

# Tracking and Environmental Justice in Massachusetts

## Childhood Lead Poisoning Prevention

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# EPHT Indicators Project

- Establish the feasibility of identifying individual residential units where different families are at risk for blood lead poisoning over time
- Establish the feasibility of identifying multiple unit dwellings that have been sources of lead exposure within more than one residential unit

These 2 objectives are a means to focus on population subgroups of property renters, especially low-income families, who may be at greater risk of lead poisoning and who may be underserved in terms of blood lead screening and lead paint remediation

# Background on Massachusetts Environmental Justice

- Environmental Justice policy passed in 2002
- 108 cities and towns have EJ communities in them
- The average number of hazardous waste sites in EJ cities and towns is 170. The average number in other communities is 40.

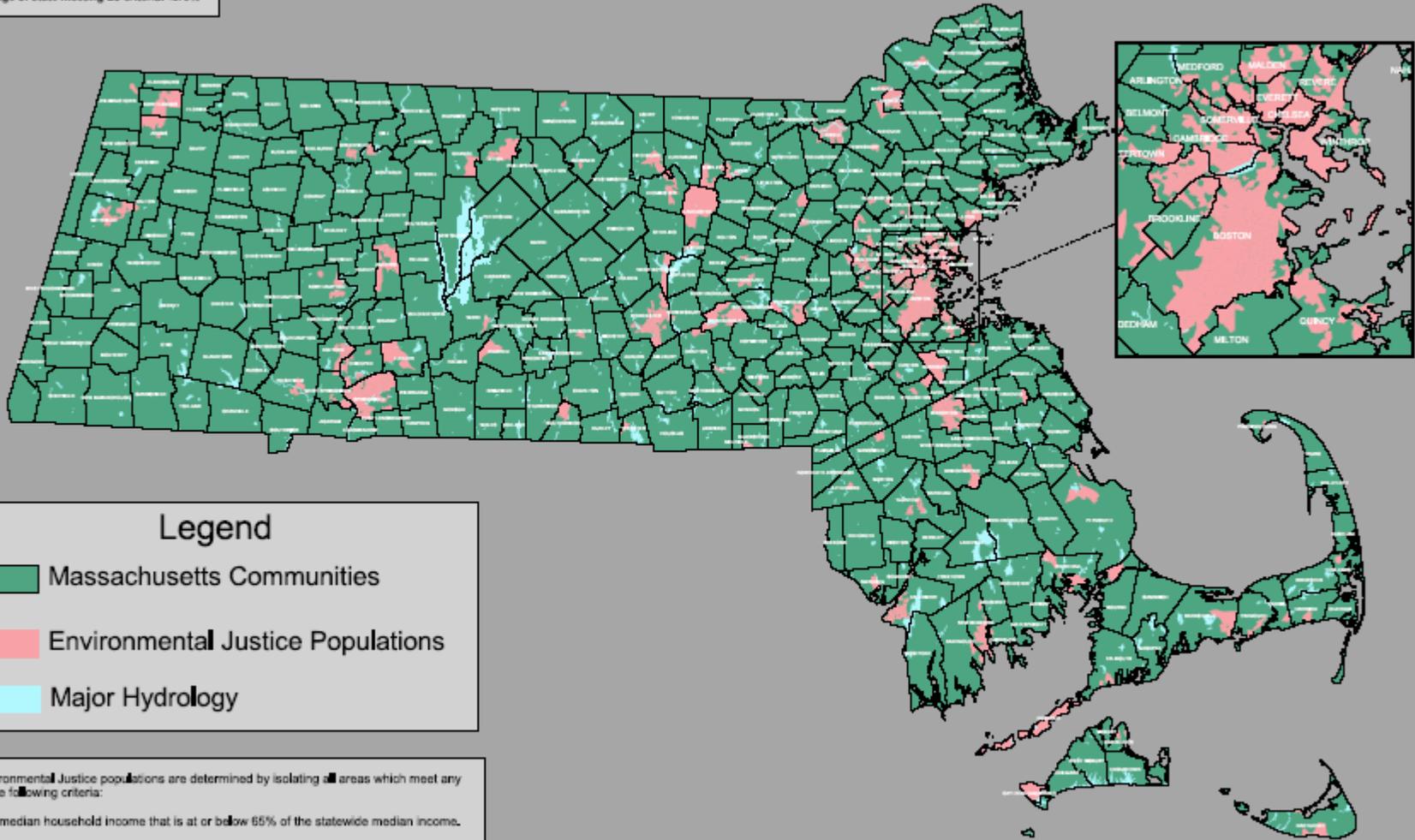
- Definition of an EJ community (one or more criterion):
  - % Minority  $\geq 25\%$
  - Median household income  $\leq 65\%$  of statewide median income
  - Lacking English proficiency  $\geq 25\%$  of households
  - % Foreign born  $\geq 25\%$

### Statewide Statistics

EJ Population represented: 1,835,322  
State population: 6,349,097  
Percentage of state meeting EJ criteria: 28.9%

Acres of EJ areas: 247,766  
State acreage total: 5,175,255.6  
Percentage of state meeting EJ criteria: 4.78%

# Environmental Justice (EJ) Population



## Legend

- Massachusetts Communities
- Environmental Justice Populations
- Major Hydrology

Environmental Justice populations are determined by isolating areas which meet any of the following criteria:

- \*\* A median household income that is at or below 65% of the statewide median income.
- \*\* 25% or more of the residents are classified as minority.
- \*\* 25% or more of the residents are foreign-born.
- \*\* 25% or more of the residents lack English language proficiency.

All data is derived from the 2000 Census Summary File 3 Demographics Report.

0 20 40 60 80 100 120 Miles

— Governor — Jane Swift —  
— Secretary — Bob Durand —



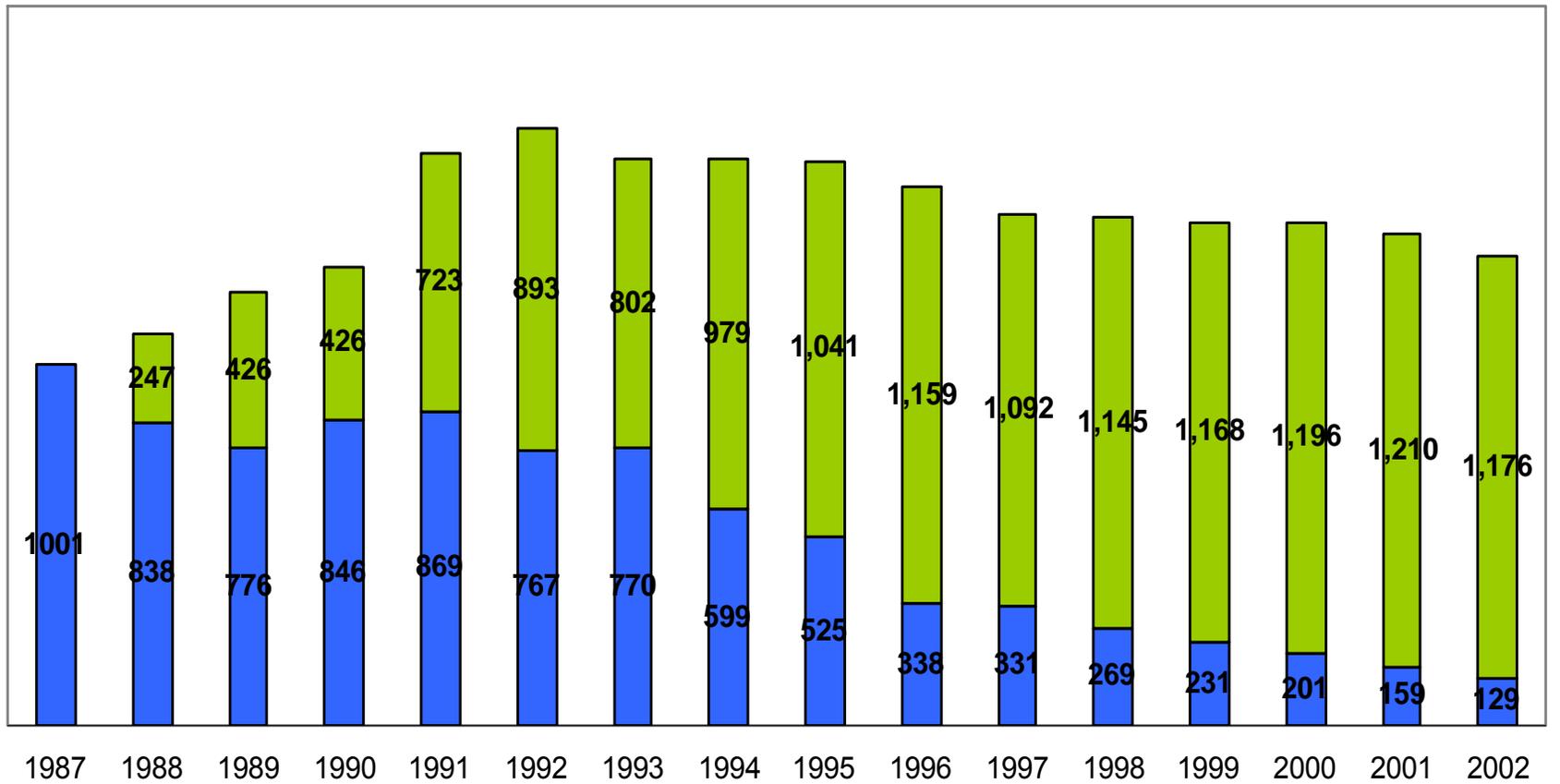
Map created 10/1/02 by G. Winters

# Background on the Massachusetts Childhood Lead Poisoning Program

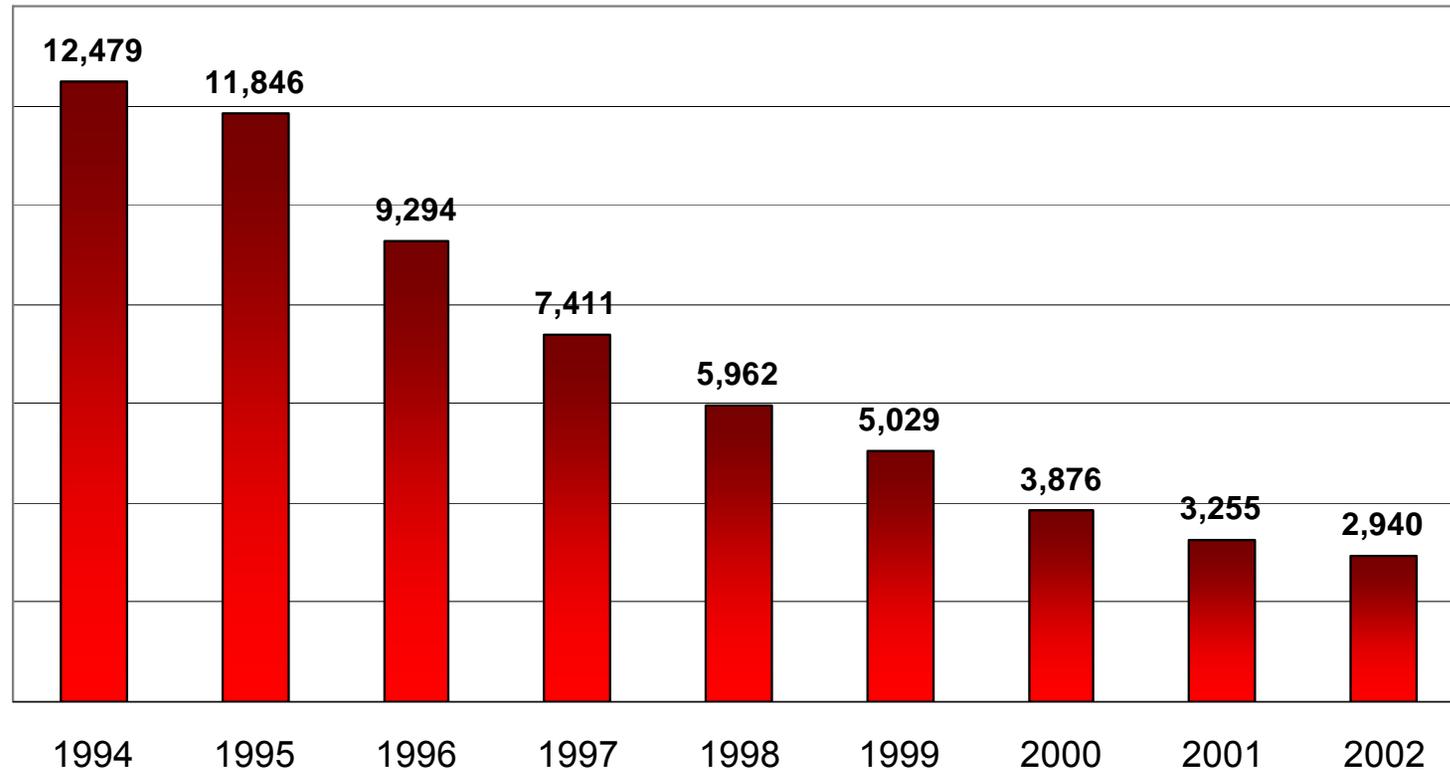
- Environmental Justice basis for the Massachusetts lead law
- Lead law enacted in 1971
- Requires all children to be tested for lead between the ages of 9 and 12 months and again at ages 2 and 3 years old. Additionally, children living in a Massachusetts high risk community must also be tested at age 4

# The Success of the Massachusetts Lead Poisoning Prevention Program Fiscal Years 1987-2002

■ Actual Cases BLL  $\geq$  25 ug/dL ■ Potential new cases at 1987 incidence rate



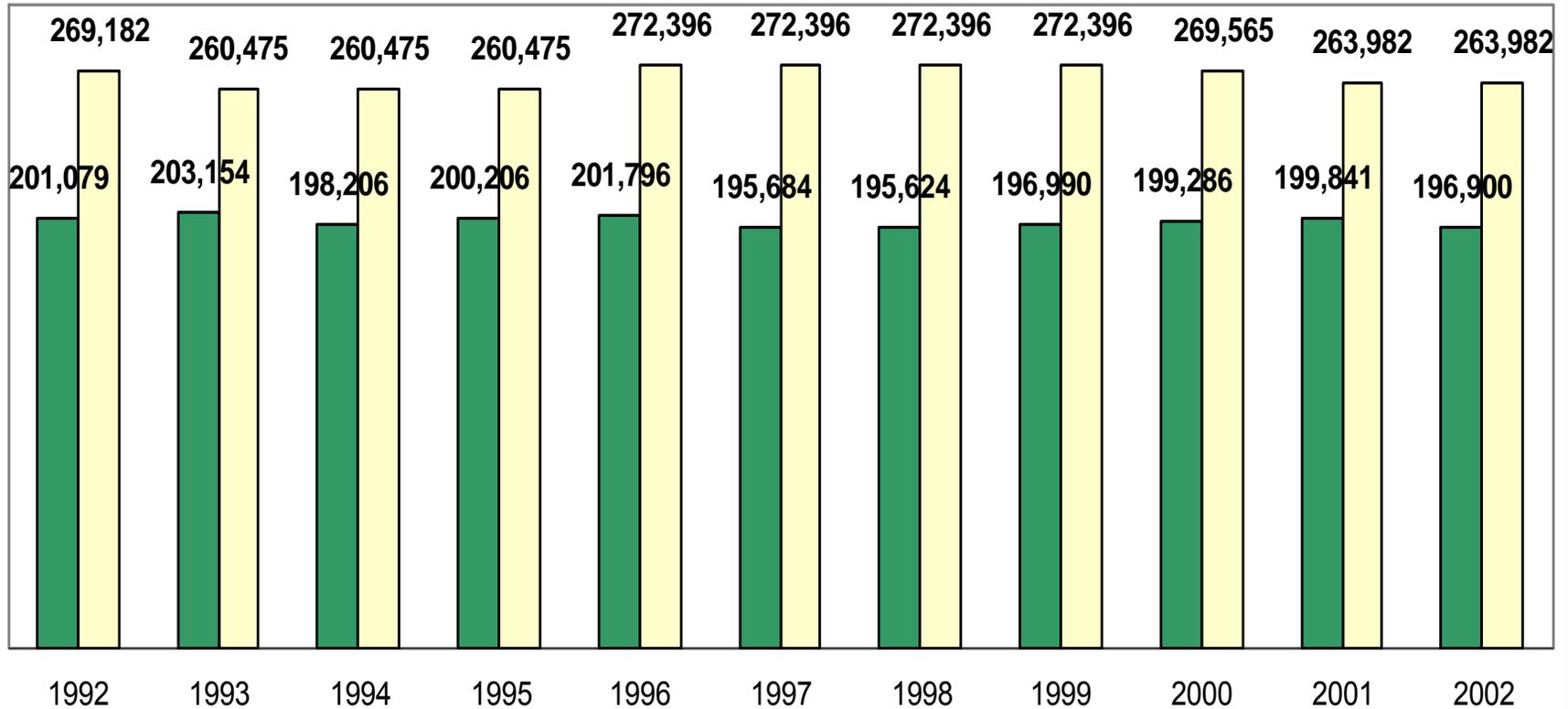
Children with Confirmed EBLL  $\geq 10$  ug/dL\*,  
6-72 months, Identified During Annual Screening  
Calendar Years 1994 - 2002



\*A confirmed elevated blood lead level (EBLL) is either one venous blood specimen  $\geq 10$  ug/dL, or 2 capillary specimens  $\geq 10$  ug/dL drawn within 12 weeks of each other, within the same year.

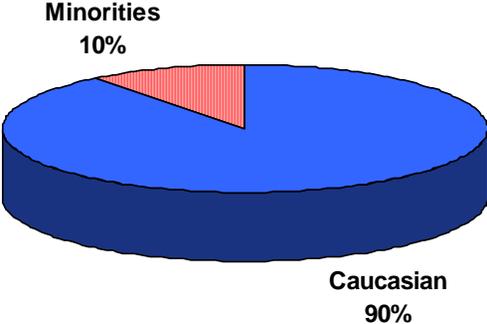
# Mandatory Screening for Lead Poisoning in Massachusetts Children 9-48 months\*, Fiscal Years 1992-2002

■ Screened    □ Population

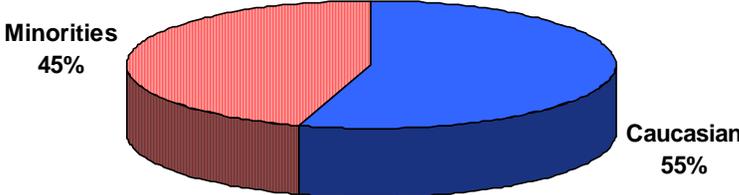


\*In July 2001, state regulations changed. In non-high risk areas, mandatory annual screenings were limited to children 9-36 months. In high risk communities, annual screening requirements remained 9-48 months.

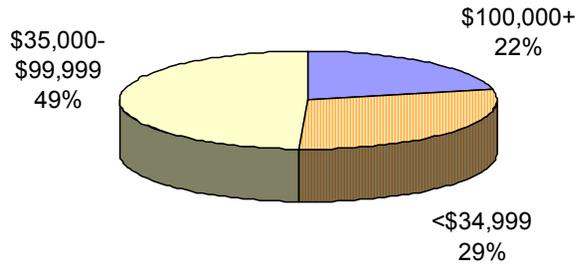
**Caucasian and Minority Children, 0-72 months  
Non High Risk Communities, Massachusetts  
(Census 2000)**



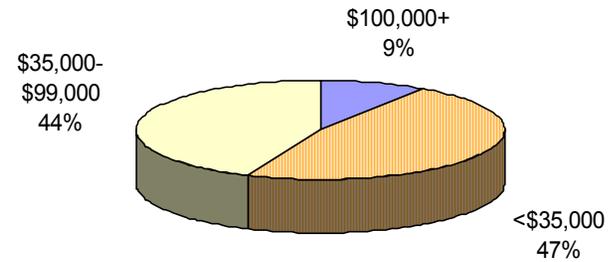
**Caucasian and Minority Children, 0-72 months  
High Risk Communities, Massachusetts  
(Census 2000)**



**Household Income in Non High Risk  
Massachusetts Communities, 2002  
(MassChip)**



**Household Income in High Risk  
Massachusetts Communities, 2002  
(MassChip)**



# Indicators Project

- Tracking children who initially had elevated blood lead levels and who have multiple addresses
- Tracking children with elevated blood lead levels and whose siblings were also screened
- Tracking addresses where children lived with elevated blood lead levels

# Where Are We Going?

- Development of Childhood Lead Poisoning database on Medicaid population
- Build EJ considerations and representation into project planning, implementation, and interpretation
- Enhancement of GIS capacity to provide more data to identify disparate populations

# Massachusetts Air Emissions



## Legend



Environmental Justice Populations

### Population by Town



80 - 4,999



5,000 - 11,999



12,000 - 49,999



50,000 - 174,999



175,000 - 590,000

### Massachusetts Highway Department Roads



Multi-lane Highway



Other Numbered Hwy

### Emissions from Located Facilities (Tons/Year)



1 - 75



75 - 100



200 - 999



1000 - 9999



10000 - 66000

## DISCUSSION

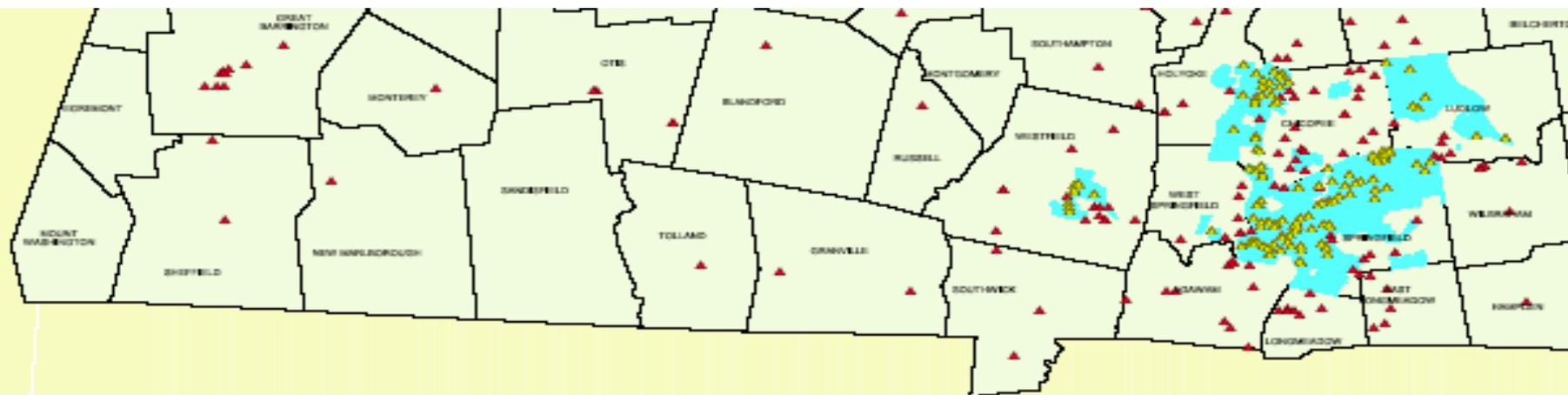
The DEP regulates facilities with air emissions ranging from large power stations to individual building boilers. This map does NOT represent all facilities with air emission permits. The vast majority of these facilities have not yet been located (see BWP MAJOR FACILITIES in data sources). Only 13% of facilities with permitted air emissions have been located, to date. Of these, approximately 2% have zero emissions. This map shows only 11% of facilities with permits for air emissions.

Major Roads are depicted on this map to indicate potential mobile sources of air emissions. Exhaust emissions from vehicles contribute significantly to air quality concerns in the Commonwealth.

Population information has been included because emissions from home heating and the domestic use of chemicals also play a major role in the degradation of air quality. These types of emissions will be greater in areas with higher populations.

Environmental Justice Populations must meet one of the following criteria: 1) the median household income is less than 65% of the state median, or, 2) greater than 25% of the population is comprised of minorities or is foreign born, or, 3) greater than 25% of the residents lack english proficiency.

# Massachusetts Waste Sites



## Legend



Environmental Justice Populations



MA Towns

### Tier Classified 21E Sites:



Tier Classified 21E Sites Inside EJ Areas



Tier Classified 21E Sites Outside EJ Areas

## Special Limitations

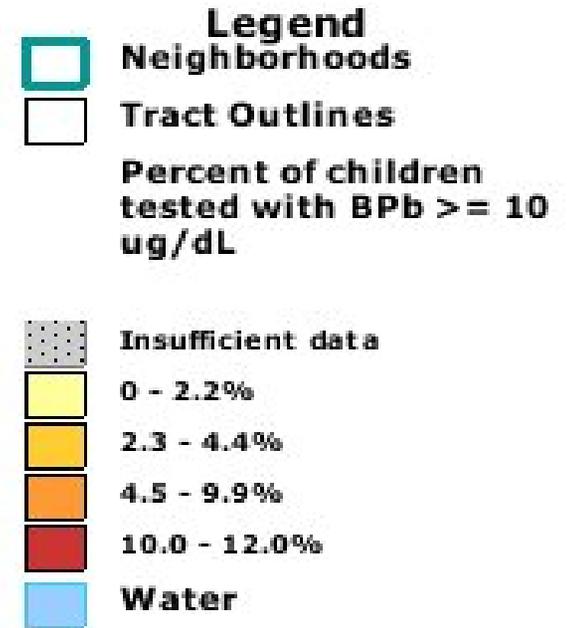
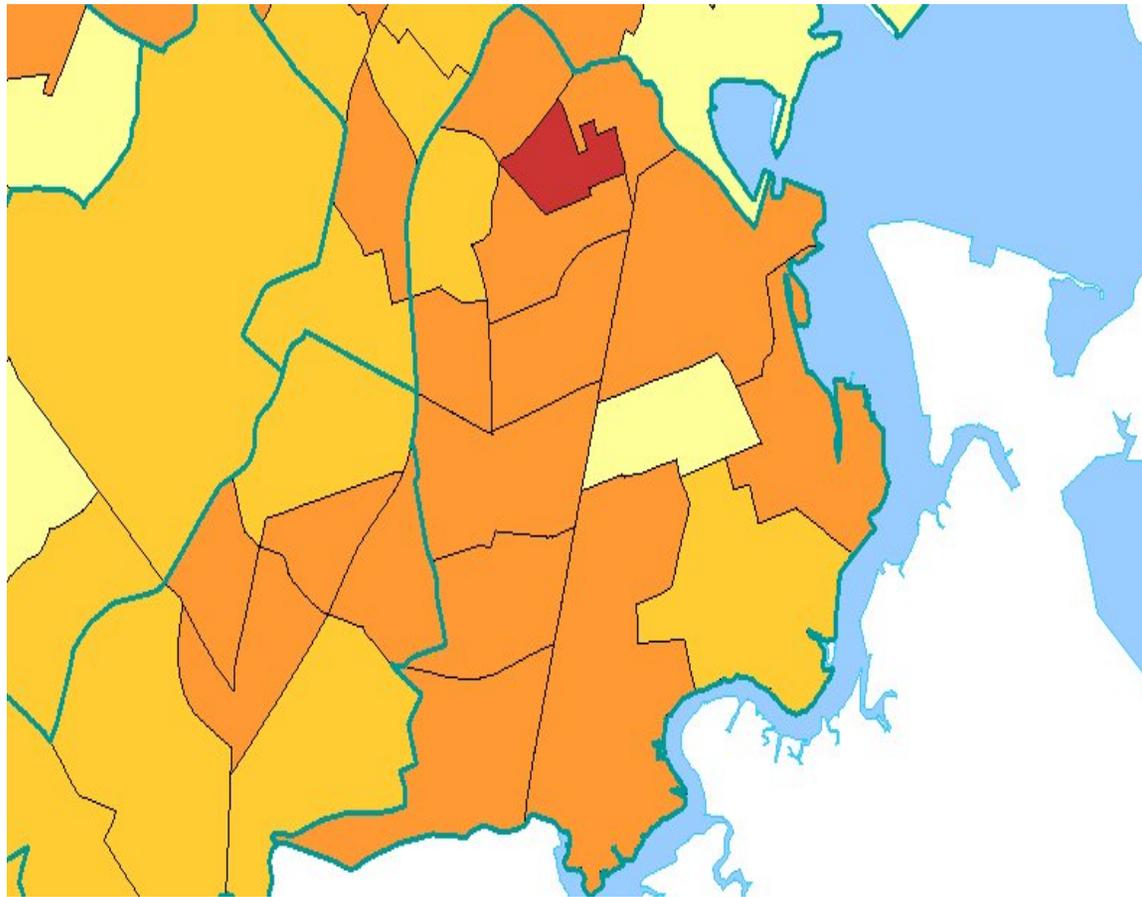
Point locations representing Tier Classified Chapter 21E sites in this data layer have not been field-verified and should be considered approximate. Locations were derived through review and interpretation of paper maps and localized information contained in DEP BWSC site files, which are maintained in DEP's Regional Offices. Generally, such information was submitted to DEP by potentially responsible parties (PRPs) and the PRPs' licensed site professionals (LSPs).

Please be advised that this data layer is incomplete. The DEP has been unable to locate some sites due to inadequate source materials. Sites that are not yet reported or tier-classified are not mapped, nor are sites for which a Response Action Outcome (RAO) has been submitted to the DEP.

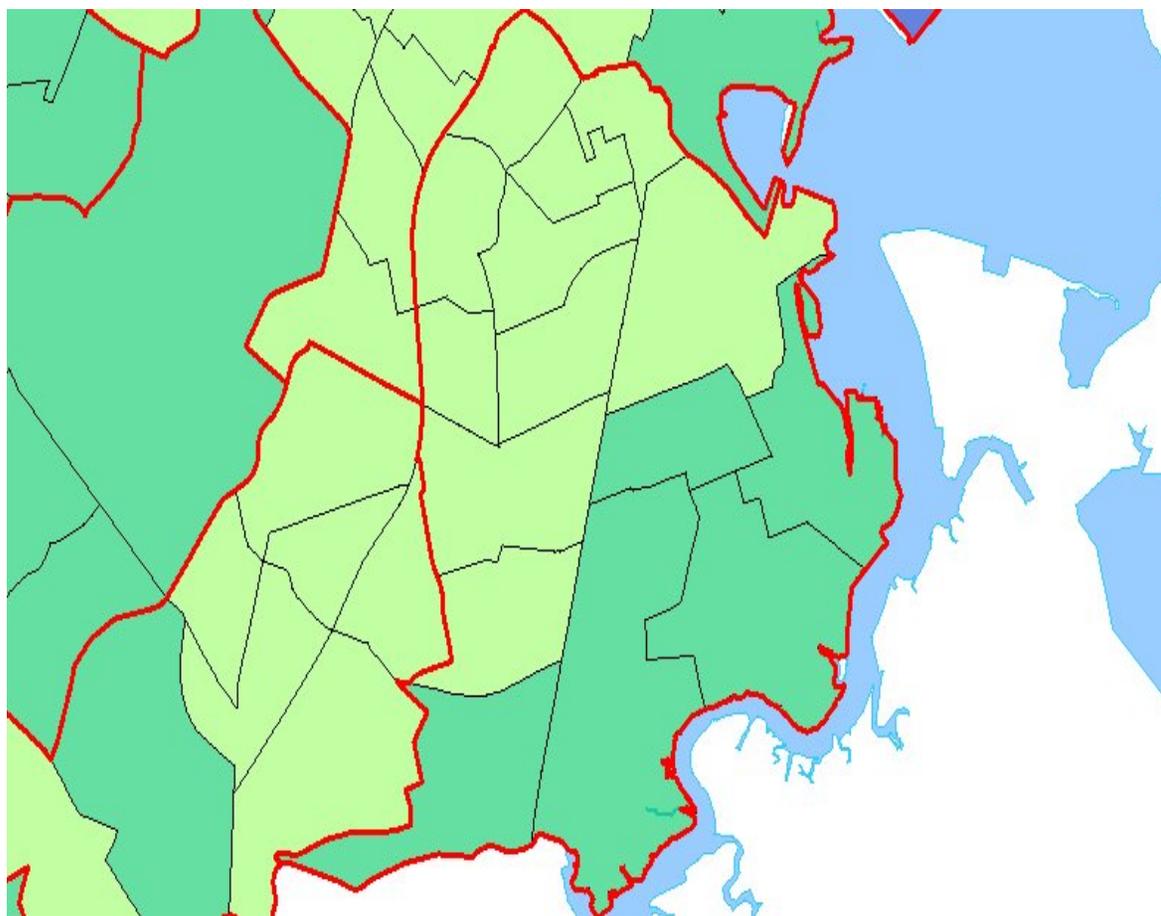
Site contamination may extend well away from the point representing a site on this map. The DEP BWSC site files should be reviewed for the most accurate and up-to-date information about a particular site. While the Tier Classified Chapter 21E site data shown on this map provides some useful information, the user should be aware of the data's limitations. For further information, please consult the data layer description documentation of DEP Tier Classified Oil or Hazardous Material Sites available on the MassGIS Web Site: <http://www.state.ma.us/mgis/c21e.htm>.

Questions regarding Tier Classified Chapter 21E sites data on this map should be referred to the DEP GIS Program (917) 574-6956. General and technical questions regarding Chapter 21E, the MCP and waste site cleanup in Massachusetts should be directed to the DEP BWSC (917) 339-2255 or (800) 426-0464.

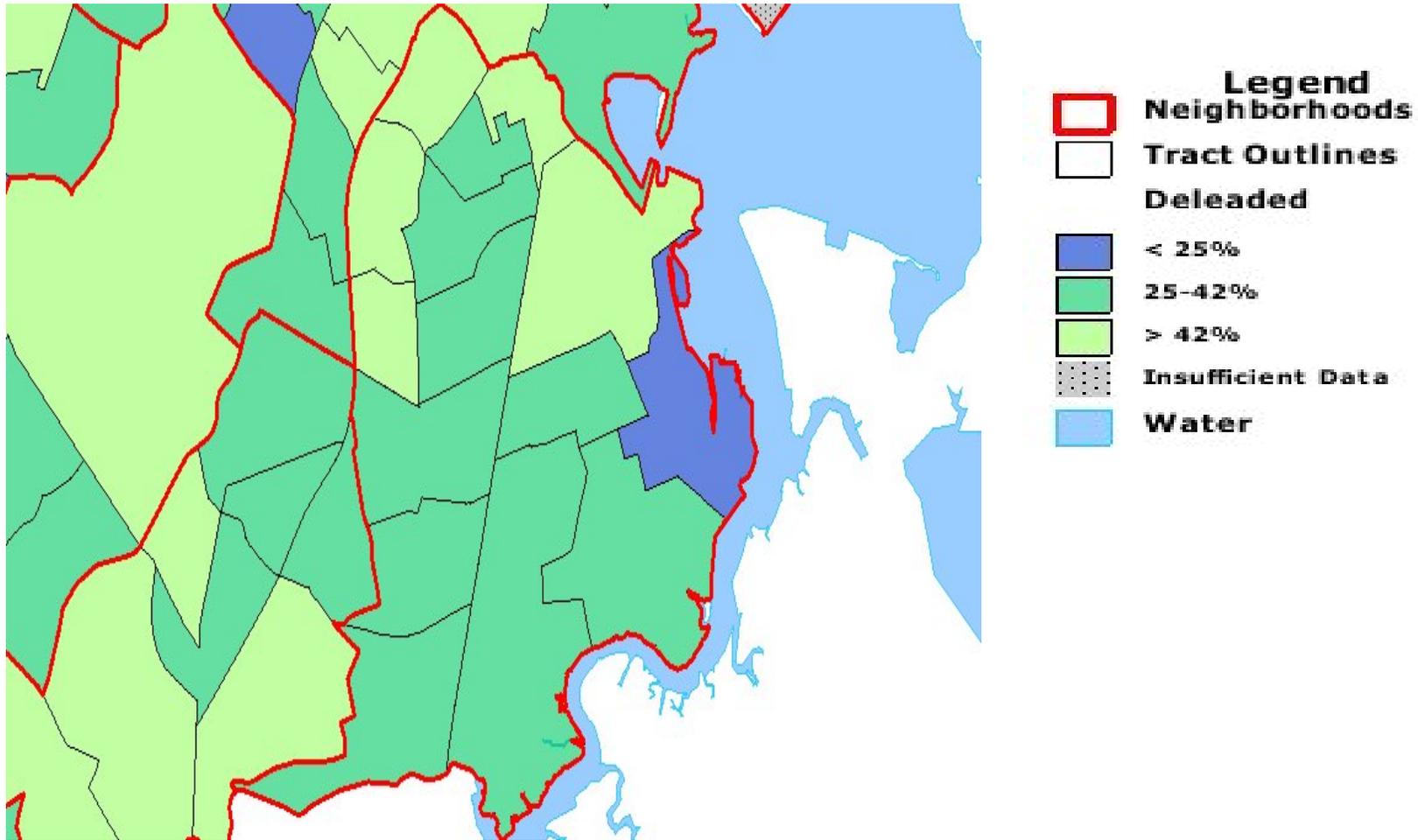
# Dorchester Blood Lead Levels by Census Tract



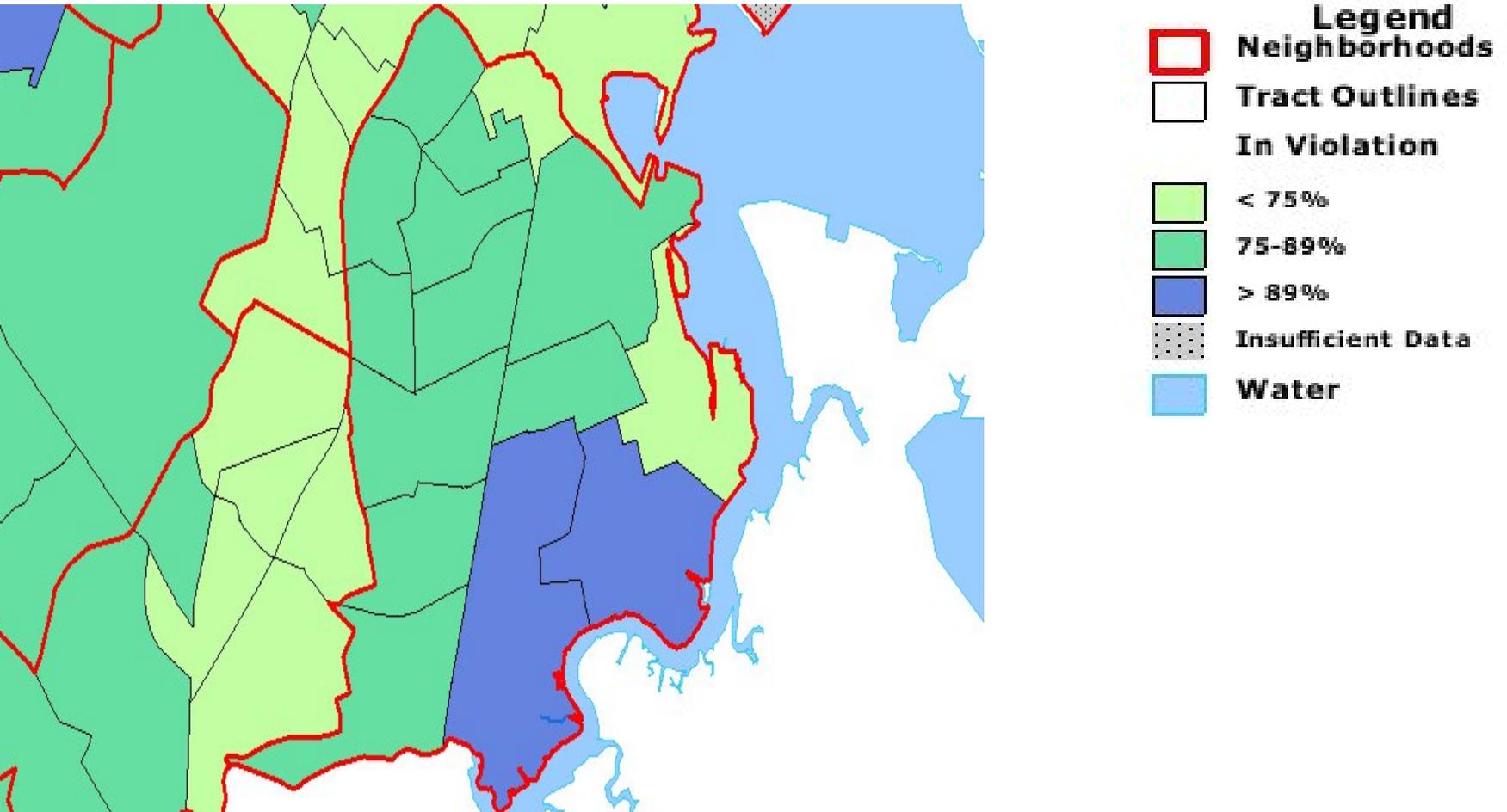
# Dorchester Pb Inspection Rates by Census Tract



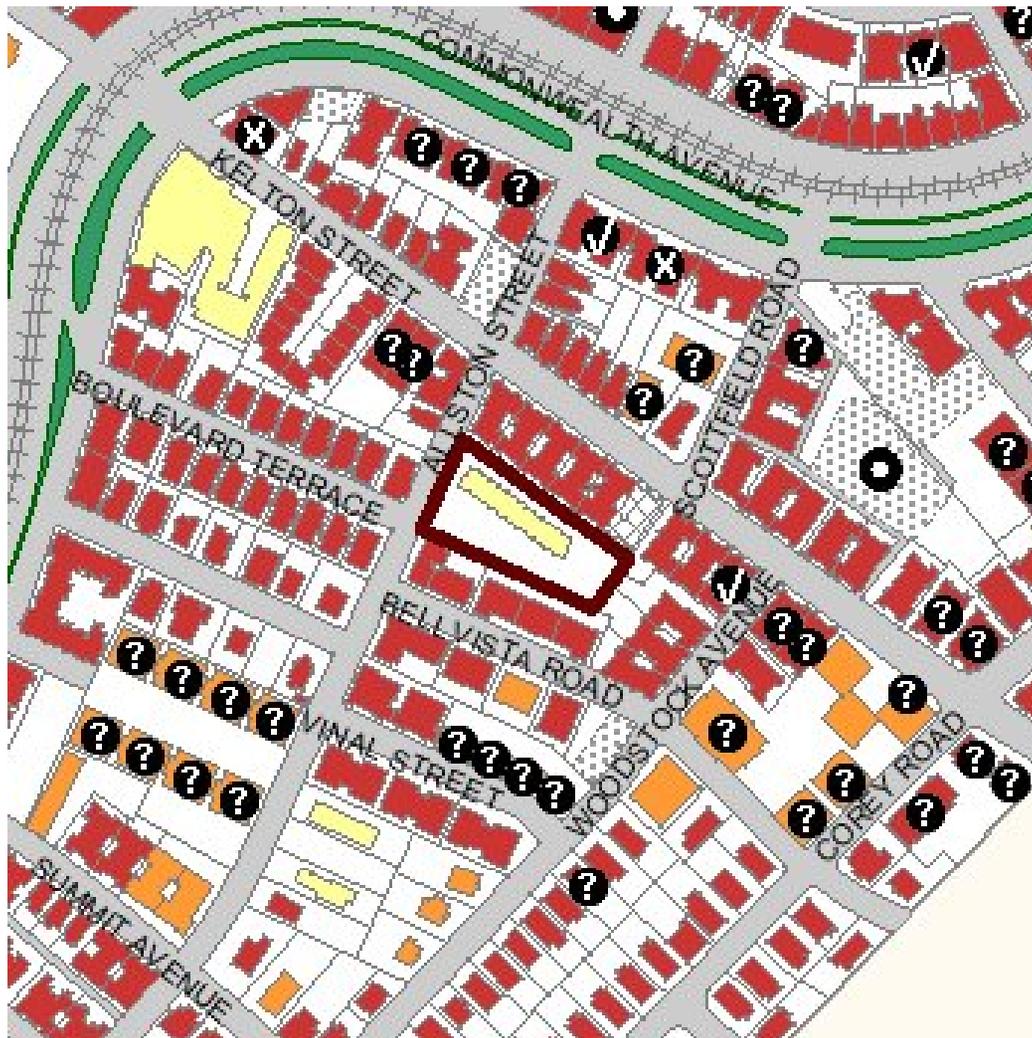
# Dorchester Deleading Rates by Census Tract



# Dorchester Violation Rates by Census Tract



# Dorchester Lead Inspection Report



## LEGEND

### Risk Symbols

- inspected - no violation
- inspected - in violation - deleted
- inspected - in violation - not deleted
- see Lead Inspection History table below

### Age of Housing

- before 1960
- 1960 - 1978
- 1979-2003
- age unknown
- non-residential

# Contact Information on the Center for Environmental Health, Environmental Public Health Tracking, and Childhood Lead Poisoning Prevention Program



***617-624-5757***

