

## **2. Project Description**

### **a. Project Director(s), Project Title and Project Type**

Project Director: Susan Aceti

Project Title: An Evaluation of the IPM in Multi-Family Housing Course

Project Type: IPM Issues

### **b. Project Summary**

Cockroaches and rodents are persistent problems in federally-subsidized housing and it is clear that these pests are associated with health problems such as asthma. Over the past five years, the National Healthy Homes Training Center (Training Center) has offered the IPM in Multi-family Housing course 49 times. Managed by the National Center for Healthy Housing (NCHH), the Training Center has a network of local partners who deliver the course around the country. The courses have reached more than 1,000 students. To improve the implementation of this training program and to sustain funding for it, we will evaluate the impact of the training on the practices of the participants. The desired impact for the training is that students will be able to successfully implement IPM in the housing developments they own or manage. If they were unable to implement IPM, we would like to understand the barriers they have encountered so that we may fine tune the training program to address these barriers. To conduct the evaluation, NCHH staff will administer a questionnaire to a group of students who have already taken the IPM course and to a group of students before they take the course. We will analyze the results and disseminate the findings of this project through conference presentations and via conference calls and webinars with interested stakeholders.

### **c. Problem and Justification**

#### **1. Problem or challenge**

Cockroaches and rodents are persistent problems in federally-subsidized housing. More than half of public housing residents surveyed by the U.S. Department of Housing and Urban Development (HUD) in 2004 reported problems with rodents and insects indoors. Almost 10% said that the rodents and insects indoors were always a problem.<sup>1</sup> The evidence of health problems associated with pests is well documented.<sup>2</sup> The presence of mice and roaches in housing has been associated with asthma. Many pesticides are known carcinogens, endocrine disruptors, and asthma triggers.

While some public housing authorities have few pest problems and others have serious problems, an IPM program is recommended by HUD for all public housing authorities especially those

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<sup>1</sup> Real Estate Assessment Center, U.S. Department of Housing and Urban Development, *How the RASS Survey Measures Up*, (2006). See page 10 at [www.hud.gov/offices/reac/products/rass/PDFs/survey.pdf](http://www.hud.gov/offices/reac/products/rass/PDFs/survey.pdf). For more information on the Customer Satisfaction Survey, go to [www.hud.gov/offices/reac/products/prodrass.cfm](http://www.hud.gov/offices/reac/products/prodrass.cfm).

<sup>2</sup> National Academies Press, 2000. *Clearing the Air: Asthma and Indoor Air Exposures. Executive Summary* Institute of Medicine. ISBN 0-309-06496-1 See [www.nap.edu/books/0309064961/html/](http://www.nap.edu/books/0309064961/html/).

with serious problems.<sup>3</sup> Toward this end, the IPM course was developed in 2006 by NCHH, Boston University and Rivard's IPM Resources and reviewed and approved by the following partners: U.S. Environmental Protection Agency (EPA), HUD's Office of Healthy Homes and Lead Hazard Control, U.S. Centers for Disease Control and Prevention (CDC), U.S. Department of Agriculture's Cooperative State Research, Education, and Extension Service (USDA - CSREES), National Pest Management Association (NPMA), Regional IPM Centers (with the Northeastern IPM Center as the lead), and the Pennsylvania IPM Program.

There is also considerable evidence that IPM prevents and eliminates insect and rodent infestations by excluding pests from the home, preventing pest access to sources of food, hydration, and harborage. By limiting the use of pesticides, it can also greatly reduce harmful chemical exposures for both residents and pest control operators.<sup>4</sup>

Over the past five years, the National Healthy Homes Training Center (Training Center) has offered the IPM in Multi-family Housing course 49 times through its national network of local partners. The courses have reached more than 1,000 students. To improve the implementation of this training program and to sustain funding for it, we are interested in evaluating the impact of the training on the practices of the participants. The desired impact for the training is that students will be able to successfully implement IPM in the housing developments they own or manage. If they were unable to implement IPM, we would like to understand the barriers they have encountered so that we may fine tune the training program to address these barriers.

## 2. Specific need identified by stakeholders

This project directly addresses the 2009 priority set by the Community IPM Working Group: *Develop creative tools for measuring the impact of public education related to IPM practices in residential settings on changes in awareness and behaviors of the target audience.* Furthermore, the funders for our training programs, HUD and EPA in particular, have expressed a keen interest in the impact of the training on local practice. For this reason, we are proposing to use EPA resources to create the evaluation survey tool, as leverage to this proposed project.

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<sup>3</sup> Promotion of Integrated Pest Management (IPM) as an environmentally-sound, economical and effective means to address a major resident concern. U.S. Department of Housing and Urban Development, Office of Public and Indian Housing, NOTICE: PIH-2011-22, Issued: April 26, 2011.

<sup>4</sup> Kass D, McKelvey W, Carlton E, Hernandez M, Chew G, Nagle S, Garfinkel R, Clarke B, Tiven J, Espino C, Evans D. [Effectiveness of an integrated pest management intervention in controlling cockroaches, mice, and allergens in New York City public housing.](#) Environ Health Perspect. 2009 Aug;117(8):1219-25. Epub 2009 Apr 15. PubMed PMID: 19672400; PubMed Central PMCID: PMC2721864.

Peters JL, Levy JI, Muilenberg ML, Coull BA, Spengler JD. [Efficacy of integrated pest management in reducing cockroach allergen concentrations in urban public housing.](#) J Asthma. 2007 Jul-Aug;44(6):455-60. PubMed PMID: 17654132.

### 3. Specify who stands to benefit from project

This project will benefit several groups. The primary beneficiaries are those who take the course; namely, affordable housing developers, owners, managers and residents. If there are recommended changes to the curriculum based on the evaluation results, those changes will better participants in implementing IPM after they take the course. A secondary group of beneficiaries are trainers who teach the course, who will be more knowledgeable about how to best teach the course and/or assist students in follow up technical assistance. Finally, the evaluation will assist funding partners in justifying ongoing support for IPM training.

### 4. Review ongoing or completed work that ties to project and include references

**The National Center for Healthy Housing** is a 501(c)(3) nonprofit corporation based in Columbia, Maryland, dedicated to creating healthy and safe homes for children through practical and proven steps. Using a holistic and interdisciplinary approach, NCHH brings the public health, housing, environmental, and regulatory communities together to combat disease and injuries caused by hazards in the home. NCHH received three consecutive recognition awards from EPA between 2005-2007. NCHH manages the Training Center which brings together public health and housing practitioners to promote practical and cost-effective methods for making homes healthier through the use of the Seven Principles of Healthy Housing. The Training Center has resulted in an extensive network of 40 regional partners that have delivered in-depth training to thousands of professionals.

### **Past Experience Conducting Evaluation**

**Providence Healthy Homes Study (Phases I & II) Phase I: City of Providence; Phase II: Battelle Memorial Institute (HUD):** Funded as a HUD Healthy Homes Demonstration Grant in 1999 (RILHH0071-99). NCHH evaluated the effectiveness of adding healthy homes treatments to intensive lead hazard control treatments in reducing allergen concentrations and dust lead loadings. NCHH was responsible for the study design and protocols, quality control, data management and analysis. All work was completed on time and within budget.

**Milwaukee Healthy Homes Study, City of Milwaukee:** Randomized controlled trial of the effectiveness of interventions under the Milwaukee Healthy Homes Demonstration Project (WILHH0108-02), evaluating the effectiveness of adding healthy homes treatments to a case management model for the control of asthma. NCHH managed the housing interventions, helped design the study, developed and maintained the data management system, performed quality control, and produced a scientific manuscript<sup>5</sup>.

**Housing Interventions and Health Outcomes: A Review of the Evidence:** NCHH, with funding from CDC, convened a meeting of experts from across the country to weigh the strength of scientific evidence on a variety of housing interventions and their effects on health and the

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<sup>5</sup> Breyse J, Wendt J, Dixon S, Murphy A, Wilson J, Meurer J, Cohn J, Jacobs DE. [Nurse case management and housing interventions reduce allergen exposures: the Milwaukee randomized controlled trial](#). Public Health Rep. 2011 May-Jun;126 Suppl 1:89-99. PubMed PMID: 21563716; PubMed Central PMCID: PMC3072907

environment. There were five expert panels, each covering a different area within the field of healthy housing. The individual panels focused on interior biological agent interventions, interior chemical agent interventions, external exposures, structural deficiencies, and the intersection between house and community. The experts reviewed the scientific literature within their designated work groups to determine the adequacy of intervention research. The meeting led to a report<sup>6</sup> that describes interventions that have sufficient evidence to move toward implementation, identifies gaps in existing research, and prioritizes needs for additional intervention research.

**IPM in Low-Income Housing Project: Funded by U.S. EPA Office of Pesticide Programs:** NCHH, under subcontract to Battelle, assisted EPA in developing its IPM in Low-Income Housing Project, which includes: developing the *IPM in Multi-Family Housing* training; building a network of trainers capable of delivering the training; delivering the training more than 20 times; developing a model request for IPM proposals for property managers; writing five case studies on IPM models and research; supporting HUD’s development of IPM inspection protocols for its Green Incentives program; commenting on HUD’s IPM inspection reports; and conducting more than 10 speeches and presentations on the project.

5. Applicability of proposed approach to other regions

This project can be replicated in other regions of the country. NCHH can provide the questionnaire to other IPM Centers so that they too can measure the impact of their IPM training efforts. We may also provide the data collected for this project so that it may be pooled with the data collected by other regions—strengthening the statistical power of the evaluation.

**d. Objectives and Anticipated Impacts**

Objectives	Anticipated Impacts	Connections to Goals of Northeastern IPM Program
1. Evaluate the impact of the IPM in Multi-family Housing course to determine if those who attended the course successfully implemented IPM at their developments.	This evaluation will determine if students (especially property managers) need additional assistance beyond the course to successfully implement IPM.	This evaluation will encourage science-based pest management that safeguards human health and the environment. This project will also address regional IPM priorities for research.
2. Provide results of evaluation to interested stakeholders.	This evaluation will enable trainers and participants to effectively implement IPM based on a revised approach to training that accounts for	This evaluation will encourage science-based pest management that safeguards human health and the environment. This project will also address regional IPM

<sup>6</sup> Krieger J, Jacobs DE, Ashley PJ, Baeder A, Chew GL, Dearborn D, Hynes HP, Miller JD, Morley R, Rabito F, Zeldin DC. [Housing interventions and control of asthma-related indoor biologic agents: a review of the evidence](#). J Public Health Manag Pract. 2010 Sep-Oct;16(5 Suppl):S11-20. Review. PubMed PMID: 20689369.

	the barriers students face in implementing IPM.	priorities for research.
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This project relates to the focus area of residential and public areas in the National Road Map for IPM. It supports the expansion of IPM programs to residential environments to reduce human health risks and to reduce or mitigate the adverse environmental effects of pest management practices. In particular, this project focuses on the implementation and adoption of IPM by providing an opportunity for public awareness and understanding of IPM programs and their economic, health and environmental impacts. In this case, “the public” is defined as owners and managers of federally-assisted housing who are considering implementing IPM at their properties. This evaluation project will ensure that the opportunity for these audiences to learn about IPM is effectively changing their behavior in implementing IPM.

**e. Approach and Procedures**

Objective 1. Evaluate the impact of the IPM in Multi-family Housing course to determine if property managers who attend the course are able to successfully implement IPM at the developments they manage.

**Task 1: Administer a questionnaire by phone to two samples of students.** NCHH staff will administer a questionnaire to two groups of students. The “treatment” group will be students that have completed the IPM training in the last two years. The “control” group will consist of students who plan to take the IPM training but have not yet done so. The questionnaire will consist of questions on the implementation of IPM at the student’s development and on barriers to implementation. NCHH will develop this questionnaire using funding leveraged from a contract with the EPA, which provides funding for Training Center course and related activities.

In developing the questionnaire, NCHH will draw from a survey tool developed by Allison Taisey at the Northeastern IPM Center to assess the IPM strategies established at a development (IPM Questionnaire Rev. 12/11). NCHH staff will also review other IPM evaluation surveys (e.g., from the Boston Public Housing Authority and those employed by NCHH for other studies) to identify valid questions to use. Once the questionnaire is prepared, NCHH will engage several experts to review it and provide feedback on the effectiveness of the questions in collecting information on students’ IPM practices.

NCHH will also test inter-rater reliability of the tool by piloting it with five participants before bringing the questionnaire to scale. The purpose of the pilot is to ensure that the questions yield consistent responses, are clearly written, and are asked in a manner that elicits the desired information. NCHH will conduct two case studies to corroborate whether on-site observation corroborates with answers given by students to the questionnaire. It is possible, for example, that students will answer “no” when asked if they use foggers because they are aware of the dangers of this tool but still use them. On-site interviews will help to substantiate the answers that the students give. The primary purpose of the case studies is to illustrate problems or successes that the students have but this task will also assist with the validation of the questionnaire.

**Treatment Group:** NCHH will administer the questionnaire by phone to a sample of 75 students who have completed the course in the prior two years. The 75 students will be randomly

chosen from the list of all students who took the course in the Northeastern region and who identified their organization as a property management company. A review of seven of the sign-in sheets from the 49 IPM courses that Training Center partners have held showed that 53% of the attendees came from property management companies. Given this, NCHH estimates that 53% of the 552 students who attended the 28 courses held in the Northeastern region are from property management companies. That total, 293 students, is the estimated total of students from property management companies who took the IPM course from November 2006 through June 2011. The sample of 75 students will be drawn from this pool of students.

**Comparison Group:** NCHH will also administer the questionnaire to a second group of students before they take the IPM training. These students will be selected from participants who register for a series of six IPM courses that NCHH is scheduled to deliver from January through May 2012. These courses are funded by a current grant from the Northeastern IPM Center to reach project-based Section 8 owners and property managers. We believe the comparison and treatment groups are similar on most factors such that they can be reasonably compared to one another. This study design is more robust than a simple pre-post approach, which would show the impact of the training on the participants, but not how the participants compared to their peers who have not been trained.

One NCHH staff person will administer questionnaire, while another transcribes the answers into an Access database as the interview is being conducted. After setting up a coding system, NCHH staff will code answers to translate the information into data appropriate for analysis.

**Task 2: Analyze data.** The data collected will be analyzed using appropriate statistical methods to produce a set of descriptive statistics and to determine whether there are significant differences between the two groups. The analysis plan objectives include: 1) Identifying particular problems with IPM implementation that are common to many property managers, and 2) determining whether the training is having a significant impact on IPM practice. They should also indicate areas in which property managers are having success with IPM.

**Task 3: Translate findings into recommendations for action.** Based on the results of the data analysis, there may be a need to recommend changes to the IPM course – either by adding information or revising the current information. There may also be a need to emphasize to other stakeholders that property managers need follow up technical assistance to successfully implement IPM. Finally, the results will be provided to the agencies funding IPM training so that they understand the impact of the IPM training on local practice. We anticipate creating a brief report to document the results. There is insufficient funding to develop a peer-reviewed journal article, however, NCHH will seek other resource for that activity.

**Task 4: Conduct two case studies to highlight results.** NCHH will interview property managers and owners, pest management professionals and residents at two housing developments that best illustrate the results of the data analysis. The write up of these interviews into case studies will help to communicate the successes and/or challenges that students of the course are having or encountering.

Objective 2. Provide results of evaluation to interested stakeholders by various methods.

**Task 1: Draft report on results to interested stakeholders.** NCHH will draft a report on the results of the data analysis and any recommendations for action and provide the report to contacts at the U.S. Department of Housing & Urban Development, the U.S. Environmental Protection Agency, and the Centers for Disease Control and Prevention. NCHH will also send information to stakeholders at local and national organizations and institutions including Safer Pest Control, University of Arizona, Virginia Tech University, Rutgers University, Cornell University, Penn State University, National Leased Housing Association, National Multi-Housing Council, National Pest Management Association, National Affordable Housing Managers Association, and the National Association of Housing Redevelopment Officials.

**Task 2: Convene a conference call.** NCHH will convene a conference call or webinar with interested stakeholders including Healthy Homes Training Center partners, other IPM trainers and any other stakeholders interested in the results of the survey. This task will be an opportunity to discuss the results of the survey and the recommendations for action.

**Task 3: Present information on the results at a conference.** NCHH will submit an abstract on the results of the survey in response to a call for abstracts for an appropriate conference. A possible conference will be Affordable Comfort which typically takes place in March of each year. The location of the 2013 Affordable Comfort conference is not yet determined but NCHH is estimating travel expenses for Kansas City, MO as a mid-west location is possible.

#### **f. Evaluation Plans**

NCHH will use its internal evaluation methodology and its project work plan to monitor progress regularly and to make mid-course adjustments as necessary. With respect to tracking deliverables and project milestones, NCHH's project management system is designed to identify and resolve any implementation barriers early in the process. We use an operating scorecard that is reviewed on a quarterly basis to determine our progress toward meeting project goals. The results of the operating scorecard are reviewed by NCHH's Board of Directors on a quarterly basis.

#### **g. Logic model**

Our logic model is included with our application. **Inputs:** Funding, NCHH staff time, IPM trainers, IPM Students, and property managers, **Audience and Activities:** Students, including: property managers, owners, maintenance staff, and pest control operators/ pest management professionals. NCHH will administer questionnaire, analyze data, produce recommendations for action, conduct case studies, provide information to stakeholders, convene conference call to communication information, and present information at conference.

**Short Term (Knowledge Change):** Improve trainers' and other stakeholders knowledge of how the course meets the needs of students to implement IPM, improve trainers' and other stakeholders knowledge of the barriers that students encounter in implementing IPM.

**Intermediate Term (Behavior Change):** Changes in the IPM course designed to address the barriers that students encounter when they try to implement IPM, additional follow up technical assistance provided to students (if identified as a need).

**Long Term (Condition Change):** Reduced exposure to pests and pesticides and improved health of those living in multi-family housing and reduced impact on the environment caused by pesticides.

#### **h. Cooperation, Institutional Units, and Key Personnel Involved**

**Susan Aceti, MSW, NCHH project manager,** manages the National Healthy Homes Training Center and Network. She developed the Community Health Worker course delivered by Network partners. Before joining NCHH in 2005, Ms. Aceti was a community organizer with the Citizens Planning and Housing Association in Baltimore. She also worked for the Coalition for Low-Income Community Development, where she provided training and assistance to local governments and nonprofits. She holds a bachelor's degree in Sociology and a Masters of Social Work from the University of Maryland at Baltimore. Ms. Aceti will serve as the Project Director for this effort, handling the day-to-day management, budget, and contract issues.

**Rebecca Morley, MSPP, NCHH Executive Director,** is responsible for managing the NCHH's multidisciplinary staff in creating healthy and safe housing for children through practical and proven steps. She led the development of the National Healthy Homes Training Center and spearheaded NCHH's work around the Gulf Coast following hurricanes Katrina and Rita. She has authored numerous articles and publications on the topic of housing-related health hazards. Before joining NCHH in 2002, Ms. Morley was a senior associate with ICF Consulting in Washington, DC, where she advised clients, including the U.S. Environmental Protection Agency and HUD, on the development of lead poisoning prevention and healthy homes programs. Prior to ICF, Ms. Morley worked for HUD in a variety of posts, including the Office of the Secretary, the Office of Public Affairs, and the Office of Healthy Homes and Lead Hazard Control. Ms. Morley will provide overall guidance on the project, particularly on development of survey questions, communication of survey results, and the development of the case studies.

**Sherry Dixon, NCHH Biostatistician,** has 17 years of experience analyzing housing and biological research data. Dr. Dixon played a key role in the statistical analysis for all of NCHH's research and evaluation projects. She planned and conducted complex statistical analyses and wrote articles for the Evaluation of the HUD Lead-Based Paint Hazard Control Grant Program and for the Study of HUD's Risk Assessment Methodology in Three US Communities. In the past few years, she has been involved with the design and analysis of evaluations of Healthy Homes Demonstration Projects in Milwaukee, Phoenix, Providence, and Washington, DC. Dr. Dixon will create the Access database that will be used for data collection and conduct the data analysis.

#### **i. References cited**

See citations in project description.

#### **3. Curriculum Vitae**

CVs are uploaded separately.

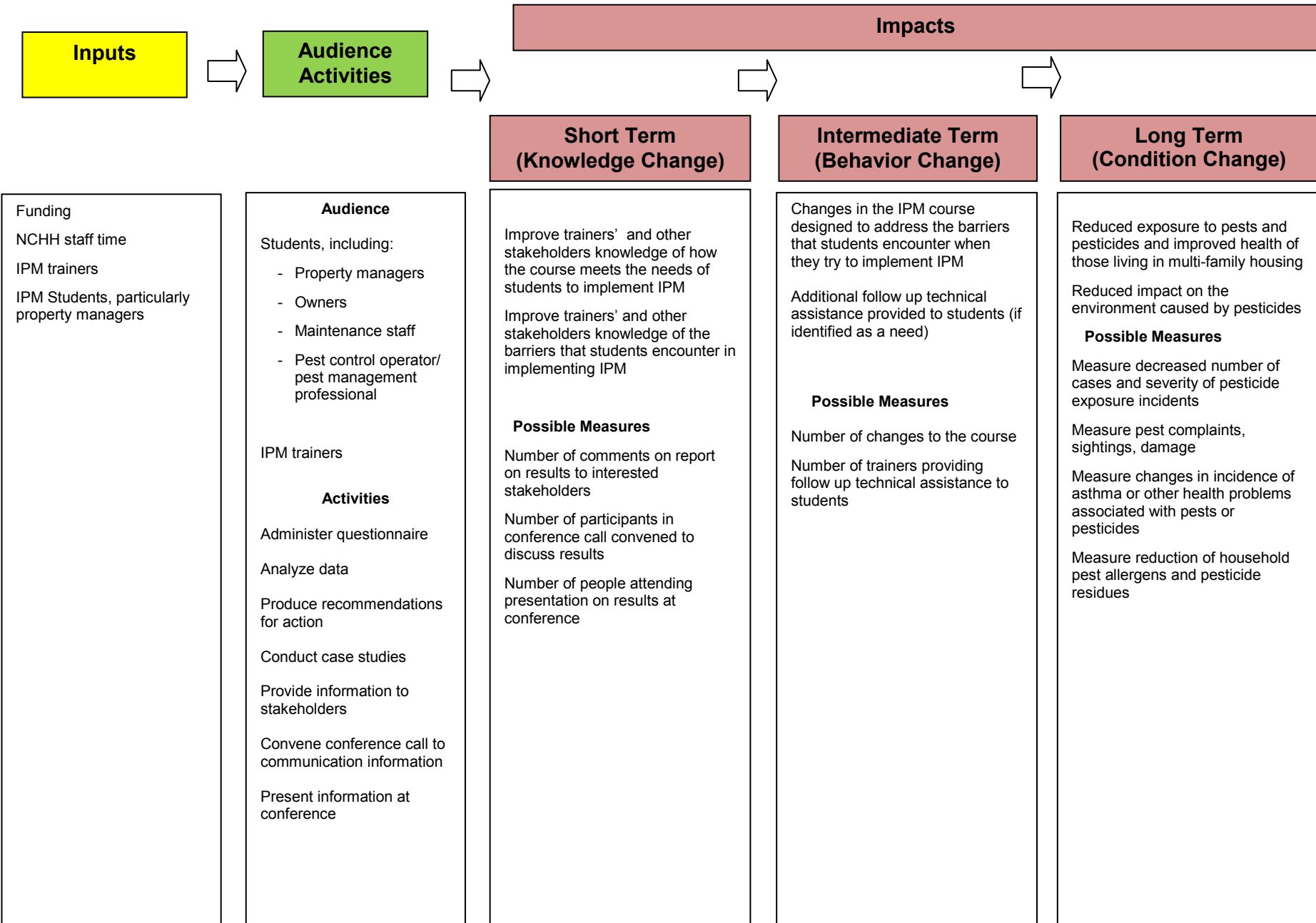
#### **4. Documentation of Collaboration**

Letters of support from the Boston Housing Authority and the Pennsylvania State IPM program are uploaded separately.

**Focus Area:** Residential and Public Areas

**Impact Area:** Human health and environmental impacts

**Roadmap Goal:** Reduce human health risks and reduce or mitigate environmental effects



PHA NAME:  
Name of Development/ AMP:

DATE OF ORIGINAL: \_\_\_\_\_  
DATE OF FOLLOW UP: \_\_\_\_\_

Background from PIH-2011-22: The goal of IPM as defined by the Environmental Protection Agency (EPA) is to control pests by the most economical long term means, and with the least possible hazard to people, property, and the environment. To undertake IPM, project managers should be committed to ongoing or continuous monitoring and record keeping, educational outreach to residents and staff as well as implementing good communication strategies between residents and building managers. IPM methods include: restricted pest access to food/water; vigilant sanitation and waste management; mechanical control; physical barriers; structural maintenance; and, where necessary, the judicious use of pesticides.

Question		Options/ units/ further explanation for reference not data analysis	
1	Name(s) and job title(s) of respondents:	Name	Job Title
2	Describe the pilot site:	Name of pilot site: Total number of units within the pilot site: Total number of buildings at the pilot site:                      Average # of floors:                      Family                      Elderly/disabled                      _____ other: _____	
3	Describe the trash management on the property:	(dumpsters, trash chutes, compactors, incinerators, or individual toters)	
4	Describe the landscaping at the site:	Plants, proximity to buildings, who does landscaping?	

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Name of Development/ AMP:

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DATE OF FOLLOW UP: \_\_\_\_\_

5	Are screens in place on opened windows and doors in warm weather?	<p style="text-align: center;">If not, why?</p> <input type="checkbox"/> Yes <input type="checkbox"/> No
6	Are door sweeps in good working condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No
7	Describe the site staffing:	# Maintenance Techs: Office Staff:
8	Is there an active resident council/association?	<input type="checkbox"/> Yes <input type="checkbox"/> No
9	Which social service agencies do you call/rely on to help with residents who can't do their duties?	
#	What was the development's pest control cost for the past year?	\$
#	Who performs the pest management activities for the pilot site?	(Check all <input type="checkbox"/> Contractor, <input type="checkbox"/> PHA staff (# of licensed applicators: _____), <input type="checkbox"/> both
#	What is the pest control service schedule?	(each unit serviced _____ times per year. PMP on site _____ times a month)

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#	Are all those who apply pesticides certified applicators?	<input type="checkbox"/> Yes <input type="checkbox"/> No
#	Does the pest control contract or job description contain IPM specifications?	<input type="checkbox"/> Yes <input type="checkbox"/> No  <i>Please provide a copy of this document.</i>
#	Does the PMP apply pesticides in units at each service regardless of infestation?	<input type="checkbox"/> Yes <input type="checkbox"/> No      Which formulation(s): _____ dust, _____ spray, _____ fog, _____ bait)
#	Describe the process used to monitor pest activity.	
#	Is pest control part of the procedure for unit turnover?	<input type="checkbox"/> Yes <input type="checkbox"/> No      If yes, what is the process?
#	How do you assess the efficacy of your pest control program?	
#	Does pilot site management have input into the pesticides applied at the property?	<input type="checkbox"/> Yes <input type="checkbox"/> No
#	Which of the following elements are considered when choosing a pesticide?	(Check all that apply.)    _____ Risk, _____ Effectiveness, _____ Cost, _____ Availability, _____ Contractor preference, _____ PHA preference, _____ Other (please specify)

PHA NAME:  
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#	Are foggers used by staff or contractors without written, advance approval of the property manager?	<input type="checkbox"/> Yes <input type="checkbox"/> No
#	Does the AMP keep pest control service records on-site?	<input type="checkbox"/> Yes <input type="checkbox"/> No <i>Please provide a copy of a recent service ticket,.</i>
#	Does the AMP keep material safety data sheets on-site for pesticides being used?	<input type="checkbox"/> Yes <input type="checkbox"/> No
#	Once you're aware of a pest problem within a <u>unit</u> , what does the PHA or the contractors do to eliminate the problem	<input type="checkbox"/> fog, <input type="checkbox"/> spray, <input type="checkbox"/> trap for rodents (sticky or snap (circle one)), (Check all that apply.) <input type="checkbox"/> bait for rodents, bait for cockroaches, bait for ants <input type="checkbox"/> eliminate pest entrance points, <input type="checkbox"/> resident education, Other
#	Once you're aware of a pest problem <u>in a common area</u> , what does the PHA or the contractors do to eliminate the problem?	<input type="checkbox"/> fog, <input type="checkbox"/> spray, <input type="checkbox"/> trap for rodents (sticky or snap (circle one)), (Check all that apply.) <input type="checkbox"/> bait for rodents, bait for cockroaches, bait for ants <input type="checkbox"/> eliminate pest entrance points, <input type="checkbox"/> resident education, Other
#	When the PHA brings a pest problem under control, what is done to maintain a pest-free unit?	<input type="checkbox"/> fog, <input type="checkbox"/> spray, <input type="checkbox"/> trap for rodents (sticky or snap (circle one)), <input type="checkbox"/> bait for rodents, bait for cockroaches, bait for ants <input type="checkbox"/> eliminate pest entrance points, <input type="checkbox"/> resident education, Other
#	Are site office staff aware of pest management activities?	<input type="checkbox"/> Yes <input type="checkbox"/> No "Yes" indicates that someone in the main office knows what types of pesticides are being used, that service reports are kept on-site and reviewed for recommendations after each PMP visit.
#	Is there zero tolerance for priority pests: rats, mice, cockroaches, and bed bugs?	<input type="checkbox"/> Yes <input type="checkbox"/> No

PHA NAME:  
Name of Development/ AMP:

DATE OF ORIGINAL: \_\_\_\_\_  
DATE OF FOLLOW UP: \_\_\_\_\_

#	Do staff believe in the zero tolerance policy?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Somewh at
#	Do residents believe in the zero tolerance policy?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Somewh at
#	Are there tolerances set for other pests such as ants and spiders?	<input type="checkbox"/> Yes <input type="checkbox"/> No <p style="text-align: right;">If yes, what pests and what are the thresholds?</p>
#	Do you feel your pest management strategy is successful?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Somewh at <p style="text-align: right;">Please explain why or why not.</p>
#	Did pest control issues negatively impact your last REAC score?	<input type="checkbox"/> Yes <input type="checkbox"/> No
#	Does the residential lease state resident responsibilities for	<input type="checkbox"/> Housekeeping (including clutter management), <input type="checkbox"/> Allowing contractors to get into the unit, given proper notification, <input type="checkbox"/> Preparing the unit for IPM service, <input type="checkbox"/> Disposing of used furniture, reporting: <input type="checkbox"/> pests, <input type="checkbox"/> mold, <input type="checkbox"/> maintenance issues <i>Please provide a copy of this document.</i> (Check all that apply.)
#	Are there state or local laws for re-used furnishings that apply to the PHA?	<input type="checkbox"/> Yes <input type="checkbox"/> No
#	Is there a written pest control policy, <u>separate from the lease</u> , in place?	<input type="checkbox"/> Yes <input type="checkbox"/> No <p style="text-align: right;"><i>Please provide a copy of this document.</i></p>

PHA NAME:  
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#	Which of the following does the PHA use to obtain resident cooperation with its pest control policies?	(Check all that apply.) <input type="checkbox"/> The Tenant's Role in IPM DVD, <input type="checkbox"/> IPM welcome kit, <input type="checkbox"/> Pest control brochure, <input type="checkbox"/> Verbal reminders, <input type="checkbox"/> Lease enforcement, <input type="checkbox"/> newsletter articles with info from _____, <input type="checkbox"/> Other: _____
#	How does the PHA identify residents who have housekeeping issues?	_____ Maintenance personnel, _____ inspection failure, _____ Pest control contractor, _____ other: _____
#	Is resident services addressing residents with housekeeping problems through education?	_____ Yes _____ No If yes, is pest control part of this education? _____ Yes _____ No Describe the education program:
#	Estimate the number of units where residents are educated one-on-one about pest control per month.	#
#	Are staff and contractors educated about IPM for cockroaches, rodents, bed bugs, and other target pests?	_____ Yes _____ No If so, how are they educated?
#	How often does the PHA (non-PMP) inspect for pests?	Describe inspections (who performs, how often, are they in conjunction with any other inspection/service)
#	Are units inspected after residents move in?	_____ Yes _____ No If yes, within how long?
#	Are pest control complaints recorded in electronic format?	_____ Yes _____ No

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#	What work order codes or system is used to record pest control complaints?	
#	Are pest control complaints analyzed regularly for timeliness, recurrent problems, and other trends?	<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, by whom?
#	Have residents reported to the PHA that they have had any health effects from pesticide application in their units or common areas?	<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, please explain health effects reported by residents.
#	Is there a program in place to notify residents and staff of pesticide use?	<input type="checkbox"/> Yes <input type="checkbox"/> No
#	When is the notification delivered and by whom?	___ days before treatment, by _____
#	Is the notification...	(Check all ___ tailored to population (i.e. posted in multiple languages), ___ that apply.) detailed about the purpose of visit (target pest, preparation needed, etc.)
#	When a resident is not home when the PMP services, is a notice left saying the PMP did visit?	<input type="checkbox"/> Yes <input type="checkbox"/> No
#	Are residents notified after common areas are treated?	<input type="checkbox"/> No    ___ lawns    ___ interior common areas

PHA NAME:  
Name of Development/ AMP:

DATE OF ORIGINAL: \_\_\_\_\_  
DATE OF FOLLOW UP: \_\_\_\_\_

#	How else are residents notified about how to lower their risk of exposure to pesticides?	
#	On a scale of 1 to 5, how would you rate the severity of the pest problem at the pilot site? (Use 0 for no pest problem, 3 for moderate, and 5 for a severe problem.)	_____ 0= none, 5= severe
#	What is the degree to which <b>cockroaches</b> contribute to your pest problem? (Use 1 for low; 5 for high; N/A.)	_____ 0= none, 5= severe
#	What is the degree to which <b>rats</b> contribute to your pest problem? (Use 1 for low; 5 for high; N/A.)	_____ 0= none, 5= severe
#	What is the degree to which <b>mice</b> contribute to your pest problem? (Use 1 for low; 5 for high; N/A.)	_____ 0= none, 5= severe
#	What is the degree to which <b>bed bugs</b> contribute to your pest problem? (Use 1 for low; 5 for high; N/A.)	_____ 0= none, 5= severe
#	What is the degree to which <b>ants</b> contribute to your pest problem? (Use 1 for low; 5 for high; N/A.)	_____ 0= none, 5= severe
#	What is the degree to which <b>flies or gnats</b> contribute to your pest problem? (Use 1 for low; 5 for high; N/A.)	_____ 0= none, 5= severe

PHA NAME:  
Name of Development/ AMP:

DATE OF ORIGINAL: \_\_\_\_\_  
DATE OF FOLLOW UP: \_\_\_\_\_

#	What is the degree to which <b>spiders</b> contribute to your pest problem? (Use 1 for low; 5 for high; N/A.)	_____ 0= none, 5= severe
#	What is the degree to which any <b>other pests</b> contribute to your pest problem? (Use 1 for low; 5 for high; N/A.) ( <b>Specify "other"</b> )	_____ 0= none, 5= severe
#	What about IPM is most relevant to you?	