***2019-21 EEB THREE YEAR EVALUATION BUDGET & PLAN – 2021 UPDATE***

***FINAL APPROVED PLAN***

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**Voted and adopted /approved by Evaluation Committee 1/27/21**

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**Organization of the Report**

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**CT EEB 2021 UPDATE TO THE 2019-21 EVALUATION PLAN & BUDGET**

# Summary / Abstract

The Evaluation Administrator Team (EA Team) is pleased to submit this 2021 Update to the recommended budget and list of Evaluation Projects for the 2019-21 Cycle. The requested evaluation budget is consistent with the total approved in the C&LM plan, and the projects were discussed with stakeholders in an open and collaborative manner, with multiple opportunities for input and feedback. The total budget requested for the Three-Year plan is $7.93 million+$68K transferred from the previous Three-Year Plan.[[1]](#footnote-1) Figure 1 presents the list of recommended projects for 2021.

### **Figure 1: 2021 Projects for 2019-2021 Evaluation Plan Update**



Later sections of this plan provide more descriptive information regarding these projects, including rationales and key deliverables (Figures 5-7), and project description notes (Appendix A). The list of projects not prioritized for funding are provided in Figure 8.

Figure 2 presents the summary of the budget totals for the Three-Year Plan. Note that the projects are consistent with the approved / adopted budget for the 2019-21 Three Year Plan.

### **Figure 2: 2019-2021 Evaluation Plan Budget Contracting by Year**



**Input from Stakeholders:** The process for identifying and selecting projects involved extensive input from the Evaluation Committee and stakeholders including utility staff, Technical Consultants, and the Evaluation Administrator Team. All contributed to the development of the project concept list participated in the discussions and identification of key outputs needed from the projects, and assessment of priorities for the concepts. The EA Team then aggregated the information and assigned budgets, and prepared tables for further review and discussion by stakeholders. This list is consistent with those discussions.

**Assign as Add-On Projects Vs. RFP’d Projects**: In a process begun in 2020, this year’s update assigns the largest number of new projects as “add-ons” to existing projects under contract in 2019 or 2020, and only a few to a full RFP process. This step was needed because of several very practical realities, particularly associated with being in the third year of a Three-Year Plan:

* Utility contracting times for one utility have become very long (extending 6-10 months over the last two years). If significant projects were issued via an RFP, the projects would not be able to start much before the end of the year, and would not be completed in time for use in the 2022 PSD / C&LM Plan work, and would be unlikely to be completed before the end of the 2019-2021 Evaluation Plan period.
* Most of the 2020 projects did not have UI contracts completed until November 30, 2020. Therefore, these projects are just underway. This has led to the unusual situation that these projects are in a phase that allows integration of new, related tasks or concepts into their project efforts without significant disruption.

Several smaller projects and one project expected to implement a Phase 2 in 2022, are slated for RFP. Although timing will be difficult, consulting firms that qualitied for the Three-Year Research Area Pools in 2019 were promised they would be eligible for responding to RFPs for each of the three years of the Evaluation Plan.

**Resolving the Contracting Issue in the Future**: To address this very significant and debilitating contracting timing problem in the future, the EA Team and the Evaluation Committee have modified the Roadmap to return to selecting designated Research Area Teams (each consisting of multiple evaluation firms) for each of three topics (residential, commercial, and cross-cutting). The teams will be selected via competitive RFP in Year 1 of the Three-Year Evaluation Plan, and retained for projects throughout the Three-Year Plan. This saves contracting time and effort at the utility procurement departments, allows for more timely Evaluations, allows greater flexibility in developing projects throughout the Three-Year Plan, and increases efficiencies as the firms become experienced in CT data, procedures, and expectations.

# Detailed Descriptions of Process, Context and Projects for 2021 Plan Update

## Background and Process

**Multi-Step, Multi-Contributor Process**: This 2021 update to the Three-Year Plan was developed through a multi-step process.

* Ideas were solicited from a broad list of stakeholders including members of the Evaluation Committee, EEB, Technical Consultants, and Evaluation Administrator Team.
* After several meetings with stakeholders to discuss the most important outcomes needed from the projects and factors affecting priorities[[2]](#footnote-2), the EA Team refined project descriptions, priorities, and budgets for further discussion with the Evaluation Committee and stakeholders.
* The results were circulated and further discussed with stakeholders. Overall, more than six meetings were held to discuss the project options between late November and mid-January. These meetings were attended by members of the Committee and various stakeholder groups to help make the project content as robust and useful as possible, and to clarify priorities. These discussions were key to the development of this Plan update.

**Project Timing and Workload Complications**: As mentioned, many of the projects contracted in 2019 only began spending significant funds at the very end of 2019, and the 2020 projects did not get contracted by UI until the end of November 2020. Of course, additional difficulties and delays were experienced as a consequence of COVID-19 and its restrictions on fieldwork and other types of disruptions in the marketplace.

A project “add-on” process, incorporating new tasks into already-contracted projects and contractors, was developed to improve the chances the work could begin quickly (without the long contracting delays) and allow more projects to complete in time for use in the 2021 C&LM Plan update and/or within the 2019-2021 timeframe. However, note that these issues have also led to a cascading increase of efforts required for the EA Team, as projects that were expected to complete in Year 1 or Year 2 have significant work shifted to Year 3. This leads to an unexpected increase in EA Team and Evaluation Committee review time in 2021 because more-than-expected numbers of projects will be working to be completed by the end of the Three-Year Plan. In addition, spending and contractor efforts have also become “backloaded” within the Three-Year Plan period. The significant delays in the 2019 and 2020 contracting processes have several specific consequences.

* This means spending in 2019 and 2020 were less than expected, and projects are behind the Three-Year Plan.
* It also means the workload for 2021 is expected to be much higher than expected.
* As a further result, we note it is very possible a number of projects may not be able to finish within the Three-Year Plan, providing less input than expected into the 2022 PSD and C&LM work, and evaluations that are less timely than originally planned.
* It also indicates a need to carry over projects, workload, and budgets into 2022.

As mentioned, revised contracting procedures are planned starting in 2022, reflected in the Roadmap, which is just completing its revision process. Also note that three projects are expected to be included in the RFP to be issued as soon as possible in 2021. The 2019 RFP[[3]](#footnote-3) process assembled a pool of qualified contractors. They were assured that becoming part of that pool made them eligible for RFPs to be issued each of the three years of the Plan. Note, however, that because of contracting issues (and the impending end of the Three-Year period) and because of COVID-19, most of the RFP-selected projects avoid primary data collection and are short-duration projects.

## The 2021 Projects in the Context of the Three-Year 2019-2021 Evaluation Plan

The remainder of the chapter discusses the 2021 projects and the overall disposition of projects and budgets in the overall 2019-2021 Plan, as implemented. Figure 3 identifies the distribution of projects by sector across the Three-Year Plan. The counts of projects increased a bit, incorporating the net of new project concepts (some of which became new projects, and others that were integrated into existing projects), and combination of other projects originally separated within the Adopted 2019-21 Plan. Note that two large C&I projects that were expected to be started in the 2019-2021 Plan were delayed to the next Plan period. The timing of the completion of a previous round of C&I impact evaluation projects allows a delay of the start of several C&I projects into the next Three-Year evaluation plan yet still meet the 5-year cycle needed to comply with the ISO-FCM requirements (a shift of $940K into the next Three-Year Plan). Some of these funds were applied to significant C&I customer equity / profiling efforts, which became an increasing focus over the Three-Year period.

### **Figure 3: Evaluation Plan Budget and Project Counts by Sector**



## Contents of the Remainder of the Plan Update

The remainder of the report consists of Figures and Appendices.

* Figure 4 in the following pages lists all projects implemented under the Three-Year Plan by year of contracting, and also identifies those projects that were part of the initial Three-Year Plan, and those added.
* Figures 5-8 in the following pages list the main outcomes and the rationale for the decisions for the projects examined in the 2021 Plan update. The tables identify, in turn, the projects and budgets that are: Budget changes; Projects to be added to existing projects (“add-ons”); projects to be issued as RFPs; and projects that were considered but were not recommended / selected / funded.
* Appendix A includes notes and descriptions of the recommended projects for 2021.
* Appendix B includes the disposition of all projects undertaken under the 2019-21 Evaluation Plan and rationales for their contracting. The figure also identifies those projects that were in the Original Adopted Plan, and the projects that were added, deleted, or modified over the three years as part of the annual updates.

## Next Steps and Additional Recommendations

This final document, with project and budget lists approved by the Evaluation Committee by vote January 27, 2021, represents the 2021 Update to the 2019-21 Evaluation Plan. The EA Team, via this Plan update, does not intend to exceed approved budget for the 2019-21 Three Year Plan as approved by the EEB. After budget approval, the EA team’s next task is to:

* Provide the Update document to the CT-EEB
* Immediately request the utilities make contract amendments to existing contracts consistent with the noted budget changes, and
* the EA Team commences the Mini-RFP process.

The EA Team recognizes and respects the Three-Year Evaluation Planning and annual update process, which coincides with the three-year process for the C&LM Plan. However, a three-year plan requires forecasting the priority issues and program needs three years into the future. While the EA Team recognizes that core projects can be realistically forecast over the period – for instance, generally assuring that C&I programs receive impact / process evaluations on a five-year cycle to comply with ISO, and priority residential programs are evaluated on a three-year cycle – foreseeing priority issues three years into the future is difficult, and tends to reduce flexibility and responsiveness in later years. Therefore, the EA team expects that the next Three-Year Plan may provide greater specificity for Year 1 and less specificity for years 2 and 3, with likely a larger budge amount assigned to the project for “emerging issues” in Year 1. In addition, timely and responsive evaluations are a goal of the EA team. Consistent with the flexibility afforded by Three-Year Research Area contractors, we may need to develop a process for adopting interim projects that respond to unexpected needs by the utilities or technical contractors.

## Details of 2021 Plan Update Projects - Figures

Figure 4 below lists the 2021 Plan Update Projects by group – those in the Original Adopted Plan and new concepts incorporated based on refinements due to 2020-21 priorities.

### **Figure 4: Three-Year Adopted Evaluation Plan Project List –As-Contracted, by Group & Year**

*(R-Residential; C-Commercial; X-Cross-cutting)*



Figures 5-8 summarize the outputs and rationales for the 2021 Evaluation Plan Projects by “groups”: budget changes due to COVID-19 or other causes; projects to be integrated or “added on” to existing, contracted projects; new projects to be assigned through an RFP process, and finally projects that were not recommended for funding in 2021. Note, some of these groups carry over multiple pages. Again, more detailed notes and descriptions of the projects are included in Appendix A.

### **Figure 5: 2021 Projects with Budget Adjustments due to COVID-19 or other causes**

*Includes brief description of rationale for inclusion in the update*



### **Figure 6: Projects that are Add-Ons to Existing Projects to Incorporate Updated Research Needs, Part 1**

*Includes brief description of rationale for inclusion in the update*



### **Figure 6: Projects that are Add-Ons to Existing Projects to Incorporate Updated Research Needs, Part 2**



### **Figure 6: Projects that are Add-Ons to Existing Projects to Incorporate Updated Research Needs, Part 3**



### **Figure 7: Projects Recommended for RFP Process**

*Includes brief description of rationale for inclusion in the update*



### **Figure 8: Project Concepts Not Recommended for 2021 Plan Update, Part 1**

*Includes brief description of rationale for inclusion in the update*



### **Figure 8: Project Concepts Not Recommended for 2021 Plan Update, Part 2**



### **Figure 8: Project Concepts Not Recommended for 2021 Plan Update, Part 3**



# Appendix A – Brief Summary Notes of 2021 Plan Update Projects

**Projects with Budget Amendments**

**X1941 MF Impact Evaluation** -- Budget: Work is completed. COVID-19 prevented contractor from doing workplan as bid. This forced extra work in developing a remote collection process that was used. Money is only those extra COVID-19 related costs. - ($36K)

**R1982 HVAC Metering** -- Budget: We approved $200K in extra funds last year to keep the meters in a second year. COVID-19 halted installation for year 1. Delete $150-200K of the new funds, moving to next 3-year plan because work cannot be done in this 3-year plan. These extra funds will be re-requested for subsequent years once project restarts (when it is safe to visit homes). Frees up funds previously allocated for year 2 to other projects in 2021 timeframe. - ($-150K)

**C1901 - C&I Sector-wide Process Eval (non-SBEA)** -- Budget: Funds are to partially compensate contractor for an unreasonably extended effort to complete routine data requests. Data request #1 was submitted 11/7/19. Work continues in Jan 2021 to obtain missing records and fill empty fields in the utility responses. - ($20K)

**Tasks / Issues / Concepts Added on to Existing Projects**

**X1931 In-depth PSD Review** -- Budget: Phase 1 of the PSD review ran over budget a bit; we negotiated a shared responsibility and also compromised on funds for Phase 2. Added funds for support to EA Team in discussions of 2022 PSD with utilities. - ($20K)

**C1901 - C&I Sector-wide Process Eval (non-SBEA)** -- Additional Profiling/equity: Extra funds will augment the customer/participant profiling task of the large C&I sector. Additional deliverables include deeper analysis of program and customer equity and a database of program and consumption records of large and small C&I sectors for the years 2017-2019. The database will be available to other evaluation contractors. - ($55K)

**X2022 - Education, Workforce, Community, Customer Engagement Evaluation** -- More programs than RFP'd: Extra funds are earmarked to expand this project to cover the extensive investment in training and education services funded by utility public goods charges. There is particular need to evaluate workforce development and the customer engagement portions of this initiative. There has not been an evaluation in more than 10 years, despite the fact that that earlier evaluation was found to be extremely helpful. Extra funds will allow deeper assessment of most important activities within the three types of training and education categories. - ($140K)

**R1983 - HES & IE Impact, Process, and Profiling Evaluation** -- expanded equity, assessment/recommendation of COVID-19 virtual audit procedures: Extra funds are added to cover specific areas of interest. These include an expanded investigation of participation/equity; program data-based review of COVID-19 related changes and impacts, particularly the use of remote audits and their applicability in post-COVID-19 program. - ($90K)

**R2029 SF Weatherization Assessment / Update** - more coordination with DEEP process: Previous scope involved definition and metric, but DEEP has intentions around this definition, and is planning a public process. Some additional work has involved understanding DEEP intentions and identifying the context of the work to date and applications for the work. The $35k in additional funds are needed to address these expenses and complete the projects with some enhanced efforts. NOTE: large on-site weatherization update was deferred in previous plan update (R1960) - ($35K)

**X1932 - Demand Response (UI)** -- Add Eversource DR in CT: Evaluation desired for at least room Air conditioners (ACs) used for DR in CT. Implementers confirmed this offer didn’t end up getting rolled out in 2020, but will be for summer 2021. The room ACs are only planned for CT; could be appropriate focus for CT project later 2021. If support desired for some funding for CT work on Eversource programs by CT contractor, and potentially some to cover MA work evaluating larger multi-state DR programs run by Eversource, it would be decided later, out of emerging issues funds. - ($75K)

**R1959 - R&A Program Evaluation** - Additional barriers research: Work completed thus far indicates that R&A represents much more savings potential than from new construction, while also addressing large lost opportunities. However, as a new sector with few home improvement projects or contractors focused on energy efficiency, there are large barriers to developing this market. Project extension is to delve deeper into these barriers and to develop a set of recommendations for overcoming them. - ($35K)

**C1902 - ECB NTG and Baseline** - Additional compliance work: Several stakeholders have expressed interest in better understanding new construction compliance patterns in CT in order to inform potential program development in this area. There are typically significant synergies between studying baseline practices and compliance patterns in new construction, as both involve construction practices. the elements related to NRNC code compliance fits well as an add-on to the non-residential new construction (NRNC) baseline study that has just resumed after being held up in the contracting. - ($90K)

**C1902 - ECB NTG and Baseline** - NTG for additional non-lighting upstream initiatives.: NTGRs were studied for EO and upstream lighting in a recently completed study, and the recently resumed study C1902 is looking at NTGRs for new construction. However, NTGR for upstream non-lighting measures (especially including HVAC) constitutes a gap in recent and current impact evaluation efforts. While the methods to be used in study C1902 have not been entirely pinned down yet, it is likely that there will be at least some synergies in working examination of NTGRs for upstream non-lighting measures into that study. Therefore, this issue will be addressed as an add-on to study C1902. - ($140K)

**R1963c - Lighting Study - Sales or Shelf Stocking analysis**: Lighting remains an important part of the programs, and a near-term continuation of tracking is needed to make sure expected progress remains in the sector. If EISA is delayed, then a study of lighting sales will inform how much non-efficient lighting is still being sold. If EISA is implemented soon, then shelf stocking will help determine how long existing stock remains to be sold before store inventories are cleared of inefficient product. Study should address LI / HTR as appropriate. - ($75K)

**X1931 PSD - Integrated and Network Lighting controls** - Near-term / Quick impact factors for PSD: Current impact factors for C&I lighting controls are uncertain and outdated, due to both the rapid evolution of controls technologies and the challenges EM&V has historically faced in gaining access to participating sites early to conduct pre/post studies. Lighting controls are anticipated to be a significant source of future savings, so the uncertainty poses risks and may be a disincentive to implementers vigorously pursuing this measure category. This study will address these issues by updating impact factors for lighting controls. The study will employ a two-step approach. The first step will use literature review and potentially reanalysis of existing data to derive new impact factors as quickly as possible. This 2021 work is a quick study. The second step, to be initiated in 2022 (depending on outcomes of 1st phase) once business operations have moved back toward normalcy following the pandemic, will collect primary data using either a pre/post design or comparing controlled areas with similar uncontrolled areas. - ($50K)

**X1931 - New Measures / Smart thermostat for C&I and small business applications** – Planned as near-term literature-based and adjusted for CT. The current PSD section on commercial setback thermostats does not specifically address the additional features of Smart communicating thermostats. A literature review of existing evaluation studies of commercial Smart thermostats will be conducted. The current commercial setback thermostat measure section of the PSD (section 3.2.5) will be revised and expanded to include a Smart Thermostat measure and incorporate results of the literature review. - ($30K)

**New Project Concepts to be Issued as RFPs**

**R2120 - Implications of program incentive differences in appliance recycling programs**: Piggy-back on work being conducted in MA to updates gross and net savings for recycled appliances, and apply survey responses from MA efforts to units recycled in CT. Approach relies on UMP. Note, additional data exists in NY and MA. Trends in savings and NTG have been climbing. If a more in-depth study were undertaken, it would include primary research in CT to update gross/net savings. CT has not conducted research into savings from recycling programs. MA is already tracking seasonality, usage, etc. - ($35K)

**R1968 - RNC Baseline and Code Compliance (Phase 1)**: A RNC baseline study is typically done one year after a code change. This allows us to capture some homes built at the end of the old code and some at the beginning of the new code. This type of study is becoming harder and more expensive to accomplish for a number of reasons: difficulty in unbiased recruitment of non-participant homes, difficulty in measuring energy efficiency differences after construction is completed, and difficulty in parsing out program and code effects. This design assumes set-up and initial phases in late 2021, with rest of project in 2022 Plan (with likely need for follow-on 2-3 years after roll-out). Need up-front work in 2021 because potential contracting delays would hamper successful completion if not in operation beginning of year 2022. Questions remaining about what direction program will take with respect to Passive House and Net-zero initiatives also will affect scope of study. NOTE: RNC Baseline and Potential study was included in 3-year plan, deferred in 2020 update (R1968). Note, it is expected this project will issue an RFP for the combination of both phases to make it more attractive to bidders- ($75K for Phase 1, and the portion that affects 2019-21 Plan budget)

**R2015 - Low Load Residential New Construction:** Planned as literature and interview-based. The project will conduct a technical and cost effectiveness study of strategies to produce low energy consumption residential new construction, including the Passive House low energy construction standard, zero net energy standards and other programs that promote highly efficient low load buildings. Energy savings, incremental construction costs, and customer acceptance will be examined for single family and multifamily new construction. Beneficial electrification and integration with battery storage systems will be examined. Barriers to adoption, such as contractor readiness, training needs, customer acceptance will be identified. Study will include literature review of evaluations similar program offerings in other states, and interviews with IOU staff, contractors, design/build professionals and homeowners. For the budget attached to this project, we do not expect it will be able to conduct more detailed tasks (e.g., engineering analysis including building simulation modeling to evaluate the technical potential of various low energy design approaches in CT buildings) but we are interested in information from the literature that will provide information / analysis of construction cost estimates of designs resulting from the strategies to assess cost effectiveness. Adding the engineering activities would increase the budget to about $150K. NOTE: study was considered in 2020 Plan update but deferred to wait for MA results (study R2015, budgeted at $150K). Note study does not include full-on potential study or simulations or associated cost-estimation work (that would cost about $150K). - ($65K)

**C2117 - Persistence Study for RCx – Literature-based Study**: There is a need to understand the persistence of RCx measures. The last CT study was published in 2013 covering PY 2008-2010 and only covered persistence of treated air compressor leaks. This study will conduct a literature search, staff interviews, and program tracking analyses to 1) summarize findings by measure from other regional and national studies and 2) prioritize Energize CT RCx measures for an in-depth persistence evaluation. - ($50K)

**C1940 - Emerging Issues and Joint State Projects 2021**: Retain funds to ID best studies to join in MA / RI, etc. PLUS Retain funds and assign in 2021 for priority topic, or to respond to / support research related to DEEP Orders and conditions. - ($174K)

**Studies Considered, but not Recommended for 2021**

**C2119 - New measure - home automation**: There was very limited discussion of this option outside the context of its influence on DR. Home automation allows for greater DR participation, scheduling, geofencing, remote control when out of home. - ($TBD)

**X2121 - Barriers to electrification**: There is interest in electrification opportunities and options, and a focus on building decarbonization. Expecting some direction from DEEP in about a year. Study would assess what other states are doing in electrification, interview design/build community representatives to identify barriers and solutions to electrification. Interview SEMs to identify emerging electrification solutions. Examine HP adoption (and barriers to adoption) in residential and commercial buildings, and examine HP soft costs. - ($100K)

**C2122 - NTG studies for lost opportunity** (TLED, LED retro and new, networked lighting controls, CAC/HP rebates, gas furnaces and boilers NTG and ISP, and steam traps): The C1902 - ECB NTG and Baseline study is providing industry standard practice (ISP) baselines and net to gross ratios for a set of priority PSD Section 2 lost opportunity C&I measures. Depending on the results of the C1902 study, additional research may be needed to expand the measure coverage to include TLEDs, LED fixtures, network lighting controls, packaged rooftop AC and heat pumps, furnaces and boilers. Separate values for true new construction and end of life replacements will be developed. - ($200K)

**R2123 - Behavior Program Evaluation**: Eversource is implementing program across NH, MA, and CT. The study should cover savings, effectiveness compared to OPower, and customer impressions, including comparisons to OPower. An evaluation is being planned in MA to be done by Guidehouse. The study may be CT-specific if previous program or new program differ between states; if not, finding a means of contributing to that study may be most efficient way to include CT. NOTE this project was in 3-year Plan, as project R1969, and deferred in 2020 update because project was discontinued (budget was $65K) - ($35K)

**C2124 - Persistence Study for SEM**: Strategic Energy Management (SEM) programs involve industrial customers that implement a wide variety of energy management practices, including operational, behavioral and process improvement measures. Energy savings for these measures are often derived from a whole facility billing analysis that does not provide measure specific savings estimates. Recent studies of SEM engagements in the Pacific Northwest and elsewhere have provided new data on the persistence of energy savings resulting from SEM engagements. A literature review of SEM program lifetimes will be conducted and the SEM program lifetime value in the PSD Appendix 4 Table A4.1 will be updated. - ($25K)

**C2125 - C&I Hours of Use - focus on standalone HVAC**: ERS is conducting research under the current X1931 project to identify the source of the heating and cooling equivalent full load hour (EFLH) values in the PSD Appendix 5 Table A5.1 and recommend updates. Depending on the results of that effort, a large-scale study of commercial building heating and cooling EFLHs may be required. The potential approaches for updating the heating and cooling EFLH data for CT may include the development of prototypical building simulation models to calculate the heating and cooling EFLHs, a billing analysis approach to identify heating and cooling end-use energy consumption combined with an on-site survey of HVAC system types and equipment capacities, or a sub-metered approach using data logging equipment to measure heating and cooling consumption on a sample of equipment and calculate EFLH from equipment consumption and capacity data. - ($350K)

**R2126 - HES follow-up on Air sealing, duct sealing, insulation practices**: Use on-sites and in-person interviews with homeowners and HES vendors to assess HES work quality, particularly for air-sealing, duct sealing, and insulation. Include walk-through with vendors to identify challenges faced on the job, and what the program could do to encourage deeper savings. Include home-owner surveys to identify 2 perspectives of the home (customer experience vs. assessment by trained technician). Includes primary data collection. Should re-investigate any changes in previously-identified disconnect between HES vendor practices and state savings goals. Identify degree to which savings are being left on the table. Review vendor performance on observation, salesmanship, follow-up, non-physical barriers, and other topics. Include return visits to homes to identify missed opportunities. Consider pilot. Include recommendations like revised incentives for stronger contractors or doing more. - ($TBD)

**X2127- Controls for electric and gas measures**: As the Plan moves away from such high dependence on lighting, other measures, and "next" measures rise in importance. Stakeholders are interested in review of control measures for electric and gas applications. The discussion was wide-ranging, mentioning EMS, HVAC local controls / economizers (in commercial sector) or for residential Heat Pump controls and integrated controls. - ($TBD)

**X2020 - New Measure - Advanced Power Strips**: Review APS support in other states and develop recommendations on whether and how CT should support this technology. Expect this project would primarily be a program review (including other states including NY, MA, RI, other), but should include staff interviews. APS are key contributors to non-lighting savings in MA and RI and may be important in CT. NOTE this project was included in 2020 update to 3-year plan as literature review, but deferred because manufactures were making studies difficult (was study X2006 and budgeted at $50K) - ($200K)

**X2129 - MF weatherization corridor CFM reduction factor, COPs, HOU, Weatherization**: Significant measure in MF space, and study should, at a minimum, examine best practices in other states and develop recommendations and interviews with implementers on calculations. Note, key elements on potential being studied in current project X1941; wait for those results. - ($300K)

**X2130 - Evaluation of non-energy goals**: Provide policy and other support toward DEEP / State / Utility review of BC tests and possible integration of NEIs. There is some interest, but current tests are very limited / restrictive toward NEIs. Needs would be continually evolving. - ($TBD)

**R2131 - Residential Load Shapes** (becoming more important): Use model resources developed for MA and adjust to CT climate / latitude to update and improve loadshapes for CT. - ($35K)

**C2132 - Commercial Load Shapes** (becoming more important): In phase 1 this study will identify end use categories with significant impact on electric peak loads. This work is being conducted in ERS / PSD project using MA modeling tool. If additional work is indicated, Phase 2 will collect interval data during peak periods for priority measures and develop load shapes, to be conducted later if / as needed, and after COVID-19 - separate project. - ($100K)

**C1920 - EO Impact Evaluation, Phase 1**: 5-year ISO says not yet needed. This project is delayed because C1635 impact study just finished, and covered participants for 2016-17. Was number C1920 and budgeted at $565. - ($565K)

**C1918 - SBEA Impact Evaluation**: 5-year ISO says not yet needed. This project is delayed because C1639 SBEA impact was completed 5/18 covering 2013-2016. Project was numbered C1918 and may be considered in 2021 update depending on other projects. The 5-year cycle is on the cusp. Original plan budget was $375K - ($375K)

# Appendix B –Disposition of 2019-2021 Evaluation Plan Projects

The figures in this Appendix track the contracting year for the projects undertaken in the 2019-21 Plan, and identifies those projects included in the Original Adopted Three-Year Plan, and those added.

### **Figure B.1: List of 2019-2021 Plan Projects After 2021 Update, with Rationales, Part 1**



### **Figure B.1: List of 2019-2021 Plan Projects After 2021 Update, with Rationales, Part 2**



### **Figure B.1: List of 2019-2021 Plan Projects After 2021 Update, with Rationales, Part 3**



### **Figure B.1: List of 2019-2021 Plan Projects After 2021 Update, with Rationales, Part 4**



1. *This document focuses on the 2021 update; the initial development of the 3-year plan is provided in the document “2019-21 EEB Three Year Evaluation Budget and Plan – Adopted / Final”, dated 12/7/19 and updated in the March 2020 document ““2019-21 EEB Three Year Evaluation Budget and Plan – 2020 Update”.* [↑](#footnote-ref-1)
2. *including program savings, length of time since last evaluation, PSD / C&LM input needs, costs, interstate project opportunities, and other factors.*  [↑](#footnote-ref-2)
3. *Note that because of these contracting issues and the inefficiencies identified in contractor turnover, the 2022-24 RFP process will select Three-Year Area Wide contractors. This is consistent with the newly-revised Roadmap.* [↑](#footnote-ref-3)