





### SOURCES OF EXPOSURE:

Lead-based paint Contaminated soil Water service pipes and fixtures Other sources ...



The Roman author Vitruvius reported the health dangers of lead in the first century BC. Hodge, Trevor, A. (October 1981). "Vitruvius, Lead Pipes and Lead Poisoning". American Journal of Archaeology. Archaeological Institute of America. **85** (4): 486–491

# LEAD

### SOURCES OF EXPOSURE:

Other sources ...





EDF analyzed 11 years of data from the Food and Drug Administration (FDA), and found that food, and baby food in particular, is a meaningful – and surprising - source of lead. If it were eliminated completely, we estimate the societal benefits at more than \$27 billion annually. (Environmental Defense Fund, June 15, 2017)



Thomas Midgeley may be responsible for millions of deaths by, "just doing his job." He found that adding lead, he knew to cause serious injury, brain damage and death, to gasoline worked almost as well as adding grain alcohol, but was cheaper and, more importantly, could be patented and made quite profitable. (Wikipedia)

# LEAD

#### Trends in lead pollution, assault rates in Chicago





"...the opinion of this mischievous effect from Lead, is at least above sixty years old; and you will observe with concern how long a useful truth may be known, and exist, before it is generally received and practiced on." Dr. Benjamin Franklin, 1786



Lead Poisoning a Significant Cause of Inner-City Crime, Say Researchers By Sarah Le, Epoch Times, August 25, 2016 Last Updated: August 30, 2016

### LEAD BASED PAINT IN HOUSING

In 2015, the 49507 Zip Code area had the highest rate of childhood lead poisoning in the entire State



### **CITY OF GRAND RAPIDS**



LEAD BASED PAINT IN HOUSING

64,000 Pre -1978 housing units<sup>1</sup> 30,000 units at risk of having lead paint hazards<sup>2</sup>



- 1. 2015 ACS
- 2. Jacobs, *et al*, 2002. Does not factor in housing condition

### **KENT COUNTY\***



## LEAD BASED PAINT IN HOUSING

78,000 pre-1978
housing units<sup>1</sup>
53,000 units at risk of having lead paint hazards<sup>2</sup>



\* Outside Grand Rapids

- 1. 2015 ACS
- 2. Jacobs, *et al*, 2002. Does not factor in housing condition.



### LEAD BASED PAINT IN HOUSING

Pre-1950 housing poses the highest risk because...



- Most likely to have lead paint (>90%)
- More likely to have deferred maintenance issues
- More likely to be maintained using unsafe work practices NO MATTER WHERE THEY ARE LOCATED

#### THE RISK OF LEAD EXPOSURE IN KENT COUNTY





Although the greatest risk occurs amidst concentrations of older homes in urban centers, there is significant risk in many rural areas of the county

Dark blue -> dark orange = lowest -> highest risk Source: Rad Cunningham, Washington State Department of Health. 2016

# THE CITY OF GRAND RAPIDS LEAD HAZARD CONTROL PROGRAM

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Lead

the



# Get the Lead Out!



### HISTORY

2000: The Get The Lead Out! Coalition formed

City of GR tasked with securing federal funds

2003: 1<sup>st</sup> & 2<sup>nd</sup> successful grant applications (LBPHC and LHRD)
2005: 3<sup>rd</sup> successful grant application (LHRD)
2008: 4<sup>th</sup> & 5<sup>th</sup> successful grant applications (LBPHC & LHRD)
2012: 6<sup>th</sup> (LBPHC w/HHS)
2016: 7<sup>th</sup> (LBPHC w/HHS)



## ACCOMPLISHMENTS

1,319 housing units made lead safe2,708 individuals trained in lead-safe practices92 lead abatement professionals trained

The Lead Safe Housing Registry now includes 1452 units www.grcd.info



### PARTNERS

- Kent County Health Department
- Healthy Homes Coalition
- LINC Community Revitalization
- Rental Property Owners Association
- Other Agencies

Funding and referral services also provided by the Michigan Department of Health and Human Services



## 2016 PROGRAM GOALS

- 150 units made lead safe
- Train 704 individuals trained in leadsafe practices
- Conduct healthy homes interventions in 150 units
- Provide contractor development services to 6 contractors
- Train 21 lead abatement professionals

Free Lead for a Healthy Future

ELIMINATE CHILDHOOD LEAD POISONING IN KENT COUNTY



### 2016 PROGRAM FUNDING

- Lead Based Paint Hazard Control Grant
- Healthy Homes
   Supplemental Funds
- Matching funds
- Owner co-pays



Landlords contribute 10% of the contracted cost of lead hazard control in their units.



### ELIGIBILITY

- 1 4 unit properties, including rental units
  - In the Target Area
- Household income ≤ 80% AMI
- Child < 6 in residence or in childcare</p>
- Vacant rental units may also qualify
- Confirmed BLL  $\geq$  5 µg/dL anywhere in city

Target Area census tracts selected based on HUD's 2016 NOFA scoring parameters.





### FINANCIAL ASSISTANCE

- Up to \$16,000 Owner-occupied units
  - Can be combined with Housing Rehabilitation
- Up to \$14,000 \$18,000 Rental units
- Up to \$5,000 for Healthy Homes interventions



The average cost to eliminate lead paint hazards in housing units is \$10,473.



## INTERVENTIONS

Abatement

- Permanent
  - Replacement
  - Enclosure
  - Encapsulation
- No/low maintenance



Hazards must be identified by a combination Paint Inspection/Risk Assessment



## INTERVENTIONS

#### **Interim Controls**

- Temporary
- Regular maintenance



Hazards must be identified by a combination Paint Inspection/Risk Assessment



### ABATEMENT PROCEDURES

Windows replacement Vinyl siding installation Floor enclosure Soil capping



Lead water pipes are excluded from Lead Hazard Control grant funding by law. Lead water pipes *may* be replaced as a high-priority Healthy Homes hazard.



### **INTERIM CONTROLS**

Prep, prime & paint Till & cover soil Specialized cleaning





## HEALTHY HOMES INTERVENTIONS

29 classes of hazards assessed by a Healthy Homes Rating System Assessment Prioritized by:

- the likelihood of causing an accident
- the extent of injury
- on-site factors that may affect either

Interventions are limited only by the level of risk and available funds.



### "The effect of the defect"



**OCCUPANT PROTECTION** 

CONTAIN - don't make a mess! CLEAN – clean up the mess you did make! CLEAR – prove it!





# **OCCUPANT PROTECTION**

### CONTAIN

- Minimize dust generated
  - Work wet
- Stop the spread of dust
  - Turn it off
  - Cover it
  - Bag it





# **OCCUPANT PROTECTION**

### CLEAN

- HEPA-filtered vacuum
- Wash 3 bucket method
- HEPA vac again







# OCCUPANT PROTECTION

### CLEAR

- Interior
  - Visual
  - Dust-wipe samples
  - Occupants may return
- Exterior
  - Visual
  - Protected access





# OCCUPANT PROTECTION

### **CLEARANCE STANDARDS**

CLEARANCE LEVELS (in µg/ft <sup>2</sup> )		
Surface	HUD/EPA	OLHCHH
Floor	40	10
Sill	250	100
Trough	400	100
Porch floor	N/A	40

Soil hazard standards (in µg/g) Play area – 400 Other areas – 1200 Abatement required - > 5000





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