Weatherization Plus Health Evaluation: Early Progress Report

Prepared for:
Energy Division
Washington Department of Commerce

Prepared by:
Vince Schueler
Rick Kunkle
Washington State University Energy Program

September 2016

WSUEEP16-015

Energy Program

WASHINGTON STATE UNIVERSITY

Contents

Figures

Tables

Executive Summary

In 2015, the Washington State Legislature expanded the focus of the Matchmaker Low Income Weatherization Program to include healthy housing improvements, and increased overall funding by $5 million for the July 2015 – June 2017 biennium (HB 1720). The Washington State Department of Commerce (Commerce) drew on the best practices and lessons learned from national and Washington state multi-faceted asthma programs to develop a statewide initiative to integrate healthy homes interventions into Washington's existing low-income weatherization delivery system. The new Matchmaker dollars funded two delivery strategies:

- **Wx+H Enhanced:** $2.3 million was set aside for a limited number of competitive grants to weatherization agencies to initiate pilots. These pilots deployed comprehensive healthy homes measures and asthma management services in partnership with community organizations or health care providers.
- **Wx+H Basic**: An additional $2 million of Matchmaker funding was allocated by formula to all agencies. Agencies had the option of using funds for existing weatherization and weatherization repair services, or for developing capacity to deliver Wx+H services and installing a subset of healthy homes measures in homes eligible for weatherization services.

The Washington State University (WSU) Energy Program was selected to integrate ongoing program evaluation and "real-time" reporting services into the Weatherization Plus Health (Wx+H) program in summer 2015. The WSU Energy Program has been working closely with Commerce staff and grantees since then to clarify program goals, identify performance measures, and establish performance reporting and program evaluation systems to assess:

- Demand for Wx+H services,
- How well Wx+H meets its goals, and
- The effectiveness of investments in healthy homes interventions in low-income households.

This early progress evaluation of the Wx+H program:

- Summarizes program goals and vision, performance measures, and logic models that will be used to guide program evaluation and measurement.
- Provides an overview of implementation plans and delivery models of enhanced grantees focusing on the current state of delivery models, and new program delivery strategies and partnerships.
- Summarizes challenges and lessons learned by enhanced grantees during initial roll out.
- Describes take up of basic Wx+H services.
- Documents lessons learned from the Request for Application (RFA) and contracting processes.

Findings

There is support and enthusiasm for the Wx+H model among local agencies

Support and creativity were greatest among the eight agencies receiving enhanced grants. All enhanced grantees have launched their initiatives and have shown creativity and resiliency in getting initiatives underway. Grantees especially valued the opportunity to work with existing and new partners to provide comprehensive and coordinated services. Support for Basic Wx+H is less robust. An additional five to eight agencies are interested in and exploring options to launch enhanced Wx+H programs in future funding cycles.

The enhanced grant is fostering new and creative approaches, partnerships, and capacity to delivery integrated weatherization and health delivery models

All enhanced grantees are exploring and deploying new delivery and partnership models. There is some evidence that the explicit requirements of the enhanced grant encouraged creativity and new partnerships. We have also observed several instances of information collaboration and sharing of best practices among enhanced grantees. Although there was some self-selection, agencies who had the option of using additional Matchmaker funds to provide basic Wx+H services or build capacity or new models, or to explore community partnerships are not exercising that option. This suggests that optional flexible funding is not likely to lead to changes in delivery models and new partners for most agencies.

Start-up delays are a primary concern for not meeting goals

Agencies will have had only 12-15 months to establish delivery infrastructure and reach their targets. Delays were particularly acute for the enhanced grantees. Grantees with partners who had already established home visit models have been able to ramp up more quickly than projects that had to build services and referral networks from scratch. Several factors contributed to the delayed enhanced grant start-up; some of these could have been avoided with better design, but others had to do with unfamiliarity and the serial nature of competitive contracting process.

Agencies find it challenging to align building-focused Wx+H treatments and eligibility with occupant-focused health conditions and needs

Most Wx+H grantees are focusing on serving owner-occupied single-family housing because of the difficulty of establishing eligibility and securing landlord support for multi-family and other rental households. The Wx+H requirement that a building must be assessed and receive weatherization services (if eligible and feasible) before healthy homes measures can be installed is particularly challenging in multi-family buildings.

Grantees report that administrative and policy requirements were unclear in the RFA and subsequent roll out

Agencies cited specific examples, such as the definition and requirements for leveraging resources and match, whether clients could be pre-qualified, and how Wx+H might affect utility match requirements under the Matchmaker Program.

About 20 percent of the low-income weatherization production is provided by agencies that are not offering Wx+H services

Between 13 and 16 of 29 local weatherization agencies (44% to 55%) are not offering either enhanced or basic healthy homes measures. Non-participating agencies tend to be smaller, serve rural areas, or are facing management challenges. These agencies account for about 20% of current low-income weatherization production. These agencies still benefit by having access to additional Matchmaker funds, which are more flexible and can be used more readily to meet needs for weatherization-related repair, and health and safety needs.

Recommendations

Maintain both enhanced and basic options

Early evidence suggests that Commerce should continue to offer an enhanced program grant model for Wx+H with fairly explicit requirements for program delivery, and for building local partnerships and referral networks. Maintain the option of providing Wx+H services through the basic model as an important transition funding step.

Continue to document what works and is working

Early reports suggest that enhanced grantees are testing new delivery approaches and models. Intentionally provide opportunities for enhanced grantees to share best practices among themselves and with other agencies. Continue efforts to report and share successes and lessons learned from enhanced Wx+H grantees to lay the groundwork for continued Wx+H funding. Support agencies in telling the story of the model and program. Work with agencies to identify and articulate the value of the program through client case studies. Focus attention on the value added, increased impact, and resources these new partnership approaches are bringing to clients. Although these benefits are crucial, they are often not visible.

Assess options for providing service to hard-to-reach populations and smaller, more rural agencies

Assess alternative options for agencies with limited capacity, resources, and interest, such as providing a very limited menu of low-cost healthy homes measures that can be offered and installed without requiring a healthy homes assessment. Consider ways to address the incompatibility between weatherization (building focus) and health (occupant focus) service models, and how to bridge the gap. Work with agencies with significant unserved multi-family clients to develop an effective service model and strategies that maintain focus on providing integrated weatherization and healthy home services

Streamline or limit the RFA process in future grant cycles

The RFA process served its initial purpose. If Wx+H funding is reauthorized, the RFA process should not be reinstituted for existing enhanced grantees that show evidence of successful initial deployment and achievement of goals. The RFA process may be used to assess applications of additional agencies that would like to transition to the enhanced model. If the RFA model is used for new entrants, the RFA process should be streamlined, and program requirements and scoring methods clarified.

Further work is needed to standardize enhanced program guidelines, tools, and requirements

To a large degree, this is the core work of a pilot project. This standardization needs to be supported with specific systems and processes to identify and track policy and administrative issues as they emerge, write specific policies and/or solutions, and share with all grantees.

Detailed recommendations are provided at the end of this report.

Introduction

In 2015, the Washington State Legislature expanded the focus of the Matchmaker Low Income Weatherization Program to include healthy housing improvements, and increased overall funding by $5 million for the July 2015 – June 2017 biennium (HB 1720). The Washington State Department of Commerce (Commerce) drew on the best practices and lessons learned from multi-faceted national asthma programs[1] and Washington state asthma programs[2] to develop a state-wide initiative to integrate healthy homes interventions into Washington's existing low-income weatherization delivery system. The vision of the Weatherization Plus Health (Wx+H) program is to:

- Integrate investments in energy efficiency and health improvements in homes, and provide education and services to low-income households to reduce energy bills;
- Increase home durability; and
- Improve occupant health, safety, and well-being.

The long-term objective for Wx+H is to support sustainable, long-term investment in low-income housing stock by making the case for continued Legislative investment in, and Medicaid/Medicare reimbursement for, weatherization and healthy homes repairs where appropriate and cost-effective.

Commerce invested the $4.3 million in new Matchmaker dollars to fund two delivery strategies:

- **Wx+H Enhanced**: $2.3 million was set aside for a limited number of competitive grants to weatherization agencies to initiate pilots. These pilots deployed comprehensive healthy homes measures and asthma management services in partnership with community organizations or health care providers. The use of a competitive Request for Application (RFA) process presented a significant departure from Washington's Low Income Weatherization Program, which had previously awarded all funding by formula-based allocation.

  The initial focus of the Wx+H enhanced grant initiative was to assess the effectiveness of integrating weatherization and healthy homes services to serve households with members who have asthma and/or respiratory illnesses. Enhanced grants are intended to be used to develop, test, and deploy new strategies and partnerships to deliver these services. The enhanced grant projects would:
  - Focus on multi-faceted interventions for asthma and other respiratory conditions to ensure consistency and increase ability to detect and measure health outcomes.
  - Encourage innovation and flexibility in program design, partnerships, and approach in deploying these models (weatherization, healthy homes measures, education, and follow-up visits). The expectation was that pilot projects would be used to develop and refine standard practices.
  - Encourage partnerships with other medical and public health entities to leverage resources and improve outreach.
- **Wx+H Basic**: An additional $2 million was allocated by formula to all agencies. Agencies had the option of using funds for weatherization, weatherization repair, developing capacity to deliver Wx+H services, or installing a subset of healthy homes measures in homes eligible for weatherization services.

[1] Meyer, Morgan, and Nardone, 2015; Schueler, 2015
[2] Rose et al., 2015; Breysse et al., 2014; Hutnik, et al., 2015

The Washington State University (WSU) Energy Program, which has provided program evaluation services and reporting for Washington's Low Income Weatherization Program since 2007, was selected to integrate ongoing program evaluation and "real-time" reporting services into the Wx+H program in summer 2015. The WSU Energy Program has been working closely with Commerce staff and grantees since then to clarify program goals, identify performance measures, and establish performance reporting and program evaluation systems to assess:

- Demand for Wx+H services,
- How well Wx+H meets its goals, and
- The effectiveness of investments in healthy homes interventions in low-income households.

This early progress evaluation of the Wx+H program:

- Summarizes program goals and vision, performance measures, and logic models that will be used to guide program evaluation and measurement.
- Provides an overview of implementation plans and delivery models of enhanced grantees focusing on the current state of delivery models, and new program delivery strategies and partnerships.
- Summarizes challenges and lessons learned by enhanced grantees during initial roll out.
- Describes take up of basic Wx+H services.
- Documents lessons learned from the RFA and contracting processes.
- Outlines the evaluation strategy.

This progress evaluation draws on:

- Multiple work sessions with Commerce staff in the fall and winter of 2015 to develop program goals, performance measures, and logic models.
- Key informant interviews with Commerce staff and key stakeholders.
- Hour-long interviews with the six enhanced grantee teams in April 2016 focused on program design and expectations. The six grantees that had launched programs were re-interviewed in June 2016. These interviews focused on lessons learned during roll-out and experience with the RFA and contracting process. Three teams that were not selected in the RFA process were offered partial grants and were interviewed in May 2016.
- Review of the RFA documents, applications, and detailed program documentation.
- Email surveys with the remaining non-enhanced grantee agencies – those that allocated some of their basic funding to Wx+H measures and those that elected not to. These surveys focused on overall opinions of the Wx+H program, why they did or did not apply for enhanced or basic funding, and future plans.

Program History, Vision, and Development

Initial Context and Authorization

The Wx+H program grew out of the recognition that integrating low-income weatherization services and healthy homes programing would address multiple intersecting needs and opportunities. Interviews with staff from Commerce Energy Division, participating agencies, and key proponents identified the following key drivers:

- **Expanding the value proposition for low-income weatherization**: While there continues to be value in reducing the energy cost burden and energy use in low-income households, energy costs in the Northwest are low. At the same time, the costs of delivering low-income weatherization services are increasing in part because much of the "low-hanging fruit" has been harvested. In the long term, it will be difficult to sustain investments in low-income weatherization solely on the basis of energy benefits. Establishing the non-energy benefits of weatherization is becoming increasingly important. As Dave Finet, a long-time proponent of the Wx+H model put it, "We need to show that low-Income weatherization is more than weatherization [and saving energy]."
- **Providing compelling and rigorous evidence of medical cost savings and improved patient well-being**. Continued legislative support for Wx+H depends, in part, on demonstrating the potential for a good return on investment (ROI). The long-term goal for the program is to help build the case for eventual reimbursement for weatherization and healthy home improvements and case management services.
- **Reducing asthma impacts can have significant benefits**. The Wx+H program is initially focusing on asthma and respiratory disease. Asthma is the #1 cause of hospitalizations for children under 15 years of age in Washington. In 2010, 25% of 10th graders with asthma missed at least one school day due to asthma, and there were 164,000 emergency room visits by the 57,000 adults with asthma.[3] Asthma hospitalizations in the state cost $73.2 million in 2010; 60% of these costs were paid for using public funds ($43 million was charged to the patients, $21.8 million to Medicaid). Native Americans and people with low incomes are at the highest risk of having poorly controlled asthma. The non-energy benefits of one avoided asthma hospitalization or doctor visit may be equivalent to several years of energy savings.
- **A proven model**. Extensive and growing national literature establishes the link between weatherization and health, specifically the value of multi-faceted interventions to address asthma funded by the U.S. Department of Housing and Urban Development (HUD), Environmental Protection Agency (EPA), Department of Energy (DOE), and the Centers for Disease Control (CDC).[4]
- **The potential for strong support and partnerships with public health**. There is strong support and evolving knowledge of best practices in Washington state's public health infrastructure, as documented by the Washington Department of Health (DOH) and Washington State Asthma Coalition.
- **Need for stable funding to move the Wx+H model from pilot to production, and bridge the gap for healthy homes measures**. Despite strong evidence of success from pilot studies that Wx+H models are effective, most Wx+H interventions are hampered by time-limited episodic funding often tied to rigorous research designs. Programs such the Tacoma-Pierce County Clean Air for Kids program and Yakima Valley Farm Workers Clinic (YVFWC) asthma home visit program

[3] Washington DOH, 2013
[4] Schueler, 2015

provided recommendations for healthy homes measures but did not have the resources to provide financial support for installing the measures or long-term follow-up. Wx+H offers the potential of providing stable "anchor" funding for these types of programs.

- **Extensive experience and leadership with the Wx+H model in Washington**. The Opportunity Council (Whatcom County) has experimented and deployed healthy homes services for over 20 years, and has been a pilot site for a DOE Weatherization Plus Health Initiative. The King County Housing Authority and Seattle-King County Health Department completed ground-breaking pilots in the effectiveness of using multi-faceted interventions (weatherization, healthy homes services, education, and community health worker visits) to reduce asthma triggers and medical costs, and increase caregiver quality of life. Two other organizations have developed strong community health worker models for addressing asthma: the YVFWC, Puget Sound Asthma Coalition, and Tacoma-Pierce County Clean Air for Kids program.
- **Ability to leverage the Washington Low Income Weatherization Program infrastructure**. This includes funding from national, state, and utility partners and programs; policy; and reporting systems and program protocols. It would be difficult to launch a program like Wx+H from scratch.
- **State-wide delivery.** Although the Wx+H model has been deployed in several pilot studies, it has not been proven in a production setting across multiple agencies. Commerce and the Low Income Weatherization Program received funding from the Legislature on the strength of the evidence of the pilot studies and model. Continued funding is likely to hinge on whether Commerce will be able to deliver an effective program.
- **Integration and coordination of services**. There is a continuing trend to integrate and coordinate services at the local level at the Housing Trust Fund, DOH, Apple Health (Medicaid), and Accountable Communities of Health. In the near term, Commerce is focusing on launching the program, but will reach out to other agencies in the next phase.

Program Design and Development

In summer 2015, Commerce consulted with low-income agencies on program design preferences. Two key themes emerged:

- **Flexibility in program design and Healthy Homes measure options**. The preference was for Commerce to allow a comprehensive list of measures and broad discretion in program targeting (able to address any health and safety need) rather than targeting the program and services to a specific condition such as asthma and measures associated with that condition.
- Agencies also expressed strong reservations about using a competitive process to award grants out of concern for the time required to complete applications and the likely delays introduced in the contracting process. Alternative strategies included allocating resources to applicants meeting minimum standards and following Healthy Homes best practices.

In summer 2015, Commerce commissioned a review of the literature on the Wx+H model.[5] This review, summarized in Attachment 1, highlighted the effectiveness of providing integrated services (weatherization, health homes services, and follow-up education and support), and the challenges and requirements to measure and document health benefits, including medical cost savings.

After reviewing legislative intent, prior research, and feedback from agencies, Commerce established six goals for the Wx+H program:

[5] Schueler, 2015

1. Develop a collaborative infrastructure for implementing a statewide Healthy Homes program.
2. Ensure that homes meet minimum health and safety requirements.
3. Reduce disease and injury outcomes from housing-related hazards.
4. Reinforce the understanding that healthy housing benefits Washington communities.
5. Ensure long-term sustainability of the Healthy Homes program.
6. Be a national leader of Healthy Homes innovation.

These goals are summarized in Figure 1. A more detailed logic model is included as Attachment 2.

In the early fall 2015, Commerce made three key design decisions:

- Offer both a basic (flexible option) and enhanced (competitive RFA) option. The RFA model was intended to encourage innovation and provide some options for local flexibility.
- Focus the enhanced grant on a priority condition (asthma and respiratory conditions) and on multi-faceted interventions to increase standardization and the likelihood of establishing measureable health benefits.
- Incorporate a strong program evaluation and reporting component.

The Enhanced Request for Application and Contracting Process

Commerce's decision to use a competitive RFA process to award up to $2.3 million through the enhanced Wx+H program was a significant departure from past practice. The initial RFA was released in September 2015 for an initial grant pool of $2 million.

Eight agencies requested $2.79 million (Table 1). Four agencies, King County Housing Authority (KCHA); Metropolitan Development Council; Chelan – Douglas Community Action Council; and the Community Action Council of Lewis, Mason, and Thurston Counties, missed proposal submission deadlines due to confusion about when the application was due. If these grantees had successfully met the deadline, the request pool would have totaled between $3.5 and $4 million.

Five agencies were eventually selected for awards. All agencies were given the option of converting their basic allocation of Matchmaker funding to an enhanced grant. One agency, KCHA, did so. Three of the unsuccessful grantees were offered smaller start-up grants. Two, Blue Mountain Action Council (BMAC) and the Yakima Nation Housing Authority (YNHA), accepted the offer.

Table 1. Washington 2015-2017 Wx+H Enhanced Grant Summary: Initial Requests and Final Awards

Applicant	Requested	Awarded
Pierce County Community Connections/Tacoma-Pierce County Public Health Dept.	$521, 528	$508,042
Opportunity Council	$565,382	$478,000
Yakima Valley Farm Workers Clinic	$369,768	$362,955
Spokane Neighborhood Action Partners	$237, 982	$208,082
Snohomish County	$220,000	$220,000
King County Housing Authority	~$500,000	$277,233
Blue Mountain Action Council	$166,311	$50,000
Yakima Nation Housing Authority	$500,000	$50,000
Yakima Opportunities Industrialization Center	$206,800	$0
Totals	*$3,287,771*	*$2,154,312*

Figure 1. Wx+H Summary Logic Model

As shown in Table 2, applicants and awardees were clustered among the larger weatherization agencies.

Table 2. Wx+H Enhanced Grants by Local Agency Peer Groups

Agency Peer Group[6]	# of Agencies	Applied (% of peer groups)	Awarded
Large Urban	5	4 (80%)	4 (80%)
Small Urban	7	3 (43%)	1 (14%)
Large Rural	5	1 (20%)	1 (20%)
Small Rural	8	1 (12%)	1 (12%)
Tribal Housing Authority	4	1 (25%)	1 (25%)

A Delayed Start

As is often the case with new initiatives, the RFA and subsequent contracting practice took longer than anticipated. Commerce's initial expectation was that contracts with grantees would be signed by December 2015. Contracts were not fully executed with most grantees until over a year from the biennium start (Table 3).

Table 3. Wx+H RFA Timeline

RFA Milestone	Date	Months from Biennium Start
RFA Released	9/23/15	3
Proposal Deadline	11/10/15	4.5
Initial Award Announcement	12/15/2015	6
Final Award Announcements/Protest Resolved	2/5/2016	7
Draft Contacts Released	3/14/2016	8.5
Contracts Signed	3/31/16 -5/23/16*	9 -11
Partner Subcontracts Finalized	June - July	11 -13

Several factors contributed to the delay, including:

- Delays at Commerce in the initial scoring process and approval of initial awards.
- Three unsuccessful grantees requested a debriefing. One of the three unsuccessful grantees contested the award. This delayed final awards by two months while this issue was resolved.
- Because Wx+H was a new funding source that occurred outside the annual budget process, some public sector grantees needed additional approvals and authorization from their governing bodies before contracts could be signed.
- New funding and delivery models required additional time to draft, review, and approve scopes of work.
- In most cases, the contracting process occurs serially. Sub-contracts cannot be negotiated until initial contracts were signed and funding levels finalized.

Improving the RFA Process

The RFA process involved a steep learning curve for Commerce and local agencies. Overall, most of the applicants were appreciative of or understood the need for open-ended flexible requirements. This allowed for local innovations tailored to community needs and partnerships.

[6] The Washington Department of Commerce Weatherization Program has assigned weatherization agencies into four peer groups that reflect service areas and budget level: large urban agencies (annual budgets >$1 million), small urban agencies ($500K-$1 million), larger rural ($300K-$500K), and smaller rural (under $300K).

Agencies reported there was too much flexibility in some areas of the RFA. Concerns were raised about the lack of clarity and definition in the goals, scoring criteria, process, requirements, and expectations. Specific issues that were identified included:

- Some of the scoring sections were duplicative and overly focused on administrative and process requirements.
- Tight word limits did not allow agencies to fully express their plans and the work they put into it.
- Key terms, such as leveraged resources, were not well defined. What was expected sometimes changed (e.g., less than full weatherization became an option), making it difficult to plan and budget.
- The match requirement was not understood. Three enhanced applicants reported uncertainty over how receipt and/or use of enhanced funds would affect meeting utility match requirements in the Matchmaker Program's authorizing legislation and in part of their utility agreements. This uncertainty contributed to reluctance to apply for enhanced grants.
- Reporting requirements were not fully specified, making it difficult to appropriately budget for them.
- There was confusion with the submittal process deadline. Four otherwise qualified applicants missed proposal deadlines and were disqualified.
- Agencies liked the use of SharePoint to post questions, responses, and background documents. Non-agency partners (such as local health departments), however, did not have access to Commerce's SharePoint site, which made the process less transparent for some teams.

The Enhanced Contracting Process

In general, the enhanced program contracting process went more smoothly than the RFA process, and grantees were more positive about their experience:

- Some agencies liked Commerce's personal outreach during the contracting process and appreciated the upfront communication, but some felt that Commerce was not always responsive.
- In general, agencies felt the statement of work (SOW) was right on target and appreciated the detail provided (compared to the RFA). The tasks and deliverables were rigorous and the reporting significant. This was more than some expected; they thought the requirements could be reduced.
- There were delays in the contracting process, both internally and at Commerce.

Although all of the enhanced grantees interviewed expressed some frustration with startup delays, these were not unexpected. The primary sentiment of the interviewees was enthusiasm and excitement around the opportunity to offer comprehensive weatherization and healthy homes services, build and strengthen a more coordinated approach to services, and have more resources to help clients deploy Healthy Homes measures.

The Basic Program

Commerce began developing policies and grant procedures for basic Wx+H funds concurrently with the RFA process. Basic funds were allocated to all local agencies based on the Commerce weatherization allocation formula used for DOE, LIHEAP, and Matchmaker funding.[7] All agencies received a basic

[7] Commerce allocates funding to agencies based on the local share of persons over 18 years of age at or below 125% of the Federal Poverty Level with additional adjustments for climate zone.

allocation, including those who were awarded enhanced funding. Agencies had the option of using basic funds for Wx+H measures or using them to supplement existing weatherization and repair efforts. As mentioned above, agencies also had the option of converting basic funds to enhanced funds. One agency, King County Housing Authority, selected this option.

Commerce staff made an early determination that the authorizing legislation clearly linked weatherization and Healthy Homes measures, and that Healthy Homes measures were not intended to be delivered as stand-alone measures and education services. Basic Wx+H policy required the following to expend funds:

- Homes and occupants must be qualified and prioritized to receive weatherization services.
- Homes must be assessed for weatherization needs and receive weatherization services before they are eligible for Healthy Homes measures. Basic health measures can be installed in homes that had been weatherized in the prior year, or if they had been assessed and the assessment confirmed there were no weatherization opportunities.
- The need for Healthy Homes measures must be documented using a Healthy Homes assessment tool, such as the Pollution Source Survey and Mold Assessment, or an alternate tool such as HUD's Healthy Homes Rating System.
- Staff providing Wx+H-specific services must document they have received a certificate of completion for Healthy Homes Essentials training.

The basic program policy established a pre-approved list of 14 measures (Attachment 4) and capped basic Wx+H installed measure costs (IMC) at $2,500 per unit, unless prior approval was obtained from Commerce. The pre-approved list for enhanced grantees had both a higher cap ($4,000) and additional measures such as roofing, floor, and advanced mechanical ventilation.

As with the enhanced program, there were some delays in finalizing policies and getting basic Wx+H contracts signed and in place. Draft contracts were released November 15, 2015. The first basic contract was signed in December 2015 and the final contract signed in April 2016.

Basic Policies

WSU Energy Program staff sent email surveys to the eight agencies that did not receive enhanced Wx+H funding but requested to use the Wx+H basic line item to fund measures. Five of the eight responded. The overall response to the basic Wx+H program and process was positive. All responding agencies appreciated access to more flexible funding to augment weatherization projects and allow additional investments, weatherization, repair, and/or Healthy Homes measures. However, three of the five respondents noted one or more of program's policy requirements for expending funds on Healthy Homes measures were excessive and/or too restrictive. Areas mentioned included certification and training requirements, and the requirement to weatherize (or rule out weatherization opportunity) before Wx+H funds could be expended on Healthy Homes measures.

Serving Multi-family and Rental Properties

This requirement, which is in place for both the basic and enhanced programs, maintains existing barriers to serving what are already hard-to-serve/qualify low-income weatherization customer segments: single-family rental units and multi-family buildings. This is an especially large hurdle for multi-family buildings because the incidence of asthma or other healthy homes needs may be limited to specific units/households, but weatherization policies require treating the entire building.

While it is possible to provide additional Healthy Homes measures in a multi-family dwelling that has been weatherized, the policy makes it difficult to serve households with needs that do not qualify for weatherization, where there are not resources for weatherization, or where the landlord is not cooperative. This also creates a disconnect from medical and public health system referrals because it is likely that a significant share of the low-income population with asthma or other Healthy Homes-qualifying conditions reside in multi-family units. While we have not been able to find state data linking asthma incidence to building type, a 2012 analysis of American Community Survey data for the state found that 48% of Washington households below 125% of the Federal Poverty Level (the priority target population) lived in multi-family units. Evidence from the epidemiological studies in other cities suggests that the prevalence of environmental triggers and allergens is greater in rental vs. owner-occupied structures (see Camancho Rivera, et al., 2014), which points to greater need in renter-occupied units.

Given the complexity and challenges of serving rental/multi-family dwellings, most agencies deploying enhanced and basic Wx+H funds have elected to focus initial efforts on single-family, owner-occupied homes. Two agencies have requested more flexibility to provide Healthy Homes services to households in multi-family dwellings that meet weatherization qualifications and priorities but do not receive weatherization services, and others are exploring options to better address this need.

Evaluation and Reporting

Commerce recognized that Wx+H was a pilot program and that it was crucial to include evaluation and measurement in the program design. WSU Energy Program and Commerce staff initially identified the following priority research questions:

- What Wx+H services were delivered by basic and enhanced programs?
- Was funding sufficient to address demand for projects? What was the unmet need?
- Who was served? Were Wx+H resources targeted to high-needs households?
- Was community capacity to deliver Healthy Homes services increased?
- Were new partnerships and funding identified to target high-needs households, and coordinate and leverage additional services?
- What innovative approaches were tried and what was learned?
- How has Wx+H impacted those receiving services? Is there evidence of health benefits?
- What were the costs for measures and services? Do the benefits outweigh the costs?
- Is the Wx+H model viable and sustainable? What are the barriers to further progress? Is sufficient capacity available? Is there support for continuing work?

Starting in fall 2015, WSU Energy Program staff worked with Commerce to prepare an evaluation plan and strategy (Attachment 3). Core evaluation features include:

- Invest in planning to clarify performance metrics, develop effective data collection tools, and integrate performance measurement into program design. Consult with the program evaluation staff when establishing contractual reporting requirements and designing reporting mechanisms.
- Provide early feedback via dashboard and interim process reporting. Develop and deploy a monthly reporting and data quality assurance review process to track implementation status. This will assure the data required for reporting, assessment, and measurement of program and health outcomes is as available, complete, and accurate as possible.

- Focus more detailed data collection and evaluation resources on enhanced projects. Streamline reporting for basic investments. Wherever possible, integrate reporting with existing systems.
- Prepare an interim report to the Legislature by December 2016. This report will focus on program deployment and the pipeline, and will present anecdotal evidence of program impacts.
- Develop a data collection process and tools that preserve options for rigorously estimating social well-being and health benefits in 2017-18. Establish a collaborative relationship with the Washington Department of Social and Health Services to support rigorous measurement of health and medical utilization outcomes, and seek outside funding for health impact measurement.

These efforts are on track:

- Healthy Homes measure and cost data were added to the Weatherization Information Data System (WIDS) in early 2016.
- Systems for tracking and reporting participant and upgrade data were in place in August 2016.
- A collaborative proposal to assess health utilization impacts of Wx+H has been developed and submitted to the HUD Housing Technical Studies Grant Program.

Enhanced Wx+H Initiative Descriptions

Eight agencies are providing enhanced Wx+H services. Commerce has negotiated targets at two service levels: comprehensive – multi-faceted intervention (weatherization, Healthy Homes measures, and multiple home or phone visits) and education (low-cost measures and education). Targets are summarized in Table 4.

Table 4. Summary of Enhanced Grantee Targets and Targeting Approach

Grantee	Targets		Targeting Strategies
	Multi-faceted	Education Only	
KCHA – Seattle King County Health Dept.	30	150	Households served by SKCHD Asthma Program in single-family homes
PCCC – Tacoma Pierce County Health Dept.	40	35	Households with asthma or COPD
YVFWC	37	113	Households served by YVFWC Asthma Home Visit Program
The Opportunity Council	40	10	Clients of all ages with asthma, COPD or other respiratory conditions; tribes
Snohomish County	18	17	Children with asthma in rural and tribal areas – focus on Early Childhood Education and Assistance and Early Head Start
SNAP	28	22	Children and those over 55 with respiratory conditions
BMAC	5		Households with children with asthma served by school health center
YNHA	7		Household with asthma served by the Indian Health Service

Two Wx+H service models have emerged:

1. **Community Health Worker (CHW) Partnerships**: Five grantees have established partnerships with other entities that have staff and experience offering home visit services:

- Two (King County Housing Authority and PCCC) established partnerships with local public health departments.
- Two (Snohomish County Human Services and YVFWC) are working with community health workers and/or visiting nurse programs elsewhere in their organizations.
- BMAC is partnered with a school-based health center for referrals and education.

CHW partnerships provide a more integrated service model, and education and follow-up are more likely to include medical case management-related services. Often initial visits, screening, and relationship building occur prior to referral and intake into Wx+H services.

2. **Referral Models**: Two grantees (Opportunity Council and Spokane Neighborhood Action Partners [SNAP]) involve community health partners for consultation and referrals, but provide all program services (weatherization, Healthy Homes, and home visits/education) in house. Education efforts in these models focus more on managing behavior and environmental triggers. Both of these organizations are exploring partnerships and options for integrating CHW home visits.

Detailed profiles of six full Wx+H grantees are provided in Attachment 5. Profiles of the partial grantees were completed in August. Three core themes emerged from this summary.

First, each of the partnerships brings a different level of expertise and experience in delivery of multi-faceted asthma interventions (Table 5). None of the partnerships have experience in all facets of the intervention model. However, each of the grantees is testing at least one new approach or tool to support program delivery and coordination.

Table 5. Qualitative Assessment of Prior Experience of Enhanced Grantees

Grantee	Weatherization	Healthy Homes Assessment	Healthy Home Upgrades	Environmental Conservation FD	Community Health Worker	Partnering with Medical	Service Integration
KCHA – Seattle King County Health Dept.	H	M	M	M	H	M	M
PCCC – Tacoma Pierce County Health Dept.	H	M	L	M	H	M	L
YVFWC	H	M	L	L	H	M	L
The Opportunity Council	H	H	H	H	L	L	L
Snohomish Human Services	H	L	L	M	M	L	L
SNAP	H	M	L	H	L	L	L
BMAC	H	M	M	M	L	M	L
YNHA	H	L	L	L	M	L	L

H = Extensive current experience
M = Some experience (may be prior)
L = Limited experience

Four have extensive or moderate experience in five of the seven areas. Much of the experience was gained as part of a research project that placed significant constraints on delivery or as part of a fairly prescribed home visit program. A key value of the grant is allowing grantees to test delivery of Wx+H services on a more "production basis." During start-up interviews, grantees identified best practices for

integrating Healthy Homes services and community health visits into weatherization program delivery based on their prior experience:

- Agencies generally could not generate sufficient referrals from existing low-income weatherization and LIHEAP applicant pipelines. To generate sufficient volumes, it is important to screen for asthma and respiratory conditions first, and then determine if candidates are eligible for weatherization. Another option is to use hybrid internal/external referral systems.
- A key finding from the Rose et al. (2015) study of the Opportunity Council's Wx+H pilot was the importance of working with local referral partners in the medical community to identify and prioritize households with greater asthma or respiratory morbidity that are also likely to be greater users of emergency or urgent care medical services.
- It is helpful to establish connection via a trusted messenger before making a broader ask for program participation, especially because this work may involve sensitive health and other data. CHWs and visiting nurses are especially effective in this role.
- It is important to provide multiple home visits to avoid the potential for information overload and to allow for follow up.
- While asthma/Healthy Homes visits may be coordinated with visits focused on energy management and weatherization, these are sufficiently different topics to warrant separate education sessions. Sequencing works better than concurrent sessions.

Second, all of the grantees will be establishing new partnerships and new roles for their organizations and partners. In some cases, these arrangements involve formal contracts or memoranda of understanding. All of them will involve developing new procedures and policies to coordinate referrals and services, which takes time.

Third, all the enhanced grantees reported that the enhanced grant provides critical resources to plug gaps and extend services. For example, partners that provided asthma home visits did not have resources to follow up after three months. Those offering home visit or occupant education could make recommendations for measures to remediate environmental triggers, but often found that occupants did not have resources to acquire or install Healthy Homes measures. Similarly, most grantees had informal referral relationships or other partnership agreements but did not have the resources to systematically integrate programs and coordinate services.

Wx+H Program Status

Enhanced Program

Six of eight grantees (indicated in orange in Table 6) had signed contracts and were accepting referrals as of June 2016. Three have conducted Healthy Homes audits and two have completed their first upgrade. All grantees are expected to complete their first upgrade by October 2016. As of July 10, 2016, all enhanced grantee agencies had invoiced and expended $12,993 (<1%) of total enhanced program funding.

Table 6. Implementation Status of Enhanced Wx+H Grantees as of June 2016 (Light Orange Projected Status)

Agency	Commerce Contract Signed	Partner Agreement Signed	Initial HH Referrals Assessed	Wx Audit	Healthy Homes Audit	Upgrade Complete
PCCC	May 2016	May 2016	14	14	3	1
YVFWC	Mar 2016	NA	34	7	5	1
Op Council	Apr 2016	Jul 2016	4	2	2	Aug 2016
KCHA	Mar 2016	Jul 2016	2-4	2- 4	Jul 2016	Aug 2016
Snohomish County	May 2016	NA	5	2	Aug 2016	Sep 2016
SNAP	May 2016	Jul 2016	Aug 2016	Aug 2016	Aug 2016	Sep 2016
BMAC	Aug 2016	Jul 2016	6	Aug 2016	Sep 2016	Oct 2016
YNHA	Aug 2016	NA	Aug 2016	Aug 2016	Sep 2016	Oct 2016

Each of the grantees has experienced challenges in getting the grant up and running, but has also shown resilience and creativity in responding to these challenges:

- KCHA has experienced some delays in contracting with Seattle King County Public Health (SKCPH). In the interim, the partnership is using this time to bring public health workers up to speed on the weatherization process. All CHWs have observed weatherization audits. In the interim, informal referrals have been made from the SKCPH asthma home visit program to KCHA weatherization services, and vice versa. Snohomish County has tested the referral process with Early Head Start, which operates through the summer months. Referrals from the Early Childhood Education Program will begin once the schoolyear begins in September. In the meantime, the program has been focusing on creating and testing education and follow-up tools.
- SNAP, which has the least experience of the six full grantees, has been focusing on establishing program infrastructure, including policies and procedures, IT/data collection systems, assessment and education tools, and protocols. A major focus has been reaching out to potential partners such as Spokane Public Health, medical clinics, and WSU Spokane.
- Opportunity Council experienced an initial setback when a key referral partner, the Whatcom Alliance for Health Advancement, went through a major retrenchment. As of July 2016, a working agreement for referrals with Unity Care NW was put in place. Partnership agreements with the Nooksak and Lummi tribes are moving forward. In addition, the grantee has refined program policies and tools, including improving the pollution source survey, client questionnaires, and assessment process to streamline and strengthen data collection.
- The YVFWC has been able to start quickly due to the pipeline established from the Home Visit Program. The initial design relied on a single intake person, who was sidelined with health challenges. The clinic shifted the intake responsibilities to a broader pool of service coordinators, which has turned out well because it provides cross training and broader awareness of the program across the organization. They also tested the feasibility of joint Healthy Homes and weatherization audits, and found that the process was too intensive and time consuming for clients. They are moving to a serial process where the Healthy Homes assessment is done first and is followed by an audit. Partnership with the asthma program has

been very effective. They identified 34 clients (all of whom received a preliminary Healthy Homes assessment and were referred to Weatherization for audit).

- PCCC has also been able to start quickly because of the strong pipeline from the Clean Air for Kids Program/CHW infrastructure at the health department. Coordination and data sharing have been more cumbersome than initially planned because there have been delays in rolling out the IT platform for data sharing (REDCAP). Despite some of these challenges, they have had a couple of early successes and have been particularly successful at providing additional case management service beyond Wx and Healthy Homes services.

Basic Program

There has been less interest and uptake of optional basic Wx+H funding. Originally, $2,009,190 was allocated to agencies for the basic program. A little over a third of basic allocations have been budgeted for Wx+H measures. Fifteen of the 25 local agencies are using these funds for Wx+H measures (see Table 7). Of these:

- KCHA converted its entire basic allocation of $277,233 (14% of all available statewide basic funding) to the enhanced program.
- Five of six enhanced grantees are using basic Wx+H funds to augment their Wx+H enhanced grant. One grantee is a tribal authority and is not included in this table.
- Eight agencies that did not receive enhanced grants have allocated funds for Wx+H measures and are using them to gain more experience in the Wx+H model.

As of July 15, 2016, $17,884 had been expended on basic Wx+H measures (4% of the budget). Most of these expenditures were made by enhanced grantees.

Table 7. Wx+H 2015-2017 Basic Allocations and Expenditures

	# of Agencies	Total Basic $	Allocated Wx+H	Allocated (%)	Expended through 7-15-16
Total	25	$2,009,190	$688,489	34.3%	$17,885
Enhanced Wx+H *and* basic Wx+H	6	$659,655	$122,556	18.6%	$13,947
Enhanced Wx+H (convert basic)	1	$277,233	$277,233	100%	0
Basic only funds allocated for Wx+H	8	$561,811	$288,700	51.4%	$3,938
Basic only; no basic Wx+H allocation	10	$510,491	$0	0%	NA

Ten agencies are not conducting any Wx+H activities. As shown in Table 8, these tend be smaller agencies with limited capacity or larger agencies with other capacity constraints (management or transition issues). Non-participating agencies accounted for 18% of total production between January 2014 and June 2015.

Table 8. Wx+H Participation by Agency Peer Group

	# of Agencies	Large Urban	Small Urban	Large Rural	Small Rural	Tribal Authority
Total	29	5	7	5	8	4
Enhanced grantees	8	4	1	1	1	1
Basic-only funds allocated for Wx+H	8	1	2	1	4	NA
Basic only; no basic Wx+H allocation	10	0	4	3	3	NA

The basic agencies that allocated funding for Wx+H and responded to the survey indicated that they saw value in the Wx+H model and are likely to be interested in progressing to enhanced or more active use of basic funds for Wx+H services.

Conclusions and Recommendations

There is support and enthusiasm for the Wx+H model among local agencies

Support and creativity were greatest among the eight agencies receiving enhanced grants. All enhanced grantees have launched their initiatives and have shown creativity and resiliency in launching initiatives. Grantees especially valued the opportunity to work with existing and new partners to provide comprehensive and coordinated services. Support for Basic Wx+H is less robust. An additional five to eight agencies are interested in and exploring options to launch enhanced Wx+H programs in future funding cycles.

Recommendations

- Continue to report and share successes and lessons learned from enhanced Wx+H grantees' experience to lay the groundwork for continued Wx+H funding.
- Verify that early indicators and reports from Wx+H reported here are accurate. Continue quarterly evaluation check-ins with enhanced grantees.
- Focus Wx+H reporting on investments in building infrastructure and establishing the pipeline.
- Support agencies in telling the story of the model and program.
- Work with agencies to identify and articulate the value of the program through client case studies.

Start-up delays are a primary concern for not meeting goals

Agencies have had only 12-15 months to establish delivery infrastructure and reach their targets. Delays were particularly acute for the enhanced grant. Grantees with partners who had already established home visit models have been able to ramp up more quickly than projects that had to build services and referral networks from scratch. Several factors contributed to the delayed enhanced grant start-up, some of which could have been avoided with better design. But others had to do with unfamiliarity and the serial nature of the competitive contracting process. Some enhanced grantees reported roll-out and deployment were slowed somewhat by a lack of timely technical assistance and guidance in new areas (for example, diagnostic testing or requirements and sourcing of Healthy Homes measures).

Recommendations

- Monitor the program pipeline and upgrade progress on a monthly basis. Reassess capacity to meet targets in fall 2016 and develop contingency plans as needed.
- Proactively assess enhanced grantees' technical assistance needs and identify resources to address them.
- If additional Wx+H funding is provided beyond July 2017, consider revising the use of an RFA process for allocation. The RFA process should be reconsidered as a way to provide ongoing funding to existing enhanced grantees that show evidence of success in initial deployment and achievement of goals. The RFA process could be considered as a method of assessing applications of additional agencies that would like to transition to the enhanced model.
- If the RFA model is chosen to be used for new entrants, consider streamlining the process, and simplify and clarify program requirements and scoring methods.

The enhanced grant is fostering new and creative approaches, partnerships, and capacity to delivery-integrated Wx+H delivery models

As summarized in the Wx+H grantee files, all enhanced grantees are exploring and deploying new delivery and partnership models. There is some evidence that the explicit requirements of the enhanced grant encouraged creativity and new partnerships. We have also observed several instances of information collaboration and sharing of best practices among enhanced grantees. Although there was some self-selection, evidence from the basic program suggests that "optional" models did not result in new models or partnerships.

Recommendations

- Early evidence suggests that Commerce should continue offering an enhanced program grant model for Wx+H with fairly explicit requirements for program delivery and for building local partnerships and referral networks.
- Focus on defining and publicizing the new value added, increased impact, and resources these new partnership approaches are bringing to clients. Although these benefits are crucial, they are often not visible or obvious unless illustrated by stories and examples.
- Further work is needed to standardize enhanced program guidelines, tools, and requirements.
- Improve methods to share new delivery models, best practices, and assessment tools among all Wx+H partners. The current SharePoint platform is not accessible all Wx+H partners.
- Intentionally provide opportunities for enhanced grantees to share best practices among themselves and with other agencies.

Agencies find it challenging to align building-focused Wx+H treatments and eligibility with occupant-focused health conditions and needs

Most Wx+H grantees are focusing on serving owner-occupied, single-family housing because of the difficulty of establishing eligibility and securing landlord support for multi-family and other rental households. The Wx+H requirement that a building must be assessed and receive weatherization services if eligible and feasible before Healthy Homes measures can be installed is particularly challenging in multi-family buildings.

Recommendations

- Consider ways to address this incompatibility between weatherization (building focus) and health (occupant focus) service models and how to bridge the gap. Work with agencies with significant unserved multi-family clients to develop an effective service model and strategies that maintain focus on providing integrated weatherization and Healthy Home services.

Grantees reported that administrative and policy requirements were unclear in the RFA and subsequent roll out

Agencies cited specific examples such as the definition and requirements for leveraging resources and match, whether clients could be pre-qualified, and how the Wx+H might affect utility match requirements under the Matchmaker Program.

Recommendations

- Identify and track policy and administrative issues as they emerge, and use quarterly meetings with grantees to discuss and develop a better understanding of the problems and potential solutions.

- Write specific policies and/or solutions and lessons learned and share with all grantees.
- Apply the clarifications to future policy documents so directions and requirements are much more specific.

About 20% of the state is not receiving Wx+H services

Between 13 and 16 of 29 local weatherization agencies (44% to 55%) are not offering enhanced or basic Healthy Homes measures. Non-participating agencies tend to be smaller, serving rural areas, or are facing management challenges. These agencies account for about 20% of current low-income weatherization production and still benefit by having access to additional Matchmaker funds, which are more flexible and can be used more readily to meet needs for weatherization-related repair and health and safety needs.

Recommendations

- Maintain the option of providing Wx+H services through the basic model as an important transition funding step in upcoming funding periods.
- Assess alternative options for agencies with limited capacity, resources, and interest such as providing a very limited menu of low-cost Healthy Homes measures that can be offered without requiring a full Healthy Homes assessment.

References

Breysse J., Krieger J., et al. (January 2014). "Effect of Weatherization Combined with Community Health Worker in Home Education on Asthma Control." *American Journal of Public Health* (King County).

Camacho-Rivera, M.; Kawachi, I.; Bennett, GG.; Subramanian, SV. (August 2014). "Associations of neighborhood concentrated poverty, neighborhood racial/ethnic composition, and indoor allergen exposures: a cross-sectional analysis of Los Angeles households, 2006-2008." *J Urban Health*. 91(4):661-76. doi: 10.1007/s11524-014-9872-9.

Hutnik, L.; Olsen, J.; Zarellijackson, H.; Byne, M. (November 2015). *Evaluation of Coordinated Care and Clean Air for Kids Collaboration*. Tacoma Pierce County Health Department.

Meyer J.; Morgan, G.; Nardonne, M. (June 2015). *Sustainable Funding and Business Case for GHHI Home Interventions for Asthma Patients*. Green and Healthy Homes Initiative and Health Management Associates. Baltimore Maryland.

Rose, E.; Hawkins, B.; Tonn, B.; Paton, D.; Shah, L. (September 2015). *Exploring the Potential of Weatherization Plus Health Interventions on Asthma-related Medicaid Claims and Costs in Washington State*. ORNL/TM-2015/213, Oak Ridge National Laboratory, Oak Ridge, TN.

Schueler, V. (August 2015). *Washington State Weatherization Plus Health Initiative: Background Research and Literature Search*. Washington State University Energy Program, Olympia, WA.

Attachment 1: Literature Summary

Summary highlights from Schueler, V. (August 2015). *Washington State Weatherization Plus Health Initiative: Background Research and Literature Search*. WSU Energy Program, Olympia, WA.

Program Models

- Assessments of weatherization plus health (healthy homes assessments with targeted repair and services) document positive self-reported health outcomes, but few attempted to measure health care utilization and cost reductions. This was largely because effect sizes were too modest given the sample size of the study, the challenges of isolating specific effects from a more general treatment, and that post treatment study periods were too short.
- Several evaluations of community health care worker/home visit programs studies have documented significant health utilization and cost reductions. Programs that combine home visits to a target population (asthma) and case management with targeted weatherization, repair, and health risk remediation show the strongest results. Several programs have been evaluated and have reported high returns on investment. A key feature of the most successful program was targeting both high-risk individuals (children with asthma) and homes with high risks (asthma triggers that require physical remediation). Several studies of integrated programs targeting asthma show very good results.
- There are several strong program models from around the country. The strongest involve large partnerships and collaborations that were built over a long period of time
- There are fewer studies and less definitive results for programs targeted to the elderly. Impacts may be more difficult to identify and track through the health care system.

Partnerships and Infrastructure to Deliver the Program

- There are very few structured programs integrating weatherization and healthy homes services currently operating Washington. The two strongest programs, the King County Asthma Program and the Opportunity Council, currently do not have ongoing sustained funding.
- Healthy homes programs rely heavily on grant funding and are often run as demonstrations. A number of healthy homes, asthma visit, and lead safe projects were listed in the Washington State Asthma Coalition 2011 inventory but are no longer functioning.
- Integrated programs are effective but require significant and long-term investments to establish processes, partnerships, tools, and protocols. Not all Washington low-income weatherization agencies have the capacity to build the required partnerships and ramp up production in 24 months. This is a particular concern for smaller, rural agencies.

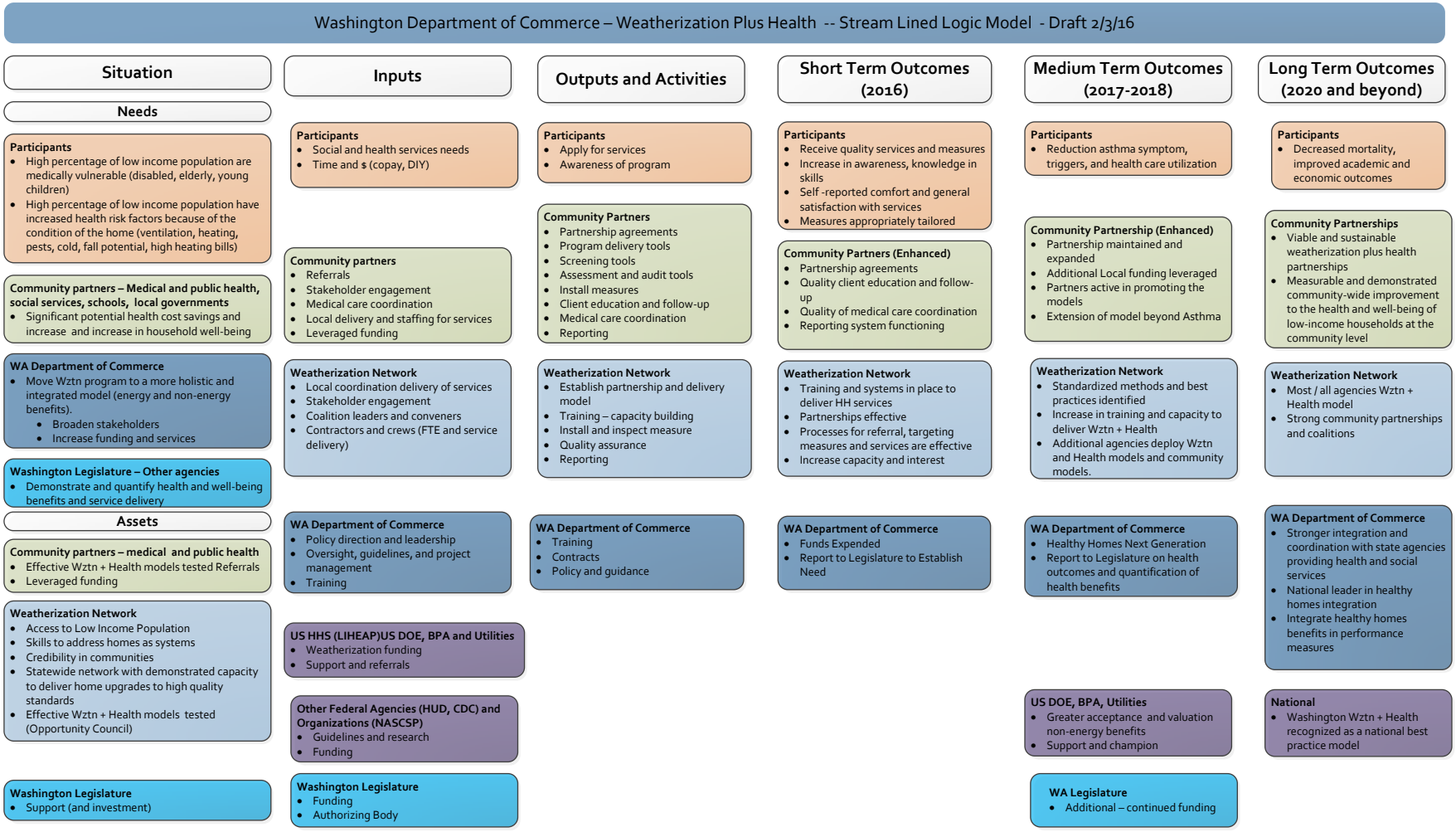
Research Requirements

- Large sample sizes (>400) are likely required to detect changes in health utilization for Wx+H models. Measurement for these programs may be best focused on tracking interventions and assessing whether they are being delivered to more at-risk populations.
- Projects that target high-risk clients living in homes requiring remediation are more likely to show stronger effects and greater return. Smaller sample sizes (100 -200) may have enough power to detect effects, assuming a similar delivery model. Asthma trigger prevalence studies suggest situations requiring significant physical remediation are present in less than 50% of

households with members who have asthma. It is difficult to isolate the effects of specific physical remediation and behavioral interventions. The assessment should focus on the effect of the overall model.

- Control groups are required because the treatment groups are vulnerable populations with chronic health conditions and sometimes declining health. Many clients have co-occurring conditions (smoking, stress). The health benefit may be in delaying or slowing health care utilization rather than preventing onset of cost.
- Projects with shorter follow-up cycles (6 to 12 months) were less likely to show results.
- One of the core challenges of this research is that weatherization treats a structure, but the occupants in the structure may move in and out. An important unexplored area in the intersection of weatherization and health is whether the provision of weatherization, repair, and health remediation services increases location stability. We have not found any strong published research linking weatherization and household stability or aging in place.

Attachment 2: Full Logic Model



Attachment 3: Evaluation Plan – Commerce Weatherization Plus Health Program

(Final Draft Evaluation Plan, March 9, 2016)

Overview

In 2015, the Washington Legislature expanded the focus of Matchmaker Low Income Weatherization to include healthy housing improvements and increased overall funding by $5 million (HB 1720). Commerce is developing a Weatherization Plus Health Program that will be implemented during the current biennium from November 2015 through June 2017.

This Program will have two delivery strategies:

- Weatherization Plus Health, Enhanced (Enhanced): $2.3 million has been set aside for a limited number of competitive grants to initiate pilot Weatherization Plus Health programs to deploy comprehensive healthy homes measures and asthma management services in partnership with community organizations or health care providers.
- Weatherization Plus Health, Basic (Basic): $2 million will be allocated by formula to agencies to install a subset of healthy homes measures.

Weatherization Plus Health has six goals:

1. Develop a collaborative infrastructure for implementation of a statewide healthy homes program.
2. Ensure that homes meet minimum health and safety requirements.
3. Reduce disease and injury outcomes from housing related hazards.
4. Reinforce the understanding that healthy housing benefits Washington communities.
5. Ensure Long-Term Sustainability of the Healthy Homes Program.
6. Be a national leader of Healthy Homes (HH) innovation.

The evaluation will assess how well Weatherization Plus Health meets these goals and increases the understanding of the needs for and effectiveness of investment in healthy homes interventions in low income households. Core research questions include:

- What Weatherization Plus Health Services were delivered?
- Was funding sufficient to address minimum health and safety needs and standards[8]? What was the unmet need?
- Who was served? How effectively were healthy homes (HH) resources targeted to high needs household?
- Was the capacity to deliver HH services increased in the community? Did the weatherization network develop new partnerships and funding to target high needs household, deliver HH measures, and coordinate and leverage additional services?
- What innovative approaches were tried and what was learned?
- How has HH impacted those receiving services? Is there evidence of health benefits?

[8] Healthy homes standards are important for defining levels of quality for meeting occupant needs and for measuring program success.

- What were the costs for measures and services? Do the benefits outweigh the costs?
- Was the capacity to measure and estimate health and social well-being benefits and make the policy and business case for HH investments increased?
- Are HH delivery model approaches viable and sustainable? What are the barriers to further progress? Is sufficient capacity available? Is there support for continuing?

This evaluation plan outlines the evaluation and reporting strategy, performance measures, tasks and deliverables. Core evaluation features include:

- Invest in planning to clarify performance metrics, develop effective data collection tools, and integrate performance measurement into program design.
- Provide early feedback by a WIDs driven dashboard and interim process reporting
- Focus more detailed data collection and evaluation resources on Enhanced projects. Streamline reporting for basic.
- Assure that data collection preserves options for estimating social well-being and health benefits.[9]
- Complete a final assessment of impacts, costs and benefits.

Summary Work Plan and Deliverables

Table 1 provides a draft summary of major deliverables by task and proposed timeline. WSU EP will work closely with Commerce and Weatherization Plus Health Grantees to complete these deliverables. This is a flexible plan and will be updated as needed based on input and experience from Commerce and from grantees.

Table 2 summarizes data collection approaches. To the maximum extent possible data collection will be integrated into existing reporting systems and tools.

Goals and Performance Measures

The following table describes each evaluation measure and the source of the information. It will be updated as needed. In addition to these measures, the overall effectiveness of service delivery (process evaluation) will be considered. Note that the reference to "quarterly report" in the Data Source Column refers to a participant/project tracking template for reporting assessment measures that are not available in WIDS or other sources (this is referred to as the quarterly assessment report in the contract statement of work). The evaluation team will work with grantees to make the reporting template an effective tool for gathering this information.

[9] This evaluation will provide some initial basic health benefits estimates. It will aim to preserve the option for more detailed measurement of health costs and benefits research in the future. This phase 2 research would require additional funding.

Table 1. Draft Summary Deliverables and Proposed Timeline		
Task	**Deliverable**	**Month Due**
Evaluation Planning	• Draft Evaluation Plan • Final Evaluation Plan • Evaluation Plan Update	December 2015 March 2016 Ongoing
Data Collection Tools	• Support for WIDS to update HH measures tracking • Develop periodic (quarterly) reporting template for enhanced grantees • Procedures, authorization and forms for household data collection to support health outcomes tracking • Review / update intake and assessment forms for basic screening and enhanced • Develop follow up data collection and survey instruments for enhanced • Develop interview instruments • Develop health outcomes data collection methods	Nov – Feb 2016 Mar – Apr 2016 Mar – Apr 2016 Mar – Apr 2016 Mar – Jun 2016 Mar – Jun 2016 Mar – Jun 2016
Data Collection and Management	• Start-up enhanced grantee interviews • Early progress process interviews • Mid-term project interviews • Collect intake assessments, follow up visit data, and quarterly reports • Final report interviews	Mar – Apr 2016 May – June 2016 Oct – Nov 2016 Ongoing 2017 - TBD
Analysis and Reporting	• Dashboard prototype • Dashboard operational • Early Progress - Process Report • Mid-term Progress Report (with case study analysis) • Final Report	Mar 2016 2nd Qtr 2016 June/July 2016 Dec 2016 Late 2017 – TBD

Table 2. Draft Summary Data Collection Approaches		
Approach	**Enhanced**	**Basic**
Audit and Assessment Forms (Test-In)	Detailed - Custom	Standardized - basic
Upgrades completed measures, costs, and services	WIDs + quarterly reports	WIDS
Program– partnership progress	Quarterly reports + interviews	One – time follow up survey/interviews
Occupant ID	Name + BD + SSN?	
Occupant Characteristics	Intake + WIDS	WIDs
Health and household effects	Data collection from follow-up services (exit 1, 3 , 6 , 12 month)	
DSHS Health and Social Services Use	Phase 2 if feasible	

Table 3. Evaluation Measures for Weatherization Plus Health			
Measure Name	**Measure Description**	**Data Source**	
		Enhanced	**Basic**
Production and # of agencies delivering HH services	The number of homes served by agency, heating fuel-type, and type of house (single-family owner/renter, multi-family, mobile owner/renter).	WIDS	WIDS
Who was served	Household/occupant characteristics High priority targets – note health conditions and needs of occupants	WIDS, Quarterly report (occupant intake info)	WIDS
Measures implemented	The weatherization and healthy homes measures implemented	WIDS	WIDS
HH services delivered	Assessments, client education, follow up services, etc.	Quarterly report (assessment forms, etc.)	
Measure costs	The costs for weatherization and healthy homes measures implemented (define categories)	WIDS	WIDS
HH initiatives partners	Partners and their roles	Quarterly report, interviews, Work plan	Survey/interviews
Training/certifications	# of HH trainings offered, # of participants, # certified	BPC, T&TA report	BPC
Service delivery capacity	Policies, procedures, assessment tools, follow up tools, etc.	Quarterly report and interviews	Survey/interviews
Leveraged services	In-kind services provided by partners (type, hours, $ value estimate)	Quarterly report	
Leveraged funds	Financial contributions from participants and non-wx funders	Quarterly report	
Client satisfaction	Satisfaction with survey delivery and the services provided – meeting client needs; unmet needs	Follow up visits; survey	
Client reported benefits	Health benefits, reduced health service utilization and cost, well-being benefits, increase in skills to deal with needs	Follow up visits; survey	
Near-term health benefits	Grantee efforts to collect health benefit information	Grantees and partners	
Process effectiveness	Case study analysis of service delivery, effectiveness, and lessons learned	Interviews, documentation, process evaluation	

Attachment 4: Basic and Enhanced Program-Approved Measure List

Basic Program Wx+H Measures

1. Wx+H client education
2. Green cleaning kit
3. Dust mite cover
4. Walk-off door mat
5. Water heater temperature adjustment
6. CO detector
7. Smoke detector
8. Toxic household chemical removal
9. HEPA vacuum cleaner
10. HEPA furnace filter
11. Slip and fall prevention
    - Handrails
    - Grab bars
    - Shower mat
    - Ramps and fixing irregular steps (limited)
12. Pest mitigation
13. Mold and moisture reduction
    - Dehumidifier
    - Dehumidistat
    - Leak repair
14. Mechanical ventilation (exhaust only)

Enhanced Program Wx+H Measures

15. Wx+H Client Education
16. Green Cleaning Kit
17. Dust Mite Cover
18. Walk-off Door Mat
19. Water heater Temperature Adjustment
20. CO Detector.
21. Smoke Detector.
22. Remove Toxic Household Chemicals

23. HEPA Vacuum Cleaner
24. HEPA Furnace Filter
25. Pest Mitigation.
26. Mold and Moisture Reduction.
    - Dehumidifier
    - Dehumidistat
    - Leak repair
    - Sump Pump
    - Drainage system
    - Mold Abatement
27. Mechanical Ventilation (exhaust only).
28. Advanced Mechanical Ventilation
29. Roofing
30. Flooring
31. Gutter and Downspout
32. Comprehensive Cleaning (one time)
33. HVAC System Cleaning
34. Crawlspace Improvements
35. Placeholder 4 = Air Filter/Purifier
36. Placeholder 5 = TBD

Attachment 5: Grantee Profiles

Provided on the following pages are profiles of the six grantee organizations:

- King County Housing Authority and Public Health – Seattle and King County

Wx + H Enhanced Profile KCHA_6-13-16.pdf

- The Opportunity Council

Wx + H Enhanced Profile Oppco_6-13-16.pdf

- Pierce County Health Homes

Wx + H Enhanced Profile Pierce_rev 6-13-16.pdf

- Spokane Neighborhood Action Partners

Wx + H Enhanced Profile SNAP_6-13-16.pdf

- Snohomish County Human Services

Wx + H Enhanced Profile Snohomish_rev 6-13-16 MTS.pdf

- Yakima Valley Farm Workers Clinic

Wx + H Enhanced Profile YVFWC_rev 6-13-16.pdf