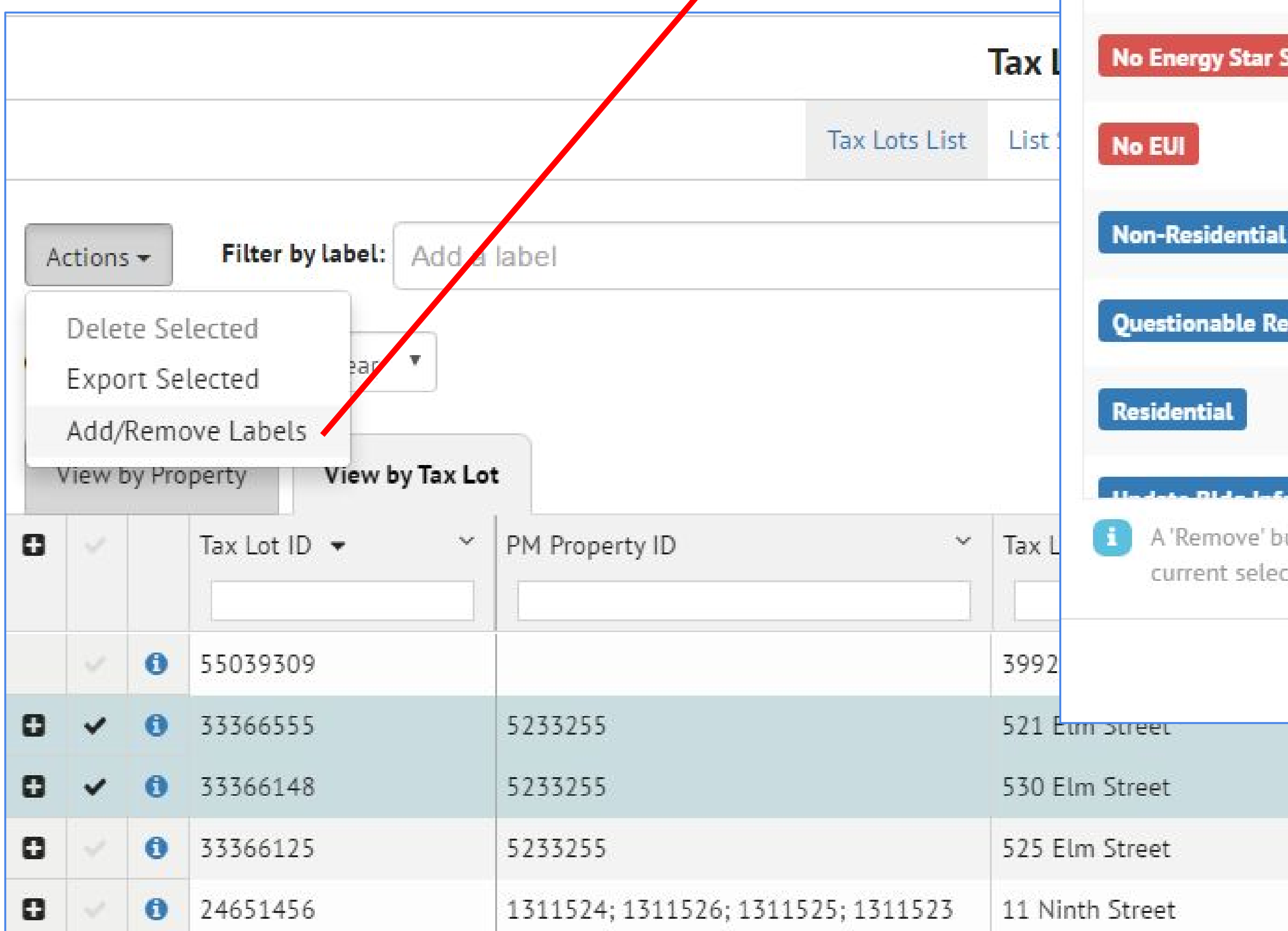
(Future work will include the ability to select fields that you want to plot so the mapping will not be as critical)

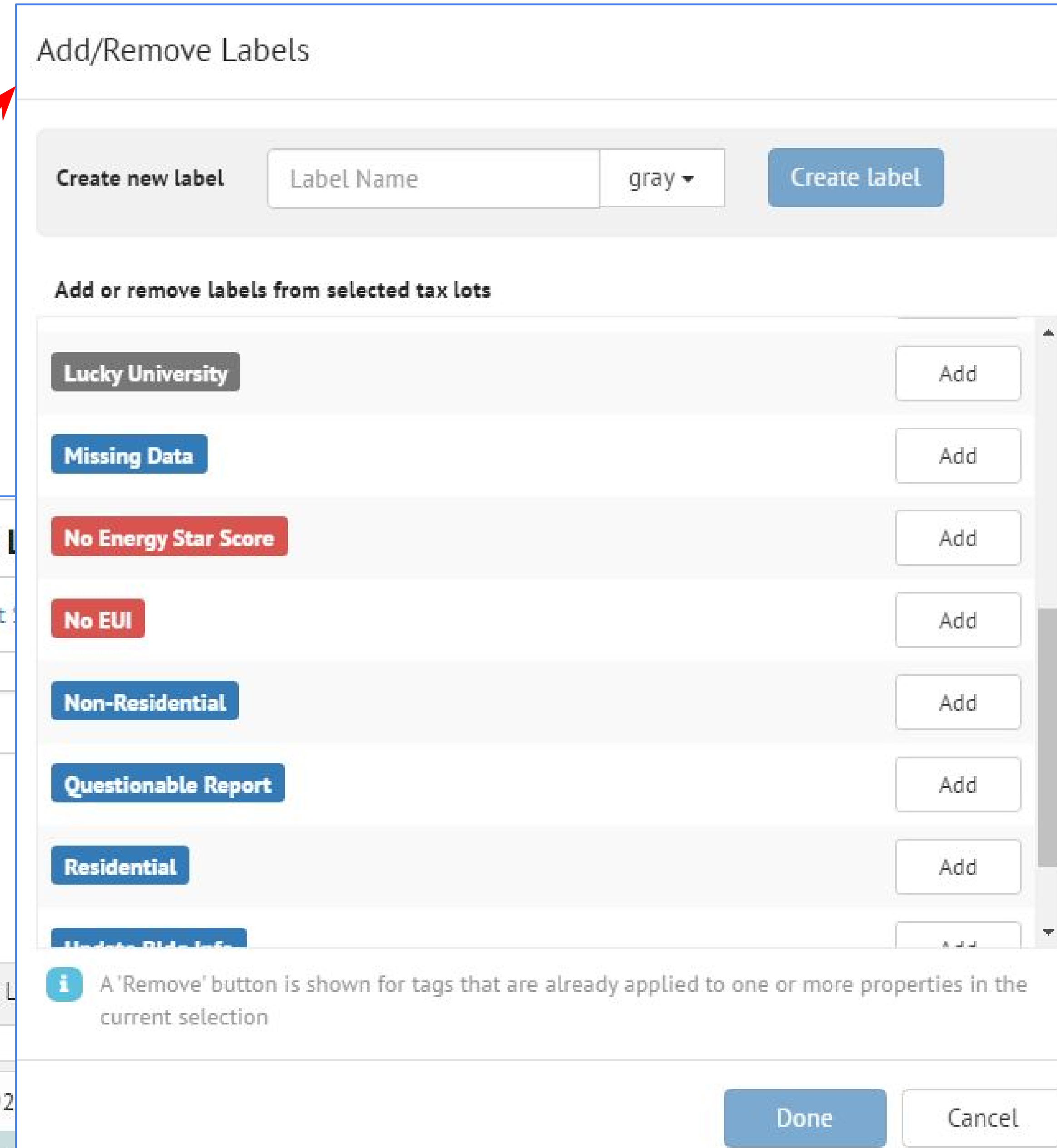


INVENTORY

Labels - List View

You can add pre-defined labels to records in the Inventory List view using the Actions pulldown list





INVENTORY

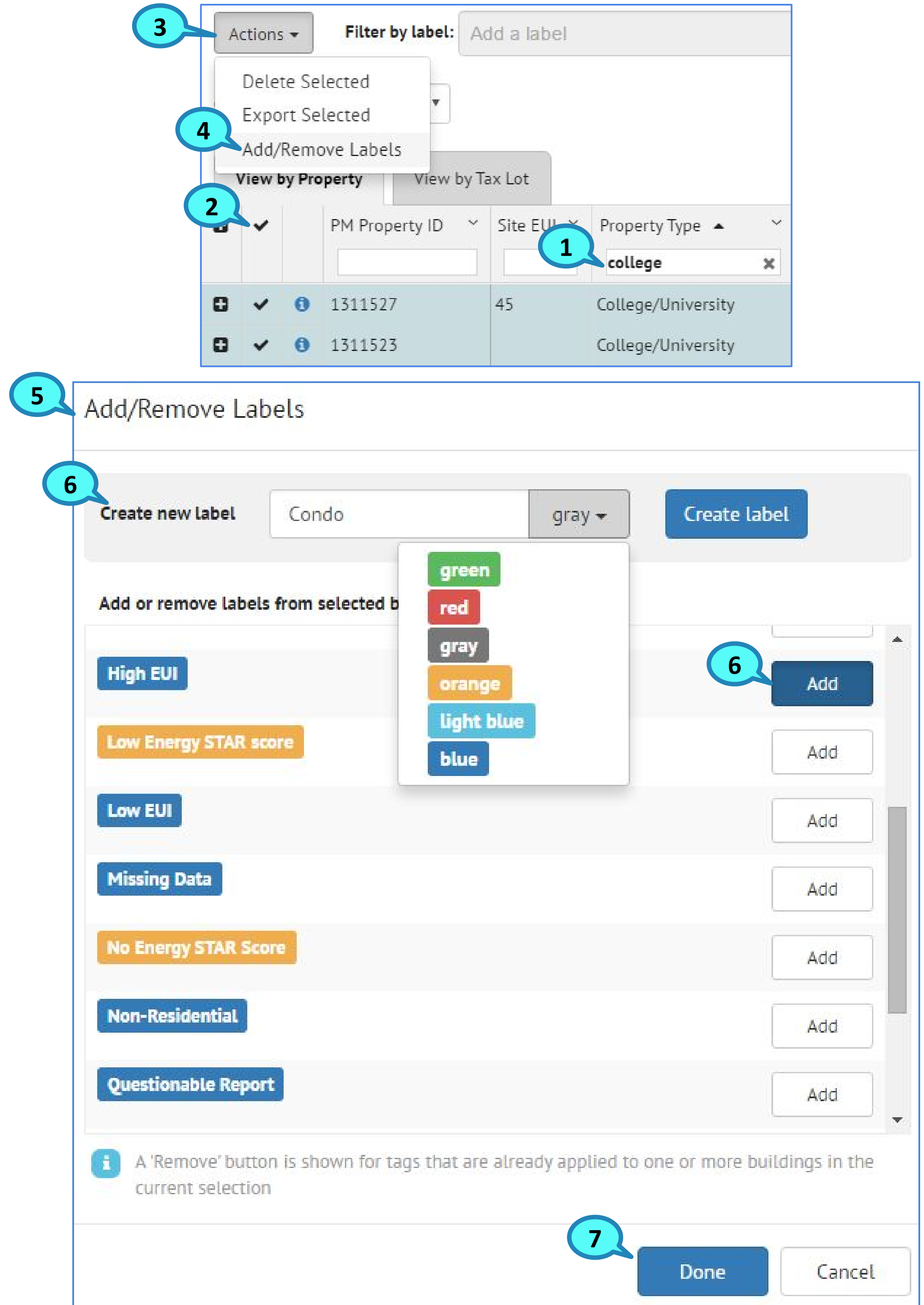
Labels - Adding Labels “on the fly”

You can also define labels “on the fly” from the Inventory List view

In the Property or Tax Lot tab

1. Filter a field or fields -- in this example we are filtering on the **Property Type** field for any value with **college** in the name
2. Select all the records by click the checkbox to the left of the column names
3. Click the **Actions** pulldown list
4. Select the **Add/Remove Labels** choice
5. The **Add/Remove Labels** dialog box appears
6. From that screen, either
    - Make a new label in the **Create new label** box *(specify the name, color, and click **Create Label** button)*
      Or
    - Select an existing label by clicking the **Add** button to the right of the label
7. Make sure the **Add** button is highlighted in blue for the label you want to apply
8. Click the **Done** button

The label will be added to all the selected records
You can view the labels for each record in the Building Detail view *(see next page)*



INVENTORY

Detail View - Property & Tax Lot

From the Inventory List view, click the "Information" icon for a record to access the Inventory Detail view.

The **Tax Lot Detail** view will only show fields and data from the Tax Lot table

The **Property Detail** view will only show fields and data from the Property table

< Properties

Property Detail

Property Detail   Settings

Controls field display and order

Property : 521 Elm Street

Add/Remove Labels

Edit record data

Edit

Add/Remove Labels   Labels:

Cycle: 2016 Calendar Year

Cycle based on List view

Change of Ownership   Compliant

Labels assigned to the record

FIELD	CURRENT VALUE
PM Property ID	5233255
Jurisdiction Property ID	5
Address Line 1 (Property)	521 Elm Street
City (Property)	Rust
Property Name	Montessori Day School
PM Parent Property ID	
Gross Floor Area	200000
ENERGY STAR Score	55
Site EUI	1358
Property Type	K-12 School
Year Ending	2015-12-31
Owner Telephone	213-555-4368

History of record shown in columns

Related Tax Lots

Links to access related Tax Lot detail views

TAX LOT ID	ADDRESS LINE 1
33366148	530 Elm Street
33366555	521 Elm Street
33366125	525 Elm Street

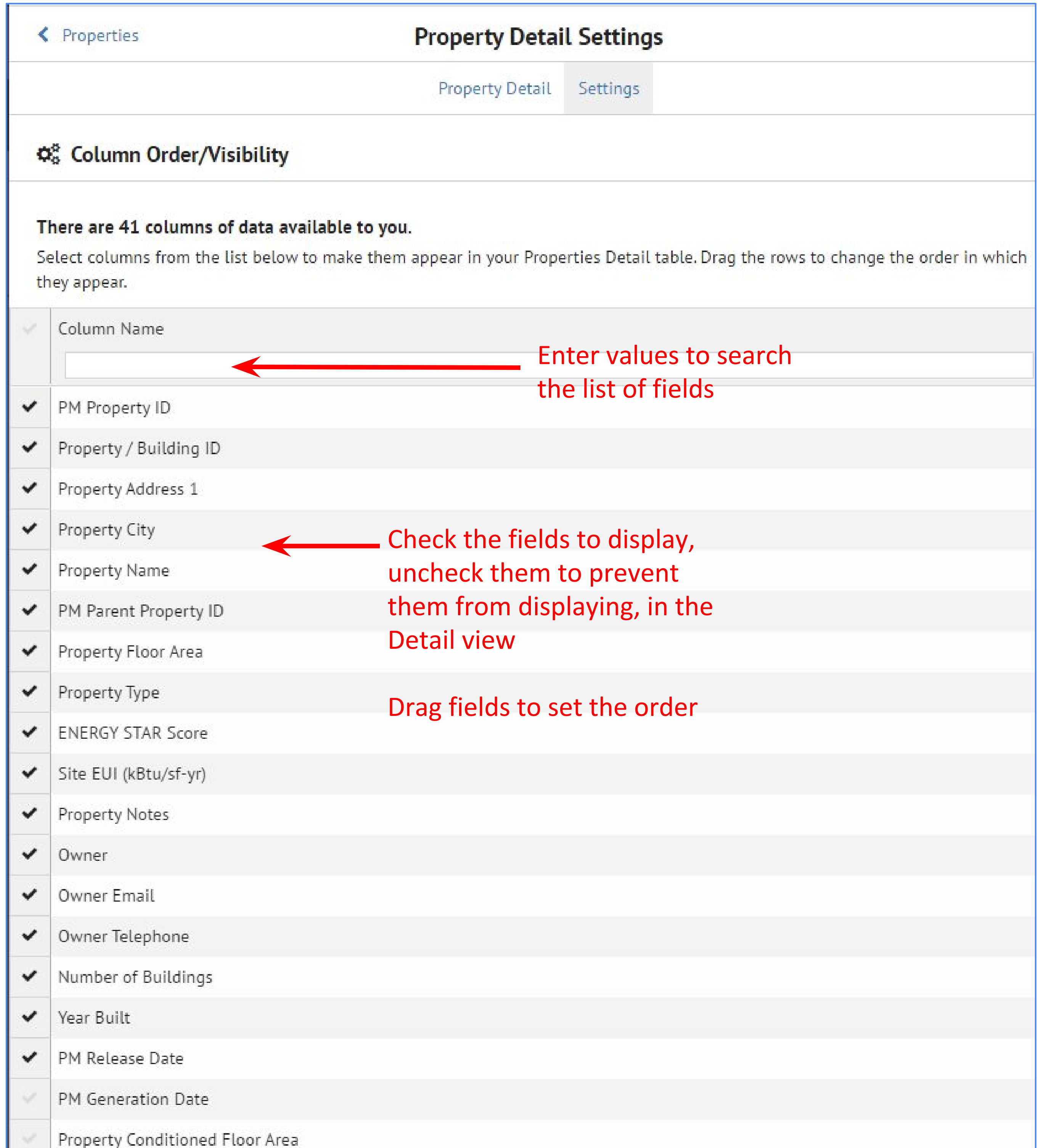
INVENTORY

Detail View - Settings - Property & Tax Lot

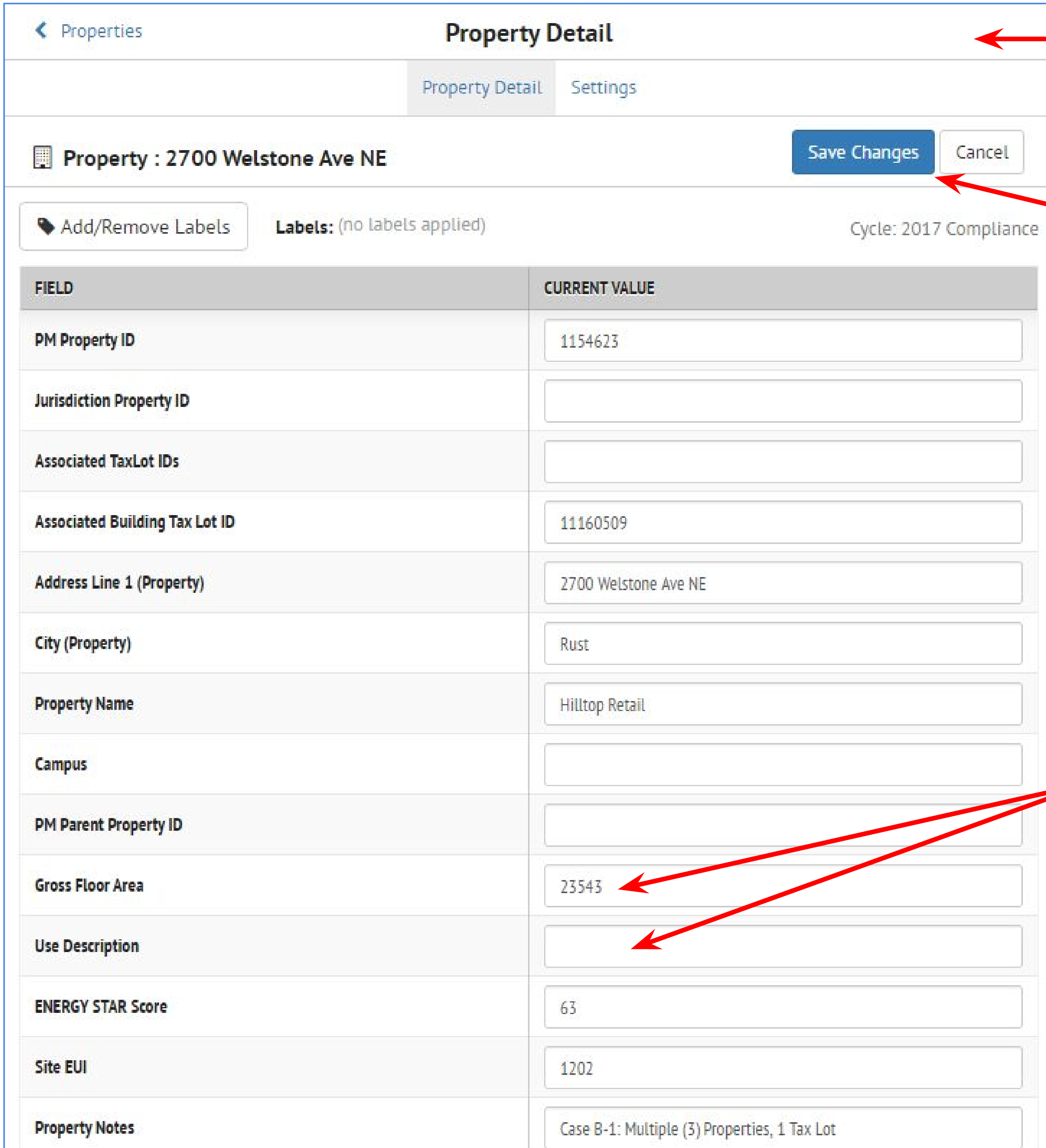
Click Settings from either Property or Tax Lot Detail to set the visibility and order properties for fields.

Tax Lot Detail Settings will only contain fields and data from the **Tax Lot** table

Property Detail Settings will only contain fields and data from the **Property** table



Detail View - Edit - Property & Tax Lot


Properties

Property Detail

Property Detail | Settings

Property : 2700 Welstone Ave NE

Save Changes | Cancel

Add/Remove Labels

Labels: (no labels applied)

Cycle: 2017 Compliance

FIELD	CURRENT VALUE
PM Property ID	1154623
Jurisdiction Property ID	
Associated TaxLot IDs	
Associated Building Tax Lot ID	11160509
Address Line 1 (Property)	2700 Welstone Ave NE
City (Property)	Rust
Property Name	Hilltop Retail
Campus	
PM Parent Property ID	
Gross Floor Area	23543
Use Description	
ENERGY STAR Score	63
Site EUI	1202
Property Notes	Case B-1: Multiple (3) Properties, 1 Tax Lot

Click **Edit** to change the information in the record.

When you have finished editing a record, click the **Save Changes** button.

To Edit Data:

- click on the **Current Value** data field and edit it directly.

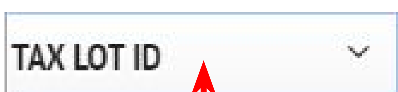
Sorting

You can sort in two different ways

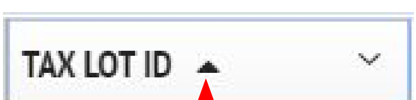
- Up/down arrow
- Column menu on right

If you click to the right of the field name, you can toggle between

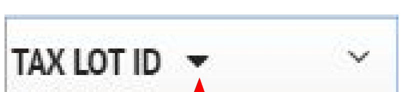
- Ascending
- Descending
- "original" unsorted



"Original" unsorted



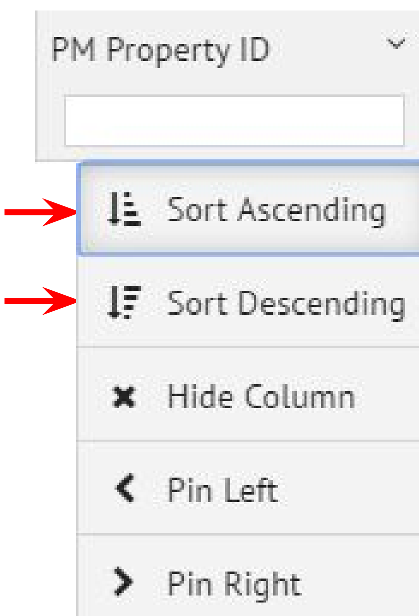
Ascending



Descending

The down arrow to the right of the field shows a menu of sort options, including Remove sort

Using this Sort option allows hierarchical sorting



Filtering

Most of the lists in SEED (Mapping, Matching, Inventory) allow you to sort and filter on the data in the columns by entering the filter values in the input box below the field (column name)

SEED supports filtering using "expressions" for both text and numeric data

Text fields:

- "" double quotes for null (empty) string
- !"" for non-null (non-empty) string
- Enter a value to show all records that contain that value:
  typing **condo** will show results for **CONDO** and **COMMERCIAL CONDO**
- Enter a value surrounded by double quotes ("") for an exact match (including case):
  typing **"CONDO"** will show results for only **CONDO**

Use Description
CONDO
CONDO
COMMERCIAL CONDO
COMMERCIAL CONDO
CONDO

Use Description
"CONDO"
CONDO
CONDO
CONDO
CONDO

Numeric fields:

- The filter field is now a single field that can parse a number of expression formats.
- An expression is one of the following operators.
- Operators: =, ==, !=, !, <>, <, <=, >, >=
- Followed by either a numeric value or the string 'null'
- null can only be used with the equality or inequality operators.
- Multiple expressions should be separated by commas.

Examples:

- >100 is greater than 100
- >1984,<1990 is greater than 1984 and less than 1990
- !null, !0 is not null and not equal to 0

ENERGY STAR Score
!null,!0

Add as many filters as needed, in this case the filter is show only records with ENERGY STAR Score data between 50 and 75, and with a Site EUI greater than 20

ENERGY STAR Score	Site EUI
>=50,<=75	>20
75	51.5
59	74.4
61	78.9
75	78.9
50	88.1
71	91.2

INVENTORY

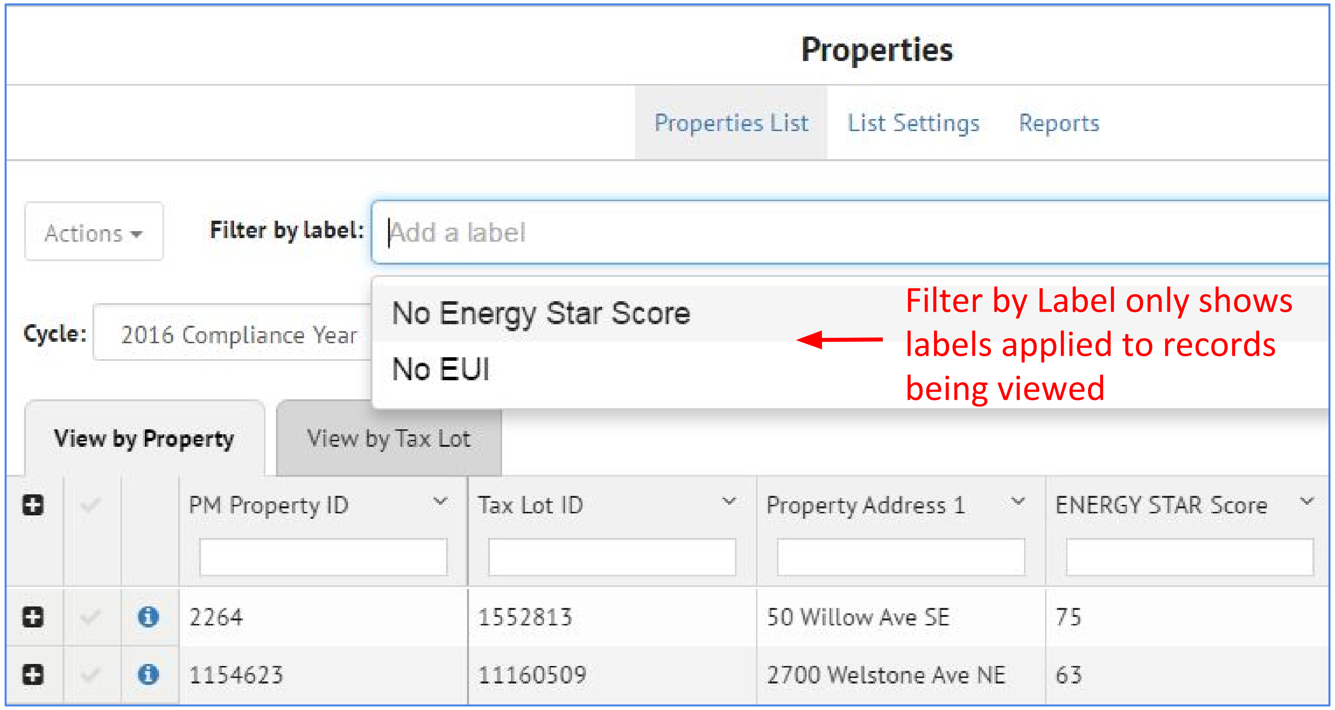
Filtering

SEED allows expressions in the filter boxes for more complex filtering

	Numeric Fields		Text Fields	
	Expression	**Example**	**Expression**	**Example**
Equal to	= == or just type the value	**100** **=100**	**value** Type the value to filter for records containing that value	**Condo** Returns any records with **condo** in any part of the text field, • **commercial condo** • **residential condo**
			“value” Surround the value with quotes for an exact match including case	**“Commerical Condo”** Returns only records with **Commercial Condo** in the text file
Not equal to	!= ! <>	**!0** Returns records with data not equal to zero		
Less than	<	**<1990** less than 1990		
Less than or equal to	<=	**<=75** Less than or equal to 75		
Greater than	>	**>100** greater than 100		
Greater than or equal to	>=			
Null	=null ==null		**””** Two double quotes without spaces	
Not null	!=null !null <>null		**!””** Two double quotes preceeded by and exclamation point (for “not)	
Combined expressions		**!null, !0** Returns data that has data, not including values of zero. **>=500,<1000** Returns data greater than or equal to 500 and less than 1000		

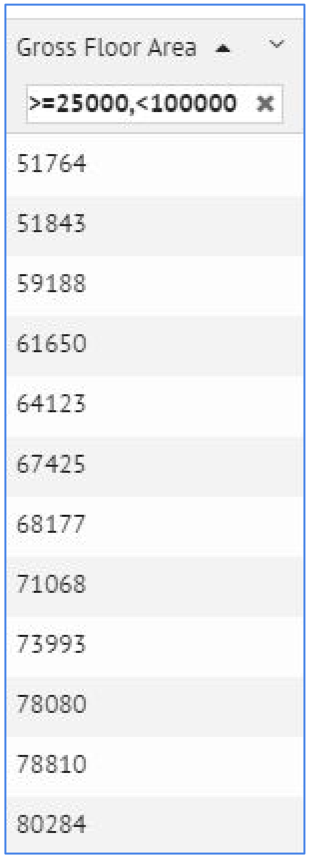
Filtering

Filter by Label shows only labels that are applied to records

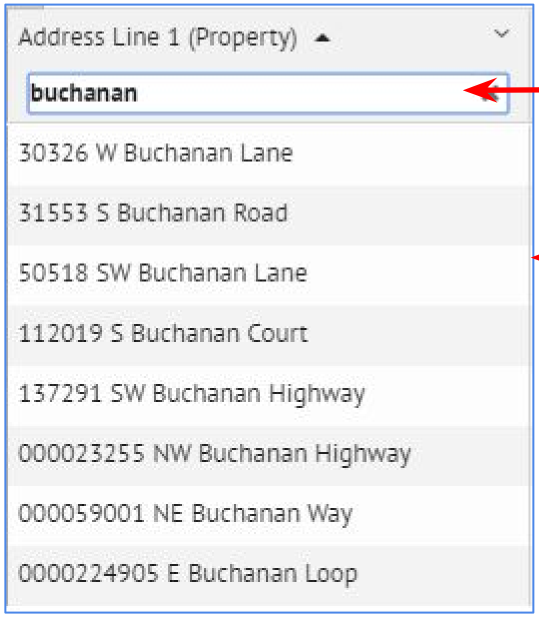


Filter by Label only shows labels applied to records being viewed

Numeric fields can have expressions



Text columns can be filtered



Enter values into the input boxes at the top of the field in order to filter the data by those values

The program will then only display the records with values based on the filter criteria

INVENTORY

Filtering Using Labels

The Inventory List view (Property and Tax Lot) can be filtered using Labels

If a label is used as a filter, then all the records with that label will be displayed. Multiple labels can be applied to the filter box.

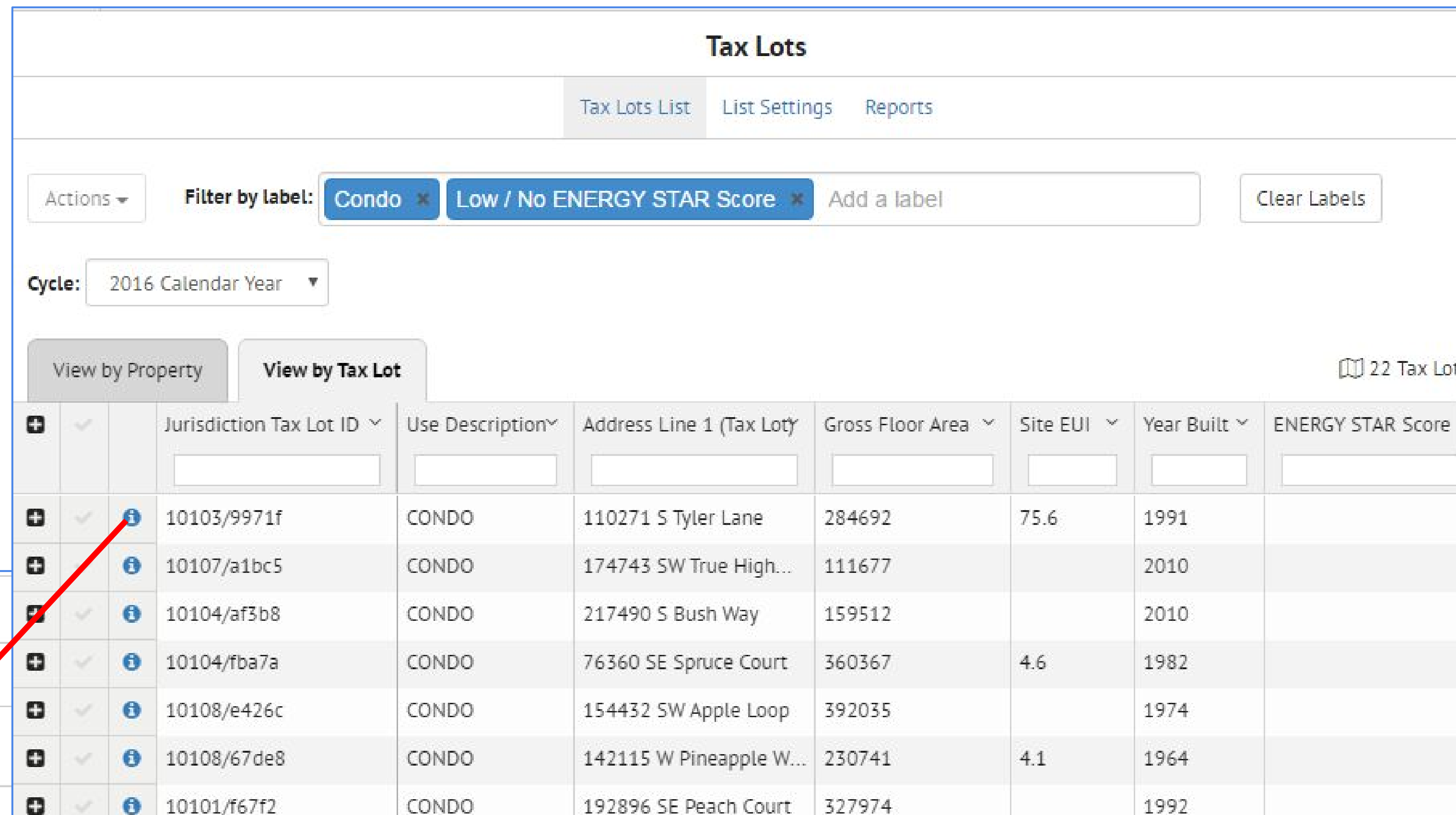
In this example, buildings with a blank ENERGY STAR score have been labeled, and Condos have also been labeled.

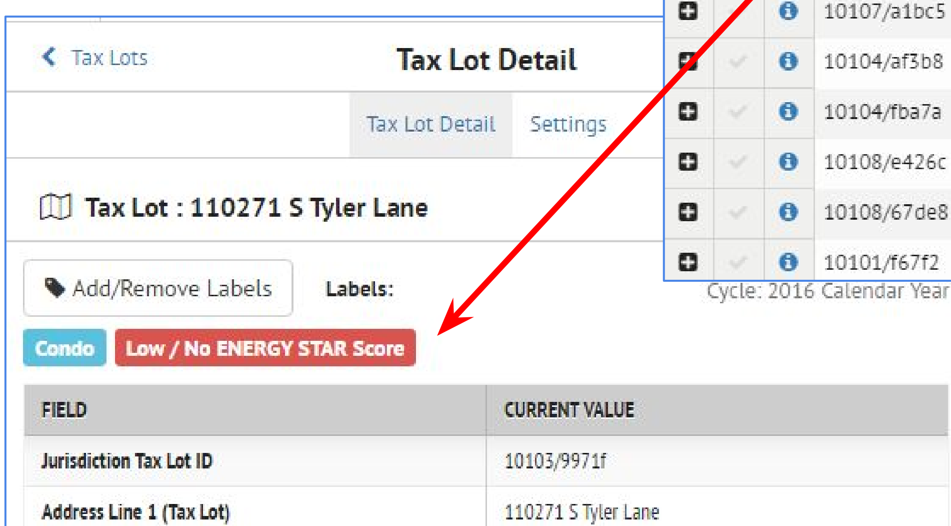
Therefore, filtering on the two labels

- Low / No ENERGY STAR Score
- Condo

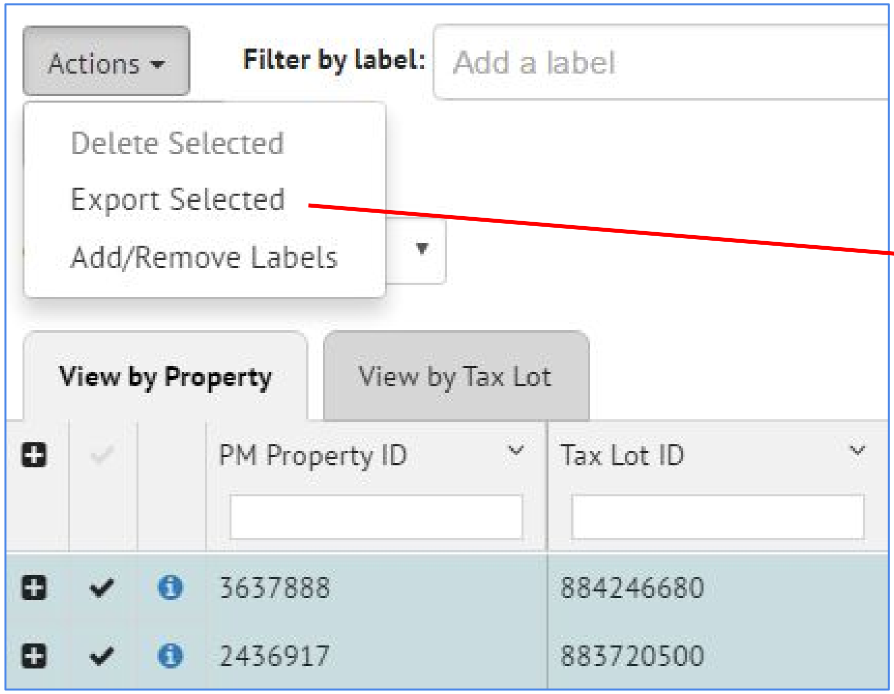
results in 22 buildings being displayed

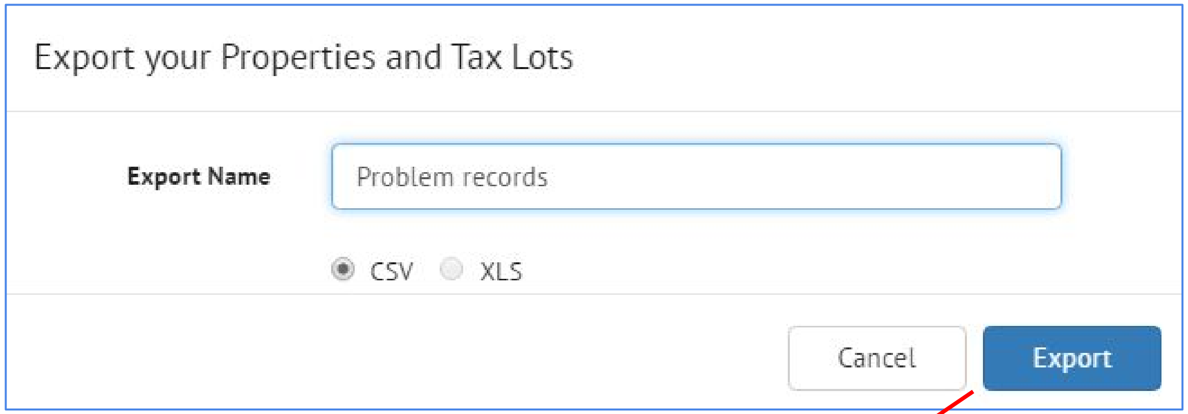
Clicking on the "information" icon Displays the Tax Lot Detail view which shows all the labels associated with that record.





Exporting Data





Exports all the data visible in the Inventory list in "expanded" form
(if there is related data between Property and Tax Lots)

	A	B	C	D	E	F
1	PM Property ID	Jurisdiction Property ID	Jurisdiction Tax Lot ID	Property Notes	Address Line 1 (Property)	Address Line 1 (Tax Lot)
2	1311527	9	13334485; 23810533	Case D: Ca	93029 Wellington Blvd	93029 Wellington Blvd; 94000 Wellington Blvd
3			13334485			93029 Wellington Blvd
4			23810533			94000 Wellington Blvd
5	4828379	3	11160509	Case B-1: I	2660 Welstone Ave NE	2655 Welstone Ave NE
6			11160509			2655 Welstone Ave NE

Collapsed record associated data in one line separated by semicolon

Associated records, one line per record

ORGANIZATIONS

Organizations

- Every account holder belongs to an Organization
- Most SEED users will only have a Parent Organization

Organizations

Organizations I Manage

ORGANIZATION
LBNL 20
Sub-Organizations

Number of records for **Properties** and **Tax Lots** for each **Cycle**, by **Organization**

Organizations I Belong To

ORGANIZATION NAME	NUMBER OF PROPERTIES	NUMBER OF TAX LOTS	YOUR ROLE	ORGANIZATION OWNER(S)
LBNL 20	2017 Compliance: 12	2017 Compliance: 10	owner	Robin LBNL 20

Role can be:
- Owner
- Member
- Viewer

- SEED is structured to allow a Parent Organization along with Sub-Organizations

Organizations

Organizations I Manage

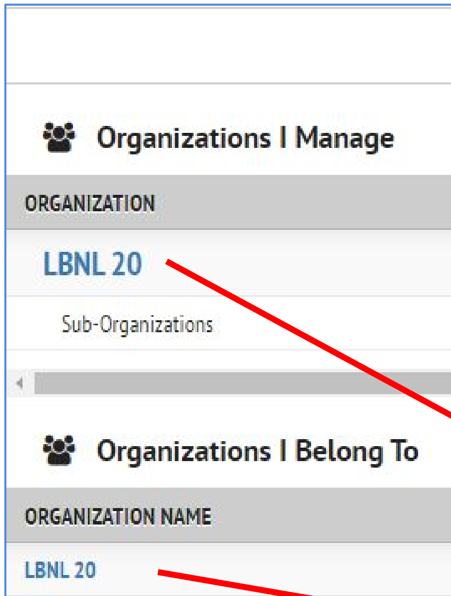
ORGANIZATION
lbnl
Sub-Organizations
LBL 1
LBL 2
LBL 3
LBL 4

There is a Parent Organization

There can also optionally be Sub-Organizations

ORGANIZATIONS

Organizations



- Click on an organization in either
  - Organizations I Manage
    Or
  - Organizations I Belong To
- The view for that organization will be displayed

Organization Name

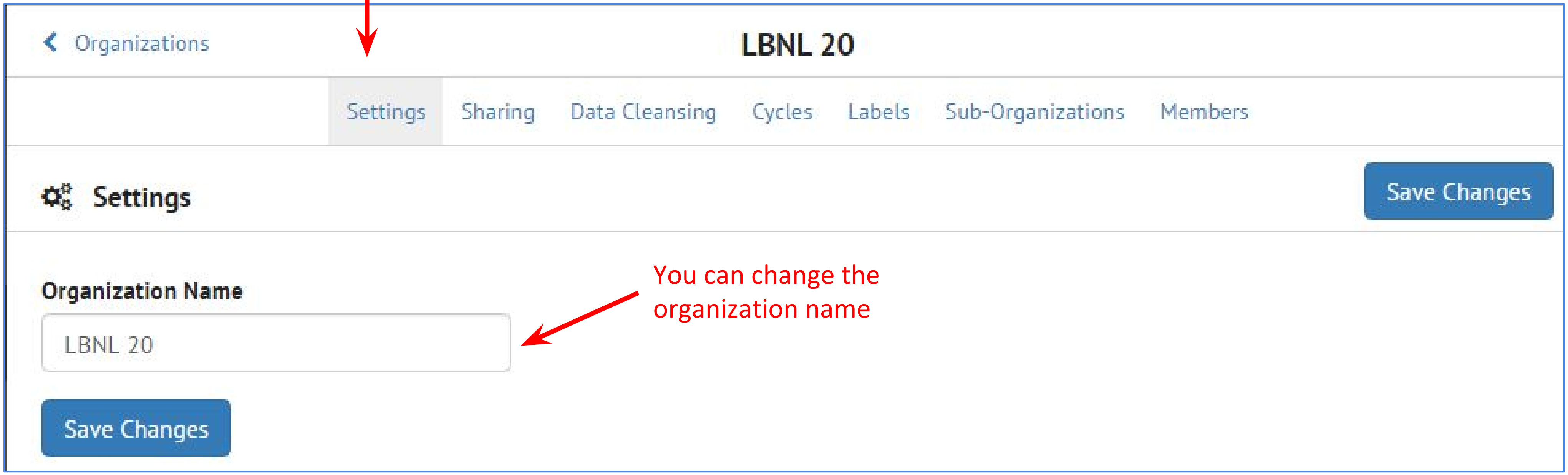
- The links from this view are
  - **Settings:** The Admin screen for organization settings
  - **Sharing:** The Admin screen for managing how data is shared
  - **Data Cleansing:** The Admin screen for managing Data Cleansing settings
  - **Cycles:** The Admin screen for managing Cycles
  - **Labels:** The Admin screen for managing Labels
  - **Sub-Organizations:** A list of all sub-organizations related to this organization
  - **Members:** A list of all members of this organization

Settings

ORGANIZATIONS

In the Organization / Settings tab, you can change the name of the organization

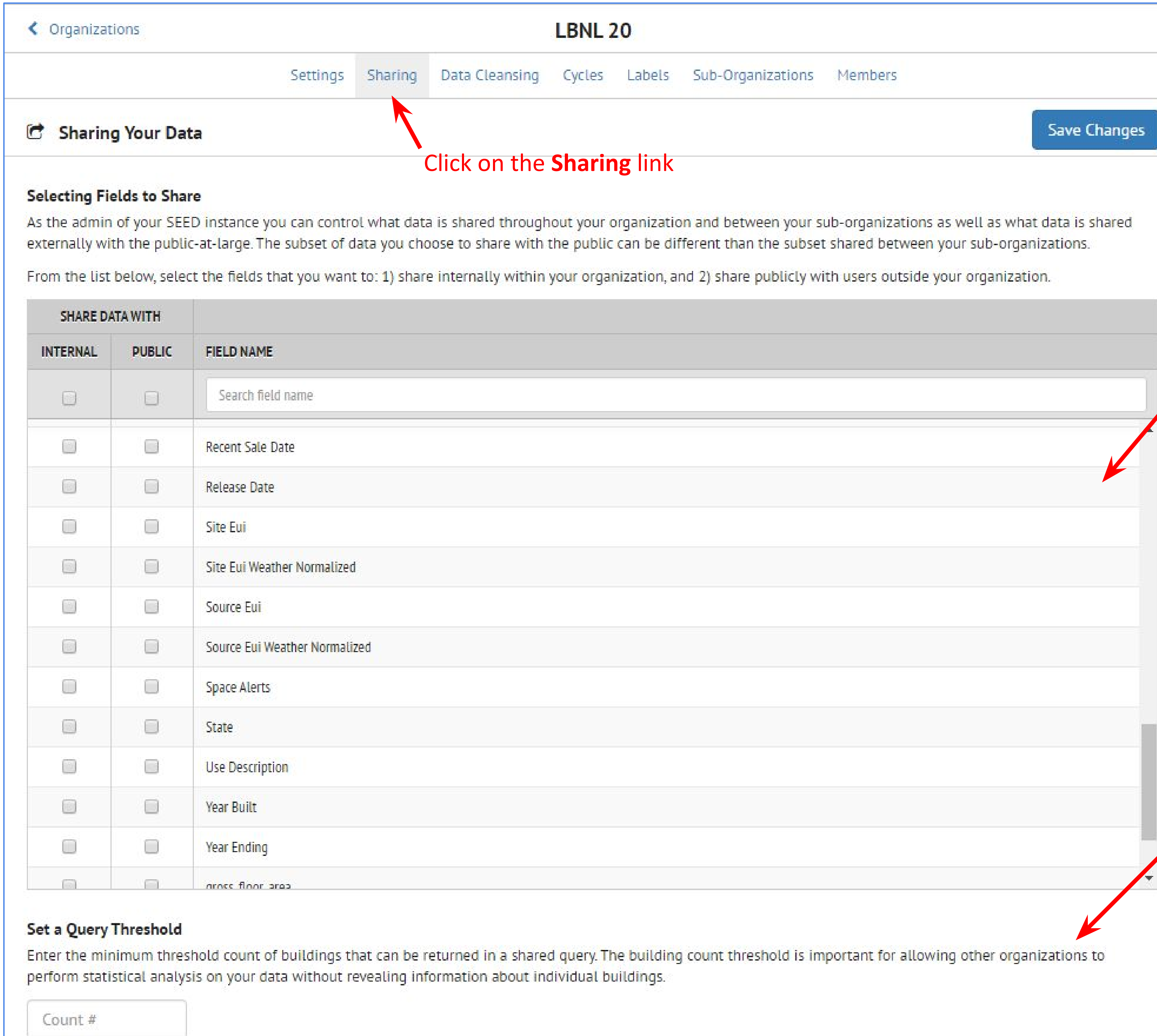
Click on the **Settings** link



You can change the organization name

Sharing

ORGANIZATIONS



The owner of a Parent Organization can select fields to view between Sub-Organizations.

The owner of a Parent Organization can set the query threshold for viewing records between Sub-Organizations.

Data Cleansing Admin Page

Manage Data Cleansing (Validation) Rules

Settings | Sharing | Data Cleansing | Cycles | Labels | Sub-Organizations | Members

Data Cleansing

Click on the **Data Cleansing** link

Restore Defaults | Save Changes

In-Range Checking: Modifying Data Cleansing Rules

From the table below, select the rules that you want to: 1) enable/disable within your organization, and 2) modify the minimum/maximum values to validate against on file upload.

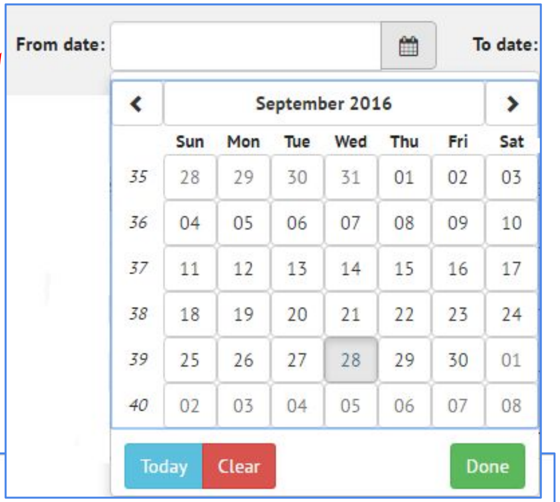
	FIELD	MINIMUM	MAXIMUM	SEVERITY	UNITS
☐	Conditioned Floor Area	(no minimum)	7000000	Error	square feet
☐	Conditioned Floor Area	100	(no maximum)	Warning	square feet
☑	Energy Score	(no minimum)	100	Error	
☑	Energy Score	10	(no maximum)	Warning	
☐	Generation Date	01/01/1889	12/31/2020	Error	
☑	Gross Floor Area	100	7000000	Error	square feet
☑	Occupied Floor Area	100	7000000	Error	square feet
☐	Recent Sale Date	01/01/1889	12/31/2020	Error	
☐	Release Date	01/01/1889	12/31/2020	Error	
☑	Site Eui	(no minimum)	1000	Error	kBtu/sq. ft./year
☑	Site Eui	6	1000	Warning	kBtu/sq. ft./year

Cycles Admin Page

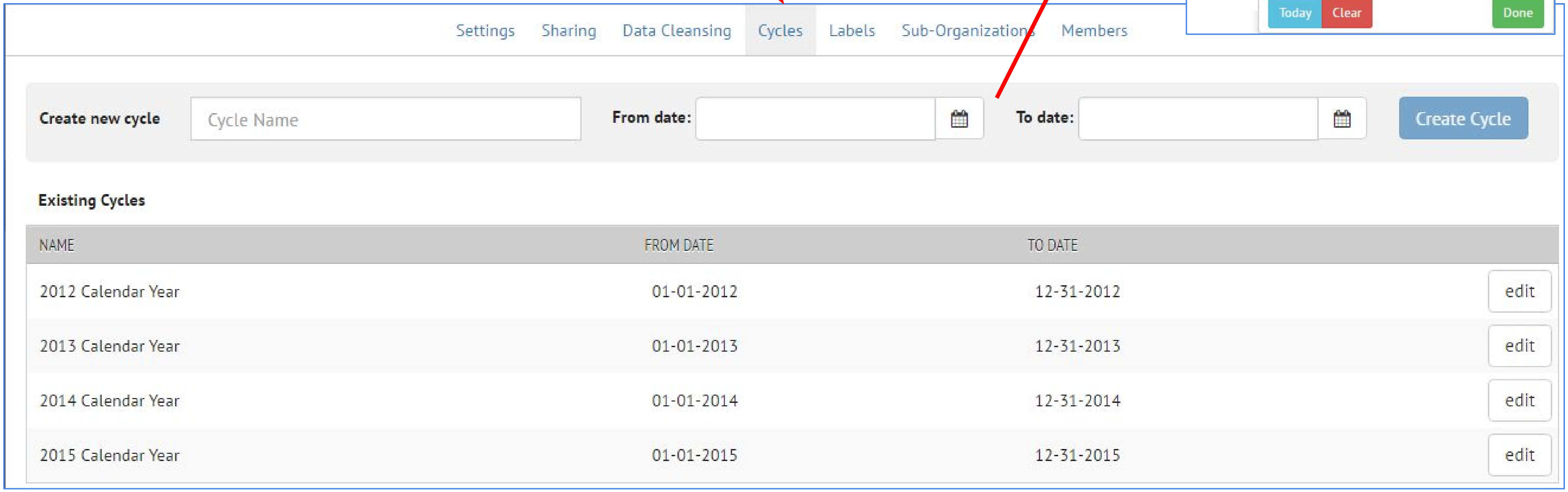
ORGANIZATIONS

Manage Cycles

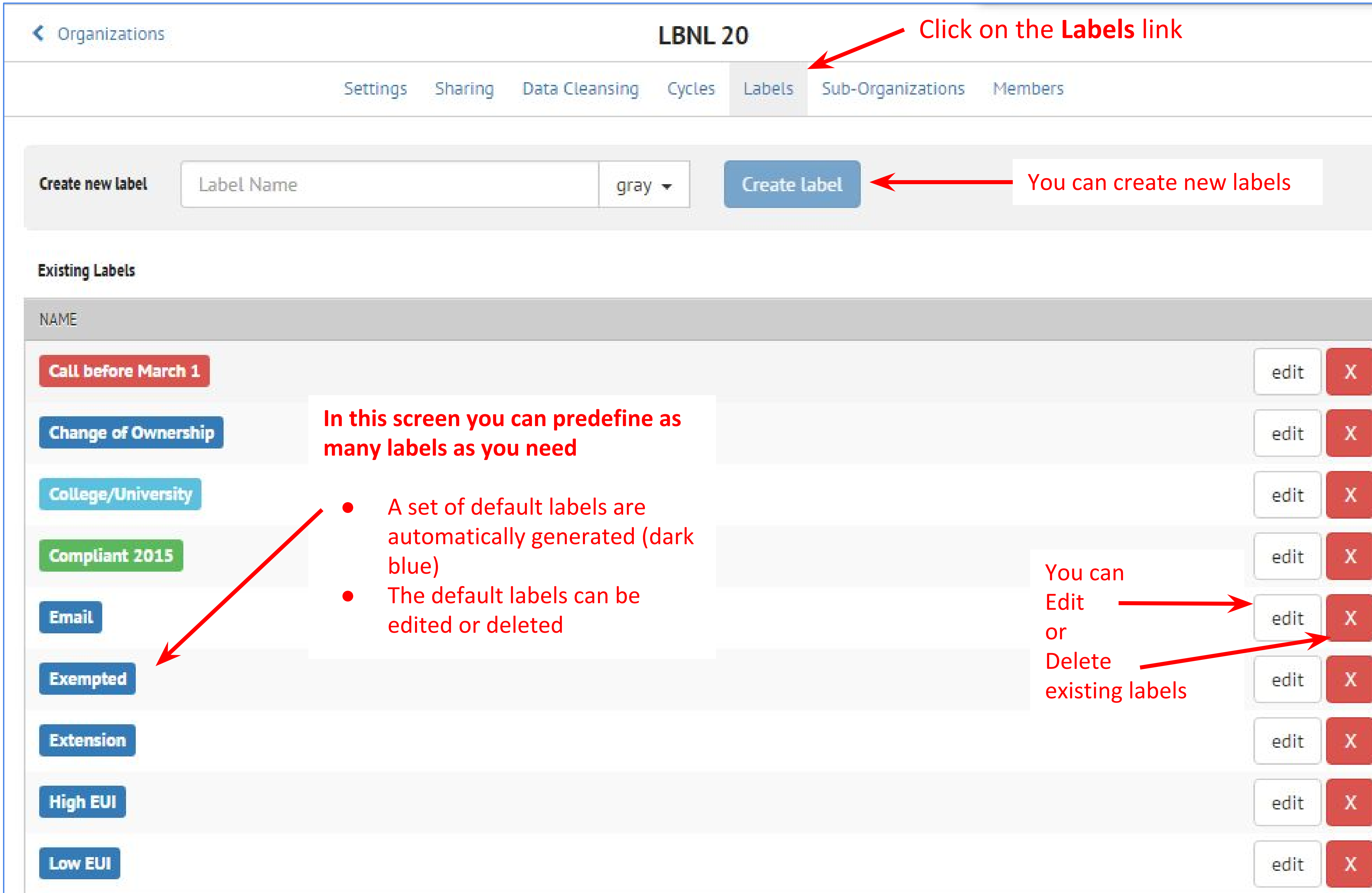
- Create Date “cycles” such as Compliance cycles
- Assigned on data import
- Used to filter data views



Click on the **Cycles** link

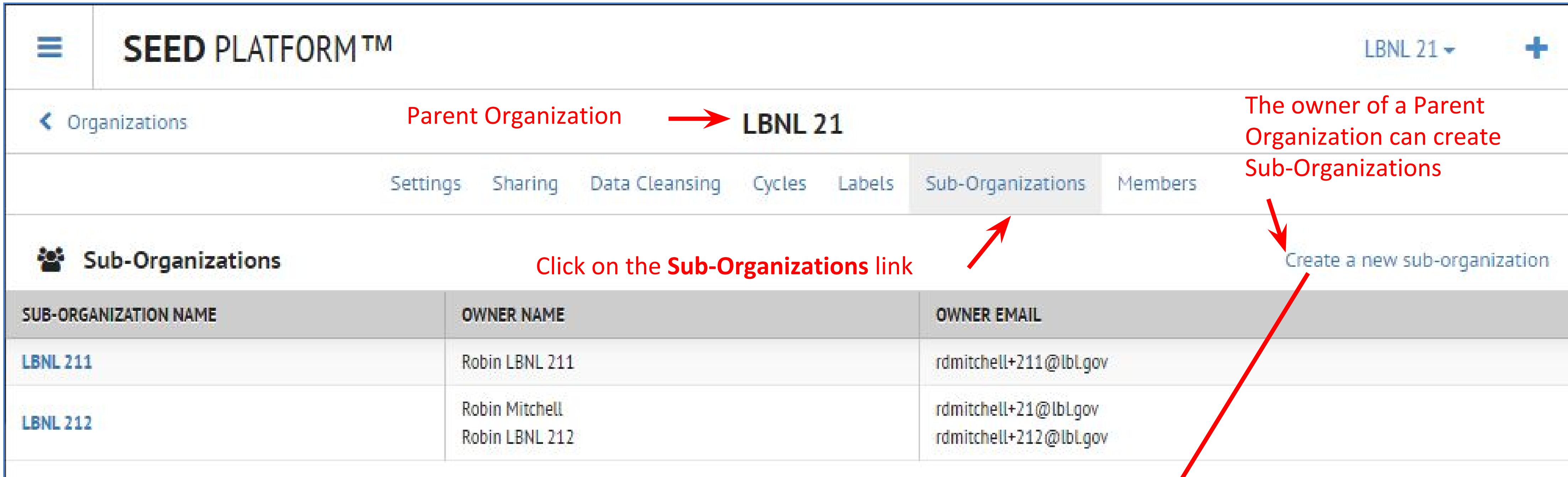


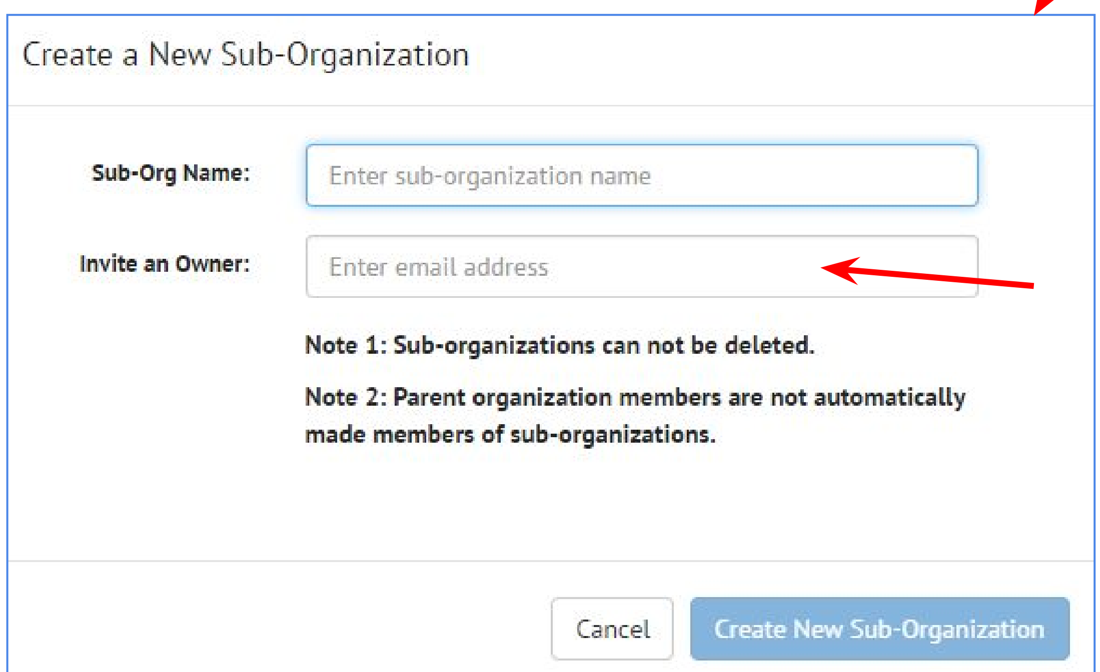
Labels Admin Page



ORGANIZATIONS

Organizations – Sub-Organizations

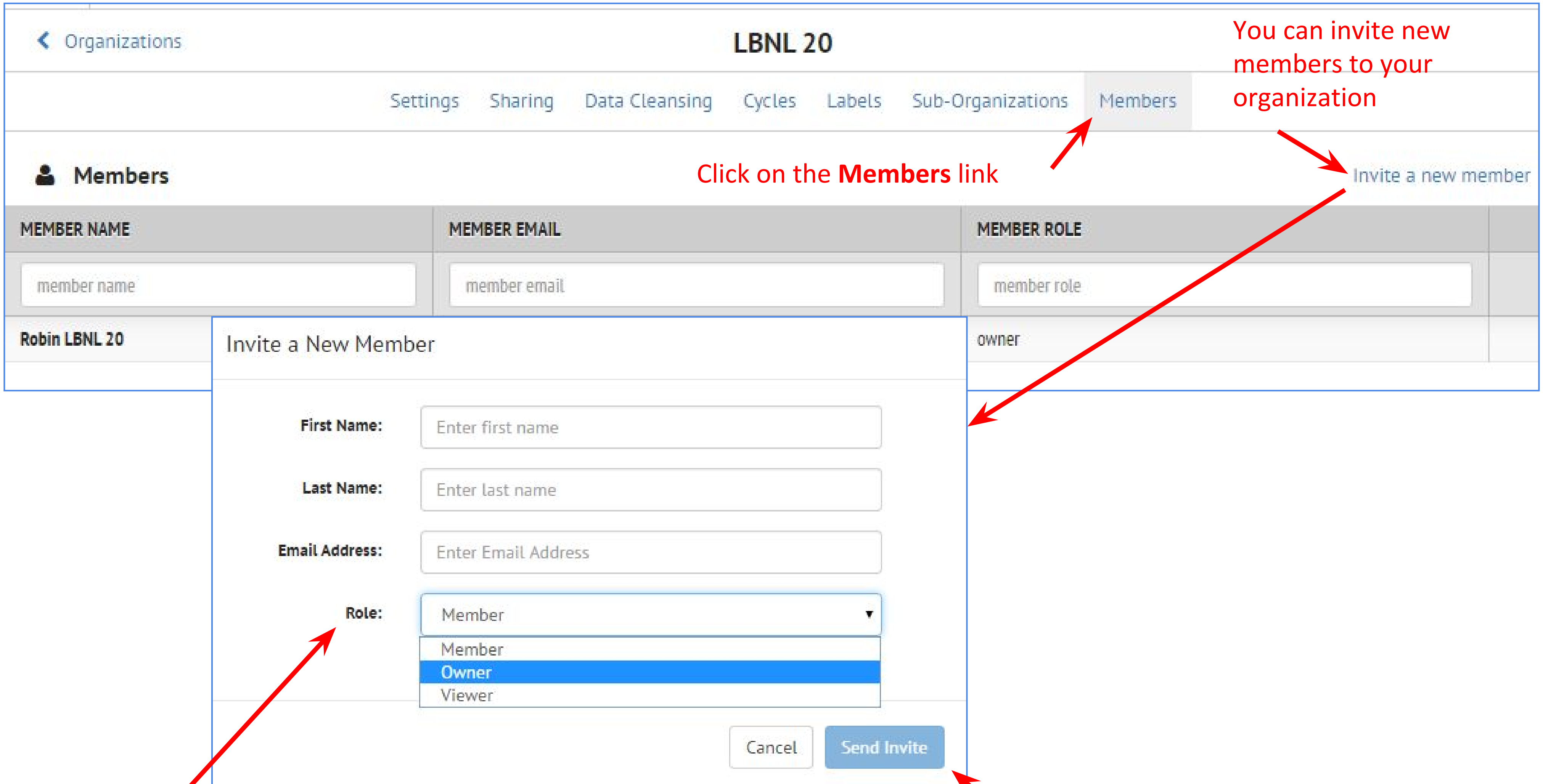




The owner being invited to a Sub-Organization has to already be a member of the Parent Organization (and can be deleted from the Parent later)

ORGANIZATIONS

Members



You can invite new members to your organization

Click on the **Members** link

You can set the role of the new member

When you click **Send Invite** the person will receive an email, asking them to set a password for their account

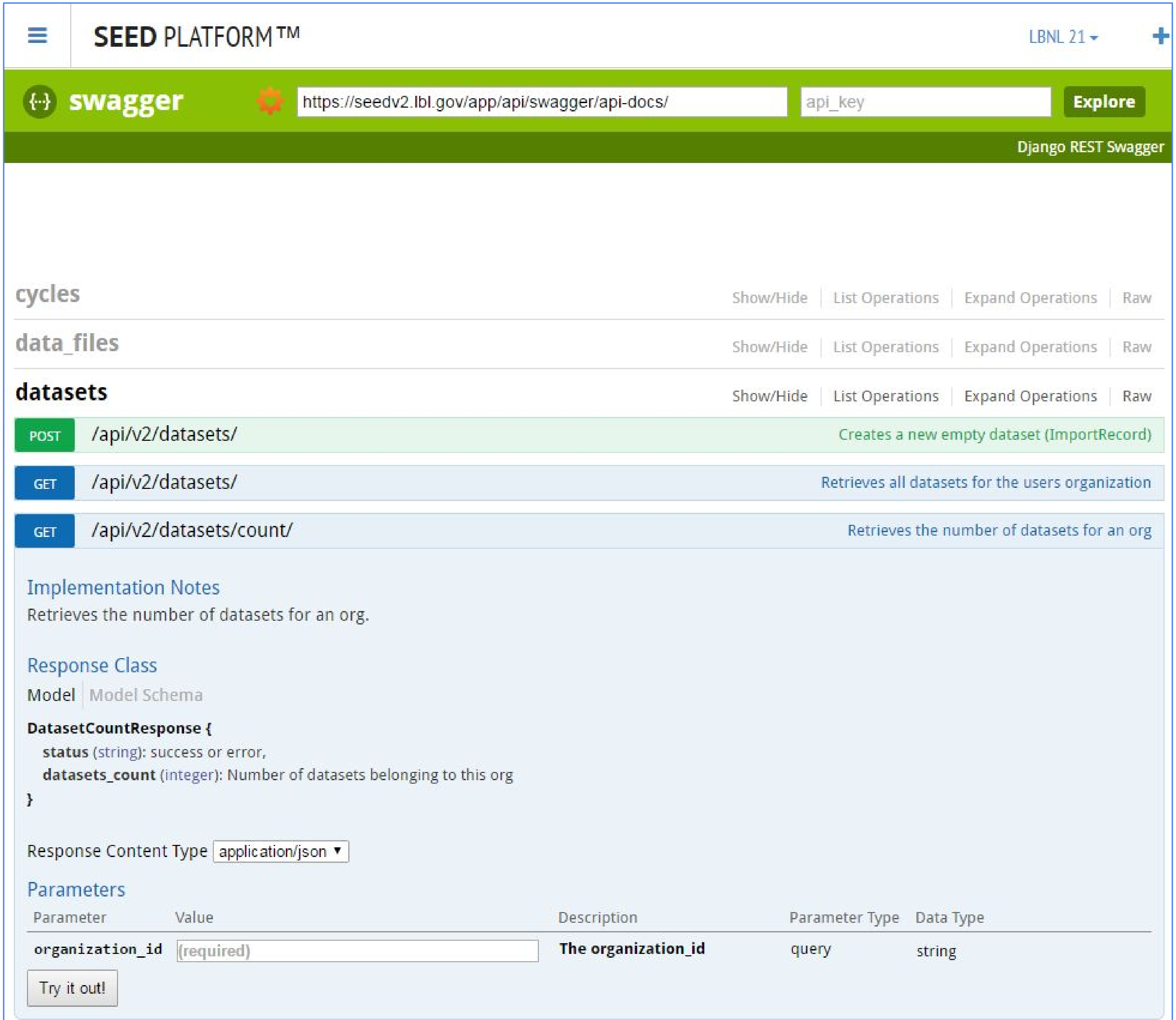
Roles

The permissions for each Role in a Parent Organization and a Sub-Organization

	Parent	Sub Organization		
		Owner	Member	Viewer
Set fields for display between Sub-Org	X			
Create Sub Orgs	X			
Add Members	X To parent or at Sub org setup	X To own Suborg		
Remove Members	X In parent	X From own Sub org		
View Members	X In parent Owner(s) of suborg	X In own Sub org		
Change Settings • **Rename Suborg** • **Change member role**	X In parent	X In own Sub org		
Add Data **(Create Datasets)**	X	X	X	
Edit data	X All the Suborgs associated with it	X In own Sub org	X In own Sub org	
View data	X All the Suborgs associated with it	X In own Sub org	X In own Sub org	X In own Sub org
Make Projects		X In own Sub org	X In own Sub org	
Label records within Projects		X In own Sub org	X In own Sub org	

API DOCUMENTATION

Swagger Interface to SEED RESTful APIs



Contact

Contact

For SEED-Platform Users:

Please visit our User Support website for tutorials and documentation to help you learn how to use SEED-Platform.

https://sites.google.com/a/lbl.gov/seed/

There is also a link to the SEED-Platform Users forum, where you can connect with other users.

https://groups.google.com/forum/#!forum/seed-platform-users

For direct help on a specific problem, please email:

SEED-Support@lists.lbl.gov

For SEED-Platform Developers:

The Open Source code is available on the Github organization SEED-Platform:

https://github.com/SEED-platform

Please join the SEED-Platform Dev forum where you can connect with other developers.

https://groups.google.com/forum/#!forum/seed-platform-dev

ABOUT

About

About SEED Platform™

The Standard Energy Efficiency Data (SEED)™ Platform is a software application that helps organizations easily manage data on the energy performance of large groups of buildings. Users can combine data from multiple sources, clean and validate it, and share the information with others. The software application provides an easy, flexible, and cost-effective method to improve the quality and availability of data to help demonstrate the economic and environmental benefits of energy efficiency, to implement programs, and to target investment activity.

More details

Development Team:

Managed by: National Renewable Energy Laboratory

Funding from: U.S. Department of Energy

Version

2.0.0.3daf0f8

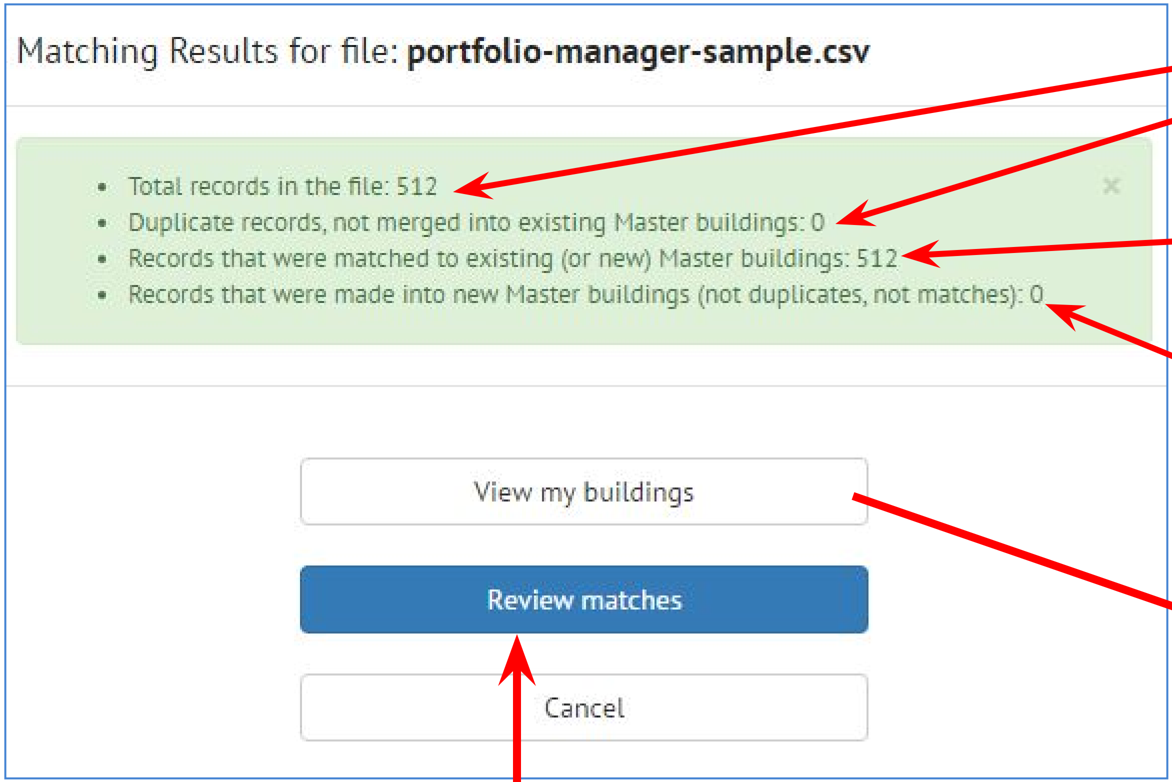
When reporting an issue, including the complete Version # is useful

Slides to update later

Data Matching -- Results

Need to update this slide with latest code for hand matching and the results dialog box 1/31/2017

The program reports the results of the matching

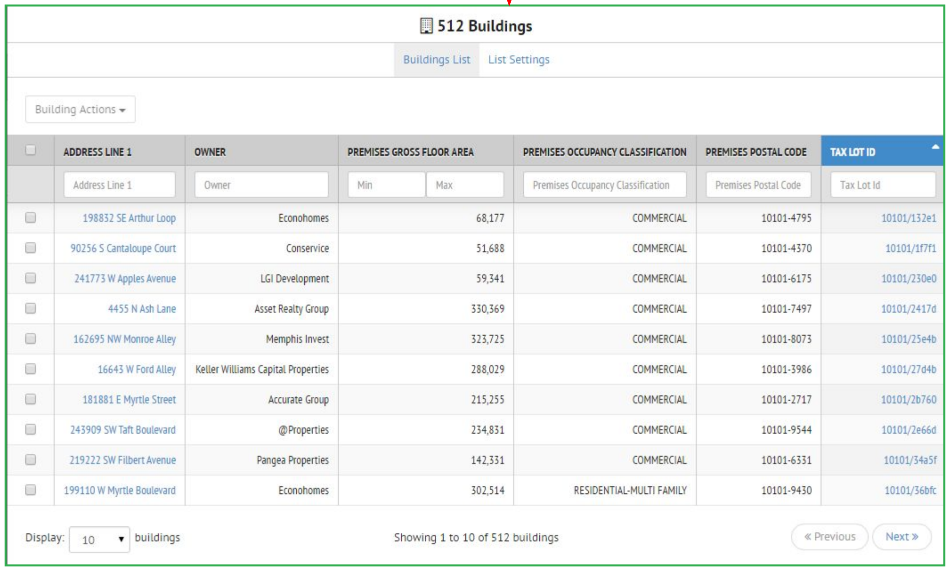


- Total records imported from the file
- Records that exactly matched between the existing buildings and the newly imported buildings – these are considered "duplicates" and are not imported
- Records that the program was able to match between the existing buildings and the newly imported buildings on the matching field(s) – in this case they matched 1:1, so 512 records matched on **Address Line 1**
- Records from the newly imported file that could not be matched to an existing building, and so are made into new building records.

Click **View Properties** to see the Inventory list

After a data file has been mapped and matched, the program adds those records to Inventory list.

Click the
Review Matches button
to go to the Matching *screen (see next page)* to see how the program matched the records between the existing buildings created from the **Tax Lot data** and the newly imported records from the **Portfolio Manager data set**


512 Buildings

Buildings List | List Settings

Building Actions

ADDRESS LINE 1	OWNER	PREMISES GROSS FLOOR AREA	PREMISES OCCUPANCY CLASSIFICATION	PREMISES POSTAL CODE	TAX LOT ID
198832 SE Arthur Loop	Econohomes	68,177	COMMERCIAL	10101-4795	10101/132e1
90256 S Cantaloupe Court	Conservice	51,688	COMMERCIAL	10101-4370	10101/1f7f1
241773 W Apples Avenue	LGI Development	59,341	COMMERCIAL	10101-6175	10101/230e0
4455 N Ash Lane	Asset Realty Group	330,369	COMMERCIAL	10101-7497	10101/2417d
162695 NW Monroe Alley	Memphis Invest	323,725	COMMERCIAL	10101-8073	10101/25e4b
16643 W Ford Alley	Keller Williams Capital Properties	288,029	COMMERCIAL	10101-3986	10101/27d4b
181881 E Myrtle Street	Accurate Group	215,255	COMMERCIAL	10101-2717	10101/2b760
243909 SW Taft Boulevard	@Properties	234,831	COMMERCIAL	10101-9544	10101/2e66d
219222 SW Filbert Avenue	Pangea Properties	142,331	COMMERCIAL	10101-6331	10101/34a5f
199110 W Myrtle Boulevard	Econohomes	302,514	RESIDENTIAL-MULTI FAMILY	10101-9430	10101/36bfc

Display: 10 buildings   Showing 1 to 10 of 512 buildings   « Previous Next »

Record Matching – Review

Need to update this slide with latest code for hand matching and the results dialog box 1/31/2017

Data file name being matched to the existing building records

The pulldown list allows you to see all the records, just the matched records, or just the unmatched records

The higher the Confidence %, the better the match

Existing building record being matched to

Click **View/Hide Columns** to control the fields that are displayed

View/Hide Columns

File Source: portfolio-manager-sample.csv

Show All

- Show All
- Show Matched
- Show Unmatched

Matched Buildings

ADDRESS LINE 1	PM PROPERTY ID	TAX LOT ID	MATCH	CONFIDENCE	ADDRESS LINE 1	PM PROPERTY ID	TAX LOT ID
Address Line 1	Pm Property Id	Tax Lot Id					
000015581 SW Sycamore Court	101125		✔	100%	15581 SW Sycamore Court		101082D867
000076655 SE Cordia Boulevard	102843		✔	100%	76655 SE Cordia Boulevard		1011043A53
137299 SW Hemlock Loop	112963		✔	100%	137299 SW Hemlock Loop		101106DD4A
196013 S Jackson Highway	113890		✔	100%	196013 S Jackson Highway		101074692C
0000184039 S Catalpa Highway	121123		✔	100%	184039 S Catalpa Highway		10101870D0
94734 SE Honeylocust Street	121690		✔	100%	94734 SE Honeylocust Street		10106913A0
14397 N Grapes Way	122147		✔	100%	14397 N Grapes Way		1010289133
000078024 N Filbert Highway	124903		✔	100%	78024 N Filbert Highway		10104208F2
181123 NW Clementine Lane	127351		✔	100%	181123 NW Clementine Lane		101073A89A
17430 E Cantaloupe Highway	127810		✔	100%	17430 E Cantaloupe Highway		10110A2B5D

In this example, the only common field between the two data files to match on is **Address Line 1**

If the match is incorrect, you can uncheck the MATCH box to force the program to "unmatch" the records

Display: 10 buildings

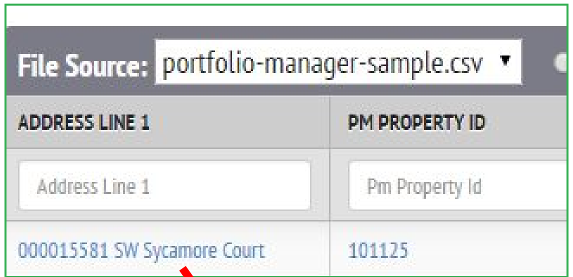
Showing 1 to 10 of 512 buildings (0 unmatched)

« First Record ‹ Previous Next › Last Record »

Click on a record (**Address Line 1**) to see the details of the record match *(see next page)*

Record Matching – Match by hand

Need to update this slide with latest code for hand matching and the results dialog box 1/31/2017



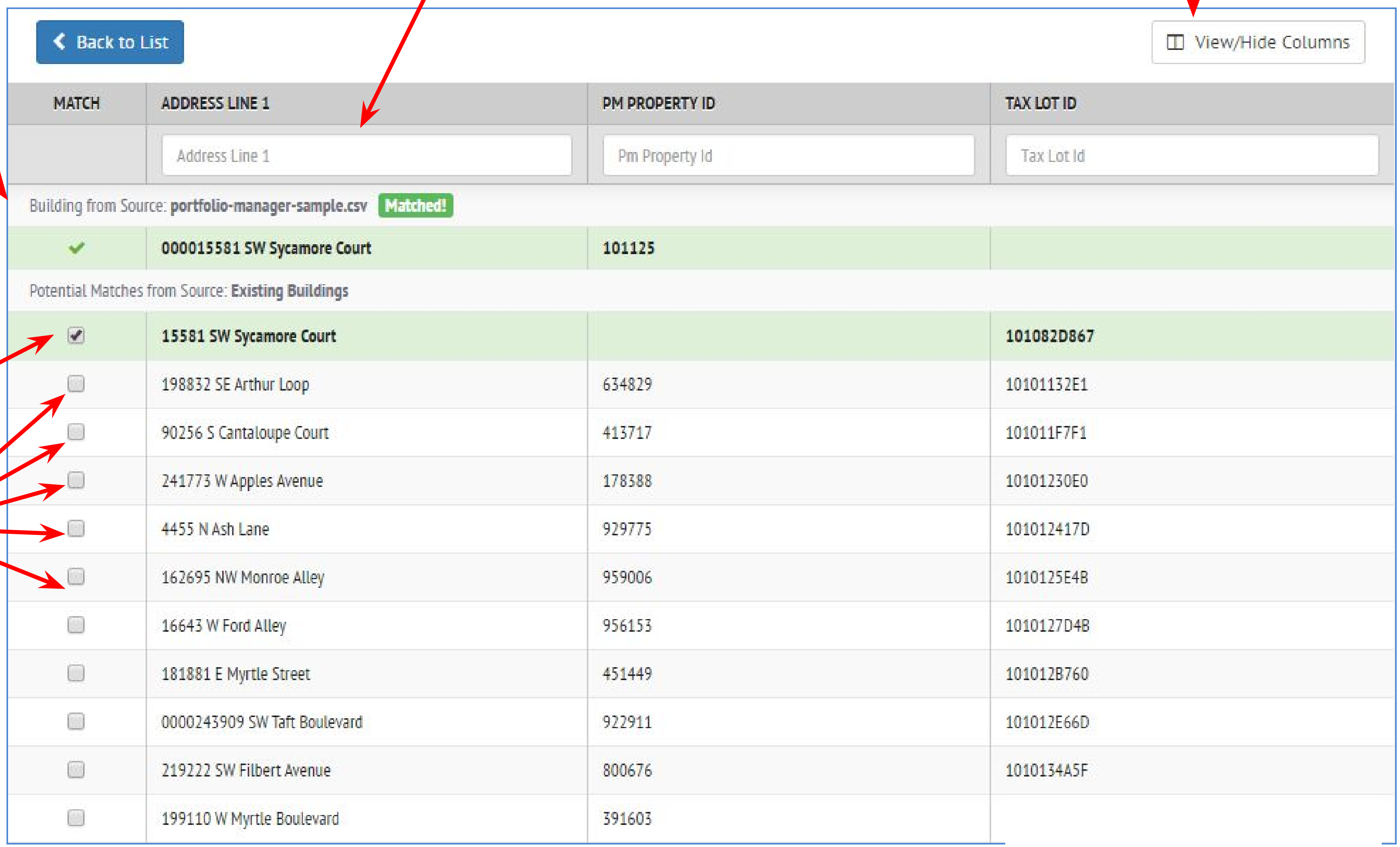
You can match “by hand” if needed

- To unmatch the automatic matching done by the program
- To force a match that the program didn’t make

Click **View/Hide Column** to select the fields to display

Type criteria into the **Filter** box to see if there are other records you want to match “by hand”

Click on an Address or ID from the Matching list to see the details of the matched records



You can **uncheck** the record the program matched, if needed

You can also **check** (select) multiple building records to be associated with one Portfolio Manager record and vice-versa

Projects – Filter data from Building List for Project

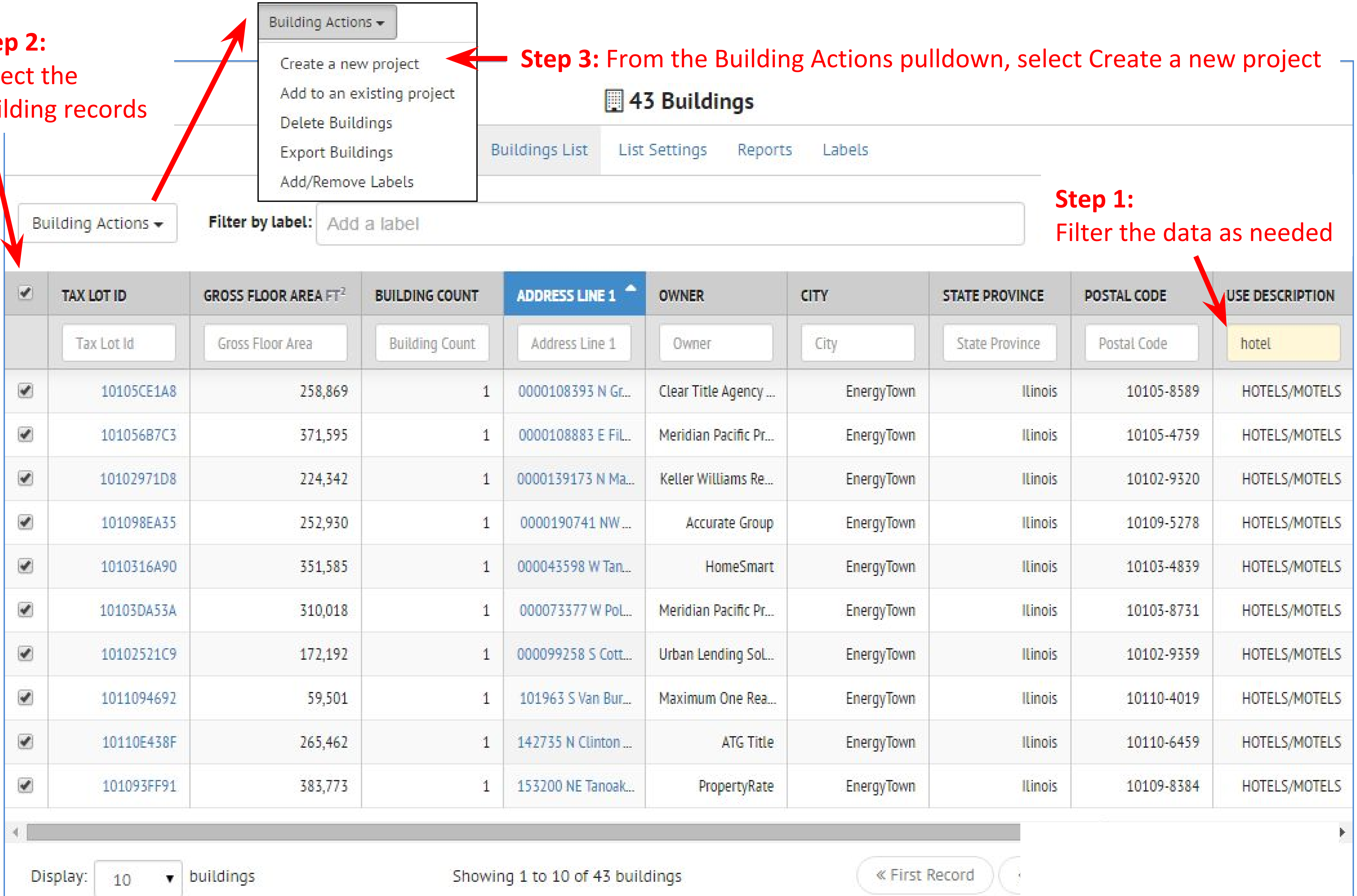
Projects allow filtered data to be saved together

(Labeling in Projects is currently disabled but will be reinstated in future versions)

Step 2: Select the building records

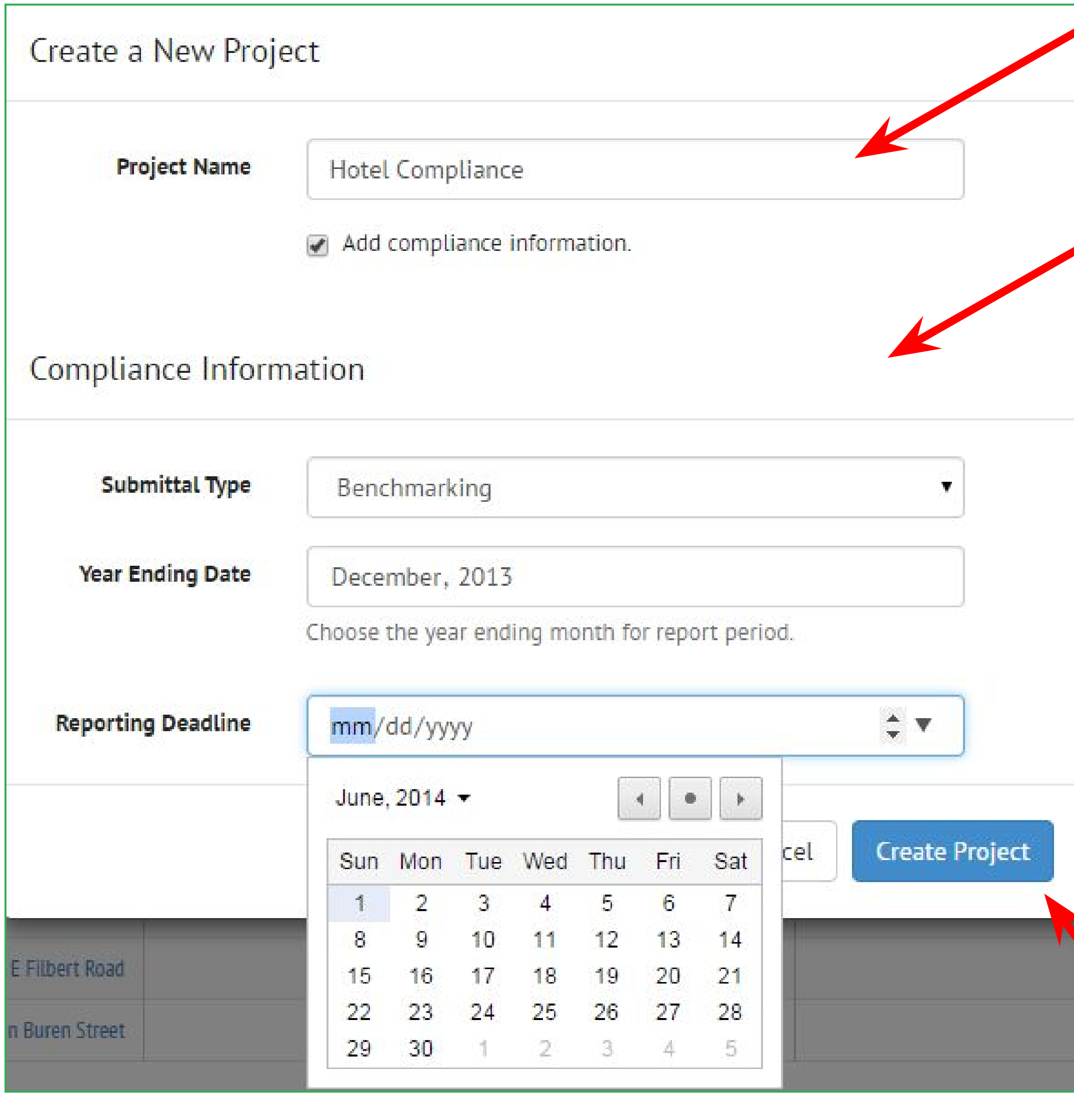
Step 3: From the Building Actions pulldown, select Create a new project

Step 1: Filter the data as needed



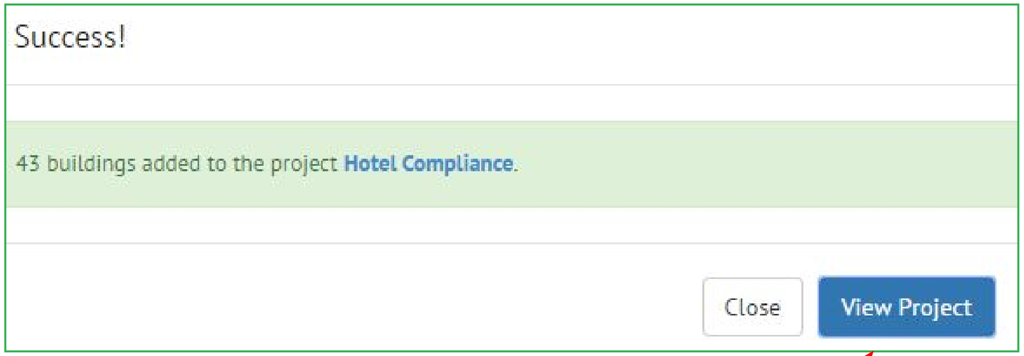
☑	TAX LOT ID	GROSS FLOOR AREA FT^2	BUILDING COUNT	ADDRESS LINE 1	OWNER	CITY	STATE PROVINCE	POSTAL CODE	USE DESCRIPTION
	Tax Lot Id	Gross Floor Area	Building Count	Address Line 1	Owner	City	State Province	Postal Code	hotel
☑	10105CE1A8	258,869	1	0000108393 N Gr...	Clear Title Agency ...	EnergyTown	Ilinois	10105-8589	HOTELS/MOTELS
☑	101056B7C3	371,595	1	0000108883 E Fil...	Meridian Pacific Pr...	EnergyTown	Ilinois	10105-4759	HOTELS/MOTELS
☑	10102971D8	224,342	1	0000139173 N Ma...	Keller Williams Re...	EnergyTown	Ilinois	10102-9320	HOTELS/MOTELS
☑	101098EA35	252,930	1	0000190741 NW ...	Accurate Group	EnergyTown	Ilinois	10109-5278	HOTELS/MOTELS
☑	1010316A90	351,585	1	000043598 W Tan...	HomeSmart	EnergyTown	Ilinois	10103-4839	HOTELS/MOTELS
☑	10103DA53A	310,018	1	000073377 W Pol...	Meridian Pacific Pr...	EnergyTown	Ilinois	10103-8731	HOTELS/MOTELS
☑	10102521C9	172,192	1	000099258 S Cott...	Urban Lending Sol...	EnergyTown	Ilinois	10102-9359	HOTELS/MOTELS
☑	1011094692	59,501	1	101963 S Van Bur...	Maximum One Rea...	EnergyTown	Ilinois	10110-4019	HOTELS/MOTELS
☑	10110E438F	265,462	1	142735 N Clinton ...	ATG Title	EnergyTown	Ilinois	10110-6459	HOTELS/MOTELS
☑	101093FF91	383,773	1	153200 NE Tanoak...	PropertyRate	EnergyTown	Ilinois	10109-8384	HOTELS/MOTELS

Projects - Create



The **Create a New Project** screen allows you to name the project and add compliance information if desired.

If you check the **Add compliance information** box, the Compliance Information section appears.



When you have defined the project, click the **Create Project** button.

When the program has created the project, click the View Project button to view the records in the Project

Projects – Hotel Compliance Project

The filter was Premises Occupancy Classification = Hotel
43 Records were found to fit this filter

‹ Projects

Hotels (43 Buildings)

Project Buildings | List Settings

This information is from entries in the Create New Project screen

Project Actions ▾ | Update Filters

TYPE OF SUBMITTAL: Benchmarking **YEAR ENDING:** 12/31/2014 **DEADLINE:** 04/30/2015

	STATUS	TAX LOT ID	GROSS FLOOR AREA FT²	BUILDING COUNT	ADDRESS LINE 1	OWNER	USE DESCRIPTION	YEAR BUILT	ENERGY SCORE
	Status	Tax Lot Id	Gross Floor Area	Building Count	Address Line 1	Owner	Use Descriptio	Year Built	Energy Score
☐		1010141BB1	388,473	1	236410 NW Cedar...	Schmidt Real Estate	HOTELS/MOTELS	2000	
☐		1010199DB8	195,267	1	194087 SE Fillmor...	Reliant Realty	HOTELS/MOTELS	1982	81
☐		10102521C9	172,192	1	000099258 S Cott...	Urban Lending Sol...	HOTELS/MOTELS	1942	
☐		10102971D8	224,342	1	0000139173 N Ma...	Keller Williams Re...	HOTELS/MOTELS	1965	
☐		1010314C96	379,375	3	235016 SW Melon...	Hawaii Life	HOTELS/MOTELS	1986	51
☐		1010316A90	351,585	1	000043598 W Tan...	HomeSmart	HOTELS/MOTELS	1962	37
☐		1010343575	115,726	1	216971 NW True W...	GRS Group	HOTELS/MOTELS	1957	
☐		101034EB74	54,433	1	6379 SW Guava Ro...	Asset Plus Compan...	HOTELS/MOTELS	1911	
☐		10103DA53A	310,018	1	000073377 W Pol...	Meridian Pacific Pr...	HOTELS/MOTELS	1964	86
☐		10103EAFDD	75,130	1	206960 S Guava L...	Trust Field Services	HOTELS/MOTELS	1999	

Display: 10 ▾ buildings

Showing 1 to 10 of 43 buildings

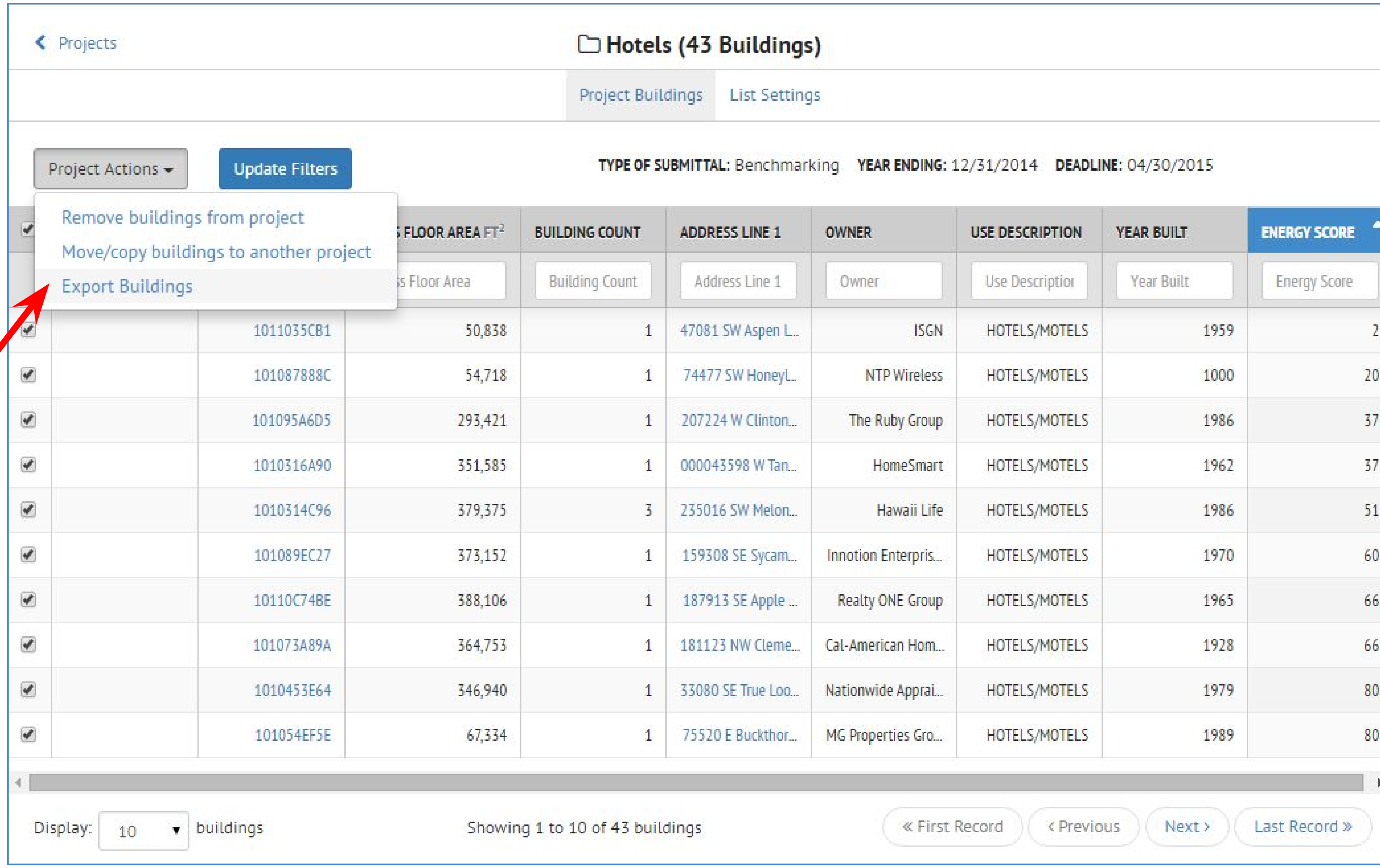
« First Record | ‹ Previous | Next › | Last Record »

Projects – Export to XLS

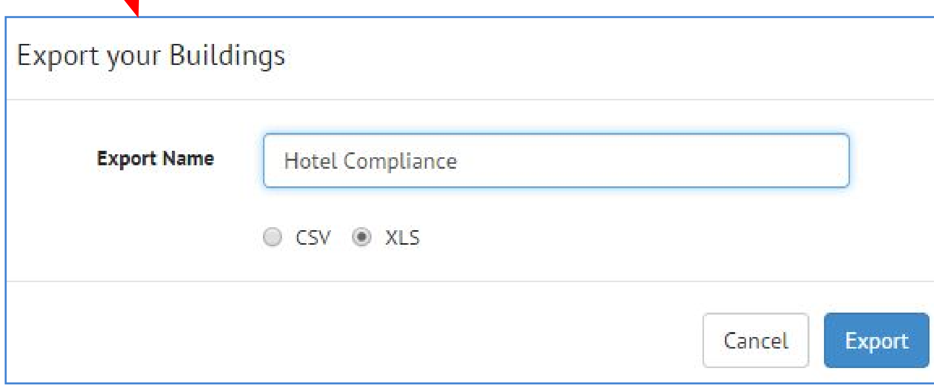
Projects can be exported to CSV or XLS files

Step 1:
Check records to be exported (check top box for all records)

Step 2:
Click on Project Actions and select Export Buildings



Step 3:
Name the export file and specify the file format



Step 4:
Click the Export button
The file will be saved to your **downloads** folder