

# St. Louis Demolition Inspections Initiative: Impacts on Env. Justice and Health Equity



Saint Louis  
**COUNTY**  
**PUBLIC HEALTH**

# Environmental Justice is Health Equity

- **Environmental Justice** is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. This goal will be achieved when **everyone enjoys the same degree of protection from environmental and health hazards**, and equal access to the decision-making process to have a healthy environment in which to live, learn, and work.

# Health Equity is Environmental Justice

- **Health equity** means that everyone has a fair and just opportunity to be as healthy as possible. **This requires removing obstacles to health such as** poverty, discrimination, and their consequences, including powerlessness and **lack of** access to good jobs with fair pay, quality education and housing, **safe environments**, and health care.
- Health Equity is related closely with Environmental Justice.

# How do we affect Health Equity and Environmental Justice?

- Change and implement policies, laws, systems, environments, and practices to reduce inequities in the opportunities and resources needed to be as healthy as possible.
- Eliminate the unfair individual and institutional social conditions that give rise to inequities.

# Demolition Dust-Fall Health Risks

- Demolitions provide a pathway for exposure for lead to enter a residential environment via tracking and blowing of exterior dust.
- There is no safe blood lead level in children
- The most common way for children to get lead in any amount is through lead based paint
- Route of contact – soils and surfaces in and around homes/demolitions with lead based paint.
- Particulate matter absent lead has health impacts.

# Demolition Dust-Fall Health Risks

- Health risks associated with lead in children includes:
  - Harms production of red blood cells
  - Impacts calcium absorption
  - Behavioral Issues
  - Learning Difficulties
  - Development Delay
  - Irritability
  - Fatigue
  - Extreme lead poisoning causes brain and kidney damage.

# Identifying an Air Quality Health Inequity/Disparity

- The St. Louis County Department of Public Health APCP identified **demolition practices** (permitting, work practices) as an Air Quality factor which contributes to higher health risks for specific communities or populations.
- Advantaged middle to higher income communities within St. Louis County have less or no demolition activity due to newer or more valuable housing stock and no vacant and abandoned properties = no demo/lead dust-fall occurring
- Disadvantaged lower income communities have older housing stock (pre-1978 lead paint), vacant/condemned buildings, demolition activity, lead dust-fall = health inequity

# Identifying an Air Quality Health Inequity/Disparity

- Lead is a major environmental health hazard for children in the United States and lead poisoning represents a health disparity, with low-income and minority children disproportionately affected (CDC, 2002, 2005).
- Although deteriorated paint in the household has been identified as the primary source of lead exposure, researchers have identified urban housing demolitions as an additional source of lead exposure in the environment.



# Examples of Research Findings

- July 2003, Environmental Health Perspective, Farfel et al., Johns Hopkins School of Public Health
  - The study was conducted to assess changes on ambient dust lead levels associated with demolition of blocks of older row houses in Baltimore, MD
  - Study presents results of dust fall samples collected within 33 feet of three demolition sites.
  - Daily lead dust fall rate during demolition increased by 40-fold during demolition and by 6-fold during debris removal.

# Research Findings (cont.)

- Nov-Dec 2013, Public Health Reports, Jacobs et al., Univ. of IL Chicago School of Public Health
  - Measured lead dust fall at perimeter (distance of neighboring homes in densely populated communities) of demolitions at 97 single-family housing demolition events with intermittent or no use of water to suppress dust.
  - Geometric mean lead dust fall was 14.18  $\mu\text{g Pb/ft}^2/\text{hour}$  w/o dust suppression
  - Declined to 5.48  $\mu\text{g Pb/ft}^2/\text{hour}$  by simply wetting debris and building.
  - Increase in dust suppression resulted in 0.25  $\mu\text{g Pb/ft}^2/\text{hour}$
  - Arsenic, Chromium, Copper, Iron, and Manganese dust fall was significantly higher than background.

# Research Findings (cont.)

- September 2006, Environmental Research, F.A. Rabito et al., Tulane University
  - This study looked at 1196 children aged 6-72 months blood lead levels taken within 45 days of demolition occurring on their census block, in the City of St. Louis.
  - Study found that being exposed to multiple demolitions on a residential block was associated with a significant increase in children's blood lead levels.
- Similar results have been found in Detroit, where accelerated demolitions of 19,000 structures has occurred since 2014, with another 21,000 remaining in the City's blight removal program.

# Summary of Literature Review

- It is clear from the literature that demolition activities generate lead containing dust, and that this dust can travel 400 feet from the source (Jacobs et al., 2013).
- It is clear that demolition activity can contribute to lead levels in interior residential floor dust, and can result in elevated blood lead levels in children (Lucas et al., 2014, Partridge et al., 2004, Rabito et al., 2007)
- Lead dust was found to be generated and dispersed from individual single-family demolitions (Jacobs et al., 2013)

# Notification of Demolitions

- The St. Louis County Department of Public Health, along with the County's Building Department, authorizes or permits all demolitions.
- St. Louis County Ordinance, Waste Management Code 607.865 allows for the Department to provide conditions for approval of demolition authorizations.
- A condition of an approved demolition authorization is to notify the Department of start of demolition activity via email to DPH, no later than 5 pm on the day preceding start-up of demo activity.

# Demolition Inspections

- Purpose of a demolition inspection is to ensure that the demolition contractor is using appropriate dust control best management practices
- Water, Water, Water and Paced-Methodical Deconstruction
- Large diameter hose from hydrant
- Appropriately sized mister
- No visible dust being created during demolition or loading for transport

# Demolition Inspections

- **612** - Number of demolitions authorized in 2019
- 616 – Number of demolitions authorized in 2020
- **53%** of demolitions occurring in 2019 and 55% in 2020 were inspected to ensure appropriate dust control was used, no visible dust created.
- Demolition activity is halted for lack of adequate dust control and appropriate enforcement action for violation of applicable local and State air pollution control regulations is performed.

# Contacts

- Jeremy Rogus, Program Supervisor  
[jrogus@stlouiscountymo.gov](mailto:jrogus@stlouiscountymo.gov)  
314-615-0926
- Kathrina Donegan, Program Manager; Air and Waste Management  
[kdonegan@stlouiscountymo.gov](mailto:kdonegan@stlouiscountymo.gov)  
314-615-8936