



NEW HAMPSHIRE  
**DHHS**  
DEPARTMENT OF  
**HEALTH & HUMAN SERVICES**

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# Childhood Blood Lead Levels and Age of Housing in Portsmouth, NH

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# Childhood Blood Lead Levels and Age of Housing in Portsmouth, NH: 2017-2021

## Collaborative Project Team:

*New Hampshire Department of Health and Human Services*

*Division of Public Health Services*

*Healthy Homes & Lead Poisoning Prevention Program*

*Portsmouth Health Officer, Kim McNamara*

*Environmental Public Health Tracking Program*

# Outline

1. Background and Motivation
2. Methods
3. Findings and Figures
4. Conclusions and Impacts

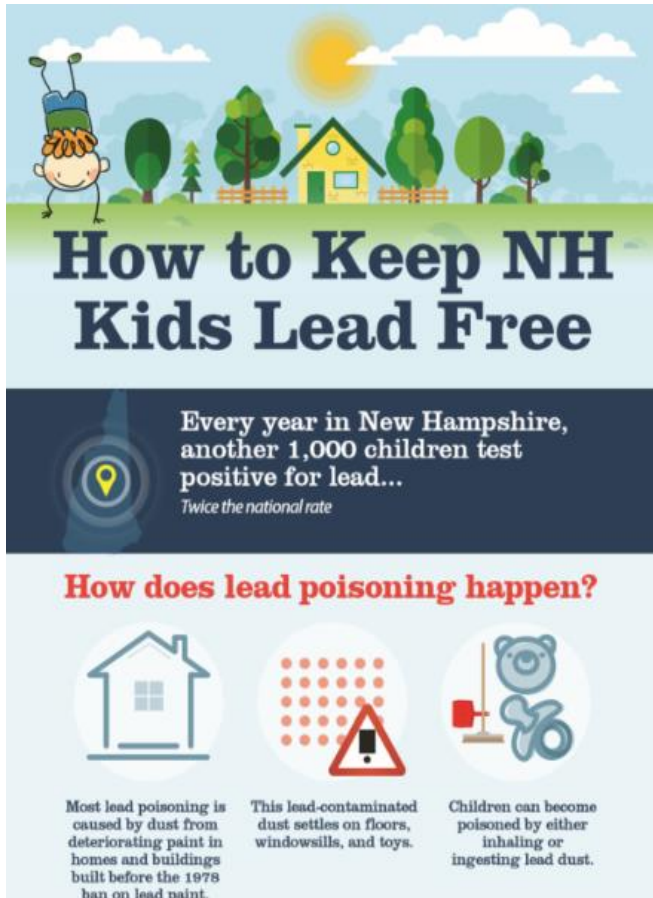




# Portsmouth, NH



# Why is Blood Lead Level mapping important?



## Affects of Childhood lead poisoning:

- Damage to the brain and nervous system
- Delayed developmental growth
- Learning and behavior problems

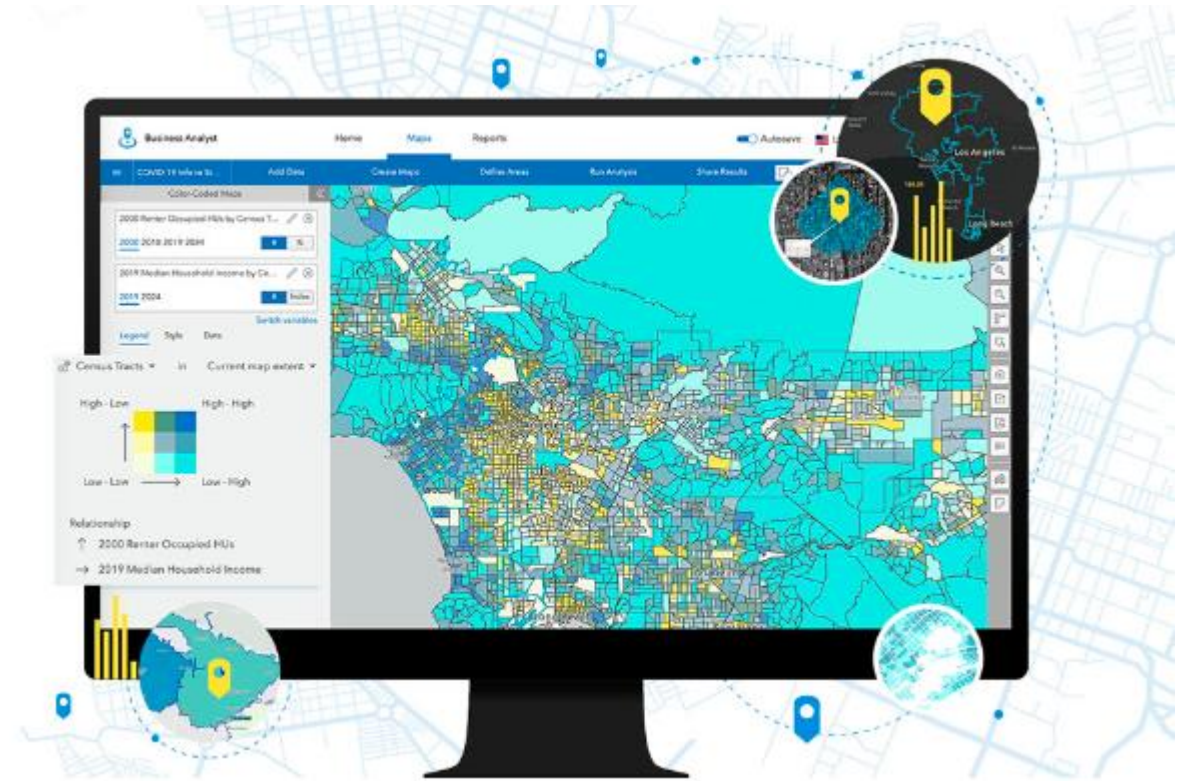
## Sources of lead Exposure:

- 15% Lead from consumer products
- 15% Lead in drinking water
- 70% Exposure to lead paint in houses built prior to 1978



# Methods

- The ESRI ArcMap tool is a kernel density tool and identifies relative densities of tests based on proximity of elevated tests.
- **Blood Lead Surveillance Analysis Dataset** :State of New Hampshire Healthy Homes & Environment Section
- **The New Hampshire Parcel Mosaic with CAMA (Computer Assisted Mass Appraisal) Data** : State of New Hampshire Department of Revenue Administration Municipal and Property Division
- These data cannot predict whether a specific residence will contain lead hazards, however, age of housing is the leading predictor of the potential presence of lead hazards.



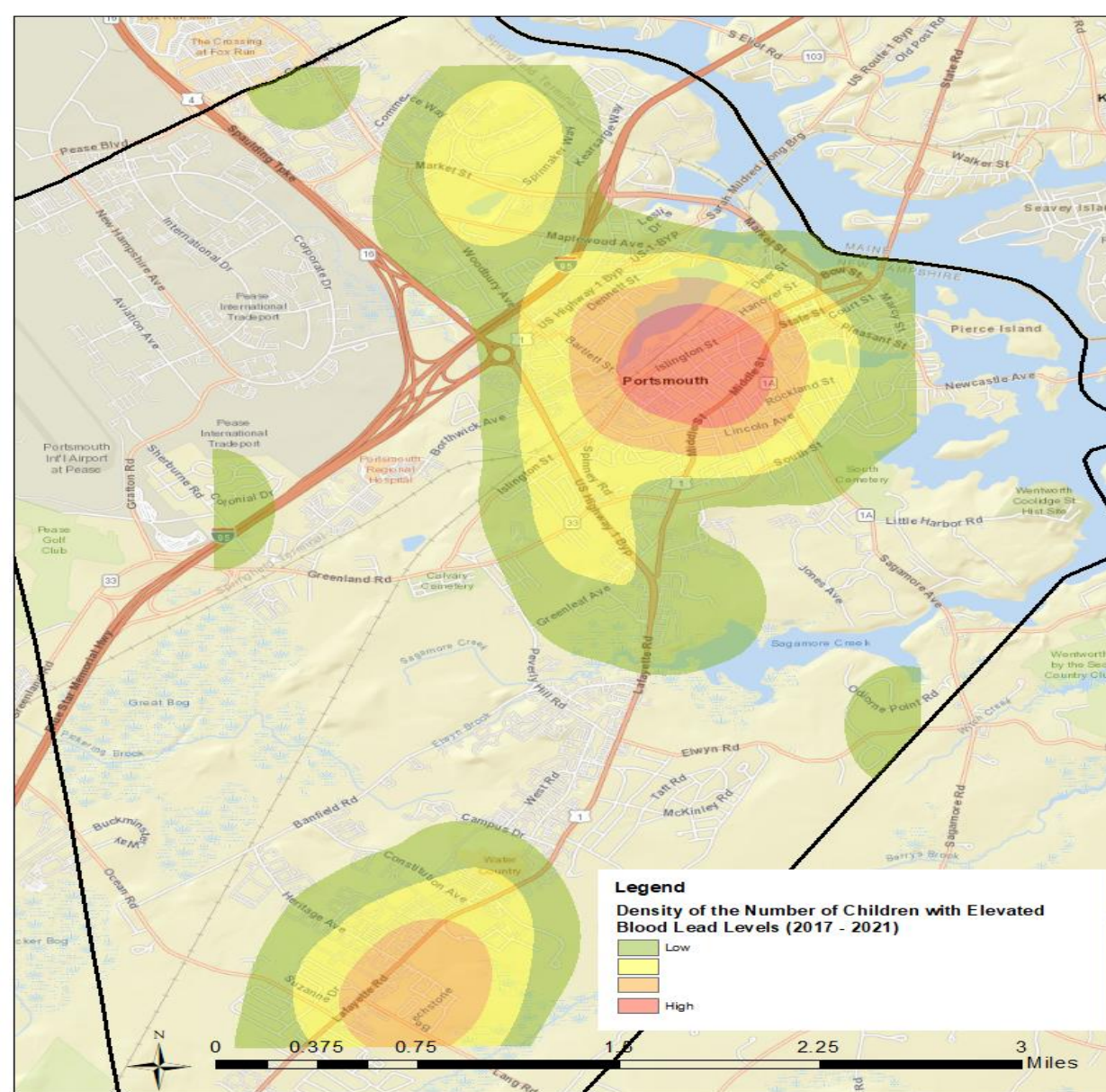
# Findings:

## Elevated Childhood Blood Lead Levels in Portsmouth, NH: 2017-2021

In Portsmouth, there were 40 unique cases from 2017-2021 above the CDC Blood Lead Reference Value of 3.5 micrograms per deciliter ( $\mu\text{g}/\text{dL}$ ) for children six-years-old and younger.

- Minimum: 3.5  $\mu\text{g}/\text{dL}$
- Median value: 4.5  $\mu\text{g}/\text{dL}$
- Maximum value: 17  $\mu\text{g}/\text{dL}$

*Data source:* NH Division of Public Health Services, Healthy Homes & Lead Poisoning Prevention Program



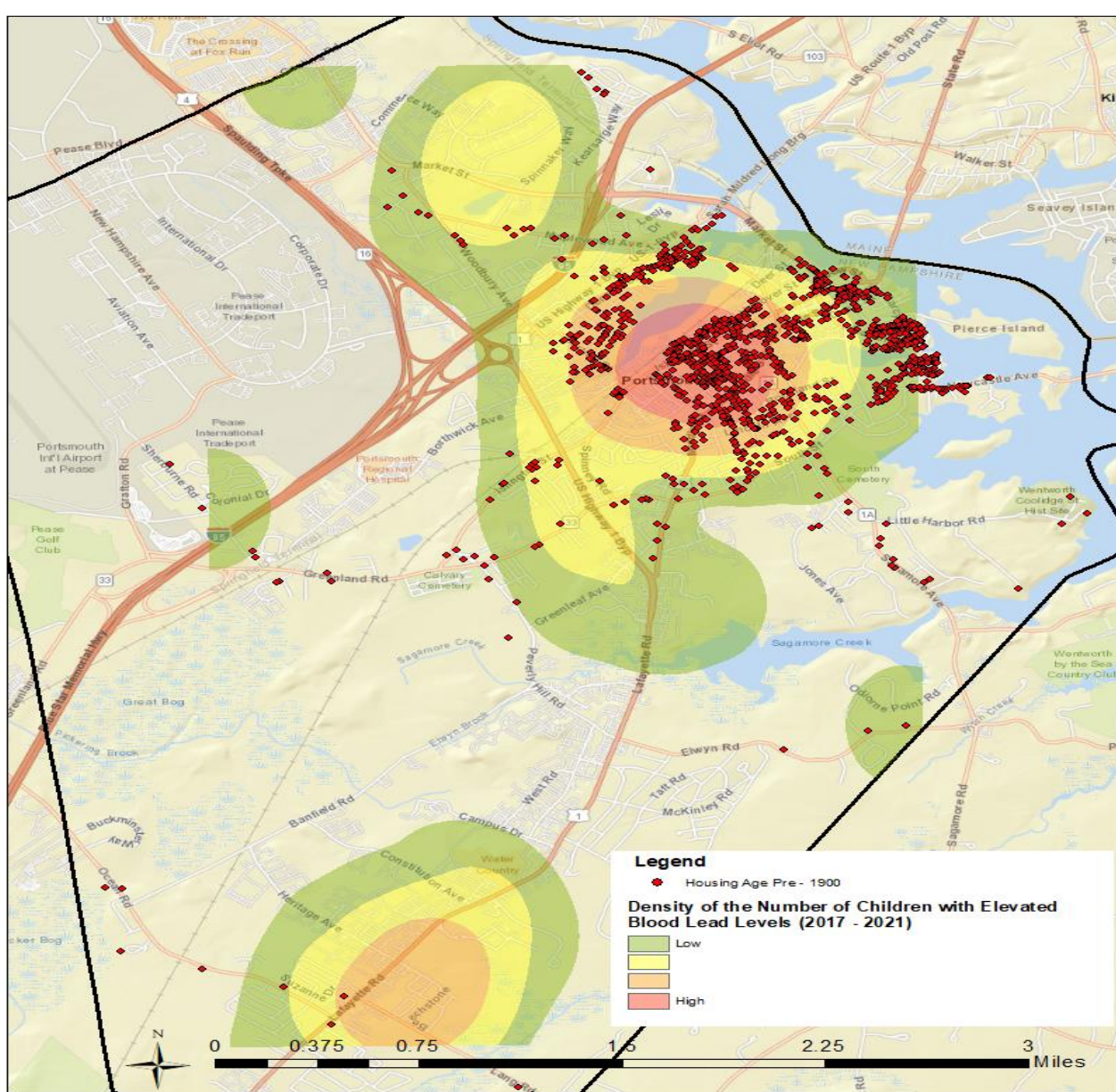


# Findings:

## Elevated Childhood Blood Lead Levels and Housing Age pre-1900 in Portsmouth, NH: 2017-2021

There were 1,477 geo-coded non-commercial residential properties identified as built before 1900 (pre-1900).

*Data source:* NH Division of Public Health Services, Healthy Homes & Lead Poisoning Prevention Program *and* The NH Parcel Mosaic with CAMA (Computer Assisted Mass Appraisal) 2020 dataset



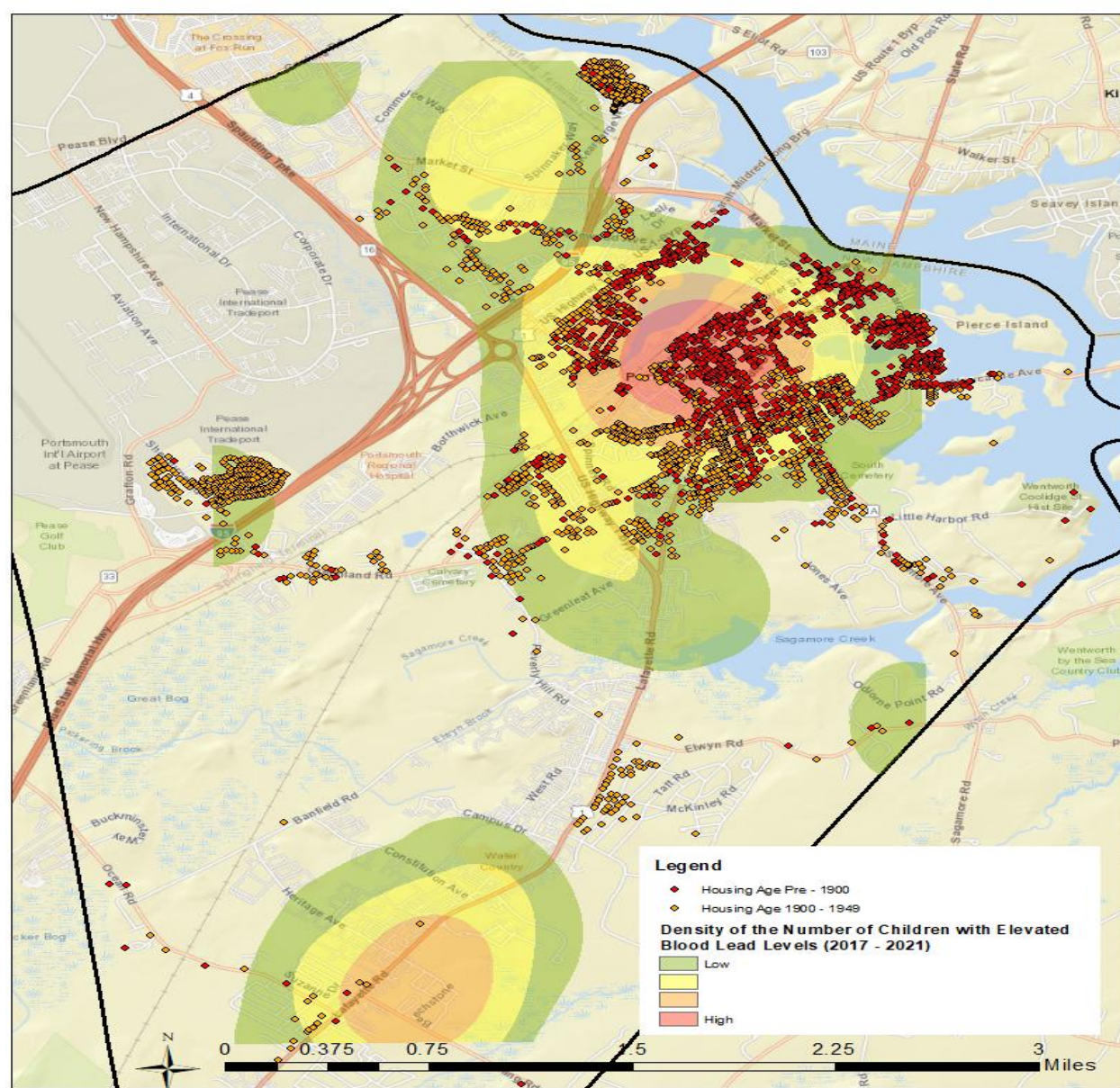


# Findings:

## Elevated Childhood Blood Lead Levels and Housing Age pre-1950 in Portsmouth, NH: 2017-2021

There were 3,606 geo-coded non-commercial residential properties identified as built before 1950 (pre-1950).

*Data source:* NH Division of Public Health Services, Healthy Homes & Lead Poisoning Prevention Program *and* The NH Parcel Mosaic with CAMA (Computer Assisted Mass Appraisal) 2020 dataset



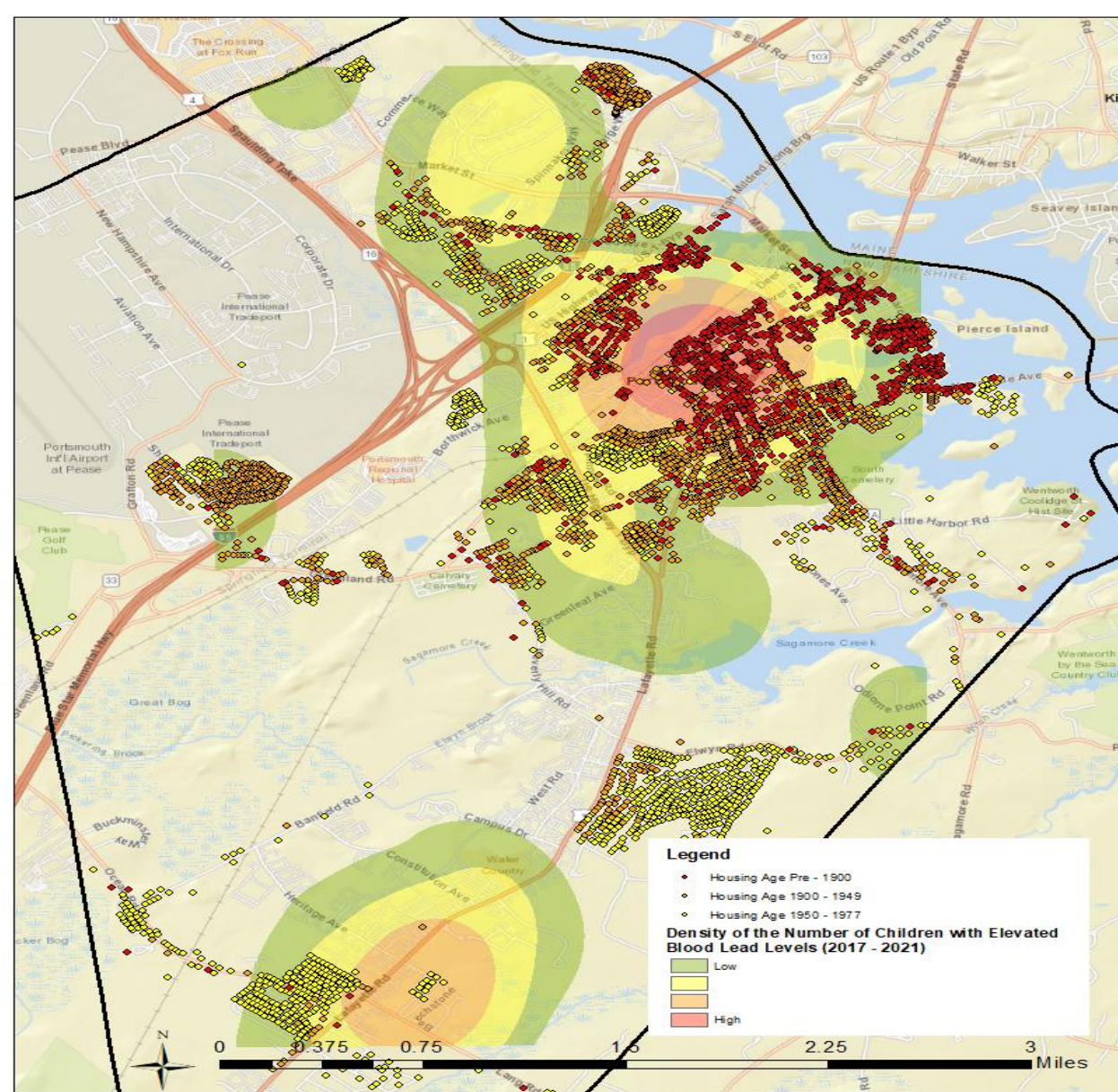


# Findings:

## Elevated Childhood Blood Lead Levels and Housing Age pre-1978 in Portsmouth, NH: 2017-2021

There were 5,279 geo-coded non-commercial residential properties identified as built before 1978 (pre-1978).

*Data source:* NH Division of Public Health Services, Healthy Homes & Lead Poisoning Prevention Program *and* The NH Parcel Mosaic with CAMA (Computer Assisted Mass Appraisal) 2020 dataset

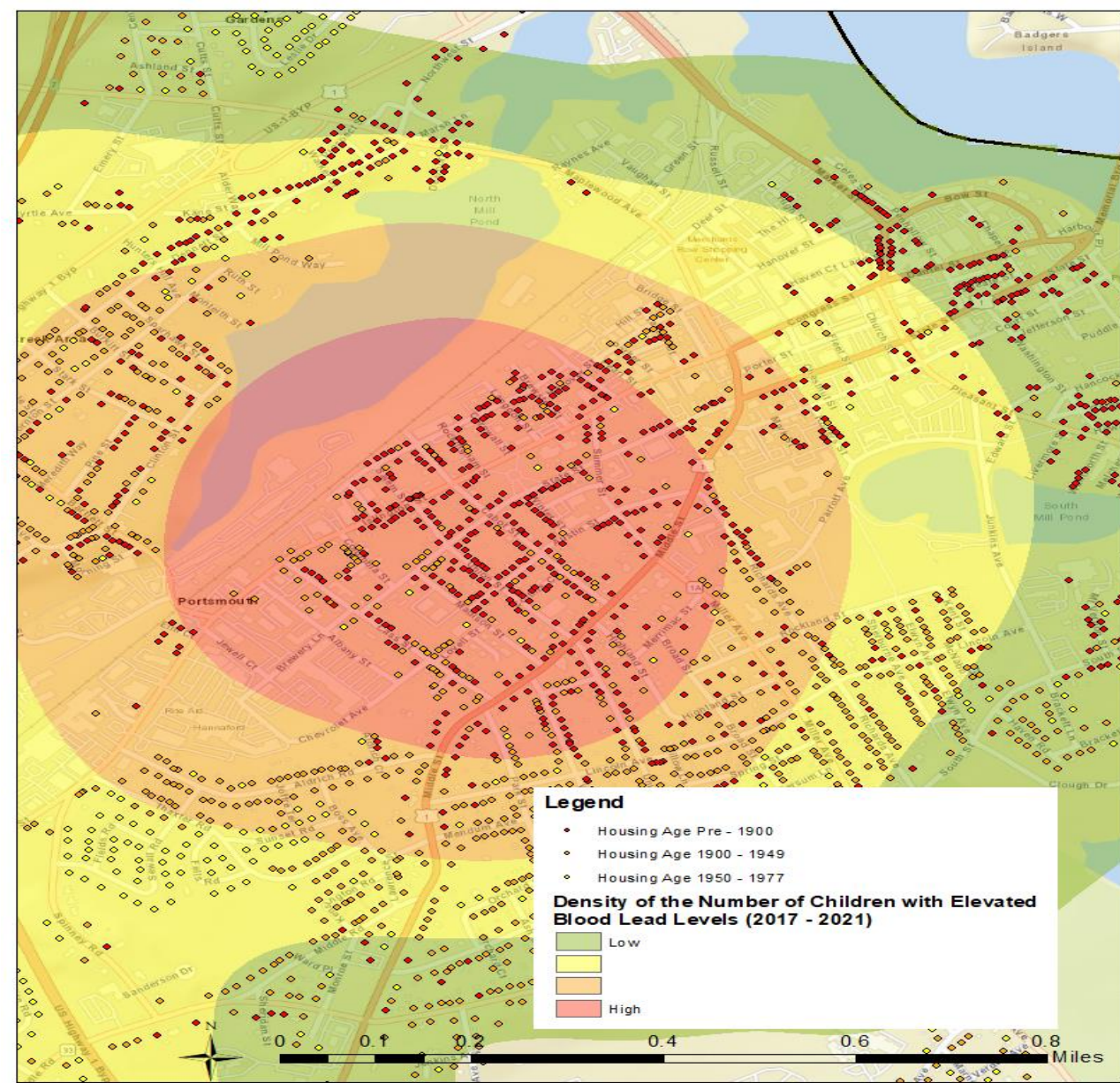




# Findings:

## Enlarged Neighborhood Area of Elevated Childhood Blood Lead Levels and Housing Age Pre-1978 in Portsmouth, NH: 2017-2021

Data source: NH Division of Public Health Services, Healthy Homes & Lead Poisoning Prevention Program and The NH Parcel Mosaic with CAMA (Computer Assisted Mass Appraisal) 2020 dataset

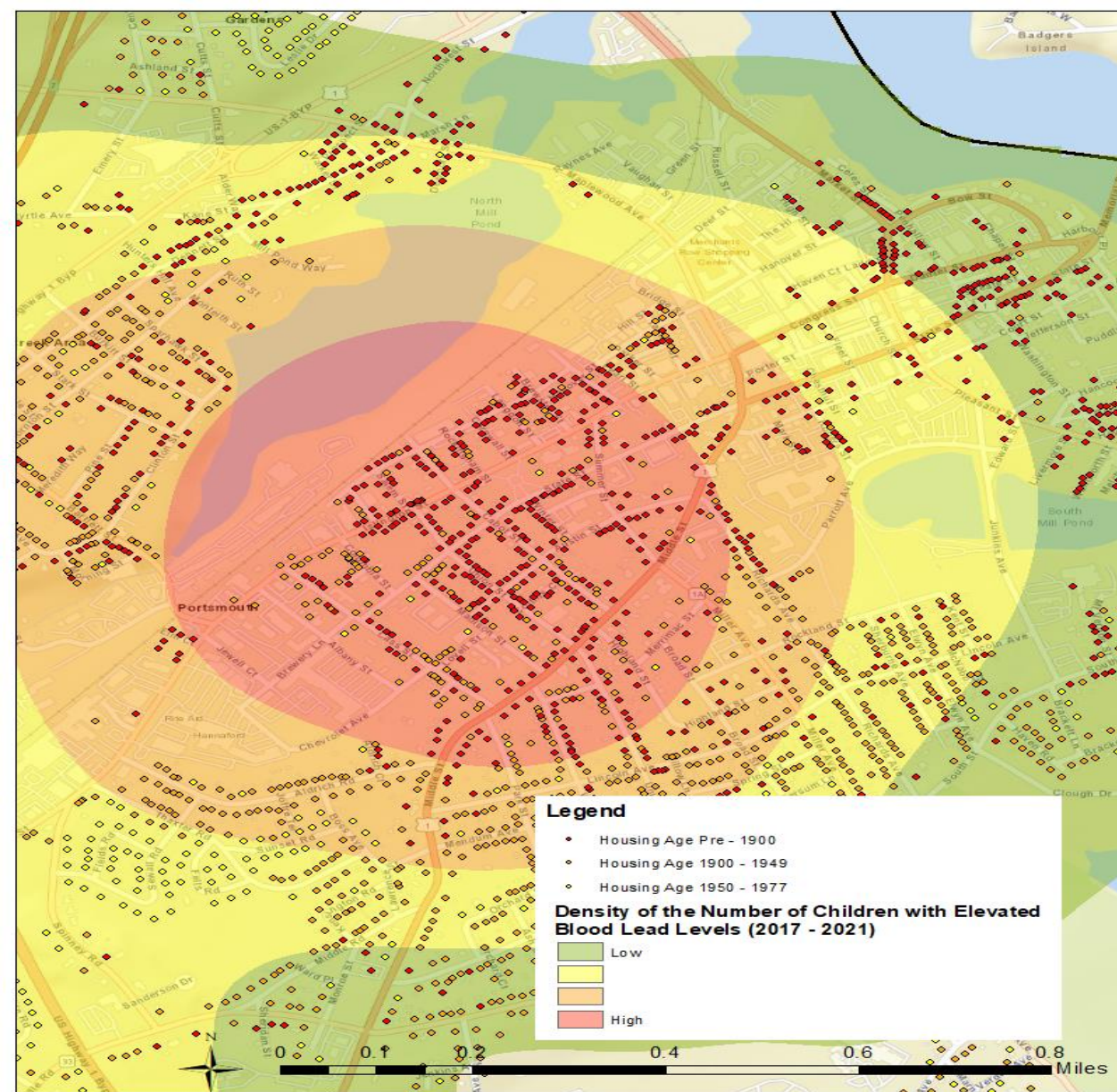




# Conclusion:

- Combining data using heat maps and overlays is a useful way to identify **potential** high-risk areas for targeted lead poisoning prevention efforts.
- The map depicts an area of interest with the highest density of elevated childhood blood lead levels (>3.5  $\mu\text{g}/\text{dL}$ ) combined with the highest density of non-commercial residential properties built before 1978.

## Enlarged Neighborhood Area of Elevated Childhood Blood Lead Levels and Housing Age Pre-1978 in Portsmouth, NH: 2017-2021





# What's the impact?

“Our Health Department staff are walking the differentiated areas to get a first hand idea of the housing stock; condition, child play areas, if homes have been broken down into apartments, and any other information we may glean.”

“When the Building Department drafts its rental inspection program including lead paint, we may use the maps for outreach to City Councilors so they know what neighborhoods have the oldest housing stock and where the risk has been higher for children living in those homes.”

Kim McNamara, Portsmouth Health Officer



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# Thank you!

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*Portsmouth Health Officer: Kim McNamara*

*Environmental Public Health Tracking Program: Katie Bush, Nick Shonka, Nicole Karlsson*

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Thank you!

Questions & Comments

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