



CITY OF SOMERVILLE, MASSACHUSETTS  
**Office of Strategic Planning and Community Development**  
JOSEPH A. CURTATONE, MAYOR

**Office of the Executive Director**

**MEMORANDUM**

**TO:** Mayor Joseph A. Curtatone

**FROM:** Monica R. Lamboy, Executive Director *ML*

**DATE:** April 22, 2010

**SUBJECT:** Request to accept a HUD Health Homes Technical Study Grant in the amount of \$749,893 for a study on cardiovascular health benefits on in-home air filtration in the Mystic Housing Development

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The Mayor's Office of Strategic Planning and Community Development (OSPCD) respectfully requests that you forward this report to the Board of Aldermen (BOA) requesting that the BOA accept a Health Homes Technical Study grant from the Department of Housing & Urban Development (HUD) in the amount of \$749,893. This grant will be for a study on cardiovascular health benefits of in-home air filtration in the Mystic Housing Development.

**BACKGROUND**

The Healthy Homes Initiative (HHI) within HUD is designed to address multiple childhood diseases and injuries in the home. The program takes a comprehensive approach by focusing on housing-related hazards in a coordinated fashion, rather than addressing a single hazard at a time. The HHI builds upon HUD's successful Lead Hazard Control programs to expand its efforts to address a variety of environmental health and safety concerns including: mold, lead, allergens, asthma, carbon monoxide, home safety, pesticides, and radon.

In Somerville, and other cities across the country, groups have been wondering about the health impacts of living in proximity to a highway. National studies have shown that areas next to highways are exposed to Ultrafine Particle (UFP) pollution from auto vehicle exhausts, and significant amounts of these UFP are able to infiltrate into homes near highways. Studies have also shown that UFP pollution increases the blood makers of inflammation that are associated with cardiovascular diseases.

Two local studies have analyzed the impacts of proximity to highways and they specifically studied

the Mystic Housing Development. The first study conducted by the Mystic View Task Force (MVTTF) and Somerville Transportation Equity Partnership (STEP) on traffic-related health risk, concluded that the Mystic Housing area is exposed to the high volume of UFP. Preliminary findings from the Community Assessment of Freeway Exposure and Health (CAFEH) study arrived at the same conclusion.

In response to this significant data, OSPCD partnered with Tufts University, Somerville Transportation Equity Partnership (STEP), and the Mystic Housing Tenant Association to apply for a Healthy Homes grant and recently received an award letter from HUD indicating that the City had been successful in its application.

## **COMPONENTS OF HEALTHY HOMES STUDY GRANT**

The purpose of the HUD Healthy Homes Technical Study Grant is to conduct a study that will measure the health benefit of air cleaning technology in the housing units in the Mystic Housing Development. The Mystic Housing Development is located in an environmental justice and highway pollution impact zone, next to highway I-93 and its residents consist of low income, minority and immigrants.

The purpose of the study will be to evaluate the effectiveness of certain technology in mitigating the traffic-related health concerns raised by the previous two studies. The following actions will occur:

1. Installation of HEPA air filters in twenty-four (24) apartments;
2. Testing of the efficacy of the HEPA air filters to reduce Ultra Fine Particles (UFP) in the apartments;
3. Testing of the effect of HEPA filtration on blood makers of inflammation that are associated with cardiovascular diseases; and,
4. Assessment of the feasibility and viability of in-home air filtration as a possible intervention to protect against heart disease in public housing located next to major highways.

The study will recruit 24 participants over a 2-year period and the HEPA air filters will be installed in their homes for a period of six weeks. Participants will be asked to keep diaries of their time-activity when the filter is installed in their homes. A clinic program will be located at the Mystic Housing Development for collecting blood and other measures for cardiovascular activities. Outdoor air monitoring equipment will be located at Mystic Housing Development and an air monitoring equipped van will monitor the air quality of the area during the study. From the time in-home filters are installed in an apartment, the data from the out-door air monitors and sample of the in-door air quality will be analyzed to determine the efficacy of the HEPA filters. Biological samples from participants will be analyzed for the difference in markers for cardiovascular health when a HEPA filter is installed in their homes.

Under the proposed study, the City of Somerville is partnering with Tufts University's School of Medicine and School of Environmental Engineering and Somerville Transportation Equity Partnership (STEP) to mobilize local knowledge and expertise to address the issue of highway pollution in the eastern part of the City. The Mystic Housing Tenant Association is a community partner in this study to ensure this study addresses the concerns of the residents of the Mystic Housing Development and the outcome of the study is of real benefit to them. The final deliverable

of the study will be several reports on the feasibility and viability of in-home air filtration system, public education materials on how to reduce in-home UFP infiltration, and a documented basis for the future course of action for the City.

## **PUBLIC PROCESS**

The study has adopted Community-Based Participatory Approach as a research model. This approach recognizes the community as a partner and involves them in an early stage in the research process. The Mystic Housing Tenant Association which represents the residents of the Mystic Housing and STEP are the community partners for this study. Both partners expressed support for the application for this grant and continue to pledge their support for the study. Members from two community partners will be voting members of a steering committee for this study, which shall provide direction for the study. Outreach and survey of the residents of Mystic Housing Development will be led by the Tenant Association.

## **BUDGET**

The grant funding will extend for three years and includes an allocation for one (1) fte Project Coordinator and a small portion of the Housing Director position, as well as funding for Tufts University, STEP, and the Mystic Housing Development. The Project Coordinator position will be filled by an existing OSPCD staff member who is presently funded on the Lead Abatement Demonstration Grant, a grant which is nearly completed. Mystic Housing residents will be recruited as outreach worker and surveyors, and this arrangement will provide jobs to some residents during the course of this study. In addition, Tufts anticipates it may be able to create as many as four student positions. A modest allocation in funds has been made for office supplies, computer equipment, and mandatory travel.

In addition, Tufts University and CAFEH are contributing matching funds and resources amounting to \$165,177 and the City is providing an in-kind match of \$13,810 towards the study.

## **RECOMMENDATION**

It is recommended that the Board of Alderman accept a HUD Health Homes Technical Study grant in the amount of \$749,893 for the study of cardiovascular health benefits of in-home air filtration as an intervention measure against highway pollution.