

Accelerate Performance (New Project)

2016 Building Technologies Office Peer Review



****Seventhwave is formerly Energy Center of Wisconsin****

U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy

Adam McMillen (PI), amcmillen@seventhwave.org
Sandra Henry (PM), shenry@seventhwave.org
Paul Torcellini (Partner), Paul.Torcellini@nrel.gov

Project Summary

Timeline:

Start date: August 1, 2015

Planned end date: July 31, 2018

Key Milestones

1. Approved program structure, 5 pilots; July 2016
2. Launch utility program offer; July 2017

Budget:

Total Project \$ to Date:

- DOE: \$93,923
- Cost Share: \$80,863

Total Project \$:

- DOE: \$824,567
- Cost Share: \$1,012,275

Key Partners:

National Renewable Energy Lab	United Illuminating
Institute for Sustainable Energy	Lend Lease
Commonwealth Edison	University of Chicago
Eversource	Minn. Department of Commerce

Project Outcome:

Scale the DOE/NREL performance based procurement process in the commercial building market. Impact 100 buildings over a three year period by integrating it into utility efficiency program offerings and portfolio building owner standard practice.

Purpose and Objectives

Problem Statement:

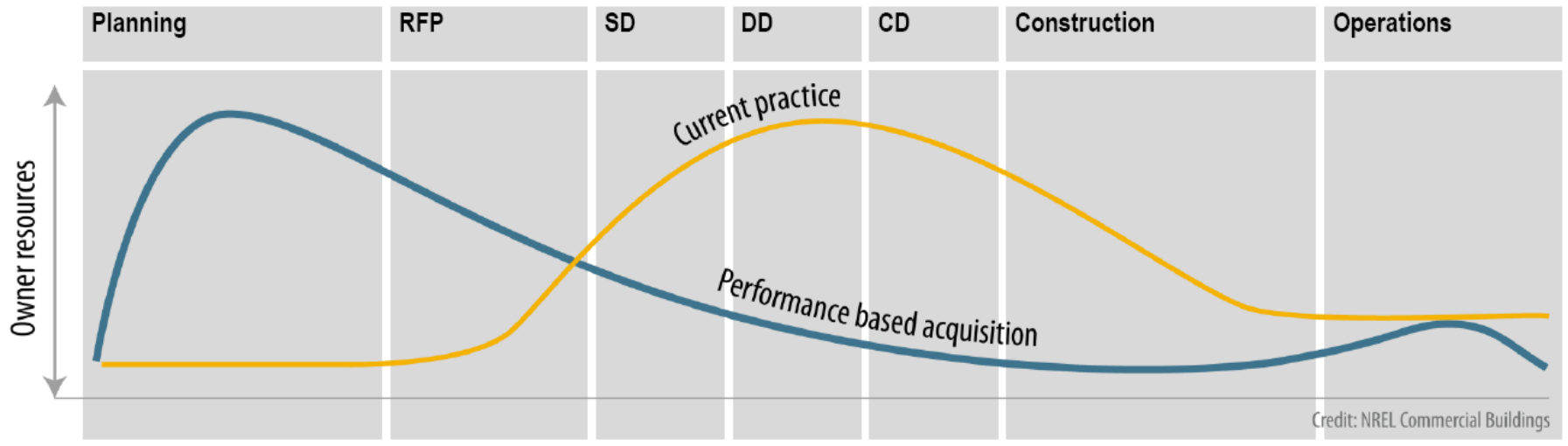
Can we embed DOE/NREL's performance based procurement approach into an new industry-standard practice?

100 buildings
three years



Purpose and Objectives

What is performance based procurement?



RFP and contract language

PROJECT GOAL LIST: Project goals help design teams prioritize their focus on the MEP and building performance design. Goals are categorized in three main sections:

Mission critical goals—required by contract and critical to success

Highly desirable goals—not required by contract and have influence on the recommended design

If possible goals—influence recommended design and are considered highly beneficial if included in the solution

MISSION CRITICAL

- Maximum energy target of 45 KBTU/gsf annually; lower is preferred
- LEED NC version 4, Silver Certification
- Superior occupant comfort
- 100% of occupied spaces physically or visually connected to nature

HIGHLY DESIRABLE

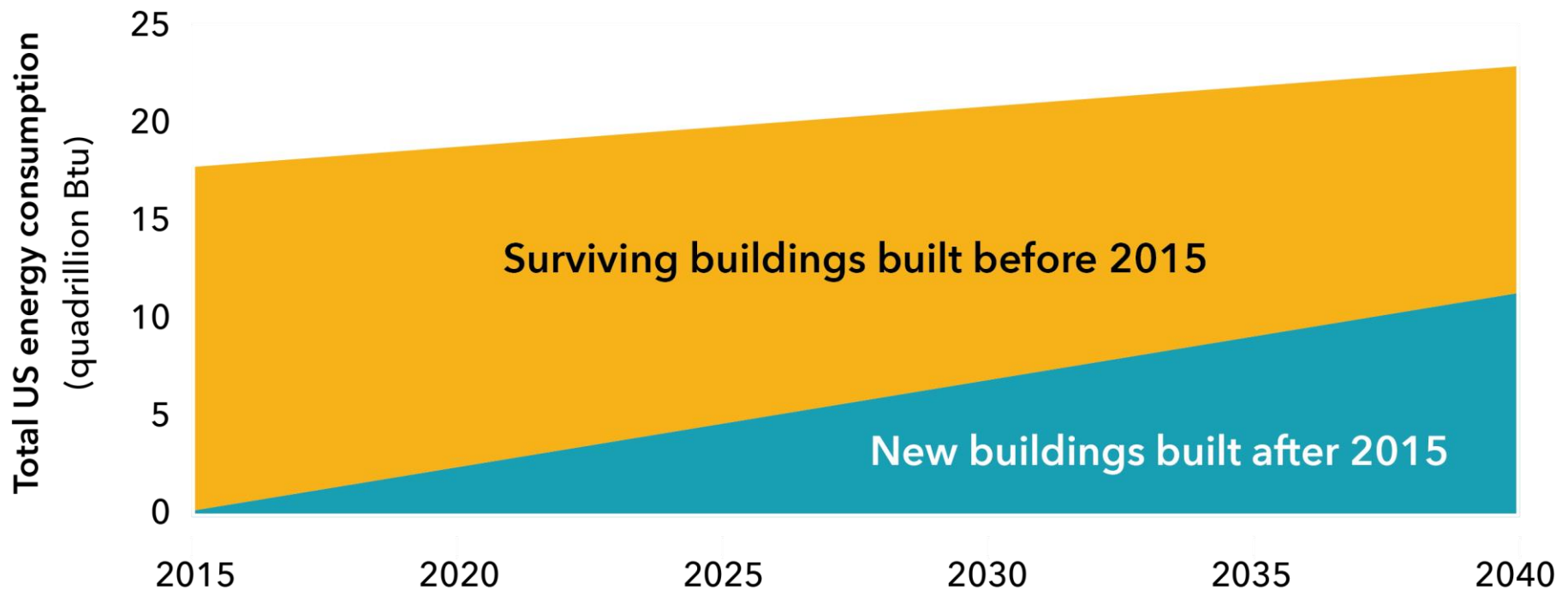
- Maximum energy target of 35 kBtu/gsf annually; lower is preferred
- Passive design strategies (i.e. daylighting, passive solar heating, etc.)
- Low recycled air content
- Strong HVAC response to quickly changing occupancy (limit precooling with air)
- Usable daylight in all occupied spaces
- Exceed LEED NC version 4, Silver Certification

IF POSSIBLE

- Living Building full certification
- Net Zero Energy Design

Purpose and Objectives

Target Market and Audience: New Construction



Purpose and Objectives

Target Market and Audience: Utilities



Top motivations:

- New codes erode program savings
- Portfolio savings goals are increasing
- Support deep energy saving projects
- Prepare programs for outcome based codes
- Directly support owners (customer service)
- Develop an industry leading program

Purpose and Objectives

Impact of Project:

- New utility program offerings
- Incentives that pay based on actual building performance
- Standardized contract language with energy performance requirements
- Bridge to impact existing building projects
- Self-sustaining utility offerings to scale beyond 100 buildings

- Year 1 – utility program structure that will engage 5 pilot projects
- Year 2 – official utility program launch
- Year 3 – map to additional utilities and portfolio building owners

- Energy impact – 250k-500k MMBtu savings beyond standard practice

Approach

Two parallel paths:



UTILITIES

Primary – utility incentive programs; embed in existing offering

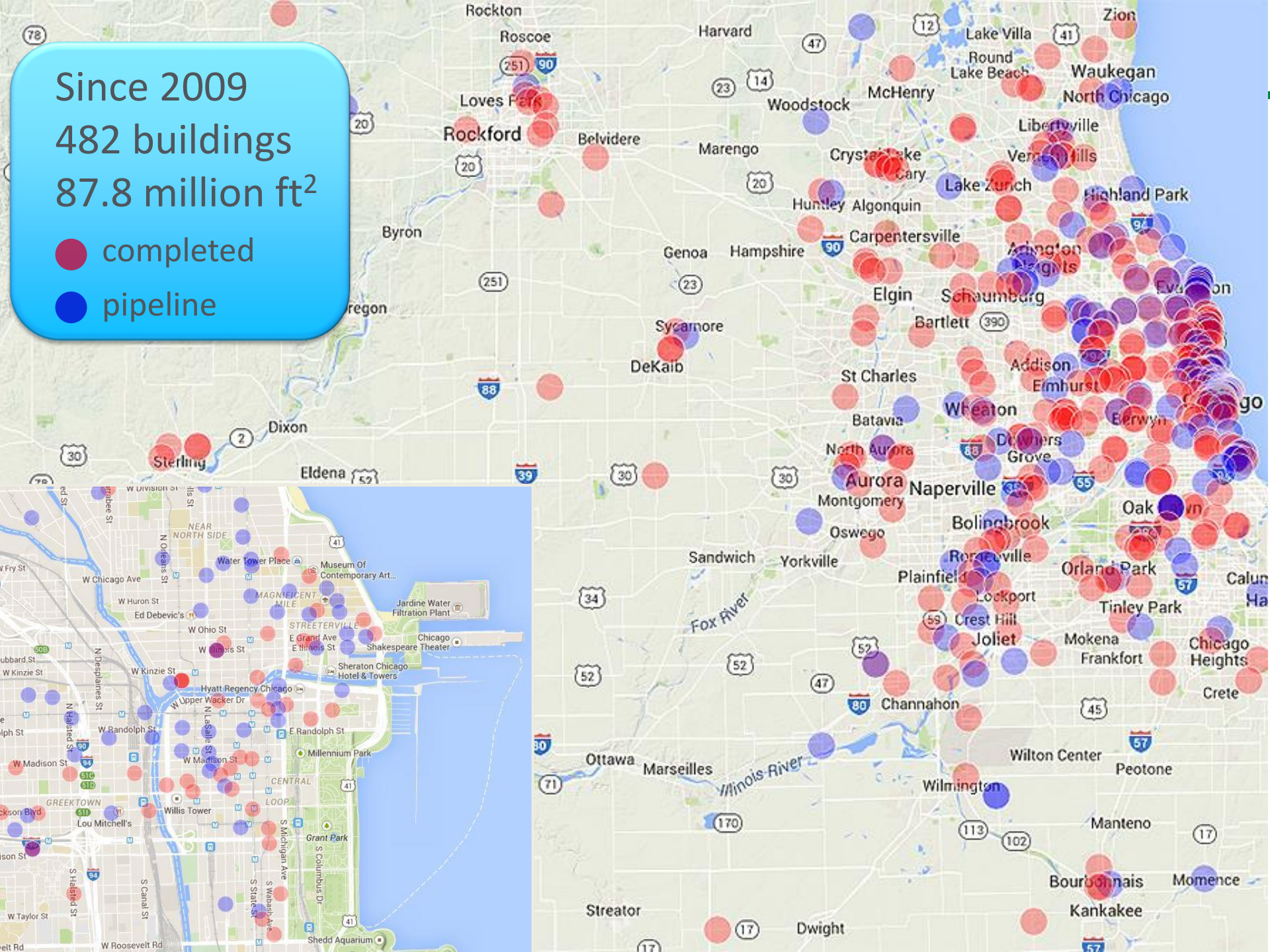


PORTFOLIO
BUILDING
OWNERS

Secondary – portfolio owners

Since 2009
482 buildings
87.8 million ft²

- completed
- pipeline



Approach - Utilities

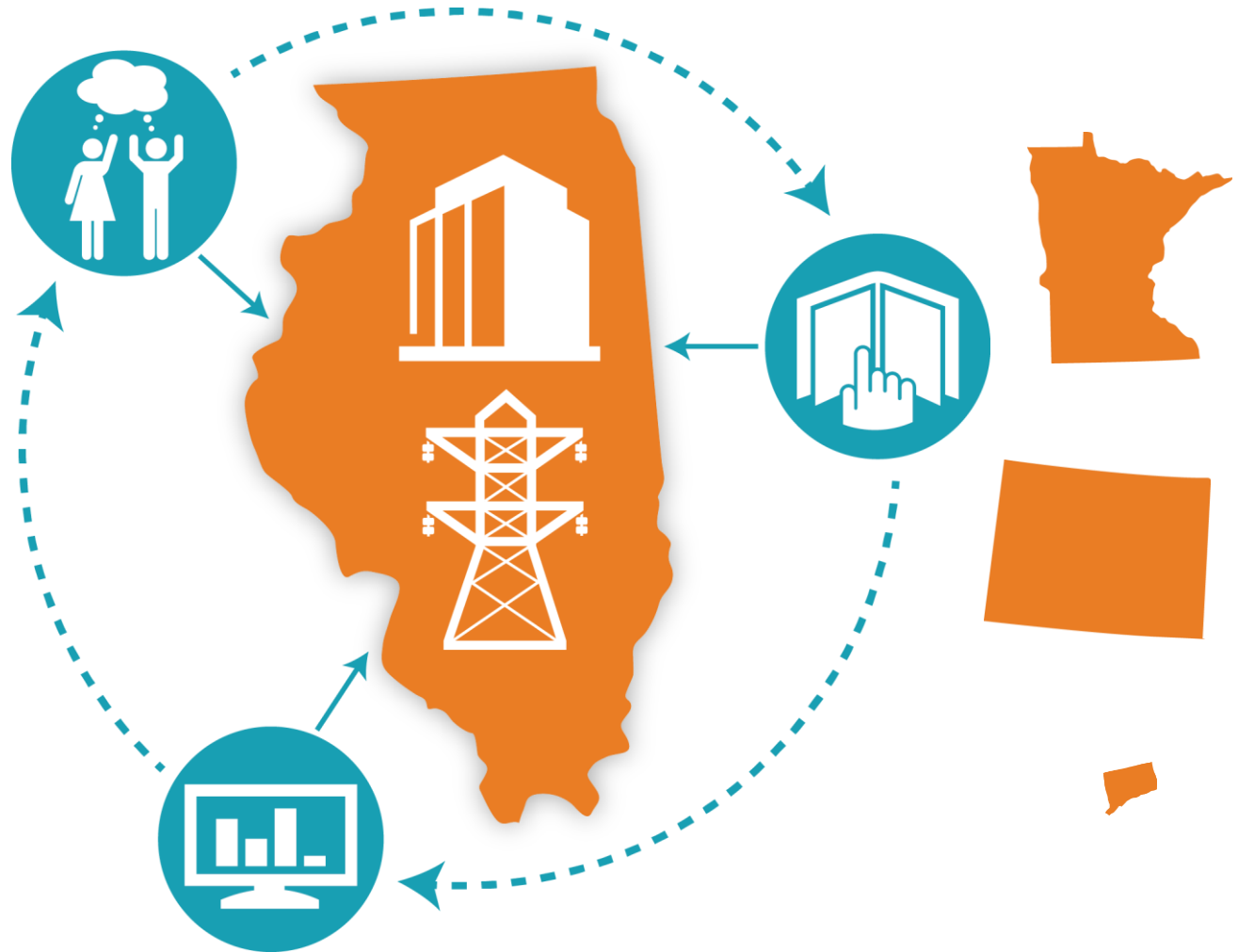
Utility programs
engage owners

Introduce
performance based
procurement

Create energy
requirement and
RFP language

Facilitate process
integration

Establish M&V to
substantiate



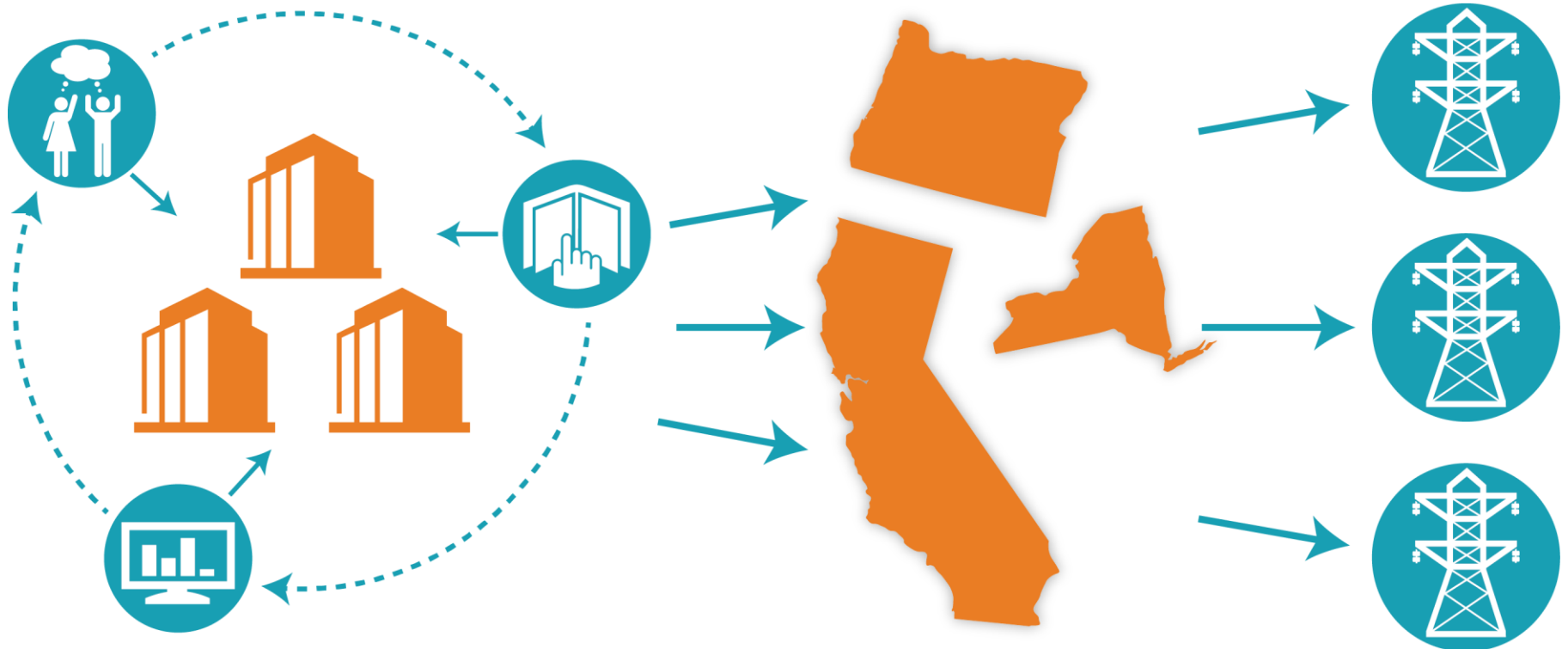
Approach – Portfolio building owners

Adopt new approach via utility program engagement

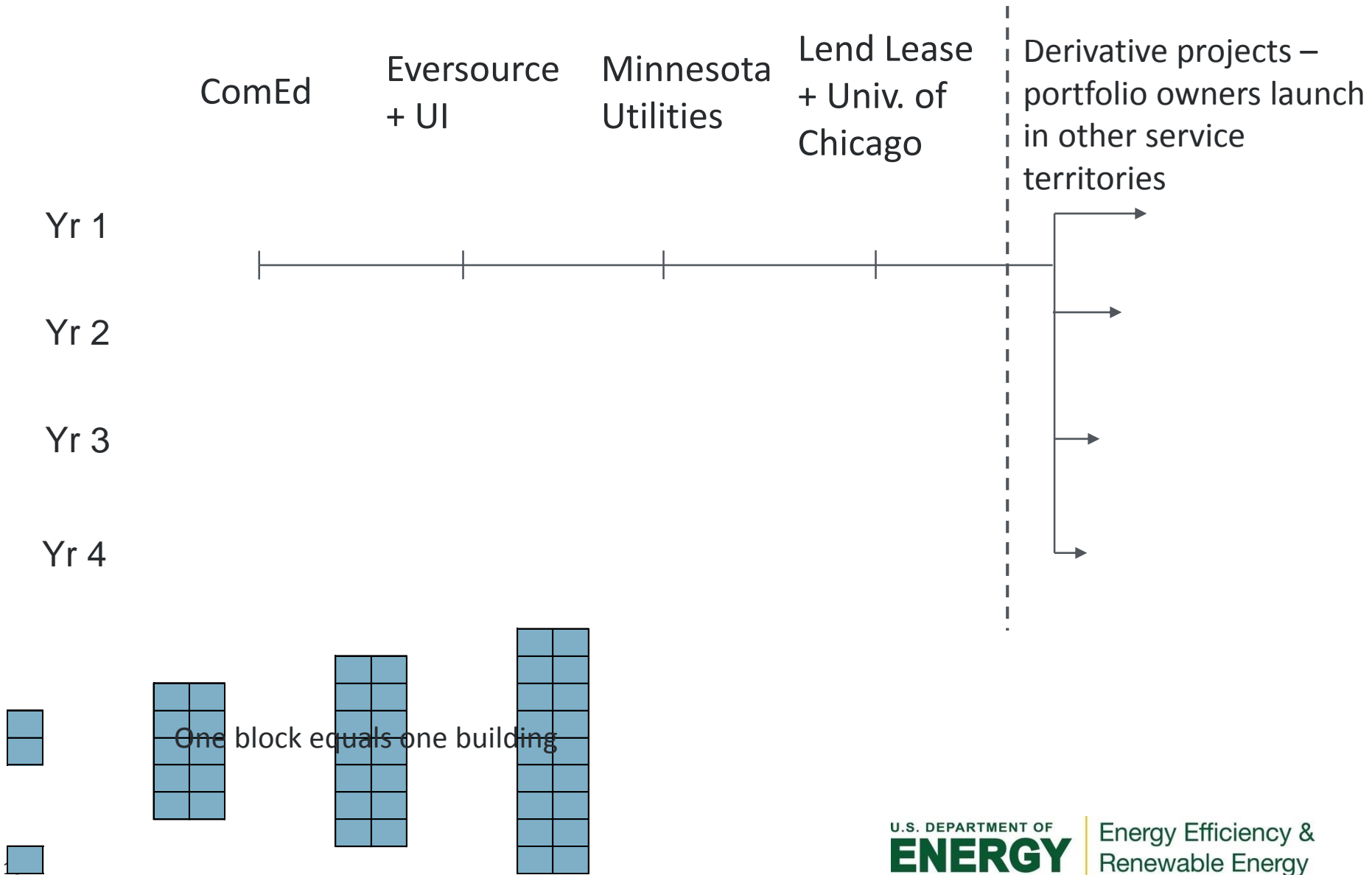
Make standard practice

Scale to their projects in other states

Engage utility programs in those states



Approach – Achieve scale



Approach

Key Issues:

Utilities – risk averse

Owners – risk averse

Approach

Distinctive Characteristics:

Utilities

- Unique scaling mechanism
- Brings cash incentives and technical assistance
- Motivated to meet program goals

Portfolio owners

- Whole building impact
- Engage key decision makers
- **Process based, not technology based**

Performance based procurement itself

- Competitively procure efficiency, avoid premiums
- Measure success
- Owner and practitioner education loop

Progress and Accomplishments

ComEd

- Pilot offering approved July 2015
- Test enhanced new construction program track

Connecticut Energy Efficiency Board

- Pilot approved in three year plan filing
- Test enhanced new construction offering

Minnesota Department of Commerce

- Two-year grant to test pilot offering
- Coordination with Xcel Energy

Progress and Accomplishments



In pursuit:

Illinois—Seventhwave

- **University of Chicago**
- **Lend Lease**
- **WBS Equity**
- Gerding Edlen
- John Buck Co.
- Advocate Healthcare
- Northwestern University

Connecticut—Institute for Sustainable Energy/NREL

- **University of Connecticut**
- State procurement office

Minnesota—Center for Sustainable Building Research

- **University of Minnesota**
- **Minnesota Metro Transit**

Colorado—NREL

Progress and Accomplishments

PERFORMANCE BASED PROCUREMENT:

Saving \$ in new construction while meeting aggressive energy and climate goals

PRESENTATION TO UCONN
JANUARY 12th, 2016



Photos courtesy of University of Chicago



At Eastern Connecticut
State University



Progress and Accomplishments

Market Impact:

- Targeting a 15-30% improvement versus average (30-50% better than code)
- Contract includes energy performance requirement
- Measured savings versus modeled savings
- Utility incentive based on actual performance

Lessons Learned: Testimonials

- Key opportunities
- Key barriers

Project Integration and Collaboration

Project Integration:

- AIA
- AIA Chicago COTE
- American College & University Presidents' Climate Commitment
- Association for the Advancement of Sustainability in Higher Ed
- City Energy Project
- Energy Foundation
- Joyce Foundation
- Illinois Clean Energy Community Foundation
- New Buildings Institute
- USGBC
- USGBC IL



seventhwave | **ACCELERATE PERFORMANCE**

OWNER WORKSHOP | DECEMBER 10, 2015


KEY OBJECTIVES

- Learn why performance-based procurement is an industry leading approach
- Build community with other owners facing similar challenges
- Identify tangible strategies to apply on future projects

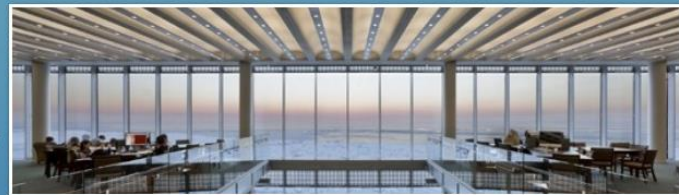
ADDRESS

Joyce Foundation, 321 N. Clark Street, Suite 1500, Chicago, IL 60654

PLEASE NOTE: Plan to arrive at least 15 minutes early. Upon arrival, please check in at the front desk with security. You will be given a pass to access the Joyce Foundation office on the 15th floor. Proceed to the 15th floor and join us in the Board Room.



Illinois Clean Energy
community foundation



Home About the Foundation **Program Areas** How to Apply Project Highlights FAQ Contact Us

Home > Program Areas > Energy Efficiency > Net Zero Energy Building Program [email page](#) [print page](#)

Net Zero Energy Building Program

Program Overview

The Illinois Clean Energy Community Foundation will launch a **Net Zero Energy Building Program** later in 2016. Full program details will be available on this website by June. Under the **Net Zero Energy Building Program**, the Foundation will award grants to support new construction as well as retrofit projects that achieve site net zero energy performance over the course of a year, meaning they are able to offset all of their energy consumption with on-site generation from renewable resources. Incentive payments will be linked to actual building performance.

Program Areas

- Energy Efficiency
 - Net Zero Energy Building Program
 - Water Energy Efficiency Program
- Renewable Energy

Project Integration and Collaboration

Partners, Subcontractors, and Collaborators:

Illinois—Seventhwave

- ComEd
- University of Chicago
- Lend Lease

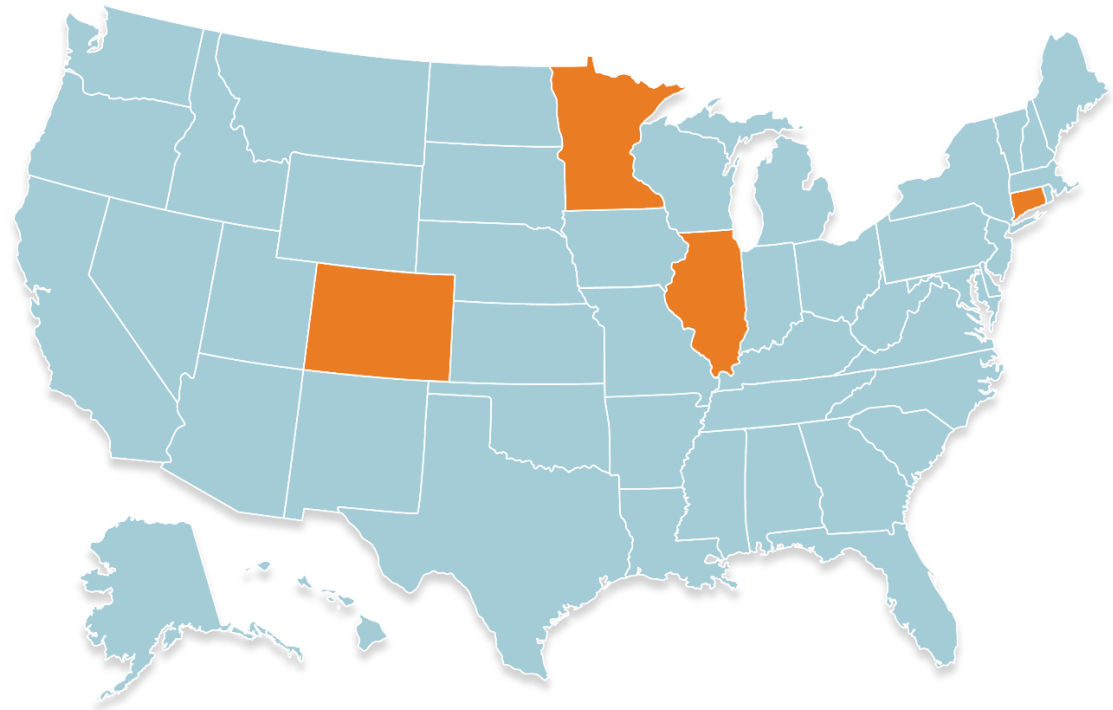
Connecticut—Institute for Sustainable Energy/NREL

- Eversource
- United Illuminating

Minnesota—Center for Sustainable Building Research

- Xcel Energy



Colorado—NREL



Project Integration and Collaboration


Communications—recent/upcoming events:

- Chicago Developers Circle
- Chicago Higher Ed Network
- AIA Chicago Committee on the Environment
- Xcel/Minneapolis Owner Roundtable
- Stamford, CT 2030 WebEx
- AASHE/ACUPCC webinar
- ACEEE Summer Study
- AASHE Annual Conference
- NBI/ComEd Zero Energy Summit
- Energy Trust of Oregon WebEx
- NYSERDA New Construction WebEx





Development Leadership Circle
Spring Meeting — by invitation only

An interactive discussion with Seventhwave regarding the Department of Energy's Accelerate Performance program and an introduction to Gerding Edlen's focus on people, planet and prosperity. Hosted by Gerding Edlen at its newest project —

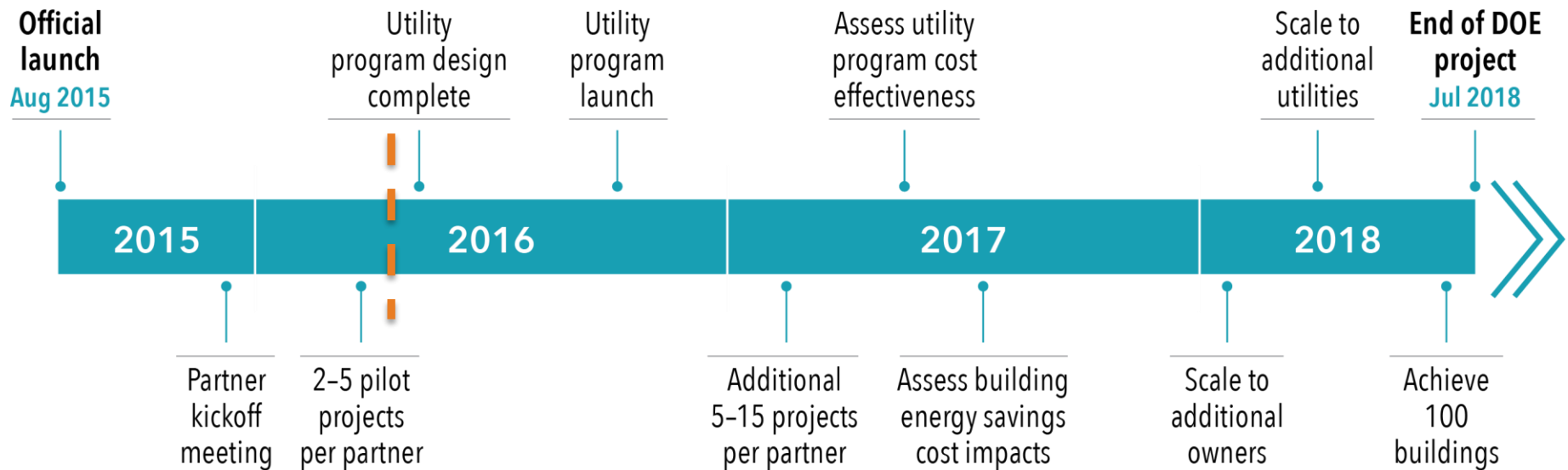

XAVIER

625 W. Division Street, Chicago
Thursday, March 24, 2016— 4:00-5:30 PM
USGBC-Illinois tour and reception to follow


GERDINGEDLEN
PEOPLE-PLANET-PROSPERITY


seventhwave

Next Steps and Future Plans



REFERENCE SLIDES

Project Budget

Project Budget: See below

Variances: None

Cost to Date: \$93,923 - 11%

Additional Funding: Several partners are contributing funding that is included in cost share below

Budget History

August 1, 2015– FY 2015 (past)		FY 2016 (current)		FY 2017 – July 31, 2018 (planned)	
DOE	Cost-share	DOE	Cost-share	DOE	Cost-share
\$83,832	\$64,015	\$355,751	\$469,952	\$384,945	\$478,385

Project Plan and Schedule

