

Energy Efficient Building Appraisals

2017 Building Technologies Office Peer Review



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[Home](#) » Appraisal Related Resources for High Performance and Energy Efficient Commercial Buildings

Appraisal Related Resources for High Performance and Energy Efficient Commercial Buildings

For Appraisers, Investors, Owners and Other Users of Commercial Appraisal Services

Historically, there has been a disconnect in commercial real estate between building developers, owners, and investors when attempting to identify the best method of analyzing an investment in energy efficient, green building, or high performance building features. This challenge is often reflected in the appraisal process for commercial real estate, where a lack of information exchange between the involved parties can lead to missed opportunities and valuations that do not effectively incorporate the costs and benefits of energy efficiency. To address this challenge, DOE developed a working group that included The Appraisal Foundation, Appraisal Institute, appraisal professionals with experience in green and high performance buildings, lenders, and commercial real estate sustainability leaders.



Commercial appraisers can play a critical role by appropriately valuing energy performance and high performance building features in the appraisal process and providing accurate information for real estate investors seeking to increase value through energy efficient strategies. The resources below were reviewed and selected by the working group participants, and are designed to help simplify information gathering processes, provide industry background and context for owners, lenders, and appraisers, and link to key training opportunities that will assist appraisers in gathering the data and developing the skills needed to competently appraise high performance commercial buildings and building attributes.



[Guidance on High Performance Buildings and Energy Efficiency](#)

[MORE](#)

U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy

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Project Summary

Timeline:

Start date: October 2014

Planned end date: September 2017

Key Milestones

Training:

1. Develop course material and apply for CEUs; September 2015
2. Two in-person pilot courses; November 2015 & June 2016
3. Application for IDECC certification; expected March 2017

Market Intervention Strategy:

1. Strategic Plan for Market Interventions; September 2015
2. Convene Working Group; March 2016
3. Program resources and Appraisal Toolkit; August 2016

Project Outcome:

Support the Commercial Buildings Integration (CBI) Program (BTO MYPP Section 4.0) to improve recognition of the full value of energy efficiency by all market actors, and for energy efficiency to be appropriately considered in real estate transactions by:

- Developing and deploying education and training materials for appraisers
- Creating a strategy for market interventions in this industry
- Engaging stakeholders to identify pain points in the appraisal process
- Developing supporting resources and messaging for owners, lenders, and appraisers to increase transfer of energy-related information

Budget:

Total Project \$ to Date:

- DOE: \$210,010
- Cost Share: \$0

Total Project \$:

- DOE: \$298,829
- Cost Share: \$0

Commercial Underwriting Process



- **Origination**

Borrower input and pro forma to establish net operating income and building price

- **Appraisal**

Determine Building Value

- **Underwriting**

Assess loan to value, debt service coverage, and operating expense ratios

- **Property Condition Assessment**

Physical inspection to confirm asset quality and identify potential concerns or recommendations for improvement

- **Funding Decision**

Assess loan to value, debt service coverage, and operating expense ratios

The Appraisal Process



Purpose and Objectives

Target Market and Audience:

- Commercial buildings account for approximately:
 - 18% of total U.S. energy consumption
 - 36% of U.S. electricity consumption
 - 18% of the nation's carbon dioxide emissions
- Commercial office buildings alone represent nearly 16 billion square feet of real estate.
- Appraisal industry by the numbers:
 - Appraisers in the U.S.: 60,000
 - Estimated commercial appraisers: 12,000
 - Annual reduction in total workforce: 3%
 - Appraisers over 50 years old: 62%
 - Appraisers who are sole proprietors: 62%
 - Appraisers not belonging to any professional association: 66%

Purpose and Objectives

Problem Statement:

Energy related equipment and energy performance are often not valued effectively during commercial real estate (CRE) appraisals and transactions due to:

- Regulatory and market changes that increase commoditization of appraisals
 - Little budget or reward for making “unusual” adjustments, even when warranted
 - Fragmented, aging, and increasingly skeptical appraisal workforce
- Poor communication of high-performance building features amongst owners, lenders, and appraisers
- Lack of relevant training and energy-related knowledge amongst appraisers

Project Objectives:

- Educate appraisers to understand how energy can affect the valuation process
- Provide appraisers with the tools needed to identify and quantify the value of high-performance buildings
- Drive demand for appraisals through communication, information exchange, and development of new tools and resources
- Encourage adoption of high-performance appraisal practices amongst leaders
- Engage lenders and other stakeholders to address barriers that prevent appropriate recognition of energy’s impact on property value.

Purpose and Objectives (cont'd)

Impact of Project:

- **Project Intent:** improve recognition of the full value of energy efficiency by all market actors, and for energy efficiency to be appropriately considered in CRE transactions
 - Anticipated Result: generate evidence that demonstrates the return on investment for additional investment in energy efficient, high-performance buildings
- **Near Term Goals:**
 - Develop and deploy a training course for appraisers to educate them on the treatment of energy factors in the three approaches to value
 - Convert the training format and conduct a synchronous online training pilot session
 - Engage stakeholders to identify pain points in the appraisal process and develop resources to mitigate these challenges
 - Develop a strategic plan for engaging additional stakeholders (e.g., lenders)
- **Intermediate & Long Term Goals:**
 - Establish a reputable and desirable training course that is offered regularly
 - Increase appraisers' knowledge of potential energy impacts on value
 - Inform appraisers of key data elements and increase the availability of relevant building energy and high-performance information
 - Collaborate with key stakeholders (e.g., Altus Group, banks) to increase treatment and exchange of energy information in their processes

Approach: Training Development and Pilots

Distinctive Characteristics:

- Targeting stakeholders with little prior involvement in energy efficiency
- Training developed by DOE and handed off to market partner
- Focus on secondary benefits of energy efficiency and non-technical market barriers



Approach: Training Development and Pilots

Training Development:

- Leveraged partnerships with appraisal industry and training experts, Earth Advantage and Sustainable Values, Inc., respectively
- Identified gaps in existing trainings,
- Emphasis on federal tools, incorporating outputs into the three approaches to value: Sales Comparison, Income Capitalization, Cost Evaluation

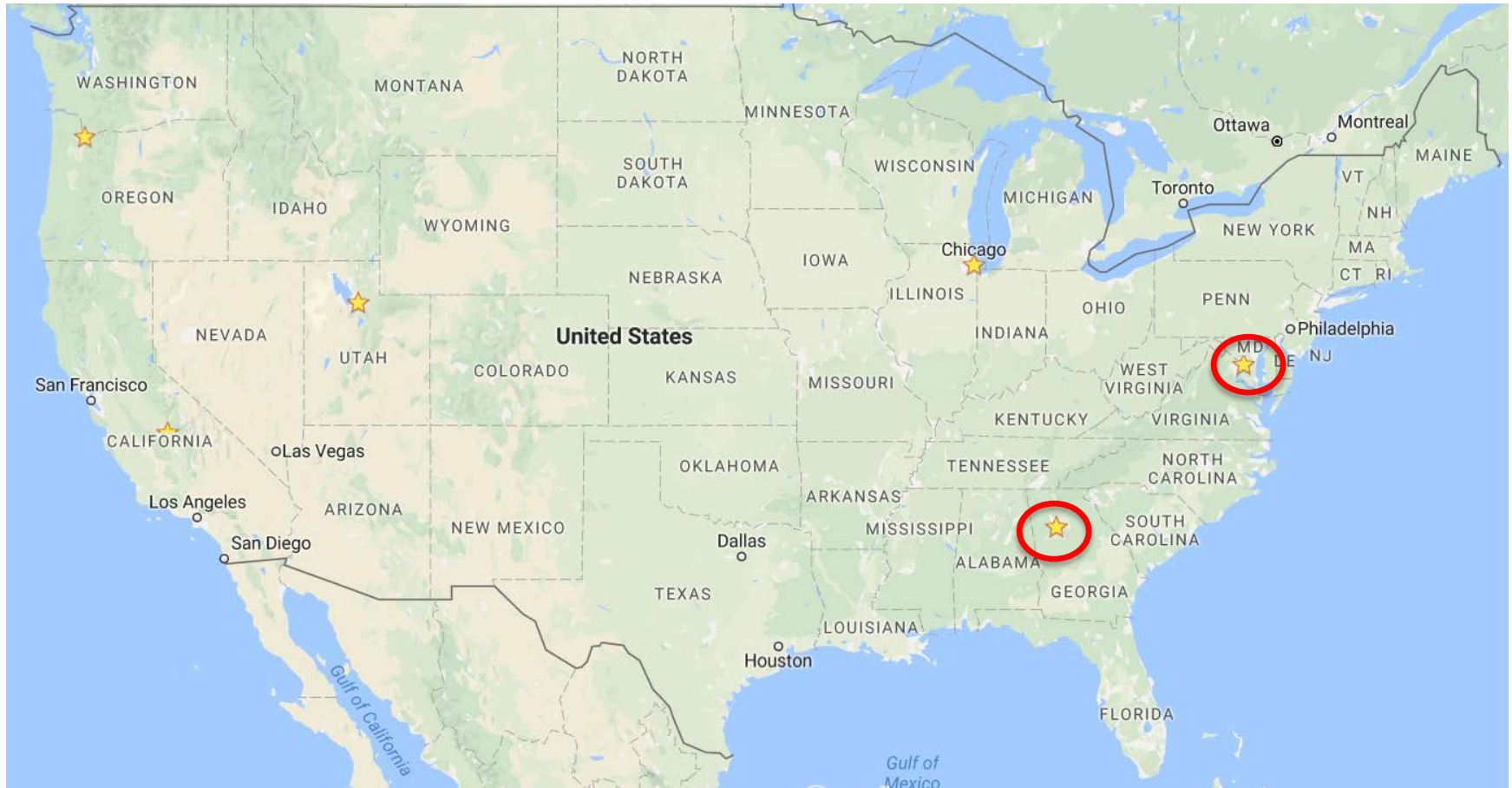
Training Pilots:

- Focused on appraiser-dense markets with industry connections and green buildings: Washington, DC & Atlanta, GA

Pivoting Online:

- Feedback from pilots and industry: online is easier, try to condense it
 - Applying for IDECC certification for shortened course

Approach: Training Development and Pilots



Progress and Accomplishments: Training

Accomplishments:

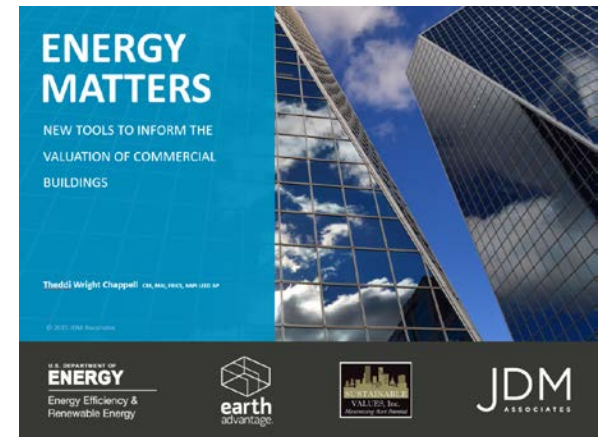
- Developed Energy Matters! training materials
- Conducted two in-person training pilots (Washington, DC & Atlanta, GA)
- Pivoted strategy converting Energy Matters! to synchronous online course

Market Impact:

- Industry leaders involved in training efforts
- Online pilot planned for key markets in 2017

Awards/Recognition:

- Work to be presented at BOMA International Conference



Project Integration and Collaboration: Training

Project Integration:

- Staff worked with key industry organizations during content development and course marketing and continue to leverage these networks to gain industry exposure

Partners, Subcontractors, and Collaborators:

- JDM Associates, a commercial real estate and program design expert, provided support to DOE.
- *Energy Matters!* course development relied heavily upon the expertise of Sustainable Values, Inc., and Earth Advantage will execute the course

Communications:

- Better Buildings Market Solutions Webinars; March 2016, January 2017
- Better Buildings Summit; May 2016
- ACEEE Summer Study; August 2016
- ACEEE Finance Forum; May 2017 (anticipated)
- BOMA International Conference; June 2017

Lessons Learned and Next Steps: Training

Lessons Learned

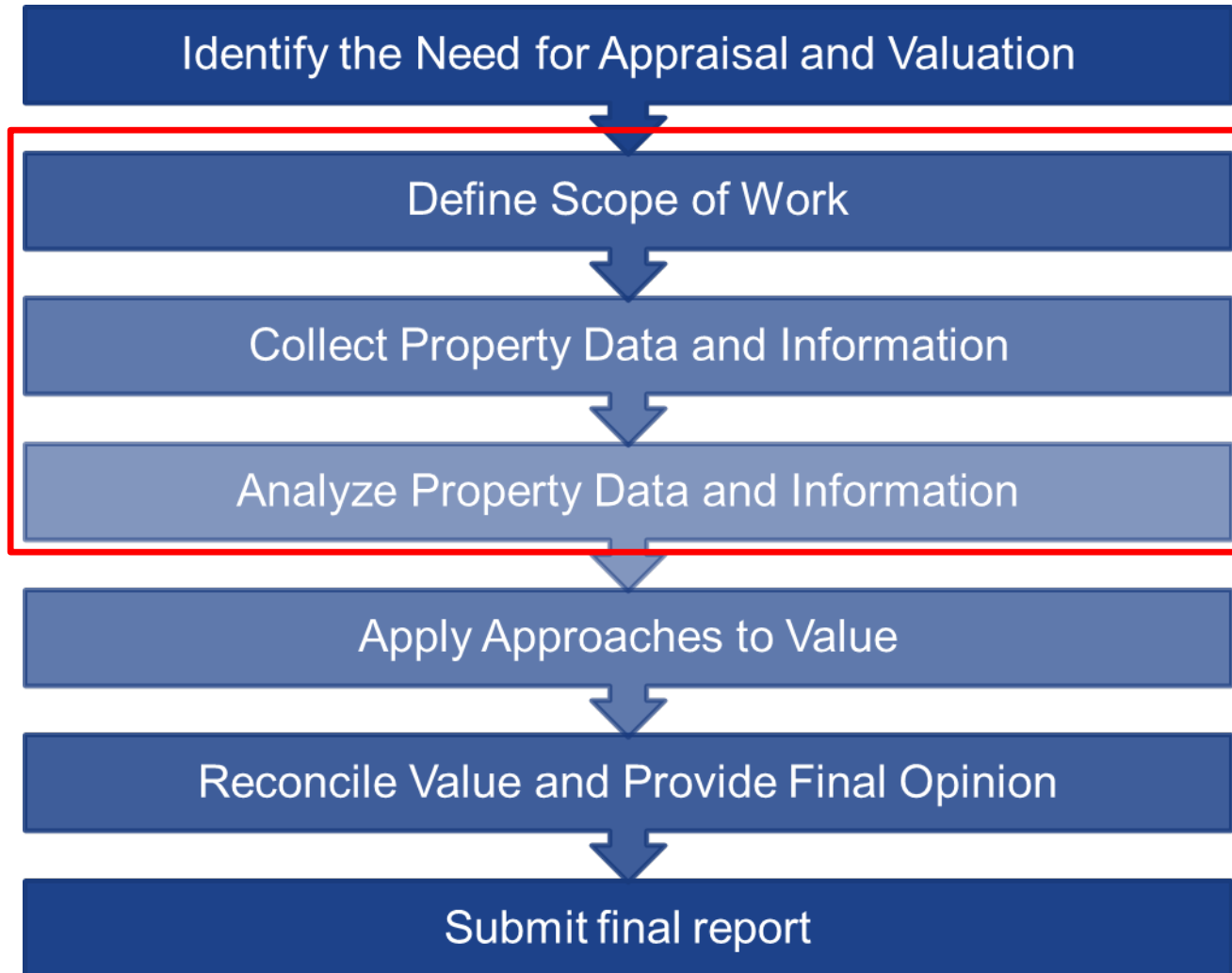
- Appraisers have minimal knowledge of energy factors, high-performance buildings, and the potential impacts on property value
- Market fragmentation is a significant hurdle to training adoption
- Education (either formal or informal) throughout the appraisal supply chain is critical
- Online training of 4 hours or less, is desired in the market

Next Steps and Future Plans

- Convert *Energy Matters!* to online format and achieve IDECC certification
- Conduct pilot of synchronous online training

Appraisal Working Group

The Appraisal Process



Approach: Working Group

Key Issues:

- Lender engagement has been minimal to date
 - Critical stakeholders that determine scope and impact of appraisal
 - Difficult to access decision-makers
- Commoditization, pricing, and time pressures
- Fragmented appraisal industry with hesitance to stray from status quo
 - 62% are sole proprietors
 - 66% do not belong to any professional association
- Appraisal management companies facilitate bidding process: limiting of communication between appraisers, lenders, and owners

Distinctive Characteristics:

- Targeting stakeholders with little prior involvement in energy efficiency
- Focus on secondary benefits of energy efficiency and non-technical market barriers

Key Partners: Working Group

Commercial Real Estate:

- CB Richard Ellis
- Colliers International
- Connecticut Green Bank
- Cushman & Wakefield
- Fannie Mae
- GRESB
- Home Innovation Research Labs
- Inspyrod
- Institute for Market Transformation (IMT)
- LaSalle Investment Management
- Lawrence Berkeley National Laboratory (LBL)
- MetLife
- PNC
- Security National Mortgage Company
- US EPA (ENERGY STAR)
- USGBC
- View Glass

Appraisal Industry:

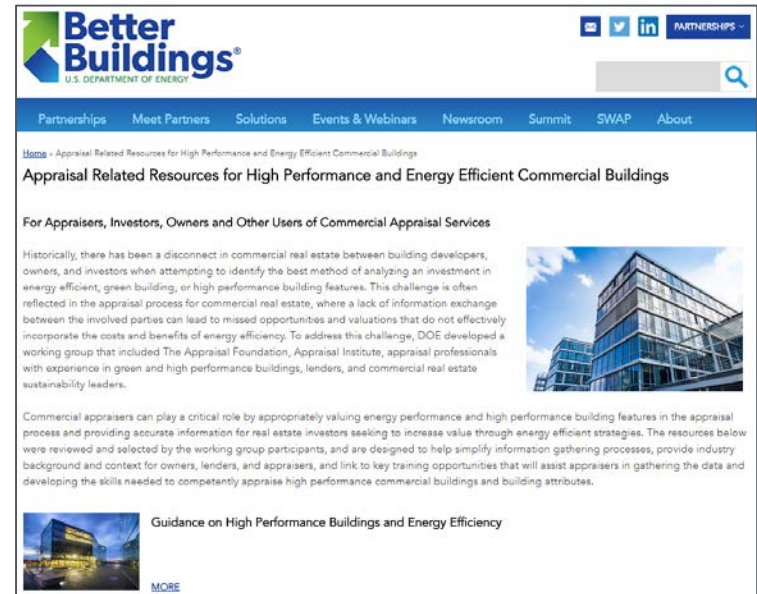
- Akerson & Wiley
- DeLacy Consulting
- Earth Advantage
- Runde & Partners, Inc.
- Sustainable Values, Inc.
- The Appraisal Foundation (TAF)
- The Appraisal Institute (AI)

Approach: Working Group

- **CRE Stakeholder Engagement:** leveraged Better Buildings Commercial Real Estate Steering Committee and other industry leaders
 - Discussed key pain points within the appraisal process
 - Identified and prioritized market intervention tactics and resource gaps
 - Reviewed new and existing resources for gaps and effectiveness
- **Resource Development:** analyzed existing resources, identified gaps, and emphasized granular instructions for appraisers and owners
- **Lender Engagement:**
 - Developed appraisal questions for the 2017 GRESB Debt Survey
 - Outreach to industry associations and pursuit of speaking engagements

Accomplishments: Working Group

- Generated specific, step-by-step [Guidance for Owners: Ordering Appraisals of High Performance and Energy Efficient Buildings](#)
- Developed detailed [Sample Scope of Work Language for Appraisers Valuing High Performance and Energy Efficient Buildings](#)
- Curated new and existing resources into an online [Appraisal Toolkit](#) for appraisers, owners, and others parties with tools, resources, and other information related to high-performance appraisals
- Developed appraisal questions for the 2017 [GRESB Debt Survey](#)



Progress and Accomplishments: Working Group

Market Impact:

- CRE leaders attempting to change SOW with Altus Group
- Industry leaders involved in, and contributing to engagement efforts



Recognition/Communications:

- Greenbuild; November 2015
- Better Buildings Market Solutions Webinars; March 2016, January 2017
- Better Buildings Summit; May 2016
- ACEEE Summer Study; August 2016
- ACEEE Finance Forum; May 2017
- BOMA International Conference; June 2017



Project Integration and Collaboration: Working Group

Project Integration:

- 25 industry experts from the Better Buildings CRE Steering Committee, leading CRE firms, industry organizations, and appraisal firms

Partners, Subcontractors, and Collaborators:

- JDM Associates, a commercial real estate and program design expert, provided support to DOE.
- Input from a working group of 25 industry experts from the Better Buildings CRE Steering Committee, leading CRE firms, industry organizations, and appraisal firms

Lessons Learned and Next Steps: Working Group

Lessons Learned

- Appraisers have minimal knowledge of energy factors, high-performance buildings, and the potential impacts on property value
- CRE owners and managers have, until recently, been unaware of their potential role in exchanging property information
- Lender engagement is a critical component to project success: lenders are the lynchpin, and they drive appraisal supply chain
- Education (either formal or informal) throughout the appraisal supply chain is critical

Next Steps and Future Plans

- Assist CRE leaders with high-performance appraisal pilots
- Draft additional appraisal questions for future GRESB Debt Surveys
- Obtain speaking engagements at key lender events
- Work with CRE leaders to engage Altus Group and lending community

REFERENCE SLIDES

Project Budget

Project Budget: Outline the project budget and history.

Variances: Pilots not done, reduced funding, pivot to online strategy = more funding

Cost to Date: Identify what portion of the project budget has been expended to date.

Additional Funding: Note, if any, other funding sources.

Budget History

| FY 2015 & FY 2016 (past) | | FY 2017 (current) | | FY 2018 – TBD (planned) | |
|-----------------------------|------------|----------------------|------------|----------------------------|------------|
| DOE | Cost-share | DOE | Cost-share | DOE | Cost-share |
| \$198,670 | \$0 | \$100,159 | \$0 | TBD | |

Project Plan and Schedule: Training

| Project Schedule | | | | | | | | | | | | |
|---|-----------------|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Project Start: FY 2015 | | Completed Work | | | | | | | | | | |
| Projected End: TBD | | Active Task (in progress work) | | | | | | | | | | |
| | ● | Milestone/Deliverable (Originally Planned) use for missed milestones | | | | | | | | | | |
| | | Milestone/Deliverable (Actual) use when met on time | | | | | | | | | | |
| | FY2015 | | | | FY2016 | | | | FY2017 | | | |
| Task | Q1 (Oct-Dec) | Q2 (Jan-Mar) | Q3 (Apr-Jun) | Q4 (Jul-Sep) | Q1 (Oct-Dec) | Q2 (Jan-Mar) | Q3 (Apr-Jun) | Q4 (Jul-Sep) | Q1 (Oct-Dec) | Q2 (Jan-Mar) | Q3 (Apr-Jun) | Q4 (Jul-Sep) |
| Past Work | | | | | | | | | | | | |
| Q1 Milestone: Identify training partners | | | | | | | | | | | | |
| Q2 Milestone: Draft course materials | | | | | | | | | | | | |
| Q3 Milestone: Apply for CEUs | | | | | | | | | | | | |
| Q4 Milestone: Training pilots | | | | | | | | | | | | |
| Q1 Milestone: Revise course material w/feedback | | | | | | | | | | | | |
| Q2 & Q3 Milestone: Additional training pilots | | | | | | | | | | | | |
| Q4 Milestone: Partner handoff | | | | | | | | | | | | |
| Current/Future Work | | | | | | | | | | | | |
| Q1 Milestone: Revise materials | | | | | | | | | | | | |
| Q2 Milestone: Apply for IDECC certification | | | | | | | | | | | | |
| Q3 Milestone: Conduct online training pilot | | | | | | | | | | | | |
| Q4 Milestone: Partner handoff | | | | | | | | | | | | |

Project Plan and Schedule: Working Group

| Project Schedule | | | | | | | | | |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Project Start: FY 2016 | | | | | | | | | |
| Projected End: TBD | | | | | | | | | |
| | | FY2016 | | | | FY2017 | | | |
| Task | Q4 (Jul-Sep) | Q1 (Oct-Dec) | Q2 (Jan-Mar) | Q3 (Apr-Jun) | Q4 (Jul-Sep) | Q1 (Oct-Dec) | Q2 (Jan-Mar) | Q3 (Apr-Jun) | Q4 (Jul-Sep) |
| Past Work | | | | | | | | | |
| Q4 Milestone: Strategic plan | | | | | | | | | |
| Q1 Milestone: Assemble working group | | | | | | | | | |
| Q2 Milestone: Convene working group | | | | | | | | | |
| Q3 Milestone: Develop and deliver resources | | | | | | | | | |
| Q4 Milestone: Strategy for lender engagement | | | | | | | | | |
| Current/Future Work | | | | | | | | | |
| Q2 Milestone: Develop GRESB questions | | | | | | | | | |
| Q3-Q4 Milestone: Conduct lender engagement | | | | | | | | | |

All Deliverables and milestones met on time.