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

Planting SEEDs

Implementation of a Common Platform for Building Performance Disclosure Program Data Management

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Buildings.energy.gov/SEED

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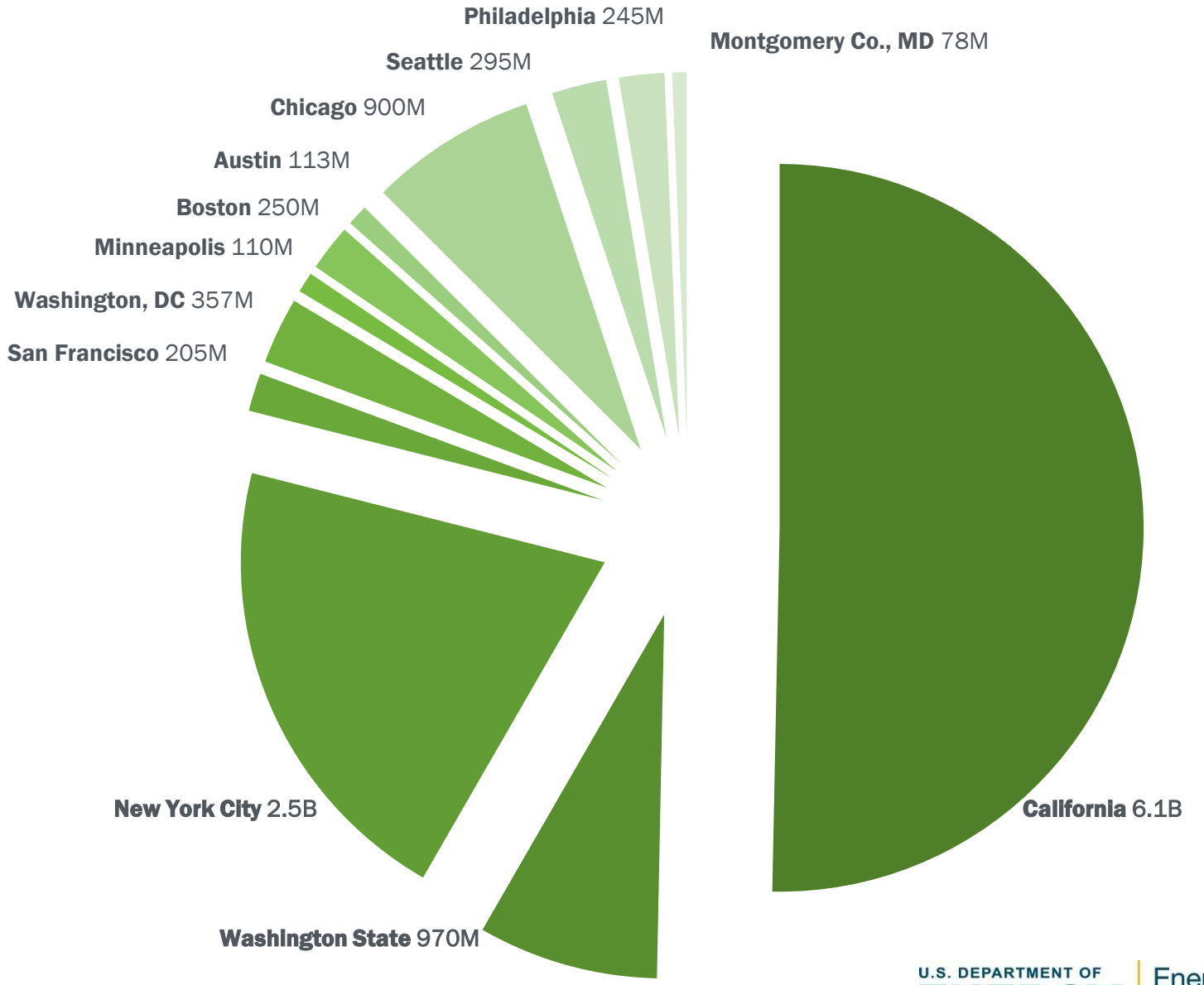
ACEEE Summer Study

August 19, 2014

Building Performance Disclosure Regulations: 12.1B SF



Source: IMT

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Rapid increase in data about building performance

- Tax Assessor Data
- Utility Data
- Building Use Information
- Mapping
- Benchmarking Results
- Contact Information
- Retrocommissioning
- Audit Data

But Usability Is Lacking.

Calendar Year 2012 Disclsoure | Sheet 1: Whole Buildng Data

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Privately-Owned Buildings

DC Real Property ID	Address of Record	Owner of Record	Ward	Property Name			State	Postal Code	Type			Weather Normalized Source EUI (kBtu/ft²)	ENERGY STAR Score	Total GHG Emissions (MtCO2e)	Electricity Use - Grid Purchase and Onsite (kWh	Natural Gas Use (therms	District Steam Use (kBtu)	Other Fuel Use (kBTU
00080806	2500 VIRGINIA AV NW	WATERGATE EAST INC	2	Watergate East		Washington	DC	20037	Multifamily	1		103.1	Not Available	1595.97	3299826		13924	
00080808	2600 VIRGINIA AV NW	GREENPENZ 2600 VIRGINIA AVENUE LLC	2	Watergate B		Washington	DC	20037	Office	1963		195.3	Not Available	1813.1	2385906.5		4893875	
00080811	0600 NEW HAMPSHIRE AV NW	WATERGATE HOLDINGS I LLC	2	0600 New Avenue	Ave	Washington	DC	20037	Office	1972	2	334.3	52	4406.32	7210210	7022.5	11212280	
00140068	2550 M ST NW	CARR CRHP DC/VA PROPERTIES LLC	2	West		Washington	DC	20037	Office	1978	208,325	8	88	1720.21	3560265.9			
00160093, 00160863	0950 25TH ST NW	CLARIDGE H COOPERTVE	2	9		shington	DC	20037	Multifamily Housing	1960	373,216		Not Available	1582.05	2173040.2	100019.8		
0024 0885*					1255 2	ton	DC	20006	Multifamily	2010	271,827			325.7		61361.9		
0024-0886*					1227 25th	n	DC	20037	Office	1988	150,905		72	1501.68	3107986.4			
00240112	1250 24TH ST NW	WORLD WILDLIFE FUND INC			1250 24th St		DC	20037	Office	1985	251,707	6	86	2052.5	4750311			
00240113	2400 N ST NW	AMERICAN COLLEGE OF CARDIOLOGY FOUNDATION		use	2400 N Street NW			20037	Office	1985	168,891	79	63	1654.9	3766720	5170.305		
00240870	2401 M ST NW	LHCW HOTEL HOLDING (2002) LLC		ton, D.C.,	2401 M Street, NW			20037	Hotel	1985	386,390	128	17	5048.4	9658038	164931.9		
00240871	2445 M ST NW	WRIT 2445 M LLC			2445 M Street N.W.			037	Office	1986	321,803	73	82	3326.63	6885037.8			
00250808	2400 M ST NW	EQR-JBG 2400 RESIDENTIAL			2400 M STREET NW				Multifamily	2006	267,750	21.5	lable	768.9	1533052.8	5295.5		
00251646	1111 25TH ST NW	ATLAS CONDOMINIUM		um	1111 25th Street N.W	Wa			ultifamily	2004	237,911	3.9	lable	130.39	268280	143		
00251782	2425 L ST NW	THE COLUMBIA RESIDENCES CONDO		esidences	2425 L Street NW	Washi			family	2006	549,021	Not Available	lable					
00280000	950 24TH STREET NW	COMMERCIAL CONDOS			950 24th St, NW	Washington				1989	157,672	72.4	54	1300.99	2300602.2	35603.2		
00310837	2475 VIRGINIA AV NW	POTOMAC PLAZA APARTMENTS INC			2475 Virginia Avenue, N.W.	Washington	DC			1957	316,550	68.9	lable	1910.78	2486205	133369.1		
00330087	2400 VIRGINIA AV NW	COLUMBIA PLAZA LP		ll Bldgs	2400 Virginia Ave NW	Washington	DC			1968	988,819	77.2	lable	6765.47	8958960.1	458040.5		
00360048	2300 N ST NW	TR 2300 N STREET CORP			2300 N Street	Washington	DC			1986	304,484	105	36	4047.3	9366857			
00360859	1201 24TH ST	HYATT EQUITIES LLC		rton	1201 24th Street NW	Washington	DC	200		986	361,400	82.9	26	3361.6	7058130	58765.78		
00370853	2300 - 2330 M ST NW	MEDICAL FACULTY ASSOCIATES INC			2300-2330 M ST NW	Washington	DC	20037	O		161,222	56	77	1289.91	2669681.3			
00400036	900 23RD ST	GEORGE WASHINGTON		niversit	900 23rd St, NW	Washington	DC	20037	Hospi		465,000	3	32	13660.5	22945530	705856.1		
00410040	2300 I ST NW	GEORGE WASHINGTON UNIVERSITY	2		2300 I St, NW	Washington	DC	20052	College/ (Campus-Le		0,653		t Available	18660.2	15457472.3	2085163		1339722
00420055	2301 G ST	GEORGE WASHINGTON UNIVERSITY	2	H Cer	2301 G St, NW	Washington	DC	20052	Recreation				Not Available	1415.2	2564755.4	33081.1		
00430026	616 23RD ST	GEORGE WASHINGTON UNIVERSITY	2	Ivory	6 23rd St, NW	Washington	DC	20052	Residence Hall/Dormitory			.9	33		4687958.4	83124.4		321383.9
00500085	1250 22ND ST NW	EMBASSY/SHAW D C VENTURE	2	Embass	2nd street NW	Washington	DC	20037	Hotel			30	100	466.18		87628.6		
00500086	1255 23RD ST	CAPITOL 50 ASSOCIATES	2	Floyd Ake	Street NW	Washington	DC	20037	Office	198		187.6	89	2704.28	5596965.1			
00510079*				73R52-Wash Carlton	t Nw	Washington	DC	20037	Hotel	1990		683	1	8261.74	13047145	368002		
00540841	2200 PENNSYLVANIA AV	GEORGE WASHINGTON UNIVERSITY	2	2200 Pennsylvania		Washington	DC	20052	Office			138.4	91	3138.26	6495159.3			
00560030	2201 G ST NW	GEORGE WASHINGTON UNIVERSITY	2	Funger, Duques, & Tompkins Halls				2005	College/U			96.5	255.2	Not Available	4047.28	7551514.3	74930.5	
00670059	2100 MASSACHUSETTS AV	NOIRO SOUTH LLC	2	Fairfax at Embassy Row								115.7	245	38	2291.2	3809210	121593.8	
00680088	1421 21ST ST NW	2130 P STREET ASSOCIATES	2	WestPark Apartments	2130						,255	64.7	133.5	Not Available	1143.55	1689513.2	61509.7	
00700195	1200 NEW HAMPSHIRE	N H STREET PARTNERS	2	1200 New Hampshire	1200 New						386,378	61.2	210.3	67	3348.08	6929414.3		

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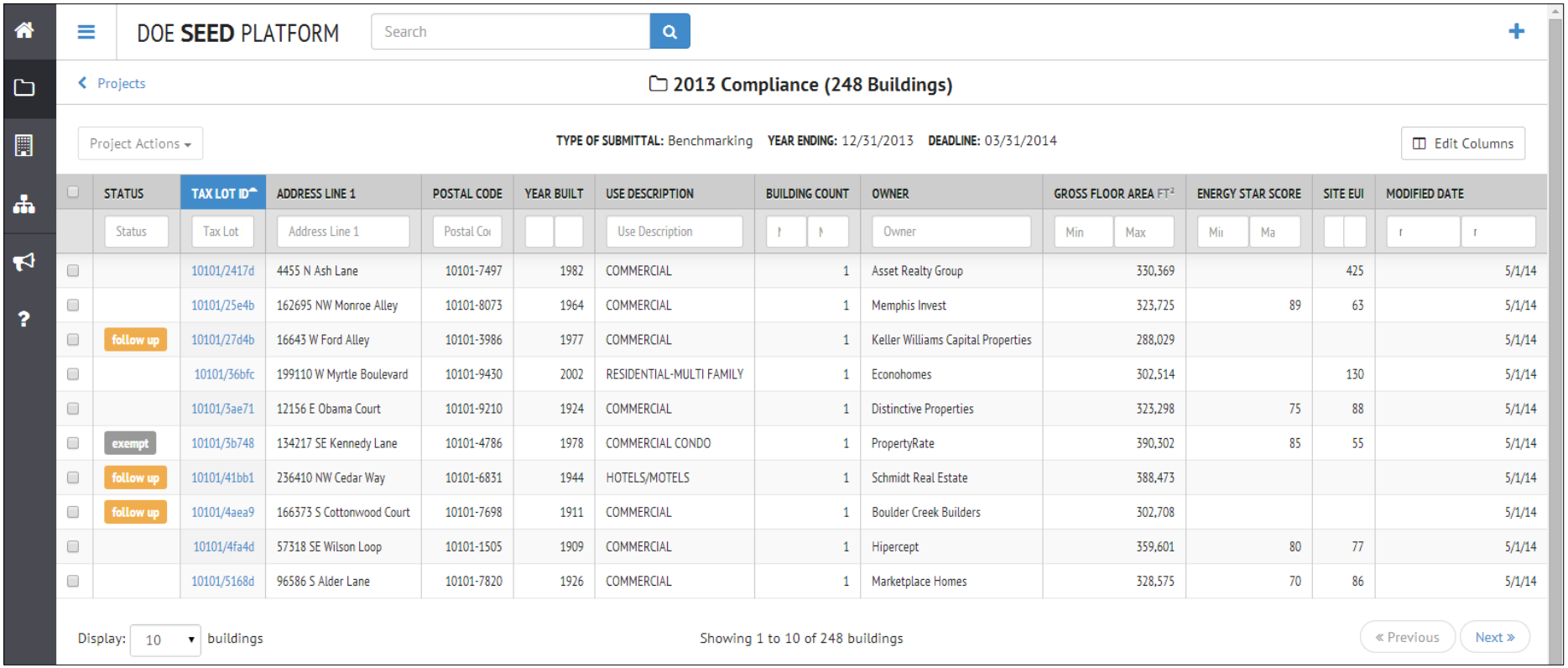
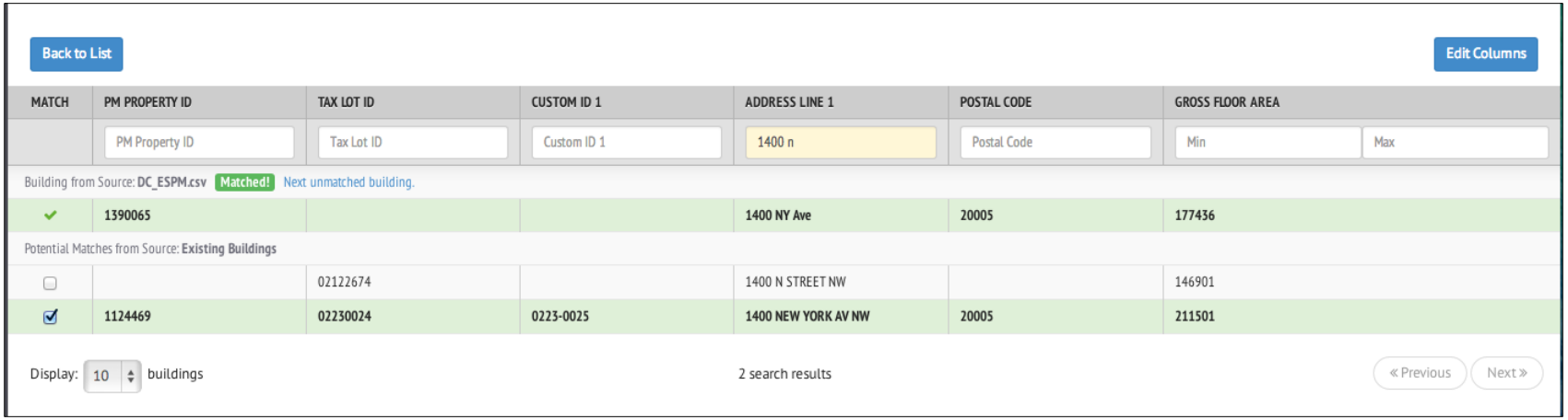
SEED is designed to help!





The Standard Energy Efficiency Data Platform

SEED is primarily designed to help State and local governments implement building performance reporting regulations for private and/or public buildings

In the future it could be used by large portfolio owners, energy efficiency programs, and energy efficiency service providers.

San Francisco

New York City

Washington D.C.

Austin

Philadelphia

Seattle

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How the SEED Platform works

SEED enables users to ***import data from multiple sources*** about the same group of buildings, and ***conduct analysis and reporting*** of the information.

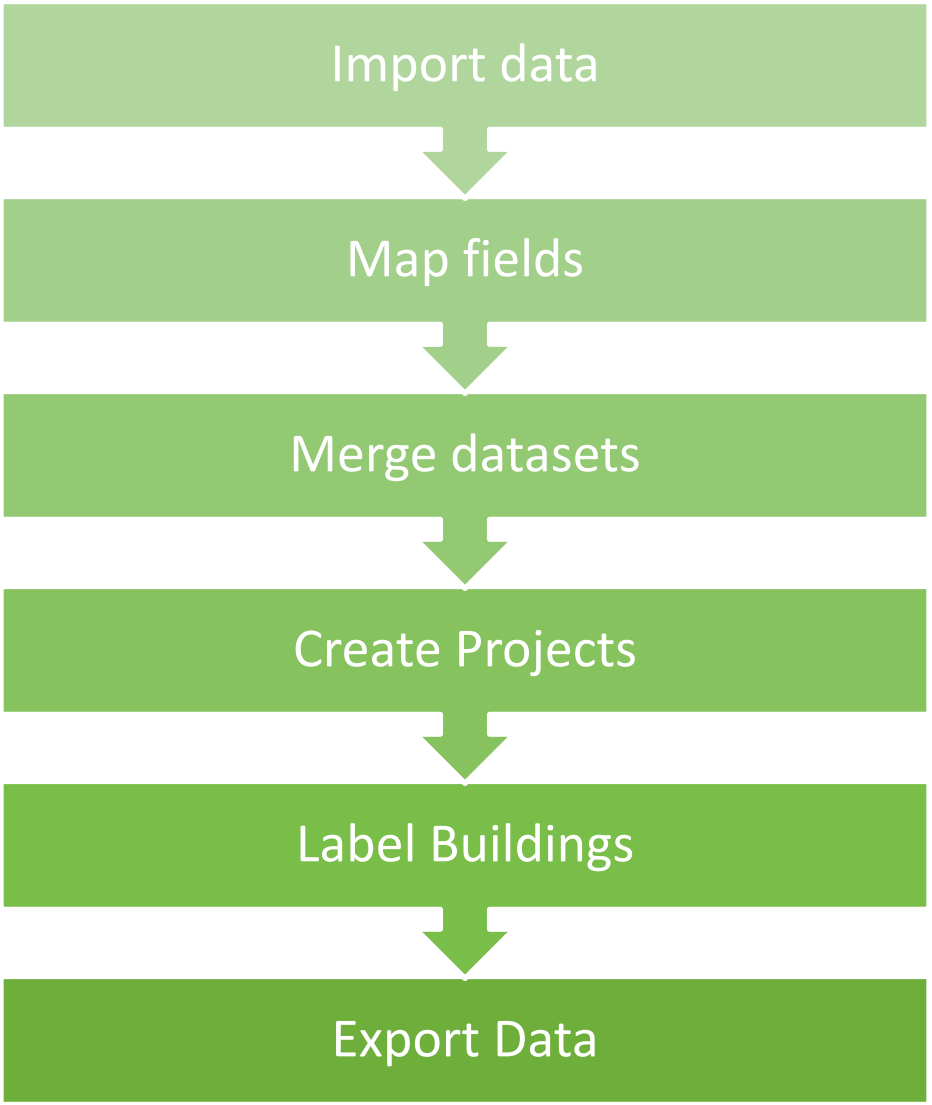
The SEED platform is a blank database; each user has their own private copy.

The SEED platform utilizes a standard data format (BEDES).

The owner of each SEED instance can choose which external parties can access their information, and what records and fields to share.

An application programming interface (API) will enable third-parties to access the data, and offer add-on tools and services, in a replicable way.

SEED V1 workflow



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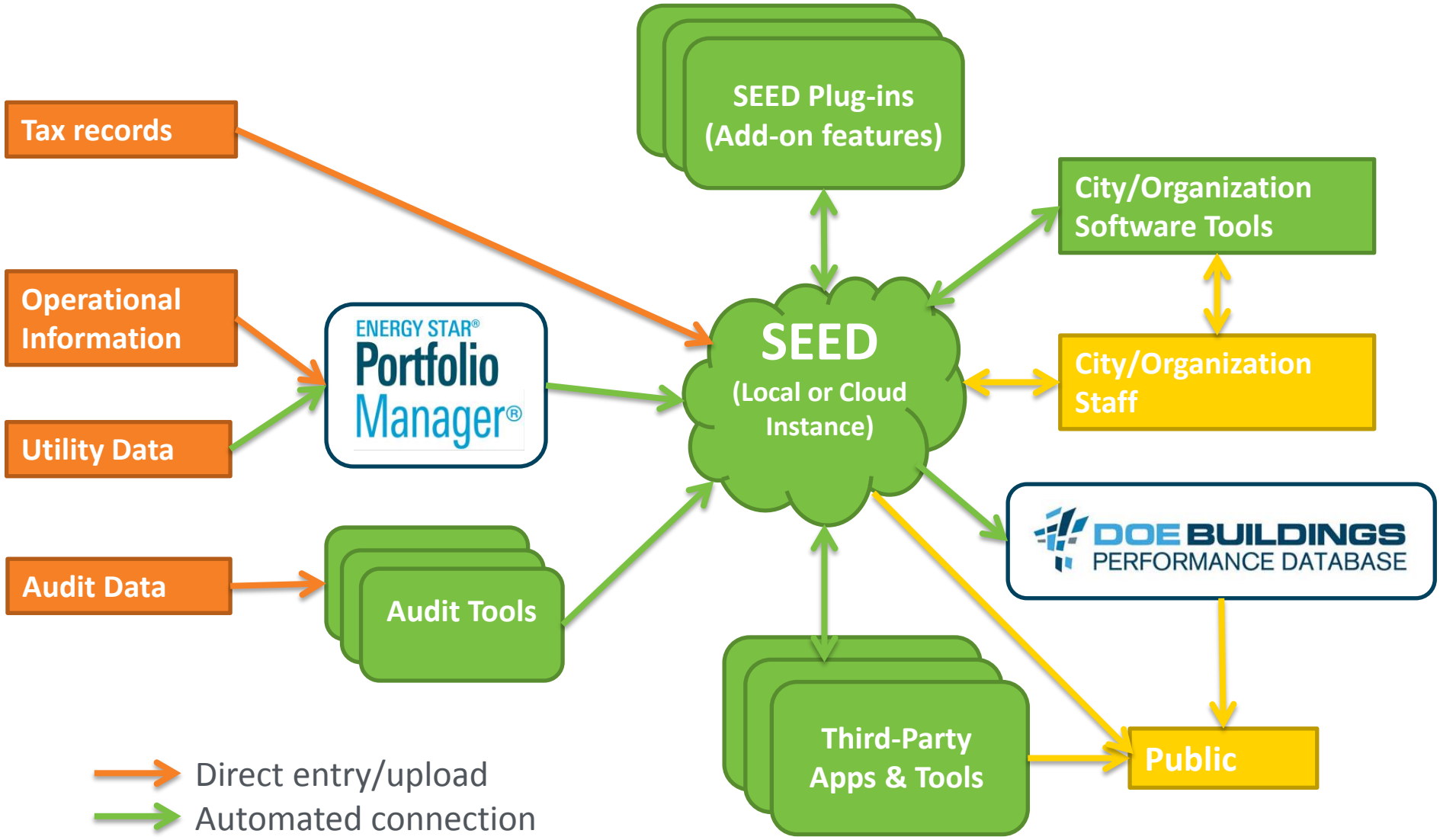
SEED Workflow in Action



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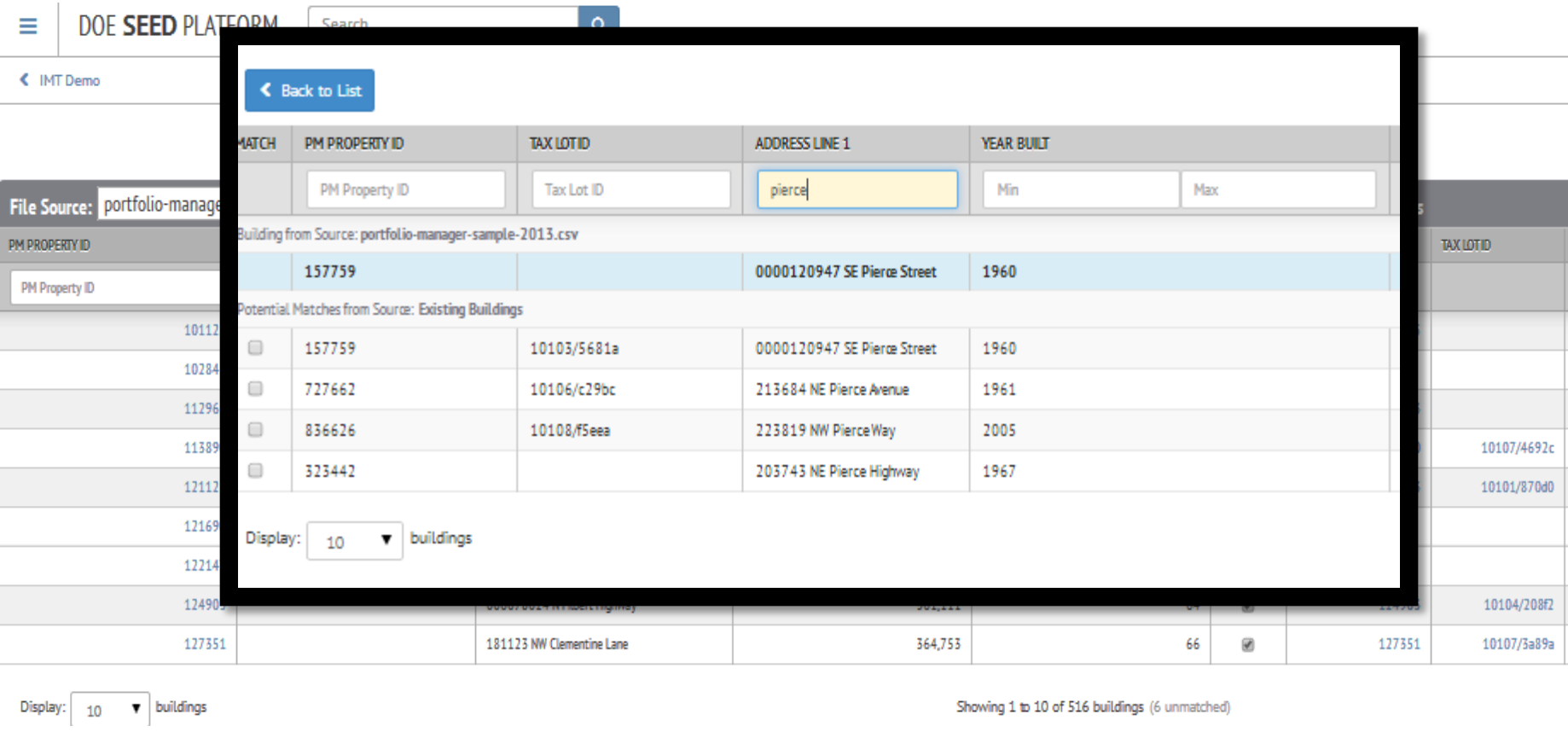
Value of SEED

A free, open-source, web-enabled software application that helps organizations easily aggregate, clean, track, and share data on the energy performance of large groups of buildings.

- Reduces upfront cost of storing and managing data in a private, secure way
- Standard, vendor neutral, objective
- Addresses workflow management and relieves administrative burden
- Data cleansing process increases data quality and saves staff time
- Common format facilitates sharing and collaboration
- Enables development of third-party applications

But these tactical values serve a bigger goal for the market – to make data and systems interoperable

Pilot Users: Matching Portfolio Manager Data



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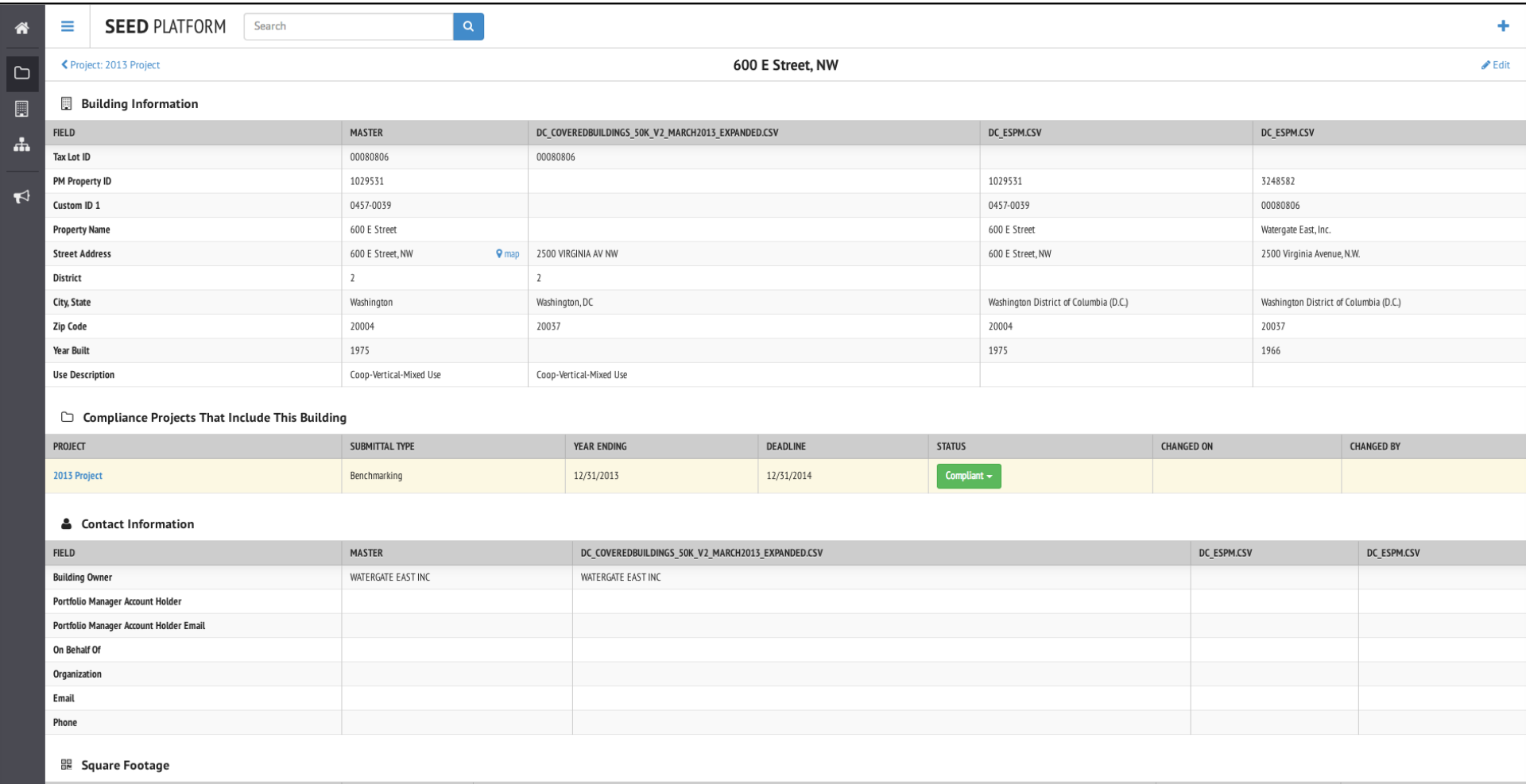
Pilot Users: Drawing from Multiple Data Sources

- Portfolio Manager (annual downloads)
- Audit data
- Participation in utility programs



SEED PLATFORM

Search

Project: 2013 Project

600 E Street, NW

Edit

Building Information

FIELD	MASTER	DC_COVEREDBUILDINGS_50K_V2_MARCH2013_EXPANDED.CSV	DC_ESPM.CSV	DC_ESPM.CSV
Tax Lot ID	00080806	00080806		
PM Property ID	1029531		1029531	3248582
Custom ID 1	0457-0039		0457-0039	00080806
Property Name	600 E Street		600 E Street	Watergate East, Inc.
Street Address	600 E Street, NW map	2500 VIRGINIA AV NW	600 E Street, NW	2500 Virginia Avenue, N.W.
District	2	2		
City, State	Washington	Washington, DC	Washington District of Columbia (D.C.)	Washington District of Columbia (D.C.)
Zip Code	20004	20037	20004	20037
Year Built	1975		1975	1966
Use Description	Coop-Vertical-Mixed Use	Coop-Vertical-Mixed Use		

Compliance Projects That Include This Building

PROJECT	SUBMITTAL TYPE	YEAR ENDING	DEADLINE	STATUS	CHANGED ON	CHANGED BY
2013 Project	Benchmarking	12/31/2013	12/31/2014	Compliant		

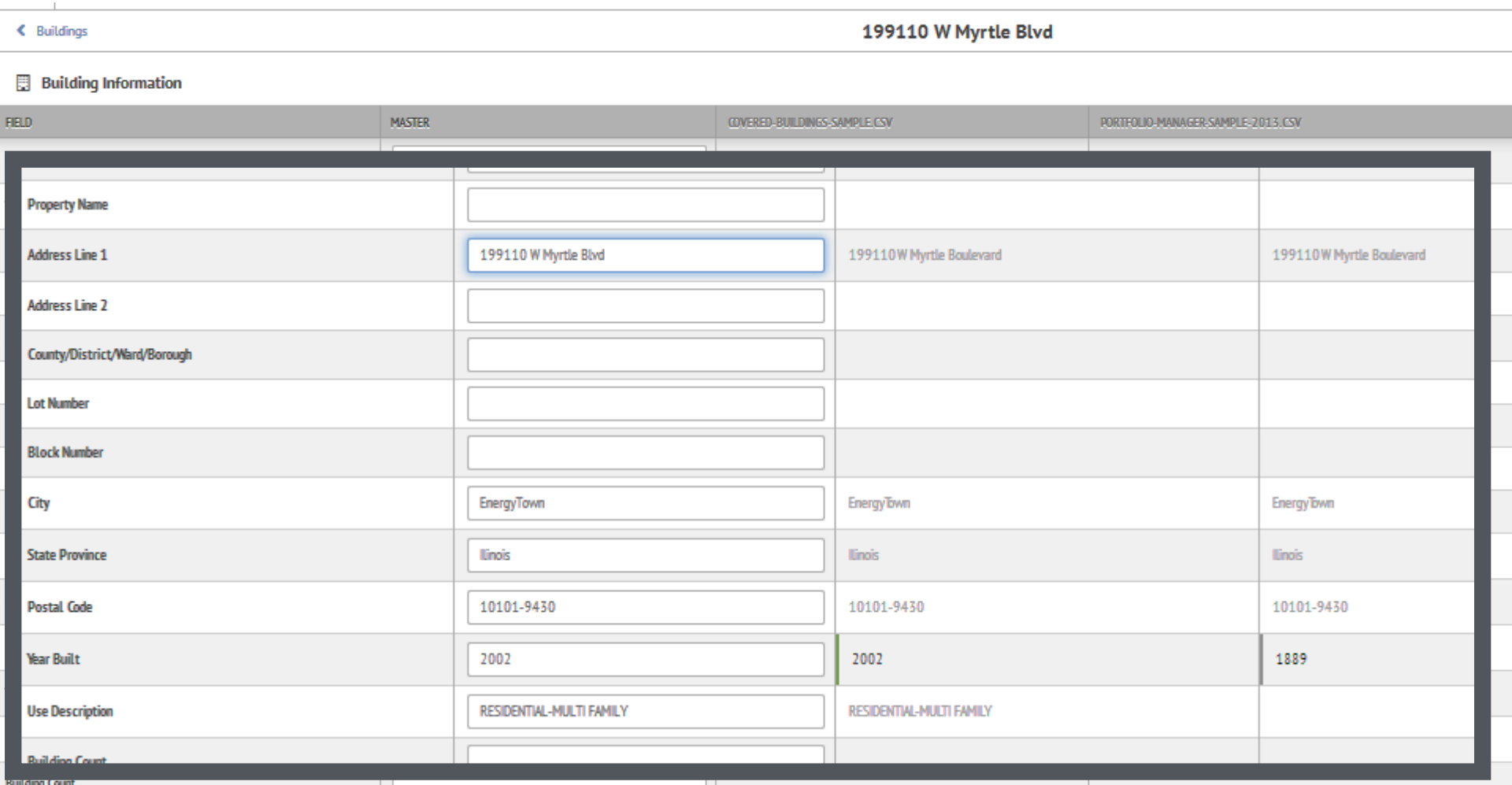
Contact Information

FIELD	MASTER	DC_COVEREDBUILDINGS_50K_V2_MARCH2013_EXPANDED.CSV	DC_ESPM.CSV	DC_ESPM.CSV
Building Owner	WATERGATE EAST INC	WATERGATE EAST INC		
Portfolio Manager Account Holder				
Portfolio Manager Account Holder Email				
On Behalf Of				
Organization				
Email				
Phone				

Square Footage

Pilot Users: Improving Data Accuracy

- View data from multiple sources
- Minimize rekeying



Pilot Users: Interagency Coordination

Three Types of Users

Owner

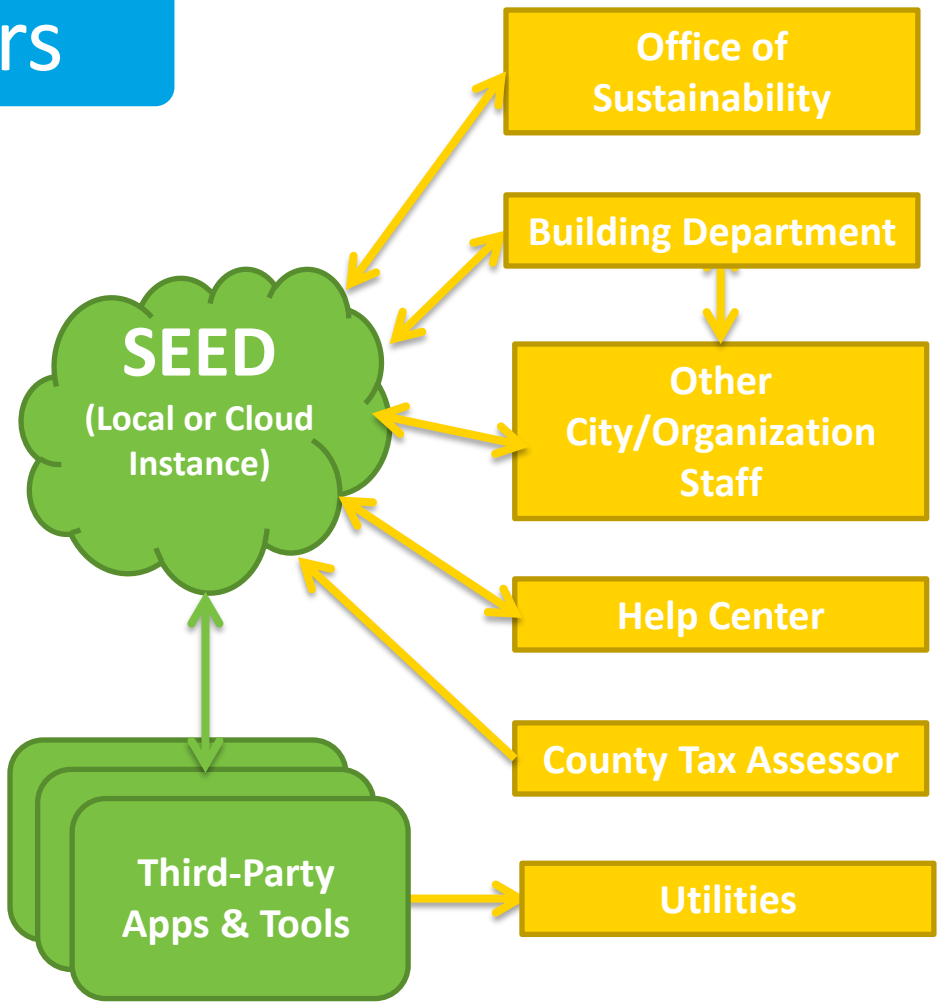
- Add new members
- Load/Delete data
- View Data

Member

- Load/Delete data
- View Data

Viewer

- View Data



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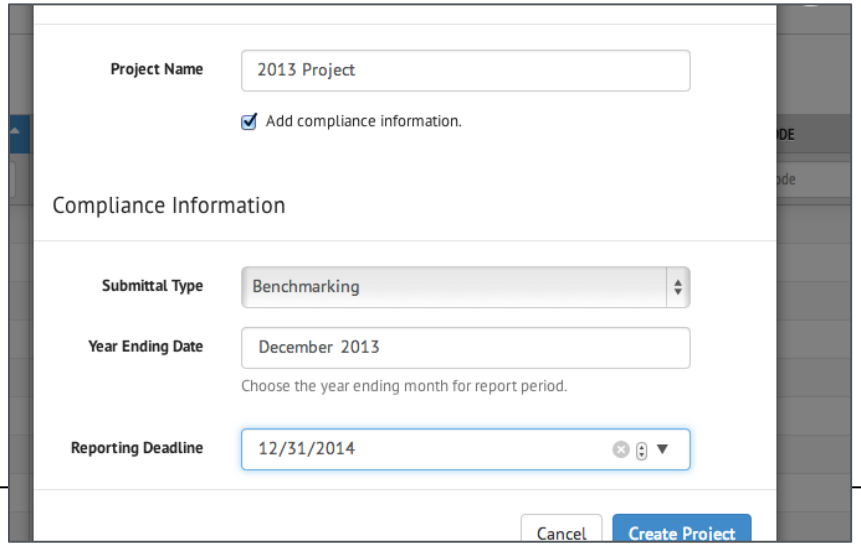
Pilot Users: Compliance Activities



SEED PLATFORM

Search

Projects

2013 Project (Buildings)

Project Actions

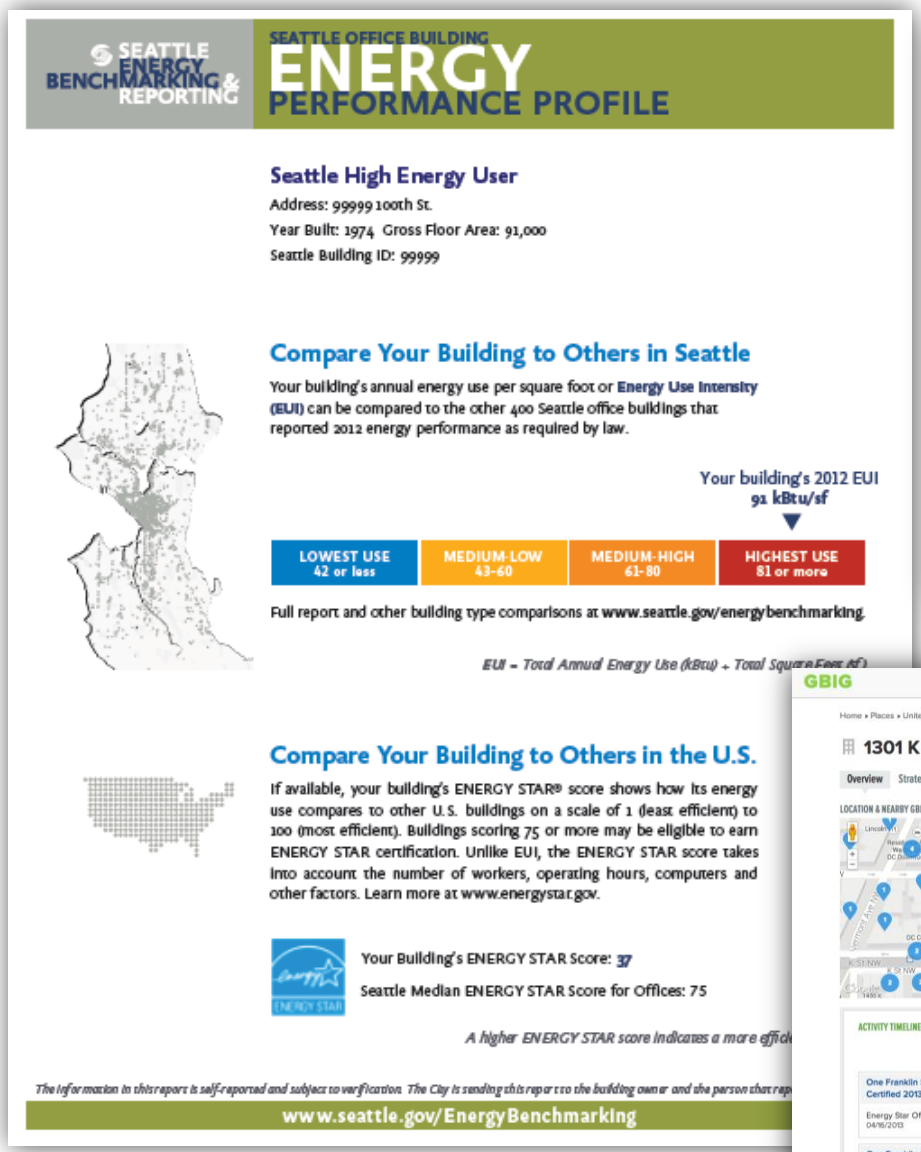
TYPE OF SUBMITTAL: Benchmarking **YEAR ENDING:** 12/30/2013 **DEADLINE:** 12/30/2014

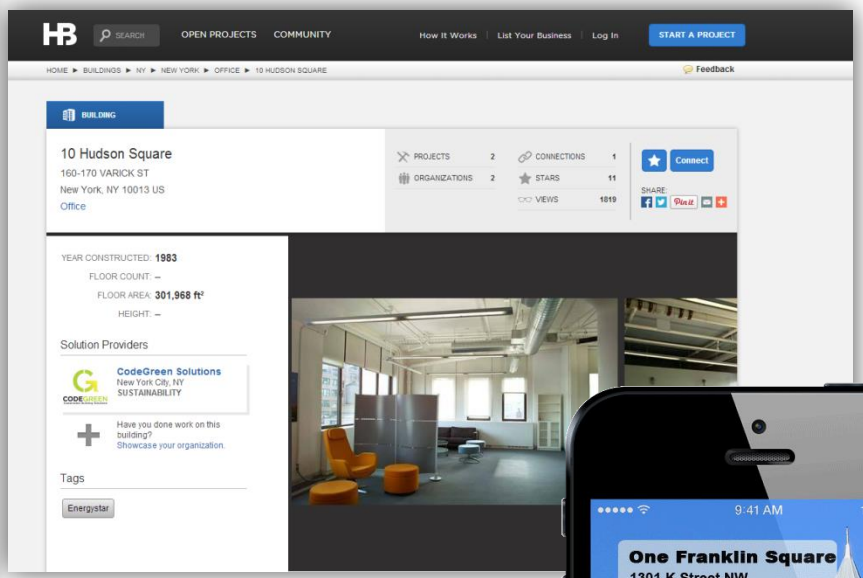
PM PROPERTY ID	STATUS	TAX LOT ID	CUSTOM ID 1	ADDRESS LINE 1	POSTAL CODE
PM Property ID	Status	Tax Lot ID	Custom ID 1	Address Line 1	Postal Code
	Compliant	0004N0027		2626 PENNSYLVANIA AV NW	20037
	Compliant	00060825		2601 VIRGINIA AV NW	20037
1029531	Compliant	00080806	0457-0039	600 E Street, NW	20004
3448441	Compliant	00080808	0008-0808	2600 VIRGINIA AV NW	20037
		00080809		2700 VIRGINIA AV NW	20037
1163866		00080811	0008-0811	0600 NEW HAMPSHIRE AV NW	20037
		00080812		0700 NEW HAMPSHIRE AV NW	20037

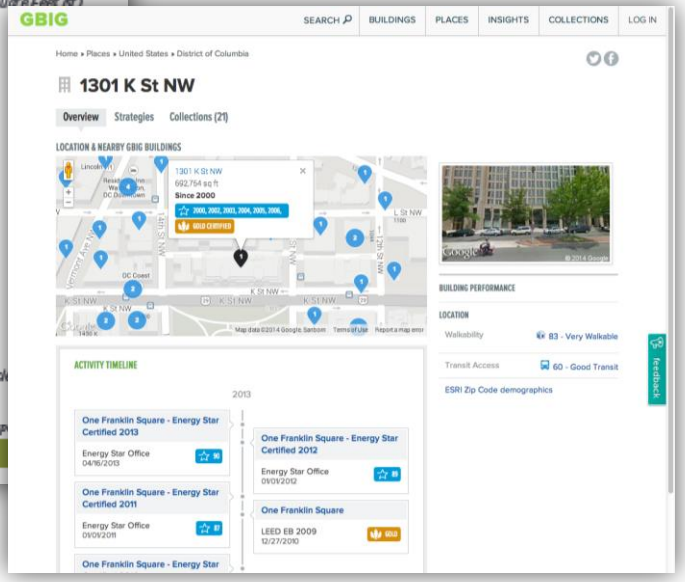
Display: 10 buildings

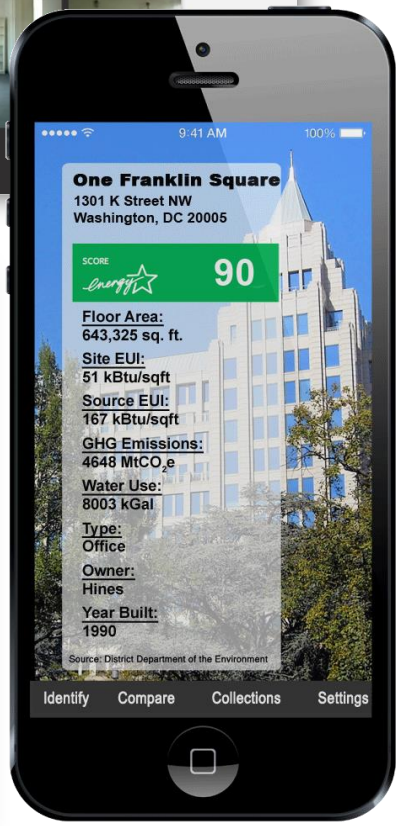
Showing 1 to 7 of 7 buildings

Pilot Users: Driving Action









Why Open Source?

- SEED was developed to support cities and others collecting whole-building energy data in using a consistent and interoperable data platform
- SEED is being developed as open source software to encourage market development of products that are flexible and meet different users' needs, providing a range of options
- "Open source" means that anyone can contribute to the open source code base and create add-on proprietary extensions. This enables the growth of a market of providers that can offer hosting and add-on functionalities that can be utilized by all SEED users
- All products that use the same code base, using the SEED brand, will remain interoperable

Quality Control Principles

- The SEED code base and brand will be closely managed to ensure high quality and interoperable software that meets the public interest
- The github site https://github.com/SEED-platform will be the only official version of SEED (code will be posted this month!)
- Interested parties are encouraged to contribute modifications and enhancements to the open source code base.
- Use of the SEED name will be managed as follows:
  - Products that open source core code as is, or add proprietary extensions using the API, can use the SEED name in their product.
  - Derivative works and customizations that modify the SEED code base (and do not contribute those modifications back to the project) are also encouraged, but the resulting products must say they are “based on SEED”

Management Plan

- The transition of SEED to management outside of DOE is intended to ensure the long-term viability of the project and use by the market
- DOE plans to support the creation of an Open Source Community 501c3 in the upcoming year
- This entity will provide ongoing maintenance to the code base, update it to remain compatible with key public tools, curate contributions from developers, and identify and oversee development of other new features identified by the SEED community, support users, conduct outreach, etc.
- We invite your participation as we design and form the 501c3
- DOE will continue to support SEED, and Lawrence Berkeley National Laboratory (LBNL) will provide oversight of the code, while the permanent management plan is established

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Related Summer Study Presentations:

Enabling Interoperability Through a Common Language for Building Performance Data **– Panel 6, Thurs at 8.30a**

Getting Real With Energy Data – Using the BPD to Support Data-Driven Analyses and Decision Making **– Panel 11, Fri at 8.30a**

Buildings.energy.gov/SEED

SEEDPlatform@ee.doe.gov

ACEEE Summer Study

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