Request for Proposals:
RFP #51627
2022 Residential Building Stock Assessment (RBSA)

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1 Introduction

About the Northwest Energy Efficiency Alliance

The Northwest Energy Efficiency Alliance (NEEA) is an alliance of more than 140 utilities and energy efficiency organizations working on behalf of more than 13 million energy consumers. NEEA is dedicated to accelerating both electric and natural gas energy efficiency, leveraging its regional partnerships to advance the adoption of energy-efficient products, services and practices.

Since 1997, NEEA and its partners have saved enough energy to power more than 900,000 homes each year. As the second-largest resource in the Northwest, energy efficiency can offset most of our new demand for energy, saving money and keeping the Northwest a healthy and vibrant place to live. www.neea.org

2 Background

This Request for Proposals (RFP) is for a research study that includes two separately funded components. One component of the study focuses on characteristics and equipment affecting energy use in multi-family units and buildings, and will be conducted on behalf of NEEA and the study funders including the Bonneville Power Administration, Energy Trust of Oregon, PacifiCorp, Puget Sound Energy, and Seattle City Light. The other component of the study focuses on characteristics and equipment affecting energy use in single-family homes and will be conducted on behalf of NEEA and its core electric and natural gas funders in Idaho, Montana, Oregon, and Washington.

For purposes of this RFP, NEEA, study funders, and other regional stakeholders, including the Regional Technical Forum (RTF), and the Northwest Power and Conservation Council (NPCC), will be collectively referred to as "NEEA and Stakeholders". The two study components together will be referred to as a Residential Building Stock Assessment (RBSA). This is the third RBSA NEEA and Stakeholders have conducted and will be referred to as the "2022 RBSA", following the "2011 RBSA" and the "2017 RBSA".

NEEA and Stakeholders are seeking a qualified contractor or team of contractors to conduct the 2022 RBSA. This RBSA will be a regionally representative assessment of single-family and multi-family residences and buildings that catalogue characteristics and equipment impacting energy use. Information on appliances, building envelope, lighting, HVAC, plug load, water heating, and windows will be collected during on-site visits by trained technicians. Demographic information, housing characteristics, and other information needed to track and account for sample and response bias will be collected prior to on-site visits through a recruiting survey. Finally, electric and natural gas consumption data will be collected for analysis from study participant utility service providers.

The 2022 RBSA anticipates some changes from the 2011 and 2017 RBSA. First, the 2022 RBSA will no longer target manufactured homes; only single-family residences with a concrete foundation will be included in the single-family sample. Residences without a concrete foundation, such as mobile homes, will not be part of the study.

Second, the 2011 RBSA recruited multi-family buildings in two stages. It recruited the building first, and then recruited units. The 2017 RBSA reversed this approach and recruited unit

residents first, then the building. The 2022 RBSA expects to return to the 2011 RBSA approach to multi-family recruitment in order to control for the number of medium and large multi-family buildings in the study by stratifying the sample based on building size.

Either smart meter or monthly billing data will be collected for a minimum of 90% of participating single-family sites and multi-family units. This data will be used to weather normalize electric and natural gas monthly energy use and estimate annual heating energy use.

The final deliverables of this study will include a relational database in CSV format, a user guide and data dictionary, summary tables with analyses of key variables, and two final reports detailing methods, findings, and conclusions relevant to the energy efficiency community for single-family and multi-family.

The data collected during this study will be used to make inferences about residential building stock and energy consumption in support of NEEA's market transformation strategies, the NPCC's 5-year Power Plan, RTF's energy efficiency measure development process, Bonneville Power Administration's market models, utility conservation potential assessments and integrated resource plans, and any other research that requires knowledge of residential building stock and energy consumption.

While the project is anticipated to begin in 2021 and end in 2022, NEEA and Stakeholders continue to monitor how the COVID-19 pandemic may impact this study and will consider alterations to the scope and timeline as needed.

2.1 Geographic Scope & Sample Approach

The geographic scope for the 2022 RBSA includes all of Idaho, Oregon, Washington, and parts of Montana.

For the single-family component of the study, NEEA and Stakeholders anticipate a minimum of 1,130 single-family residences will be included in the study. Bidders should recommend a sample design that stratifies the sample by state, sub-region (See Figure 1), public power, utility service territory of utilities planning to oversample (See Section 2.2), and heating zone 2. It is anticipated that the climate definitions developed by the RTF (See Section 3.2) will be used to support sampling by heating zone.

It is expected that for a representative sub-set of single-family sites, approximately 400 blower door tests, 300 duct blaster tests, and 300 TrueFlow air handler meter tests will be conducted. Bidders should recommend appropriate sampling approach and sample sizes needed to achieve a confidence level of 90% with a +/- 10% precision. It is also expected that all on-site visits will collect comprehensive information on insulation using both visual inspection and infrared sensors. Shower-head flow rate measurements will remain consistent with the 2017 RBSA and use the Micro-Weir method.

For the multi-family component of the study, NEEA and Stakeholders anticipate a minimum of 550 multi-family units in 230 buildings will be included in the study. Bidders should recommend a sample design that allocates the sample according to building size (See Section

3.1), and utility service territory of any funding utilities and regional stakeholders planning to oversample (See Section 2.2).

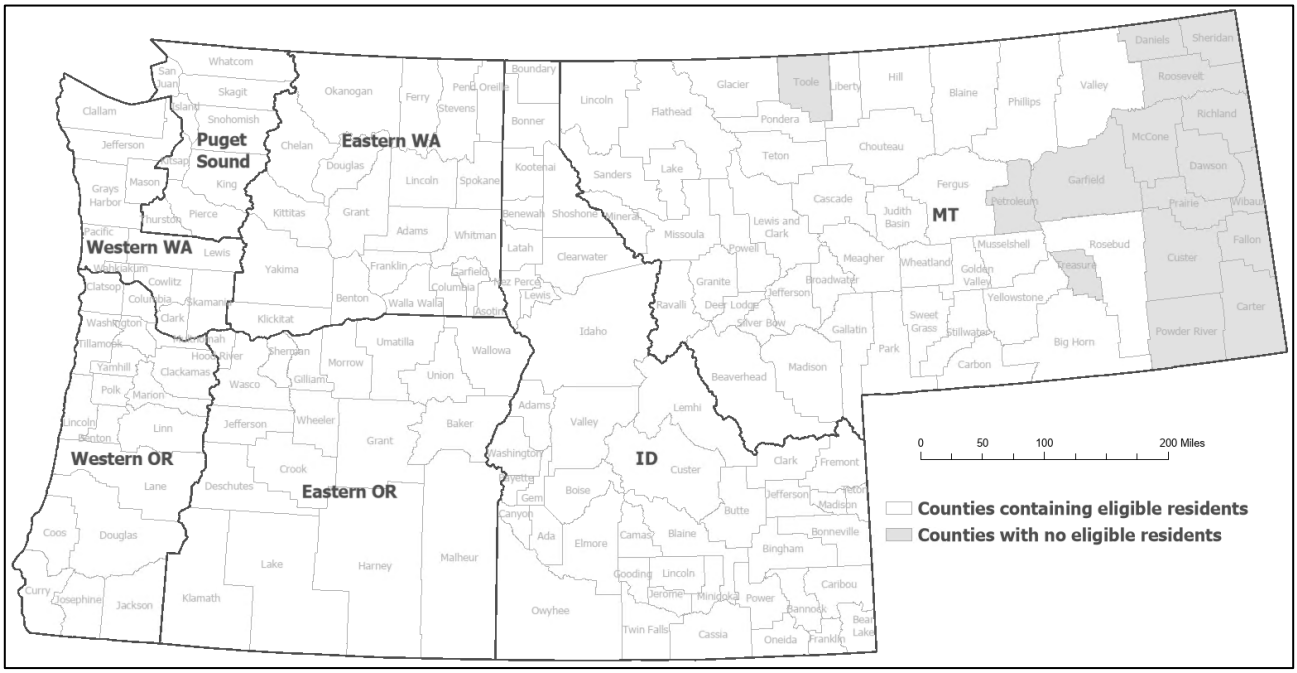

Figure 1: The seven sub-regions used in the 2011 and 2017 RBSAs, based on Bonneville Power Administration's customer sub-region boundaries.

2.2 Oversampling

Some funding utilities and regional stakeholders are interested in understanding residential building characteristics and energy use in their own service territory or are looking for ways to increase the overall sample size of the study. These stakeholders are prepared to contract separately with the selected contractor for additional sampling to be included in this study and all final deliverables. Table 1 includes a draft list of stakeholders interested in contracting separately for additional sampling for their service territory. Bidders should provide a separate cost estimate in their proposal for the cost of oversampling on a per site basis, and account for oversamples in the proposed sample design and weighting scheme. Sample sizes should be listed separately for the core study and oversamples.

Table 1: A draft list of stakeholders who have expressed interest in oversampling for their territory

Utility/Stakeholder	Single Family (1 unit detached)	Single-Family (2-4 units attached)	Multi-Family (5+ units)
Avista	Yes		
Bonneville Power Administration	Yes		Yes
Clark PUD	Yes		
Energy Trust of Oregon	Yes	Yes	Yes
NW Natural Gas	Yes		
Puget Sound Energy	Yes		Yes
Seattle City Light			Yes

3 Definitions and Applicable Documents

3.1 Definitions

Acronym or Term	Definition
AAPOR	American Association for Public Opinion Research
EUI	Energy Use Intensity
Multi-Family	Residential buildings with 5 or more units: 1. Garden/low-rise: 1-3 stories 2. Mid-rise: 4-6 stories 3. High-rise: 7+ stories
NEEA and Stakeholders	Multi-Family Study Funders: NEEA, Bonneville Power Administration, Energy Trust of Oregon, PacifiCorp, Puget Sound Energy, and Seattle City Light. Single-Family Study Funders: NEEA, its core electric and natural gas funders throughout Idaho, Montana, Oregon, and Washington. For purposes of this RFP, NEEA, the study funders and other regional stakeholders (including the Regional Technical Forum (RTF), and the Northwest Power and Conservation Council (NPCC)) will be collectively referred to as "NEEA and Stakeholders".
NEEA Project Manager	Point of Contact for NEEA and Stakeholders
NPCC	Northwest Power & Conservation Council
PII	Personally Identifiable Information
RBSA	Residential Building Stock Assessment
RTF	Regional Technical Forum of the Northwest Power & Conservation Council
Single-Family	Includes detached, attached, manufactured, duplex, triplex, and fourplex residences with a concrete foundation and a separate HVAC system for each unit.
Utility Oversample	Additional sites embedded into the sample design and weighting scheme, but funded, purchased, and contracted separately by individual stakeholders.
Workgroup	A committee of representatives from participating stakeholder organizations providing decision support, expertise, and regional and utility coordination.

3.2 Reports and Supporting Documents

Item	Link
2017 RBSA Field Data Collection Protocols	https://neea.org/img/uploads/RBSA-II-Data-Collection-Protocols.pdf
2017 RBSA Multi-Family Report	https://neea.org/img/documents/Residential-Building-Stock-Assessment-II-Multifamily-Homes-Report-2016-2017.pdf
2017 RBSA Single-Family Report	https://neea.org/img/uploads/Residential-Building-Stock-Assessment-II-Single-Family-Homes-Report-2016-2017.pdf
AAPOR guide to tracking and measuring survey outcomes	https://www.aapor.org/Standards-Ethics/Standard-Definitions-(1).aspx
Introduction to using XLSForm with Survey123	https://doc.arcgis.com/en/survey123/desktop/create-surveys/xlsformessentials.htm
NEEA COVID-19 Safety Policy and Guidelines	https://neea.org/resources/neea-covid-19-safety-policy-and-guidelines
RBSA landing page with supporting documents	https://neea.org/data/residential-building-stock-assessment
Sample RBSA Survey Instrument XLSForm	https://neea.org/img/documents/2022-RBSA-Survey-Instrument-Sample.xlsx
Spreadsheet containing climate zone definitions developed by the RTF	https://rtf.nwcouncil.org/work-products/supporting-documents/climate-zones

4 2022 RBSA Study Phases

The 2022 RBSA will have four distinct phases:

1. **Planning:** Work Plan, Sampling Plan, Recruitment Plan, Weighting Plan, Data Management Plan, and Data Integrity Plan
2. **Systems Development and Testing:** Systems development, recruiting and data collection dashboard, testing of systems, equipment and protocols.
3. **Recruitment, Data Collection, and Data Product Development:** Begin recruiting, site visits, and development of data products.
4. **Data & Reporting Products:** Finalize data products, data analysis, study reports, and present findings.

Proposals should identify the bidders' suggested approach and methodology, activities, deliverables, timelines and cost estimates for each phase.

4.1 Phase One – Planning

It is anticipated that each deliverable will be presented to the Workgroup for discussion and feedback prior to being finalized. All draft deliverables should be shared at least 2 weeks prior to Workgroup meetings. Phase one planning includes development of an overall project work plan, as well as related sub-plans addressing key components of the study.

4.1.1 Work Plan

The selected contractor shall submit a draft work plan outlining the timelines, milestones, dependencies, and deliverables for all phases of the project.

NEEA and Stakeholders envision an initial engagement process that could include three two-hour meetings with the Workgroup, in which the draft work plan is presented in the first meeting and input is captured from Workgroup members. Iterative meetings will be held to incorporate input/feedback and establish the final work plan.

4.1.2 Sampling Plan

A sampling plan will be developed that outlines the agreed-upon objectives of the study and a sample design for single-family and multi-family components of the study that will achieve the following objectives.

4.1.2.1 Single-Family

A single-stage sample design for the single-family component of the study should support inferences to be made in the following geographic areas:

1. All single-family residences in NEEA and Partner's service territory
2. All single-family residences in Idaho
3. All single-family residences in Oregon
4. All single-family residences in Washington
5. All single-family residences in those parts of Montana served by either Bonneville Power Administration utilities or by Northwestern Energy (electric service only)
6. All single-family residences in heating zone 2
7. All single-family residences in each of Bonneville Power Administration's seven sub-regions
8. All single-family residences served only by Bonneville Power Administration utilities who purchase their power through Bonneville Power Administration
9. All single-family residences in utility service territories that opt to oversample

4.1.2.2 Multi-Family

A two-stage sample design for multi-family buildings (buildings recruited first, units second) should support inferences to be made for the following sub-sets of multi-family housing:

1. All multi-family buildings in NEEA and Partner's service territory
2. Low-rise/Garden buildings
3. Mid-rise buildings
4. High-rise buildings
5. All multi-family buildings in utility service territories that opt to oversample

4.1.3 Recruitment Plan

A recruitment plan will be developed that outlines the agreed-upon objectives of recruiting, and approaches for meeting these objectives for single-family and multi-family components of the study.

Bidders must recommend a methodology that uses the most appropriate recruitment method or combination of methods (mail, phone, email, etc.) to minimize sample bias and recruitment costs, and maximize response rates, to ensure representativeness of the underlying

population. Approaches should also address how to effectively recruit non-English speaking residents.

NEEA and Stakeholders anticipate that residents will be recruited to complete an initial survey either digitally through a website or by telephone. This survey will collect information on the respondent's utility service providers, general home characteristics, and key demographic characteristics such as income, race, ethnicity, education level, and primary language spoken in the home. The survey will also ask if respondents are interested having an on-site visit conducted. Questions should be included that identify why respondents did or did not decide to have an on-site visit so impacts such as the COVID-19 pandemic can be tracked, and better recruitment approaches can be developed. The recruitment plan should specify whether the disposition codes recommended by the American Association of Public Opinion Research (AAPOR) (see Section 3.2 for details on AAPOR disposition codes) or a custom list of codes unique to this study will be used to track survey outcomes. Bidders should explain how disposition codes, demographic and housing variables, and other information collected in the initial survey will be used to track, assess, minimize, account for, and report on sample and response bias throughout the study.

Given the importance of the initial recruitment survey in understanding study sample bias, and the time required of homeowners or tenants to conduct on-site visits, bidders should specify appropriate and separate incentives for the recruitment survey and the on-site visit and incorporate these costs into proposals. Past research incentives have typically ranged between $100 and $300 per home visit. Bidders should also recommend a third incentive level, if they believe one is needed, to achieve the goal of collecting billing data for 90% of the single-family residences and 90% of multi-family units surveyed.

NEEA and Stakeholders expect that recruitment of single-family residences will use randomly sampled USPS addresses. Marketing Systems Group is one viable source for certified and up-to-date USPS address lists and other third-party demographic data that may be needed for recruitment and evaluation of sample bias.

NEEA and Stakeholders anticipate that CoStar is the most viable data source for recruiting multi-family buildings. NEEA has a CoStar license, so bidders should not include this as a study cost in their proposals. Bidders should explain how they will successfully recruit both buildings and units to participate in the study.

Bidders should consider alternative or supplementary data sources that may improve coverage without introducing other more burdensome limitations to the sample frame such as duplications. Bidders should also explain how they will evaluate, identify, report, and account for any limitations and data gaps in data source they use that would impact the representativeness of study results.

4.1.4 Weighting Plan

A weighting plan will be developed that outlines an approach to weighting for single-family and multi-family components of the study that will produce results that are representative of the underlying populations. These weights should be derived from selection probability and be based on standard design-based inference theory. Bidders should address how an assessment of sample and response bias using data collected from the recruitment survey and

distribution codes will be used to adjust weights to account for any sample and response bias identified. Bidders should also explain how they will ensure the population-level estimates for each strata and the region can be estimated with levels of accuracy sufficient for comparisons with future studies. Approaches to quantifying levels of uncertainty in the study as implemented (as opposed to as planned) should be described.

Case weights will be developed for the following:

1. Single-family residences
2. Multi-family units
3. Multi-family buildings

4.1.5 Data Management and Security Plan

A Data Management and Security Plan will be developed that addresses the following:

1. Access Control. The plan should provide an overview of all platforms, software, and equipment that will be used to implement the study. Access to NEEA administered systems such as ESRI's cloud infrastructure (e.g. Survey123), and Microsoft Azure SQL databases will be granted as needed. The plan should outline which parties will need access to which systems.
2. Data Processing and Protocols. The plan should address all data processing methods and protocols starting from data collection all the way to the posting of final CSV deliverables on neea.org. This should call out retention and disposal timelines and methods for data and documents not stored in NEEA's environment.
3. Data Integrity. The plan should identify processes, staff trainings, and QA/QC approaches that will be employed during planning, data collection, and the development of data products to ensure data integrity. Some of these may already be captured in the Field Data Collection Protocols document (see Section 3.2) and can be referenced as such. All data collected throughout the study must be accurate and free of errors. This includes all data collected during site visits, all billing data collected and analyzed, all data used for weighting, and all final data and reporting deliverables done as part of this study.
4. Data Security. NEEA takes very seriously its obligations to the region's prospective participants in the RBSA to ensure personally identifiable information (PII) is never disclosed (intentionally or otherwise). The plan should align with NEEA's data security policies and practices.

Bidders should provide information in their proposals that speaks to their internal data security policies and practices.

4.2 Phase Two – Systems Development and Testing

4.2.1 Systems Development

4.2.1.1 Recruitment Survey & On-Site Survey Instruments

NEEA and Stakeholders are in the process of developing the initial recruitment survey instrument and on-site survey instrument (referred to as the "recruitment instrument" and "on-site instrument" respectively, or "the instruments" collectively) in ESRI's Survey123. Bidders should familiarize themselves with Survey123 and the XLSForm open

standard that Survey123 uses to structure the instruments. This can be done by loading the sample RBSA XLSForm (see Section 3.2) into the Survey123 Connect desktop app[1].

While NEEA and Stakeholders have already conducted two rounds of reviews on the instruments in order to adapt them to the 2022 RBSA priorities, the selected contractor should plan to review input from the Workgroup on additions, deletions, and modifications to questions included in the instruments and conduct at least two more rounds of updates prior to testing. A log listing all additions, deletions, and modifications from the 2017 RBSA will be developed and incorporated into the final data dictionary deliverable.

Key elements that should also be addressed in the on-site instrument include:

1. A single flag field that: a) Indicates well-defined reasons for why any question was left blank or not answered, including skipped questions; b) Indicates well-defined distinctions between known and approximated answers to questions.
2. Drop-down menus should be used whenever possible to minimize the need to standardize responses later.
3. The instrument should incorporate the collection of photos for key variables. Hardware used for the instrument should therefore be equipped with a camera.

4.2.1.2 Supporting Websites

The selected contractor will work with NEEA and Stakeholders to develop study participant landing page(s) that will live on neea.org. These pages will include an overview of the RBSA (addressing both the single-family and multi-family components the study), as well as provide a list of all on-site field technicians, technician photographs, and technician biographies working on the study.

It is also anticipated that utility billing release forms and on-site participation agreements will be automatically initiated based on the utility service provider identified based on participant ZIP codes collected in the initial recruitment survey. Since some utilities may require custom billing release forms, conditional logic will be required to ensure study participants are able to complete the appropriate forms. While NEEA has identified two possible solutions for collecting signed agreements, bidders with experience in this area may recommend their own solution that enables study participants to receive and digitally complete the correct forms.

4.2.2 Recruiting and Data Collection Dashboard

The selected contractor will develop a dashboard accessible by the NEEA Project Manager using ESRI's ArcGIS Dashboard. This dashboard will track key indicators for recruiting outcomes and site visit completions.

4.2.3 Testing of Systems, Equipment, and Protocols

The selected contractor will be responsible for procuring any equipment needed to effectively implement the study and facilitate on-site data collection. Bidders should call out any equipment they are anticipating needing to purchase as a separate direct cost in their cost estimate.

[1] https://www.esri.com/en-us/arcgis/products/arcgis-survey123/resources

The selected contractor is expected to develop acceptance criteria for all systems (e.g. the instruments, supporting website functionality, etc.) and equipment needed for the effective implementation of the study. Systems should be tested until they pass acceptance criteria. It is anticipated that these criteria and results will be presented to the Workgroup prior to initiation of Phase 3 of the study.

4.3 Phase Three – Recruitment, Data Collection, and Data Product Development

4.3.1 Recruitment

While some recruiting activities may occur in Phase Two as part of testing, the full recruiting effort is anticipated to begin in Phase Three such that site visits can begin in June 2021. The selected contractor will be responsible for managing all scheduling, communications, marketing activities and materials, and incentive payments. Proposals should address bidders' approach to marketing and recruitment efforts, including the use of any subcontractors that the bidder may use to facilitate these efforts.

4.3.2 Site Visits

NEEA and Stakeholders anticipate that site visits will be scheduled to begin around June 2021 and continue through June 2022.

Bidders should address the following in their proposals:

1. What will be done to ensure the health and safety of contractor staff and residents? This should at a minimum address COVID-19 related concerns. Bidders should address if certain portions of site visits could be done remotely. Any in-person fieldwork will need to be approved in advance by NEEA. The selected contractor should be prepared to provide a COVID-19 safety plan addressing how they will facilitate in-person site visits in accordance with NEEA's COVID-19 Safety Policy and Guidelines (see Section 3.2). Proposals should also address how travel for on-site visits may be affected by COVID-19 and any additional costs. Cost estimates should also reflect any direct costs that may be incurred for procurement of Personal Protective Equipment (PPE) for field technicians.
2. What processes are in place to ensure collected data are accurate, and that on-site technicians have resources available to them while on site to address any questions that may arise so that the data are entered accurately, completely, and promptly?
3. How will study participants privacy and safety be protected? For example, field technicians should be clearly identifiable to residents and have had a background check prior to beginning any on-site work.
4. NEEA and Stakeholders are interested in conducting a variety of on-site measurements including for blower door testing, duct blaster, and TrueFlow air handler meter measurements, infrared sensor insulation measurements, and shower-head flow rates using the Micro-Weir method. Bidders should include per site cost per test.
5. What will be done to ensure access to and complete information on central systems and common areas in multi-family buildings?
6. How much time do bidders anticipate spending at a site? This should include anticipated average, minimum, and maximum lengths of time broken out for single-family sites and for multi-family units and buildings.

4.3.3 Data Product Development

The selected contractor will development an SQL database and database views in NEEA's Microsoft Azure platform. The database views will define the structure of the final set of relational CSVs and other analytic tables that summarize variables such that a single row represents a unit or building. The database views shall have the following characteristics:

1. All string variable names, and their values are standardized for spelling and formatting.
2. Flags will be included that explain why a value may be null and whether values that are present are known with certainty or estimated.

NEEA and Stakeholders expect that the SQL database will be derived in large part from the survey instrument's tables, but that significant changes and simplifications will be made to ensure the database and views are as user friendly for analysts as possible. While the structure of the 2017 RBSA database generally met user's needs, bidders are encouraged to consider possible improvements (e.g. consolidating heating and cooling tables into a single HVAC table). While the SQL database can contain PII, the database views cannot (it is these views that will be exported and posted on NEEA's website).

Drafts of all data products and supporting documentation should be presented to the NEEA Project Manager and Workgroup for review prior to being finalized in Phase four.

4.3.3.1 Data Dictionary

The selected contractor will develop a data dictionary that defines every variable contained in the database views, specifies all levels for each variable, defines all terms and acronyms a non-technical audience would need to understand the underlying data, and explains the calculations behind calculated fields.

The data dictionary should also indicate if variables have been included in previous RBSA studies (and if so, which ones), and if any modifications to the data collection methods have taken place since the 2017 RBSA. All variables removed from the 2017 RBSA should be listed.

4.3.3.2 User Guide

The selected contractor will develop a user guide will provide instructions for data users on how to prepare the data for analysis and provide any background information on what questions the study was and was not designed to answer, and a quantification of uncertainty in the study, in easy-to-understand language. The user guide will also include instructions and code snippets in both R and Python for applying weights, an entity relationship diagram for the database views, and instructions on how to join tables.

4.4 Phase Four – Data & Reporting Products

4.4.1 Analysis

It is anticipated that all code used outside of the SQL database (EG R and Python) will be written and versioned to a NEEA Bitbucket repository if the data includes PII. All other analyses that do not use PII will be written to and versioned in NEEA's public GitHub 2022 RBSA repository for review by NEEA and Stakeholders, outside experts, and the broader energy efficiency community. It is anticipated that this GitHub repository will be available for use going forward for analysts to find and share their 2022 RBSA code and results.

4.4.1.1 Weighting

Once all on-site data collection has been completed, case weights will be developed based on approaches laid out in the weighting plan. Modifications to the weighting plan should be recommended if needed to minimize sample and response bias and ensure representativeness.

4.4.1.2 Billing Data

The selected contractor will collect electric and natural gas consumption data (smart meter data, where available, and monthly billing consumption data for all other sites), working in close coordination with the NEEA Project Manager and Workgroup. These datasets will be used to calculate weather normalized monthly natural gas, electric, and combined energy consumption and EUI for each residence and multi-family unit. Natural gas, electric, and combined heating energy use should also be estimated for all residences and units. NEEA and Stakeholders also expect the heat loss rate (commonly referred to by the designation "UA" and defined as the rate at which a building loses heat relative to a change in outside temperature) to be calculated for all residences and units.

Weather-normalized energy consumption data will include energy use and EUI calculations in therms and BTUs for natural gas consumption, kWh and BTUs for electricity consumption, and BTUs for total energy consumption.

4.4.2 Final Deliverables

4.4.2.1 Database & Supporting Documentation

All site-level analysis completed during case weight development, analysis of energy use data, and relevant attributes associated with the sample design will be incorporated into the SQL database and the database views. The new variables will be incorporated into the user guide, and data dictionary, and presented to the Workgroup for review.

4.4.2.2 Analytical Tables

Two database views will be developed that assemble as many variables as possible into a single row for each site or unit, and for each multi-family building. These database views will define the structure of the two analytical CSV files that will be posted with the database CSVs.

4.4.2.3 Summary Tables

These summary tables will contain results of queries to the finalized version of the database views. They will either be published in an Excel workbook or included with the final report. Each table should include easy to understand explanations of how calculations and aggregations were made. Bidders should review the 2011 and 2017 RBSAs to better understand how those summary tables have been presented previously and recommend new approaches that enable analysts to quickly find, review, and accurately and easily interpret the results.

4.4.2.4 Final Field Data Collection Protocols

The Field Data Collection Protocols document contains all protocols used by field staff for data collection and will match the final iteration of the survey instrument's development. The selected contractor will be responsible for delivering an updated "Field Data Collection Protocols" document for the 2022 RBSA. This will require updates to the previous version used for the 2017 RBSA.

Copies of all final training materials used to train field technicians for the study will also be delivered to NEEA.

4.4.2.5 Final reports

There will be a final report for the single-family component of the study and a final report for the multi-family component of the study. Both final reports will contain all pertinent information on study and sample design, recruitment, field data collection, case weight development, uncertainty and sample bias estimates, highlights of key findings, and implications for the energy efficiency community. Bidders should review the 2011 and 2017 reports and recommend approaches that enable analysts to accurately and easily interpret the study's methods, findings, and conclusions.

The final report must be provided in draft form to NEEA Project Manager. This draft will be reviewed and commented on by NEEA staff, the Workgroup and any other parties deemed appropriate by NEEA. Based on these comments, the selected contractor shall make revisions and deliver to NEEA a final version of the report.

4.4.2.6 Presentations

The selected contractor will develop a final presentation summarizing the single-family and multi-family final report. Bidders should assume there will be a minimum of four (4) one-hour presentation "events".

4.4.2.7 Other Deliverables

The selected contractor will need to provide weekly status updates to NEEA's Project Manager as well as coordinate with NEEA to provide regular status updates to the Workgroup via monthly conference calls.

Bidders should allow for additional requests that may be needed to support the 2022 RBSA and incorporate a line item for such costs in their cost estimates. These requests would most likely include development of interim memos or white papers. NEEA will consider contract modifications to the extent these work products are outside the original scope.

5 Contractor Competencies

NEEA encourages proposal submissions from qualified contractors or teams of contractors with a proven track record of collaboration.

5.1 Technical Expertise

Bidders responding to this solicitation should have the following:

- Experience developing complex sample designs and weighting schemes for single-family and multi-family units and buildings
- Experience developing recruiting surveys, dashboards, and survey instruments
- Knowledge of the electric and natural gas utility industry and regulatory environment
- Experience collecting and analyzing energy consumption data
- Experience/Expertise in database design and implementation
- Experience developing publication-quality reports

5.2 Stakeholder Collaboration

NEEA will take the lead on all activities that involve cooperation and coordination with NEEA and study funders; the selected contractor will maintain a support role unless otherwise directed. The selected contractor should understand sensitivities of the utility industry and the regulatory environment in which they operate. The NEEA Project Manager should be notified of which participants are having site visits and the respective utility service area.

The selected contractor will be expected to resolve study participant (utility customer) complaints quickly and effectively. Any disagreements or issues with study participants should be promptly reported to the NEEA Project Manager and communicated to the appropriate Workgroup representative of the utility of the customer in question.

6 Timeline and Budget

6.1 Timeline

In order to continue collecting data for an RBSA every five years, NEEA and Stakeholders anticipate conducting site visits throughout 2021 and 2022, and all data products to be finalized by December 31, 2022. While the data products must be complete by the end of 2022, reporting products can be completed in early 2023 if necessary.

Respondents should address any risks that may cause delays to the anticipated timeframe, including, at a minimum, risks associated with COVID-19 will be addressed.

	Estimated 2022 RBSA Timeline			
Phase	**Name**	**Deliverables**	**Start Date**	**End Date**
1	Planning	Work Plan, Sample Plan, Weighting Plan, Data Management Plan, and Data Integrity Plan	February 2021	April 2021
2	Systems Development and Testing	Completed instruments and successful testing of systems	April 2021	June 2021
3	Recruitment, Data Collection, and Data Product Development	Development of data products, site visits and data collection completed	June 2021	June 2022
4	Data and Reporting Products	Weighting, billing data collection, data analysis, data products, final reports, and presentations	June 2022	December 2022

6.2 Budget

Bidders should develop a core proposal that includes only approaches and scope they are confident can be completed within a budget between $3.4 – $3.5 million. Study costs should be broken out separately for multi-family and single-family, with the multi-family costs comprising between 35 – 40% of the total study cost. Any requests mentioned in this RFP that bidders do not include in the core proposal, or additional innovative approaches bidders would like to recommend, should be listed as separate add-on options.

7 Proposal Submission

Bidders shall submit one (1) electronic copy of the proposal to the RFP Point of Contact (listed in Section 7.3).

7.1 RFP Schedule

All actions should be completed by 11:59PM PST on the specified due dates.

Due Date	Action
Sunday 10/18/2020	Intent to respond submitted to NEEA
Sunday 10/18/2020	Last day for bidders to submit questions to NEEA
Thursday 10/22/2020	Last day for NEEA to respond to bidder questions
Sunday 11/15/2020	Proposals due to NEEA
Wednesday 11/25/2020	Finalists notified
Week of 12/7/2020	Virtual presentations with finalists
Wednesday 12/16/2020	Anticipated award date

7.2 Intent to Respond (Mandatory)

All Intent to Respond forms (see Appendix A) must be received by the date and time listed in the RFP Schedule above (Section 7.1). Firms who submit an intent to respond are under no obligation to submit a proposal. Only those parties who submit the Intent to Respond form will be provided updates to the RFP, have questions responded to, and have their proposals considered.

7.3 RFP Point of Contact

All correspondence, included but not limited to, questions and proposal submissions shall be directed to:

Mike Psaris, Senior Data Analyst
Northwest Energy Efficiency Alliance
E-mail: mpsaris@neea.org

7.4 Proposal Format

Excluding appendices, proposals should not exceed 30 pages and should follow the below structure. Bidders must also provide reporting and data product samples for review.

1. **Executive Summary (2-page maximum)** – Include the key strategies and approach to executing the 2022 RBSA, proposed costs, and the reasons NEEA should select your team.
2. **Introduction (2-page maximum)** – State your understanding of the scope and key objectives of this study.

3. **Project Team Identification (2-page maximum)** – Provide information regarding the proposed project team, including hierarchical team structure, and any subcontractors that bidders intend to team with. Note that project team bios and/or resumes should be included in the Appendix section.
4. **Proposed Methodology and Approach (15-page maximum)** – Provide information regarding the specific methodologies and approach to be undertaken to complete the 2022 RBSA Study.
5. **Timeline (3-page maximum)** – Provide the proposed timeline for all major phases and milestones of the project broken out by proposed task and associated deliverables.
6. **Project Cost (6-page maximum)** – Provide total estimated costs for the single-family and the multi-family components of the study separately. Costs for both study components should be broken down by project phase and proposed task. An hourly rate sheet should be included in the Proposal Appendix.

   Additionally – bidders should provide an itemization of all direct costs (i.e. equipment, PPE, etc.) and provide separate cost estimates for on-site visits for single-family residences, multi-family units, and multi-family buildings. This should include an estimate of cost per home, unit, or building, on a not-to-exceed basis, and an itemization of the following:

   - The additional cost per home to include blower door testing
   - The additional cost per home to include duct blaster testing.
   - The additional cost per home to include TrueFlow air handler meter testing.
   - The additional cost per home to include Infra-red sensor insulation measurements.
   - The additional cost per home for utility oversampling.
7. **Proposal Appendix** – Appendix materials do not count against the 30-page maximum and should include the following:

   - Hourly Rate Sheet - for all proposed project team members including estimated hours by Task and any projected annual hourly rate increases.
   - Company Background & Qualifications
   - Project Team Bios – Include information about program team members and team structure, past team efforts on similar work, years of experience and other relevant qualifications.

8 Selection and Insurance Requirements

Bidders should note that the Workgroup will be part of the evaluation committee reviewing responses to this solicitation. The procurement process described herein is also being conducted in an open and transparent fashion between competing bidders.

8.1 Scoring

Bidding firms will be rated in terms of the following:

1. Responsiveness to the RFP and demonstrated understanding of the issues surrounding the study.

2. The thoughtfulness and appropriateness of the proposed methodology used to accomplish the desired results of the study, specifically attention paid to statistical rigor and representativeness in study results.
3. The experience and qualifications of the individuals specifically proposed to execute and manage the study.
4. The experience of the firm's project manager and/or the project management team.
5. The capability to execute the plan, including past experience and aptitude for collaboration.
6. The reasonableness of the overall cost of the work to conduct the study.

NEEA is under no obligation to select any proposal that results from this solicitation, nor is there any obligation or intent implied to reimburse any party for the cost of preparing a proposal in response to this RFP. NEEA encourages bidders to submit proposals that include innovative methods or tasks in addition to or different from those listed in the RFP; however, these should be listed as additional "options" over and above the scope envisioned in this solicitation to facilitate comparisons between competing proposals.

8.2 Insurance Requirements

Firms interested in working with NEEA should be aware of the following insurance requirements. Vendors must maintain adequate and reasonable insurance covering their performance under any offered contract, including:

- Commercial General Liability Insurance ($1,000,000 per occurrence / $2,000,000 aggregate)
- Business Automobile Liability Insurance ($1,000,000 combined single limit)
- Professional Liability Insurance ($1,000,000 combined single limit)
- Cyber Liability Insurance ($1,000,000 combined single limit)
- Workers' compensation and unemployment insurance, as required by law.

NEEA may request a copy of such insurance policies prior to awarding work. A sample of NEEA's standard contract terms and conditions including information about minimum insurance requirements can be found at: https://neea.org/img/documents/sample-neea-contract-terms-and-conditions.pdf.

Appendix A - Intent to Respond Form

RFP #: 51627

Project Title: Residential Building Stock Assessment
NEEA Point of Contact: Mike Psaris, mpsaris@neea.org

Please provide the following information:

Company	
Address	
City, State, Zip	
Contact Name	
Contact Title	
Phone #	
E-mail	

The company named above intends to submit a proposal in response to NEEA's request for proposal listed above. Deadline for submitting the "Intent to Respond" form is end of business day (5pm PST) of date listed in the RFP schedule.

List any Disadvantaged Business Enterprise (DBE) certifications and the state of the certifications below:

_____

_____

_____

Signature of Authorized Representative _____

Print Name _____

Title _____

Date _____