City of Madison Proposal: Reducing childhood exposure to lead and mold through healthy and resilient homes

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Project Description:

The City of Madison proposes $10,000 to support the research, engagement, and implementation planning steps necessary to incorporate mold and lead abatement into an existing energy efficiency retrofit program for nonsubsidized affordable housing.

The Need and Opportunity

Housing type and quality is a social determinant of health in children. Indoor air quality exposures to respiratory irritants such as allergens, criteria pollutants, and dampness and mold are consistently linked to exacerbation of asthma symptoms and increased asthma medication use. Concentrations of these pollutants are particularly problematic in low-income housing where excessive moisture and dampness, inadequate ventilation systems, and other issues lead to high exposures to indoor asthma triggers and other pollutants.[1] Housing on Madison's west and east sides were subject to excessive flooding in 2018 and have experienced mold damage.

An acerbating health factor in many of these homes is the presence of lead on interior finishes such as windows and/or drinking water pipes. The CDC considers childhood lead poisoning to be the most preventable environmental disease among young children, yet children continue to be poisoned. Data for Dane County shows that approximately 1% of children have blood levels between 5ug/l and 10 ug/L with much of the exposure due to household exposure from paint, water service lines, and fixtures.

Removing lead-based paint, lead contaminated dust, and lead water pipes and service lines, and mitigating mold contamination through better heating, ventilation and cooling systems from a child's environment are the top preventive measures to reduce exposure. Yet, homes, particularly unsubsidized affordable housing that is not regularly upgraded, remain a source of pollutants to hundreds of children in Madison. Over 40,000 units of such housing exists in the City of Madison with significant level of occupancy by black and brown families.[2] Identifying and remediating homes for mold and lead hazards has been a long-standing challenge. The City now sees an opportunity to do so by leveraging an existing program aimed at improving energy efficiency of unsubsidized multifamily affordable housing – the

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[1] Krieger J, Higgins DL. Housing and health: time again for public health action. Am J Public Health 2002;92(5):758–68

Krieger J. Home is Where the Triggers Are: Increasing Asthma Control by Improving the Home Environment. Pediatric Allergy, Immunology, and Pulmonology 2010;23(2):139–45

Adamkiewicz G, Spengler JD, Harley AE, Stoddard A, Yang M, Alvarez-Reeves M, et al. Environmental Conditions in Low-Income Urban Housing: Clustering and Associations With Self-Reported Health. American Journal of Public Health 2014;104(9):1650–6

[2] The Naturally Occurring Affordable Housing, or NOAH, sector represents 65% of the available housing stock and 88% of the available affordable housing stock in Madison.

[Efficiency Navigator](#) initiative, which is a partnership between the City of Madison, Sustain Dane, and Elevate. The City of Madison is requesting a $10,000 planning grant to compile existing data on blood lead levels, identify neighborhoods at risk for high lead levels (e.g. age of housing stock) and/or mold (e.g. experienced flooding) via geospatial data and engagement with local stakeholders to build out a program that can be administered through the existing Efficiency Navigator initiative and ultimately results in mitigation of lead and mold in affordable housing in the City of Madison. [3] This work will help reposition the existing program from one focused on efficiency to one focused on whole-home needs and health, which not only benefits Madison residents, but also serves as an example for others.

Project Scope

Grant funds will support a contractual employee to engage key City departments, external stakeholders, and community-based organizations in a planning process to design an implementation (shovel-ready) program to mitigate lead and mold hazards alongside energy efficiency retrofits in affordable housing in Madison. The core activities of the planning project include:

1. *Data collection and* evaluation– compile and review existing data sources related to blood levels, flooding and flood prone areas, lead service lines, asthma rates, housing stock, and demographics including the presence of children in households. Utilize data to identify at-risk populations, neighborhoods, and housing to identify priority areas for home assessments and mitigation.
2. *Stakeholder engagement* – engage stakeholders including City departments, health organization, local organizations , and neighborhood associations to gathering input on the data evaluation and mapping and creating alignment around key program design parameters
3. *Program design/development* – develop the implementation approach, resource needs, and program goals that will result in lead and mold mitigation in affordable housing in Madison. Utilize the ongoing in-building work of the Efficiency Navigator to collect data on the presence of lead and mold in affordable housing to program design.
4. *Case Study* - develop a case study documenting the methodology and strategies for developing the program that can be shared with other municipalities.

The resulting program approach and design will be incorporated into the ongoing work of the Efficiency Navigator program. Assessment of lead and mold issues will be incorporated into the in-building assessment process and assistance to building owners to mitigate lead and mold risks will become part of the services related to contractor engagement and management included in the Efficiency Navigator services to building owners.

The City will engage with partners to complete this scope of work, with specific partner roles defined in the following table.

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[3] The City of Madison has partnered with Sustain Dane and Elevate, two non-profit organizations, to implement efficiency upgrades in naturally occurring affordable housing stock in the City of Madison, thereby proving the program infrastructure in which to reach owners and residents of at risk housing.

Partner	Data/Literature/ Technical Resource	Education/ Outreach	Program Implementer
Public Health Madison Dane County	X	X	
City of Madison	X		X
University of Wisconsin School of Health	X	X	
Sustain Dane	X	X	X
Elevate	X	X	X

Project Impacts

Near term: greater alignment amongst partners focused on lead and mold mitigation through the data sharing and analysis as well as the stakeholder engagement activities. Additionally, through the ongoing in-building work of the Efficiency Navigator program, data on lead and mold issues in at least 100 units of affordable housing will be available to support the program design activity.

Mid-term: the development of a scalable program design ready to implement. Understanding the scale and costs of the program will allow the City and partners to secure City and other funding for implementation.

Long-term: reduced blood lead levels and asthma in children living in affordable housing, and a healthier and more resilient housing stock.

Timeline

The project will be completed within a 12-month period according to the following schedule.

Activity	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
1. Data Collection & Evaluation	X	X	X	X	X	X						
2. Stakeholder engagement			X	X	X	X	X	X	X			
3. Program Design/Development										X	X	X
3B. In-Building Lead/Mold Assessments			X	X	X	X	X					
4. Case Study											X	X

Budget

The total requested budget for the planning process is $10,000.

Labor	
- Contractor (130 hours @ $75/hour)	$9,750
Expenses	
- Travel	$250
TOTAL REQUEST	**$10,000**
Matching funds	
- In-building assessment for lead/mold in 100 units (~ 20 buildings @ $500 per building)	$10,000
TOTAL PROJECT BUDGET	**$20,000**