

America Saves! Energizing Main Street Small Businesses

2014 Building Technologies Office Peer Review



U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy

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Project Summary

Timeline:

Start date: 10/1/2013

Planned end date: 9/30/2016

Key Milestones

1. Collect building attribute and utility energy data for 1,000 sites (9/30/14)
2. Engage at least one utility in a demonstration of engagement and retrofit analysis (9/30/14)

Budget:

Total DOE \$ to date: \$196,198

Total future DOE \$: \$1.803m

Cost Share: \$2m

Target Market/Audience:

Small business customers in Main Street communities and older urban commercial cores.

Key Partners:

National Main Street Center
Building Energy
Energy Center of Wisconsin
NREL
Lend Lease

Project Goals:

- Demonstrate a community-based approach to business engagement that enhances small-business participation in energy retrofit programs.
- Evaluate technology-based tools to reduce cost and technical barriers to retrofit delivery in small businesses.

Purpose and Objectives



America Saves!

Energy Efficiency on Main Street

- Demonstrate a community-based approach to business engagement that enhances small-business participation in energy retrofit programs.
- Evaluate technology-based tools to reduce cost and technical barriers to retrofit delivery in small businesses.

Purpose and Objectives

Problem Statement: Small businesses and small commercial buildings are underserved in the energy efficiency marketplace. Cost-effective delivery mechanisms are needed that leverage technical resources to provide no- and low-hassle solutions.

Target Market and Audience: Small businesses and owners of small buildings represent the great majority of commercial properties in the US. This project targets 7 use types that represent more than 2TBtu of annual energy consumption. The audiences are owners and energy utilities that seek cost-effective ways to realize energy efficiency.



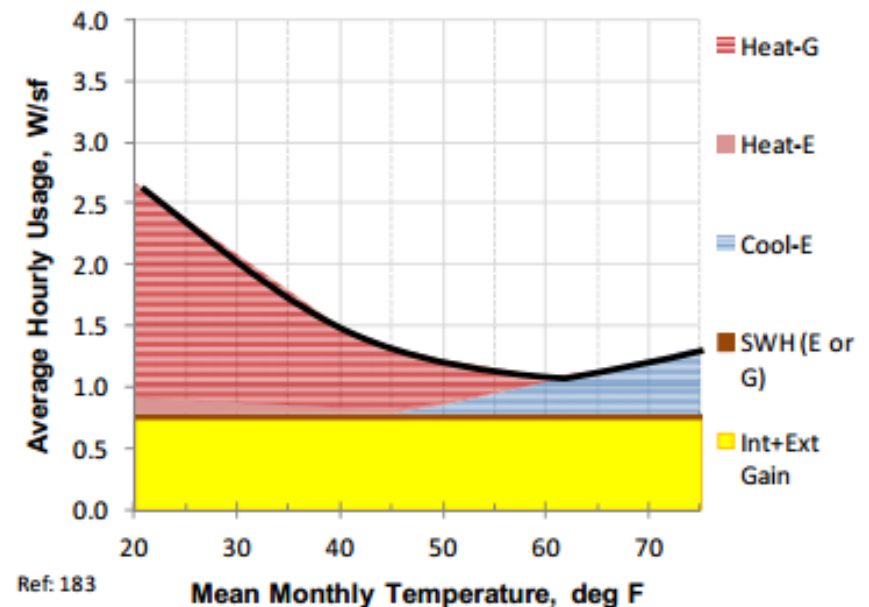
Purpose and Objectives

Impact of Project: Aligning small businesses and utilities through large-scale data acquisition, cost-effective building analytics, and community-based retrofit delivery, this project is intended to create a model for retrofit implementation in millions of small businesses nationwide. :

1. Output: Collect and analyze building-specific energy consumption data from at least 5,000 small commercial buildings and businesses located in traditional business districts across at least five climate zones
2. Metrics – Impact Path:
 - a. Award Period: 5,000 businesses analyzed to target average 20% EE improvement
 - b. Intermediate (3-6 yrs): Regional pilot projects, conducted with the financial support of local utility partners, stimulate \$50 million in energy conservation investments and save approximately 500 Billion Btu of site energy annually
 - c. Long-term (6+ yrs): Millions of small businesses save up to \$30 billion per year in energy

Approach

- Test national data standards that enable automatic collection of energy data from thousands of small commercial buildings;
- Evaluate low-cost applications that can assess the energy savings potential of numerous small commercial buildings within a traditional business district;
- Identify and promote national best practices in existing utility-supported retrofit programs that currently focus on small buildings and businesses;
- Deploy, test, and validate scalable, low-cost assessment and management tools for local program partners in regional pilot projects to achieve average energy savings in small commercial buildings of 20% or more.



Approach

Key Issues:

- Technical and financial barriers for small businesses to adopt energy efficiency
- Lack of cost-effective approaches for utilities to deliver EE to small businesses

Distinctive Characteristics:

- Create energy conservation relationships throughout the National Main Street Center's network – focus on district (aggregation) approach
- Drive down the cost of measuring energy savings through innovative technologies



Progress and Accomplishments

Lessons Learned (Barriers):

- Automated data acquisition from utilities, using existing national standards such as Green Button, is a greater challenge than anticipated

Why?

- **No perceived value in automated data for 3rd parties**
- **High cost of automated data provision**

Accomplishments:

- Engagement of utilities for data acquisition demonstration
 - ComEd; Alliant; SCL; PSE; SMEU
 - Why? Cost-effective service delivery to small businesses
- Survey of national best practices in SBSP retrofit delivery (in process)
- Engagement of diverse organizations to test data acquisition and retrofit analysis
- Prototyping of data acquisition platform that leverages volunteers and serves small business community
- In-process collection of data for >650 sites to test remote analytics

Progress and Accomplishments

Market Impact:

- Focus groups with 5 utility service providers
- Collaboration with NMSC for engagement of entire Main Street network (>1,200 communities)
- Direct engagement with CBOs/CDCs to test SBSP engagement models



Project Integration and Collaboration



National Trust *for* Historic Preservation

Preservation Green Lab



National Main Street Center

a subsidiary of the
National Trust *for* Historic Preservation



BUILDING ENERGY™



Lend Lease

Project Integration and Collaboration

Project Integration:

- *Marketing & Outreach:* NTHP web development and marketing/branding
- *Community Engagement:* NMSC & ECW outreach and focus groups identifying best practices for small business customers
- *Utility Engagement:* ECW & NTHP developing pilot programs for data collection and community engagement
- *Data Collection & Analysis:* NREL, BE & EnergyRM developing data platform and analysis protocol

Communications to Date:

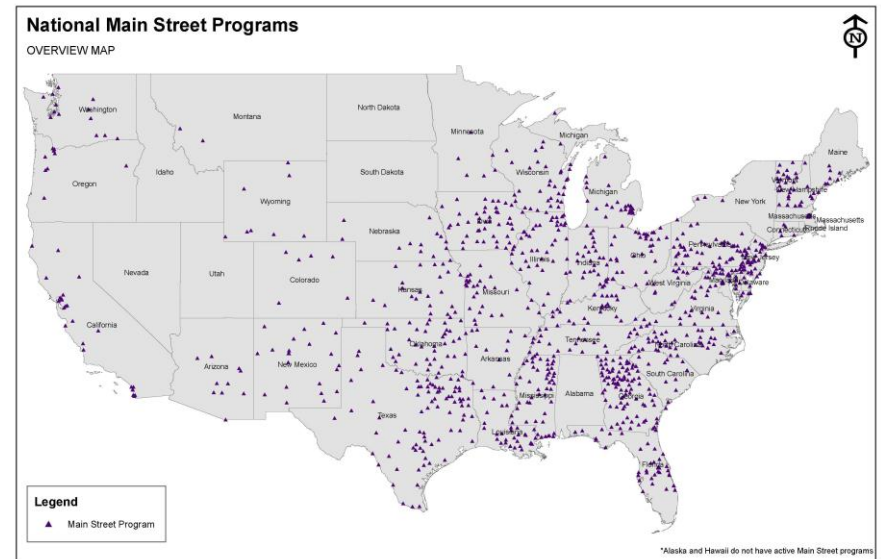
- National Main Street Conference
- EcoDistricts Summit
- USGBC GreenBuild
- National Preservation Conference



Next Steps and Future Plans

Next Steps and Future Plans:

- Data-acquisition and utility engagement pilots in 3-4 regions: Illinois/Wisconsin; Iowa; Texas; Washington State
 - Data platform development will enable large-scale data collection and refinement of data protocols and tools
- Utility partnerships will enable automated data acquisition and testing of community-scale EE analysis and delivery in diverse contexts
- Partnerships with Main Streets, CDCs (Community Development Corporations), and CBOs will test different engagement models for small business customers



Next Steps and Future Plans

Next Steps and Future Plans:

Potential expansion areas:

- Automated utility data acquisition is essential to the project model – Green Button or other model should be accelerated to enable market access and demonstrate costs/benefits to utilities



REFERENCE SLIDES

Project Budget

Project Budget: see below

Variations:

- Actuals-to-date less than budget due to delays in execution of contracts and program design – anticipated to be on schedule by Project Q4
- Contractual: Revision of NMSC SOW – NTHP to administer \$250,000 grant funds
- Contractual: New contract and software license awarded to Building Energy for previously TBD SOW

Cost to Date: \$279,433.16

Additional Funding: Foundation funding (cost share): \$346,700

Budget History

FY2014 – start 10/1/13 (current)		FY2015 (planned)		FY2016 – end 9/30/16 (planned)	
DOE	Cost-share	DOE	Cost-share	DOE	Cost-share
\$981,273	\$1,151,465	\$297,634	\$476,462	\$321,093	\$372,073

Project Plan and Schedule

Project Start: 10/1/2013

Project End: 9/30/2016

Year 1

- Automate Data Collection
- Engage Main Streets
- Establish Utility Pilot Location(s)
- Measure Baseline Energy Use

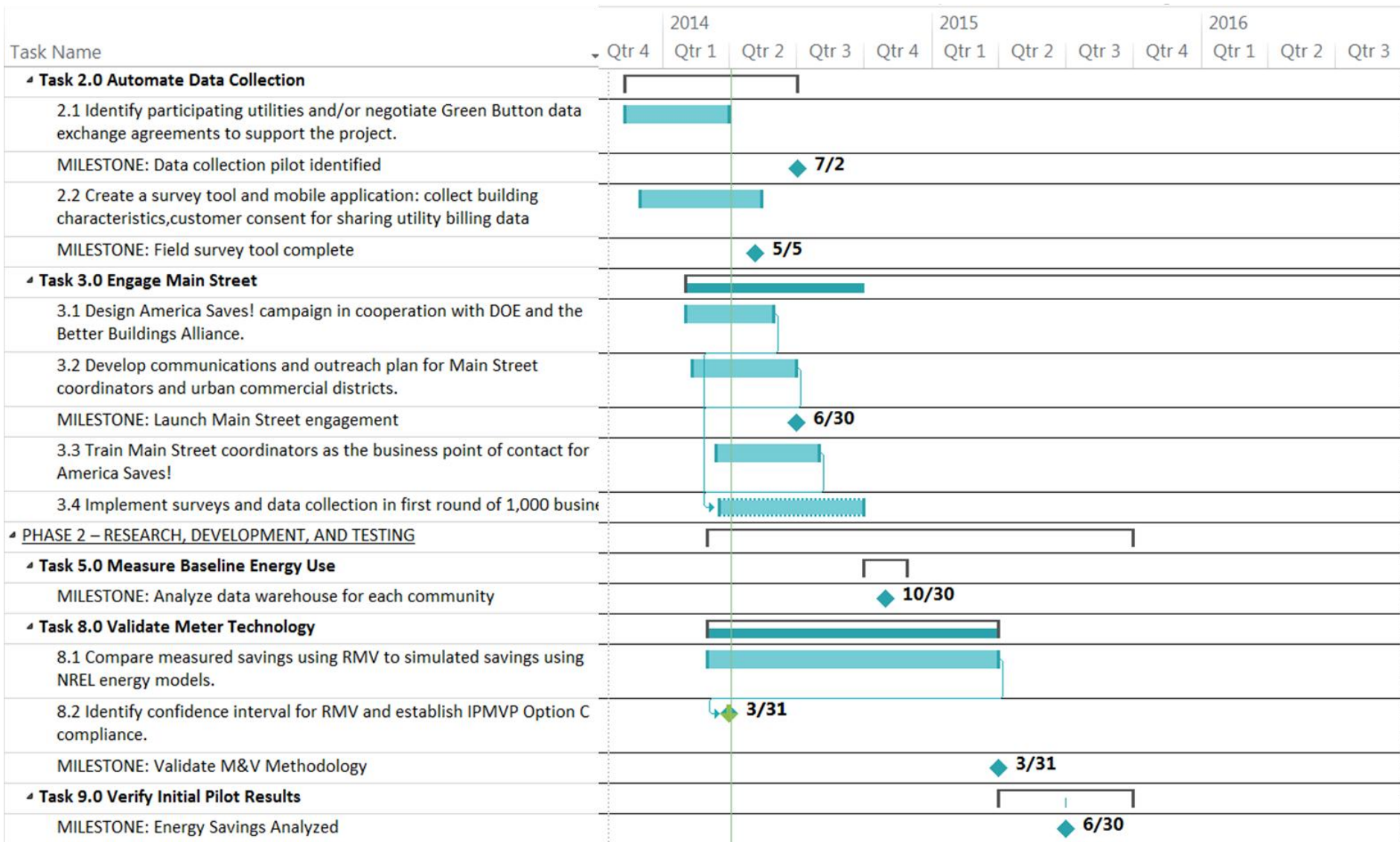
Year 2

- Target Energy Saving Packages
- Evaluate Potential Savings
- Validate Technology
- Verify Utility Pilot Results

Year 3

- Expand Utility Pilot Program
- Verify Overall Program Results

Project Plan and Schedule



Project Plan and Schedule

Go/No-Go Decision Points

Task Name
<u>PHASE 1 GO/NO-GO DECISION:</u>
The project has made significant progress towards the following Phase 1 goals:
1. The project has implemented an information system to collect, store and analyze energy data from small commercial buildings, including customer consent, building characteristics, and utility billing data.
2. The project has collected data from at least 1000 sites in one climate zone, and is making progress towards the goal of 5000 sites in at least five climate zones.
3. At least one utility program that has committed incentives to a district-based energy conservation program and has agreed to pilot data collection and analysis in small commercial buildings in the district.

Task Name
<u>PHASE 2 GO/NO-GO DECISION:</u>
The project has made significant progress towards the following Phase 2 goals:
1. The project has established baseline energy performance of at least 1000 sites including at least three target types of small commercial buildings.
2. Using the data warehouse, the project has determined strategies for cost effective energy savings in at least three target types of small commercial buildings.
3. The project has quantified the potential energy savings of each surveyed building in at least one participating commercial district.
4. The project has tested at least one RMV product to validate the applicability of the approach within at least one building type.