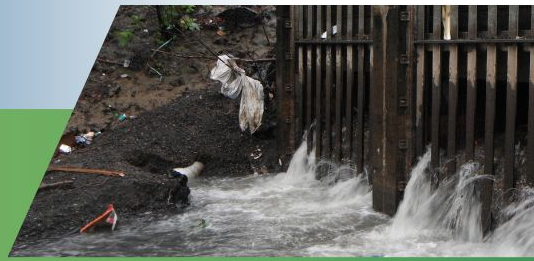
JERSEY WATER WORKS
Smart infrastructure. Strong communities.

LEAD FREE NJ



MEMBERSHIP MEETING

ALIGNING OUR ACTIONS
SMART INFRASTRUCTURE.
STRONG COMMUNITIES.

lead-free-nj

jerseywaterworks LeadFree_NJ

jerseywaterworks LeadFreeNewJersey

JerseyWaterWrks LeadFree_NJ

Thank you to our Host

Thank you for your Support

BANK OF AMERICA

The Fund for New Jersey

GERALDINE R. DODGE FOUNDATION

THE KRESGE FOUNDATION

Robert Wood Johnson Foundation

SCHUMANN FUND FOR NEW JERSEY

SPRING POINT PARTNERS

VICTORIA FOUNDATION

Agenda

8:30 a.m.	—	Breakfast
9:30 a.m.	—	Opening Remarks
10:10 a.m.	—	Breakout Sessions
11:30 a.m.	—	Lunch
12:20 p.m.	—	Mini-Keynotes
2:00 p.m.	—	World Café

Welcome

Stephen D Marks

Town of Kearny

Rashan Prailow

THINK Group

Dr. Helmut Zarbl, Ph.D.

Environmental and Occupational Health Sciences Institute

Olivia Glenn

U.S. Environmental Protection Agency, Region 2 Office; NY, NJ, PR, USVI, and Eight Indian Nations

Stephen D Marks

Town Administrator, Town of Kearny

Jersey Water Works Steering Committee

Jersey Water Works

is a **cross-sector collaborative** working to transform New Jersey's water infrastructure through sustainable, cost-effective solutions that provide communities with clean water and waterways; healthier, safer neighborhoods; local jobs; flood and climate resilience; and economic growth.

JERSEY WA
WO
Smart infrastructure. Strong con

SHARED GOALS & COMMON AGENDAS

1. Effective and Financially Sustainable Systems
2. Empowered Stakeholders
3. Successful and Beneficial Green Infrastructure
4. Smart Combined Sewer Overflow Control Plans

SUPPORTING MEMBERSHIP

STEERING COMMITTEE

BACKBONE ORGANIZATION

- ASSET MANAGEMENT & FINANCE COMMITTEE
- GREEN INFRASTRUCTURE COMMITTEE
- CLIMATE RESILIENCE
- COMBINED SEWER OVERFLOW COMMITTEE
- LEAD TASK FORCE
- DATA COMMITTEE / JERSEY WATERCHECK
- WATER WORKFORCE TASK FORCE

JERSEY WA
WO
Smart infrastructure. Strong con

NETWORK

Rashan Prailow

Founder, THINK Group

Lead-Free NJ Steering Committee Co-Chair

Lead-Free NJ

Lead disproportionately affects young children,

causing serious medical and behavioral issues into adulthood.

Low-income communities and/or communities of color are most at risk

due to systemic inequities. Fortunately, these issues are preventable when we target the sources of lead.

We can address this complex problem on a larger scale than any individual or organization can alone.

Working together as Lead-Free NJ, an inclusive and equitable collaborative focused on removing lead from New Jersey's environment.

The time is now to demand action

and organize for statewide lead remediation in every home, childcare facility, school, and water system.

Our Model

Uniting communities with policy-oriented organizations to effect change

Dr. Helmut Zarbl,
Ph.D.

Director, Environmental and Occupational Health Sciences Institute

Olivia Glenn

Chief of Staff and Senior Advisor for Equity
U.S. Environmental Protection Agency,
Region 2 Office;
NY, NJ, PR, USVI, and Eight Indian Nations

Breakout Sessions

Lead-Free NJ Joint Steering and Advocacy Committee

Room 411

Asset Management and Finance and Smart Combined Sewer Overflows

Room 109

Climate Resilience and Green Infrastructure

Remain here

Mini-Keynotes

Kelvin Boddy
Housing and Community Development Network of NJ

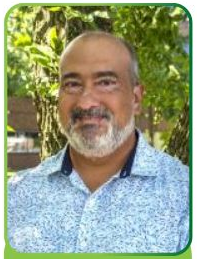
Holistic Approaches to Eliminating Lead Poisoning

Anthony Diaz
Newark Water Coalition

The Power of Community Owned and Managed Research to Identify and Address Lead Hazards

Debbie Mans
TWENTYTWENTY public affairs

Aligning Our Actions: Celebrating Progress and Articulating Next Steps



Chris Obropta
Rutgers Cooperative Extension Water Resources Program

Green Infrastructure: Where We've Been, Where We Are Going

Rick Dovey
Atlantic County Utilities Authority (ACUA)

Water Sector Utilities as Community Anchors: Lessons Learned From 33 Years Of Service

Nicole Miller
MnM Consulting

Moderator

Nicole Miller
MnM Consulting

Moderator

Kelvin Boddy
Housing and Community Development Network of NJ

Holistic Approaches to Eliminating Lead Poisoning

Anthony Diaz
Newark Water Coalition

The Power of Community Owned and Managed Research to Identify and Address Lead Hazards

COMMUNITY DATA SCIENCE: NEWARK WATER COALITION MOBILE LEAD INITIATIVE FOR COMMUNITY OWNED AND MANAGED RESEARCH

Bavisha Kalyan. Anthony Diaz

Lead Free NJ/JWW July Membership Meeting

NEWARK WATER COALITION

Co-Founder & Executive director: Anthony Diaz

Community of people who recognize the connection between systemic environmental racism and capitalism. Grassroots organization centered on liberating natural resources.

Timeline of Newark Water Lead Crisis

2003: Reports of high lead levels in Newark

2016: News reports of high levels of lead in public schools' drinking water ignited a surge of community activism and community science

2017: **Highest levels recorded** by a large water system in the United States

2018: Newark Education Workers Caucus (NEW Caucus), public school educators, and the National Resource Defense Council (NRDC) **filed a federal lawsuit** alleging numerous violations of the Safe Drinking Water Act and demanded a safe alternative source of water for Newark residents

2019: Swift lead service line (LSL) replacement program

2022: Newark replaced 23,000 lead service lines

STREET TEAM → MOBILE LEAD TESTING UNIT

NEWARK, NJ

MOST POPULATED CITY IN NJ

DEMOGRAPHICS:

Black or African American: 48%

Hispanic or Latino: 37%

White: 23%

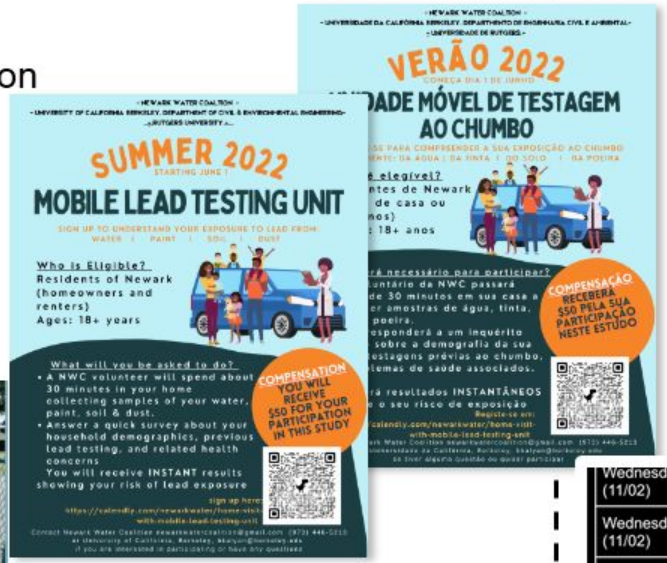
30% BELOW THE FEDERAL POVERTY LINE

MEDIAN INCOME: ~$40,000

Holistic lead exposure

RECRUITMENT STRATEGIES FOR MOBILE LEAD TESTING UNIT

- July 2022: Kick Off Community Science Training Day
- Food & water distribution
- Tabled at local events
- Referral program
- **315 Homes**
- Ended Nov 2022



Recruitment materials

Tabling at Laundry Workers Center Community event & Recruiting at NWC Weekly Food Distribution at St Stephans Church

TRAINING THE TESTING TEAM

- ~15-person team (5 high school students)
- Sub teams: Recruitment & Advertising, Scheduling, Lab Team, Testing Team, Data Analysis, Report Back
- NJ Licensed Lead Risk Assessor
- Trained team following EPA and HUD Lead Risk Assessment methods

Wednesday (11/02)	5:30 - 6:30 PM	Jessica, Earl, Jermaine, Delon, Saeed
Wednesday (11/02)	6:30 - 7:30 PM	Danny, Jessica, Jermaine, Delon, Saeed
Thursday (11/03)	9 AM - 10 AM	Christian, Ravin, Jessica
Thursday (11/03)	11:30- 12:30 PM	Christian, Ravin, Jessica
Thursday (11/03)	4:30 - 5:30 PM	Earl, Jessica, Jermaine, Delon, Saeed
Friday (11/04)	9:30 - 10:30 AM	Anthony, Ravin
Friday (11/04)	11 AM - 12 PM	Anthony, Ravin

METHODS WERE DEFINED AFTER INTERVIEWING MULTIPLE STAKEHOLDERS

HOME SURVEY
N = 282

Demographics, Home Conditions, and Health History Questionnaire

WATER
N = 312

eXact Lead Spectrophotometer
Instant results above 3ppb
1st & 5th Liter draw sampling

PAINT
N = 294

Portable X-Ray Fluorescence (XRF) machine to measure lead concentrations from multiple building components in home

SOIL
N = 38

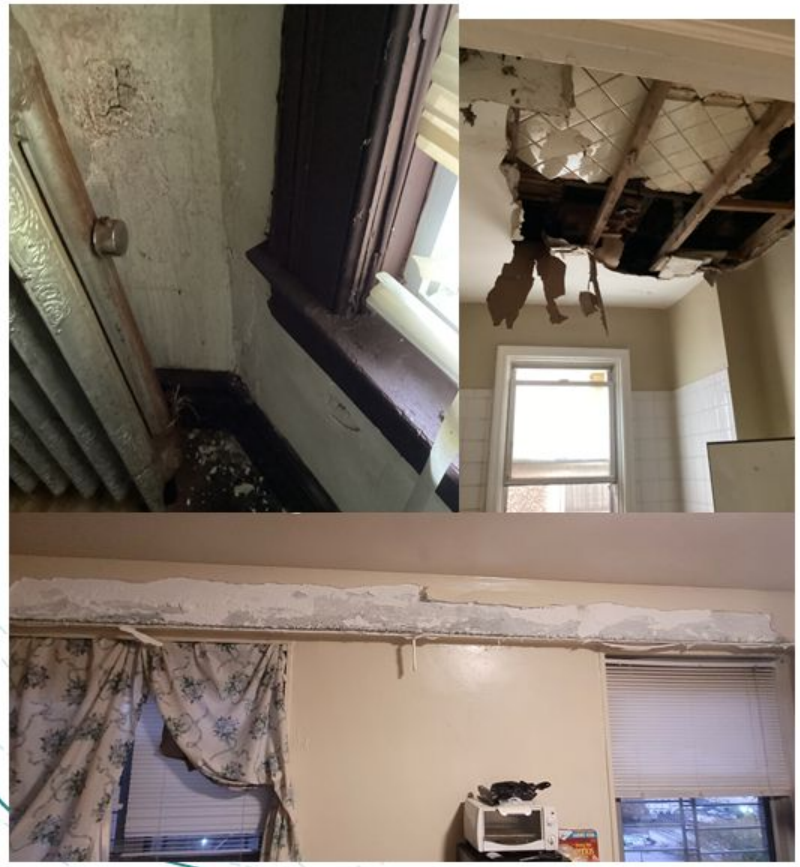
Portable X-Ray Fluorescence (XRF) to measure lead concentrations in-situ
Collected soil samples to dry and sieve and re-measure using the XRF

DUST
N = 256

Ghost wipes were used to collect two samples per home (1 sq ft each) in high traffic floors and window sills & measured via ICP-MS

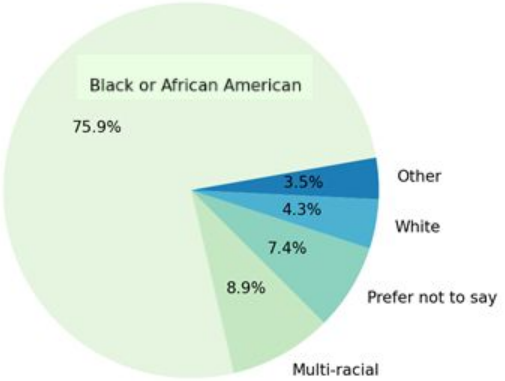
N = Homes sampled

HOME SURVEY - METHODS & RESULTS (HOMES = 282)



Building condition

Participant demographics



"Common concerns about drinking water"

WATER & PAINT - METHODS & RESULTS

WATER

eXact Lead Spectrophotometer
Instant results above 3ppb
1st & 5th Liter sampling

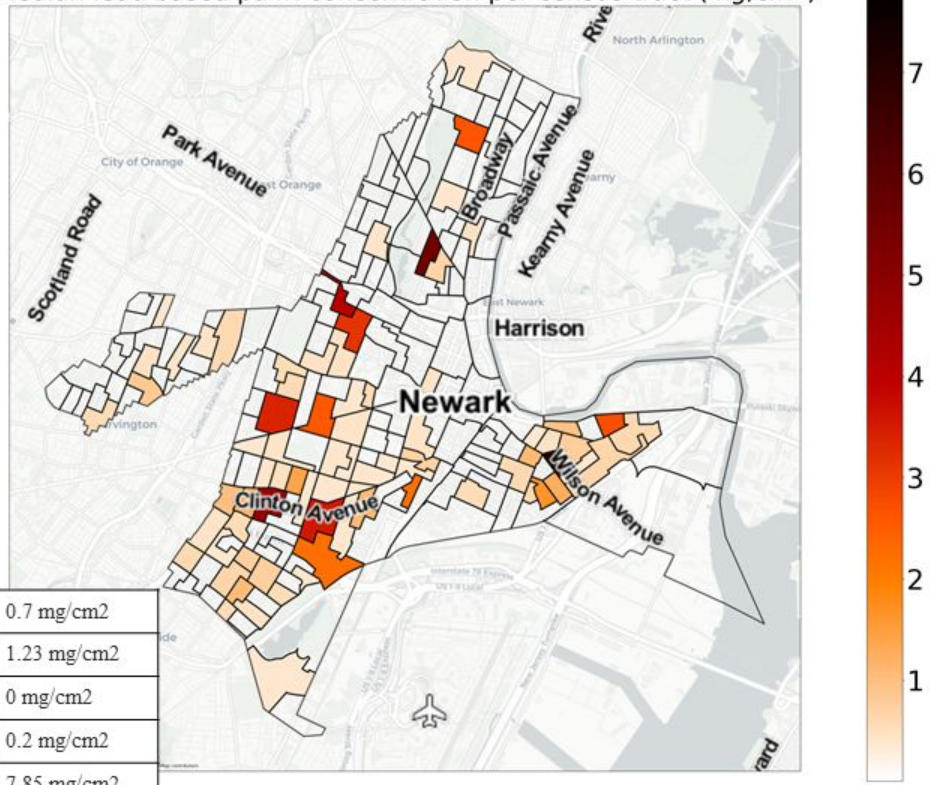
Lead levels in first & fifth draw samples were low

PAINT

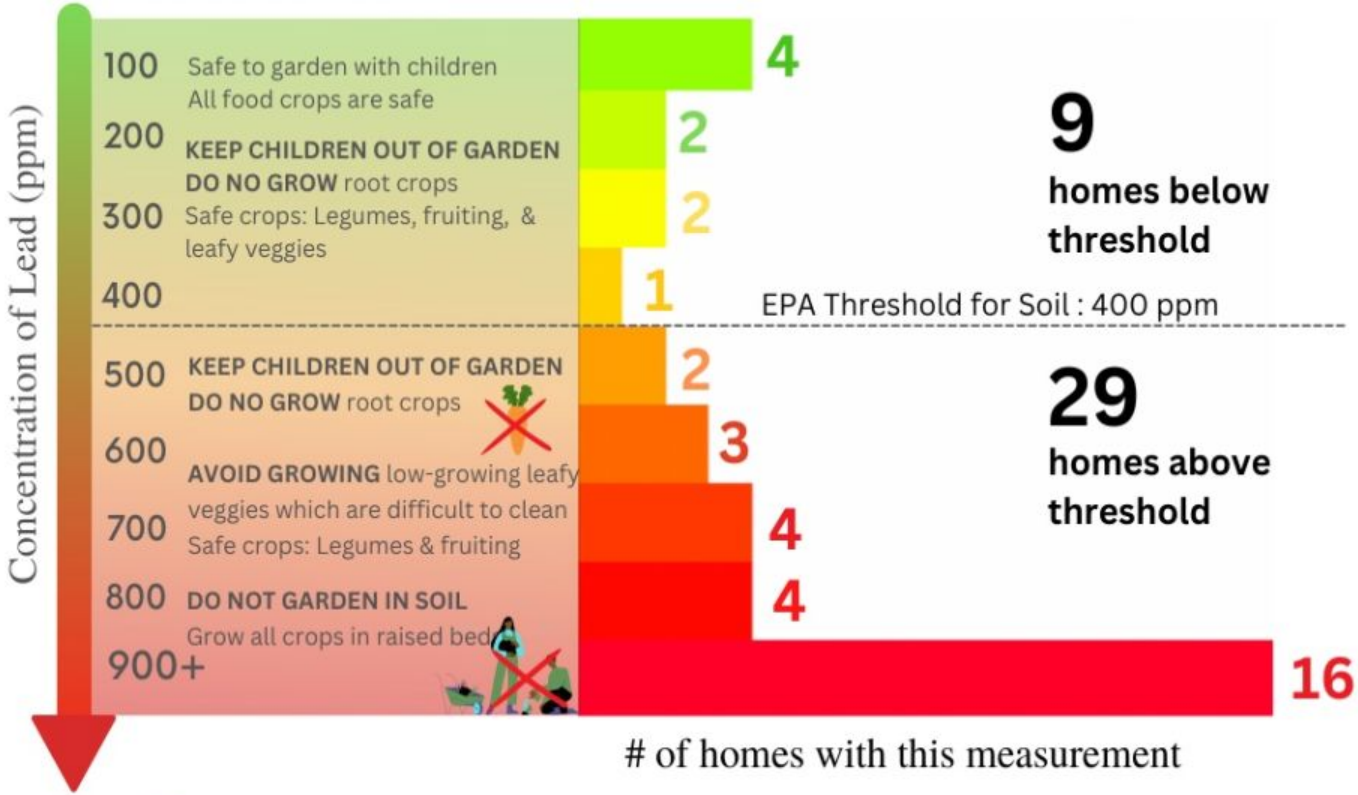
Portable X-Ray Fluorescence (XRF) machine to measure lead concentrations from multiple building components in home

Mean	0.7 mg/cm2
Standard Deviation	1.23 mg/cm2
Minimum	0 mg/cm2
Median	0.2 mg/cm2
Maximum	7.85 mg/cm2
Total # of homes with all NDs	75

Median lead based paint concentration per census tract (mg/cm^2)



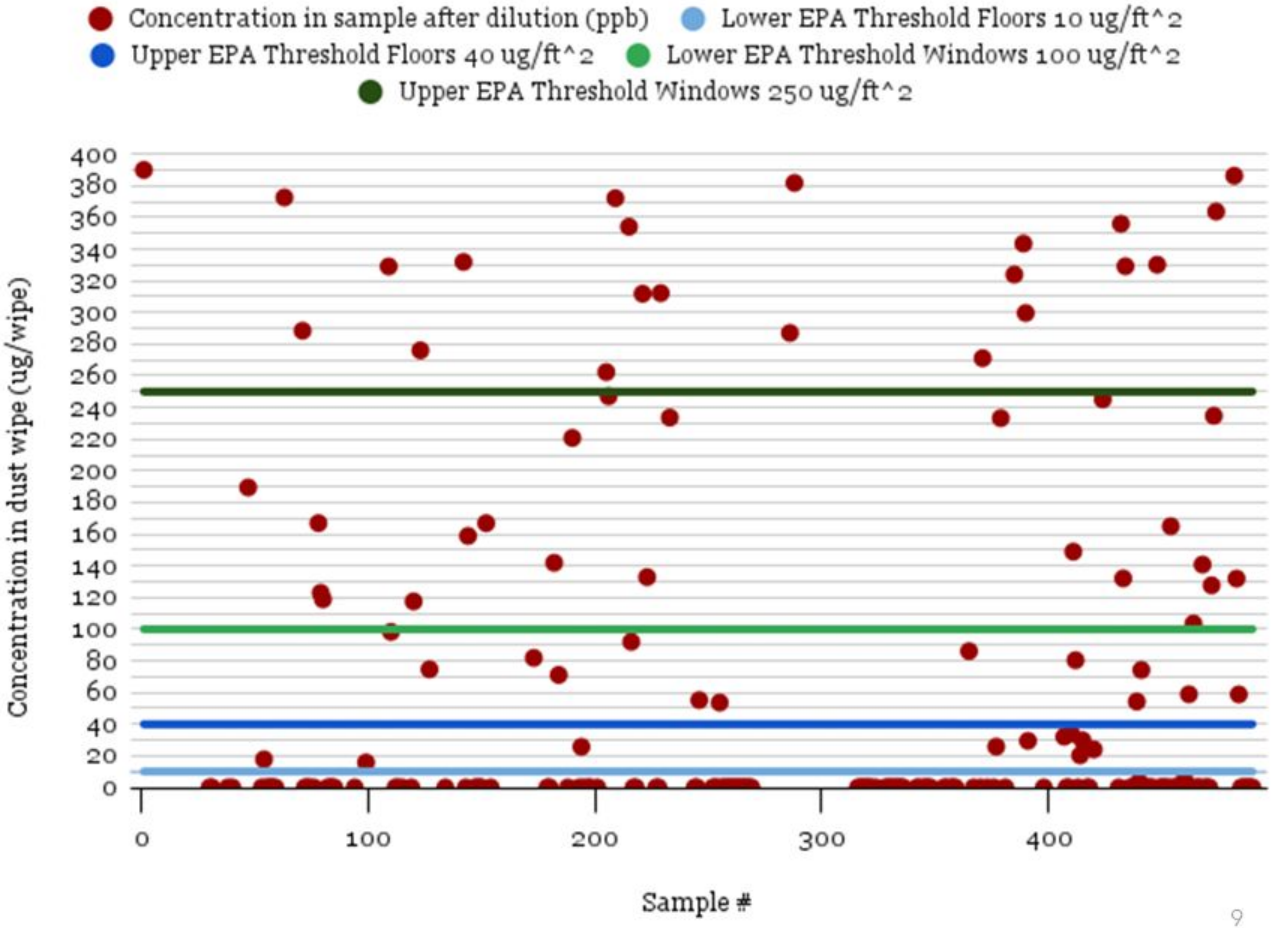
SOIL- TELLING THE STORY OF THE DATA



DUST - METHODS & RESULTS (HOMES = 256)

DUST

Ghost wipes were used to collect two samples per home (1 sq ft each) in high traffic floors and window wills



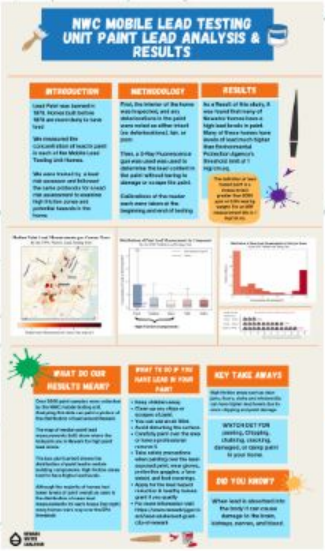
PUBLIC DATA SHARE BACK FROM MOBILE LEAD TESTING UNIT. JAN 14

Community report

Community voice manuscript accepted for publication in Environmental Justice

Individual reports to participants

"Get the Lead Out" documentary



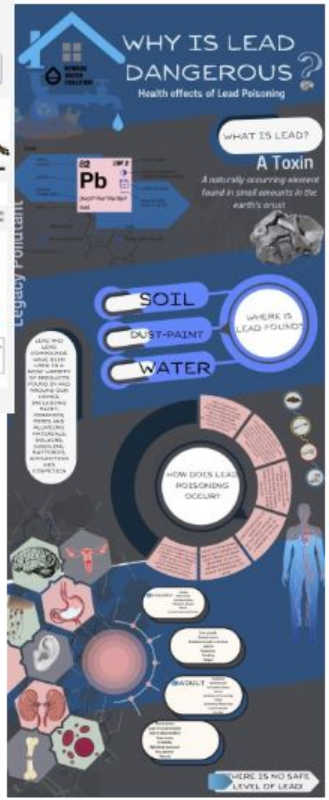
Romir Anand

Saneitta Wicks

Danny Feliciano

Cristian Cerrato

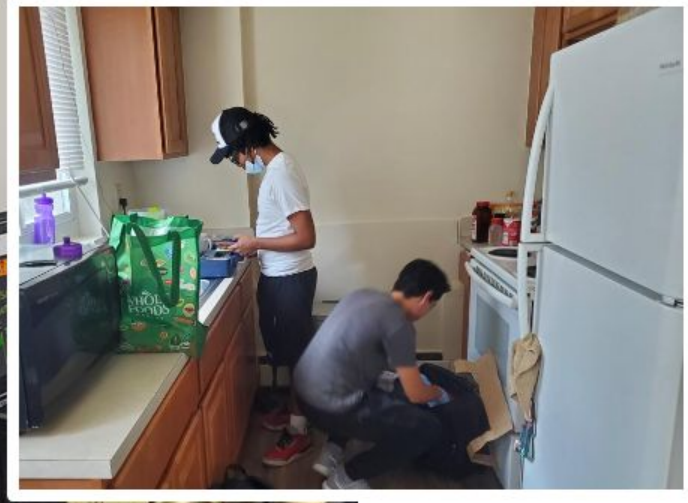
Ravin Ramsaran



Nia Wakefield

Micah Demarest

EXPECTATIONS	REALITIES
Incentive: compensation	• People were welcoming, wanted to know about lead, goodwill created by NWC • Compensation & referral = money (cash $20,000) back to the community
Lab sample analysis would be easily accessible	Partnership and resource sharing is complicated: • Timeline • Access to local laboratories • Cost of laboratory sample analysis



ONGOING & FUTURE WORK

- → Looking at correlations of data to build predictive models. Incorporating the age of the households
- → Purchased XRF - established NWC capacity for further lead assessment. Other NJ Cities: Trenton
- → Starting a lead risk assessor training center
- → Built partnerships:
  - Rutgers
  - Stevens Institute of Technology
  - NJ Institute of Technology
- → Peoples Public Lab

HOW THE TESTING UNIT IMPACTED OUR COMMUNITY

Workshops for Applying to College and Learning Python for Data science

Our highschoolers and team members are pursuing STEM higher education

- Environmental engineering
- Computer engineering
- Biomedical engineering

THANK YOU!

QUESTIONS?

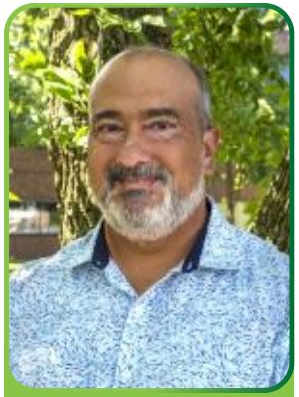
Bavisha Kalyan
bkalyan@berkeley.edu

Anthony Diaz
anthony@newarkwatercoalition.org

Acknowledgements

Newark community and study participants for letting us into their homes
St Stephans Church
Casey Finnerty, Ph.D.
Luis Anaya

Environmental Justice Data Fund, Windward Fund & Google.org
Lead Free New Jersey



Chris Obropta

Rutgers Cooperative Extension Water Resources Program

Rutgers Cooperative Extension Water Resources Program

RUTGERS
New Jersey Agricultural Experiment Station

Green Infrastructure: Where We've Been, Where are we going?

Jersey Water Works Membership Meeting on June 12, 2023 in New Brunswick, NJ

Christopher C. Obropta, Ph.D., P.E.
Email: obropta@envsci.rutgers.edu

In the beginning...

Lots of Rain Gardens

- Education and outreach programs
- Volunteers
- Limited funding

Lots of Rain Barrels

Where Are
We Now?

New Jersey

- Most densely populated state
- 21 Counties, 565 municipalities
- In 2002, 95% of our waterways were impaired
- In 2022, 95% of our waterways were impaired
- Harmful Algal Blooms (HABS) in many of our lakes
- Hammered by Ida, Henri, Sandy, and a bunch of Nor'easters
- Climate change is real – more severe storms and sea level rise and warmer temp

Causes of Water Resources Problems in NJ

New Development

Causes of Water Resources Problems in NJ

Existing Development

Role of Green Infrastructure in NJ

- New "Major" Development is required to use GI to maintain groundwater recharge and reduce Total Suspended Solids (TSS) from runoff
- Communities with combined sewers are using GI to reduce stormwater into system to prevent overflows (GI partially required)
- On a voluntary basis, existing development, is being retrofitted with GI to help improve water quality and reduce flooding

WHERE
are we going?
RDMPTN

WHEN THE WHOLE WORLD IS GOING TO HELL IN A HANDBASKET.

imgflip.com

Insights

- Stringent stormwater regulations on new development has not improved water quality or eliminating flooding
- We must retrofit existing older development with stormwater management to reduce impairments to our waterways and stop flooding
- Green infrastructure is a great tool to retrofit existing older development for water quality
- Couple green with gray infrastructure to address severe flooding
- Green Infrastructure also can be used to reduce combined sewer overflows
- Local champions are needed to advocate for green infrastructure retrofits

Actions Needed

- Educate community leaders, municipal officials, environmental commissioners, engineers, landscape architects, and planners on new regulations and green infrastructure
- Help CSO communities advocate for GI and identify appropriate locations
- Create local champions to promote GI for retrofitting existing development
- Help communities develop green infrastructure action plans, design demonstration projects, and install projects
- Get the kids involved!

Porous Asphalt

Pervious Concrete

Permeable Pavers

Grass Pavers

RUTGERS
New Jersey Agricultural Experiment Station

Christopher C. Obropta, Ph.D., P.E.
Phone: 908-229-0210
Email: obropta@envsci.rutgers.edu

Rick Dovey
Atlantic County Utilities Authority (ACUA)

Water Sector Utilities as Community Anchors: Lessons Learned From 33 Years Of Service

Debbie Mans
TWENTYTWENTY
public affairs

Aligning Our Actions: Celebrating Progress and Articulating Next Steps

World Café

A world café is a structured way for people to share knowledge and discuss a topic. It involves small groups of people sitting at tables resembling those in a café.
Sit with people you have not met. Please sit 6 or more to a table.
Questions:

- Based on your experience, what resonated with you from today's speaker presentations and/or experience throughout the day?
- How does that factor within your area of work or in your community?