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FLINT LEAD FREE

2017 REPORT

FLINT, MICHIGAN



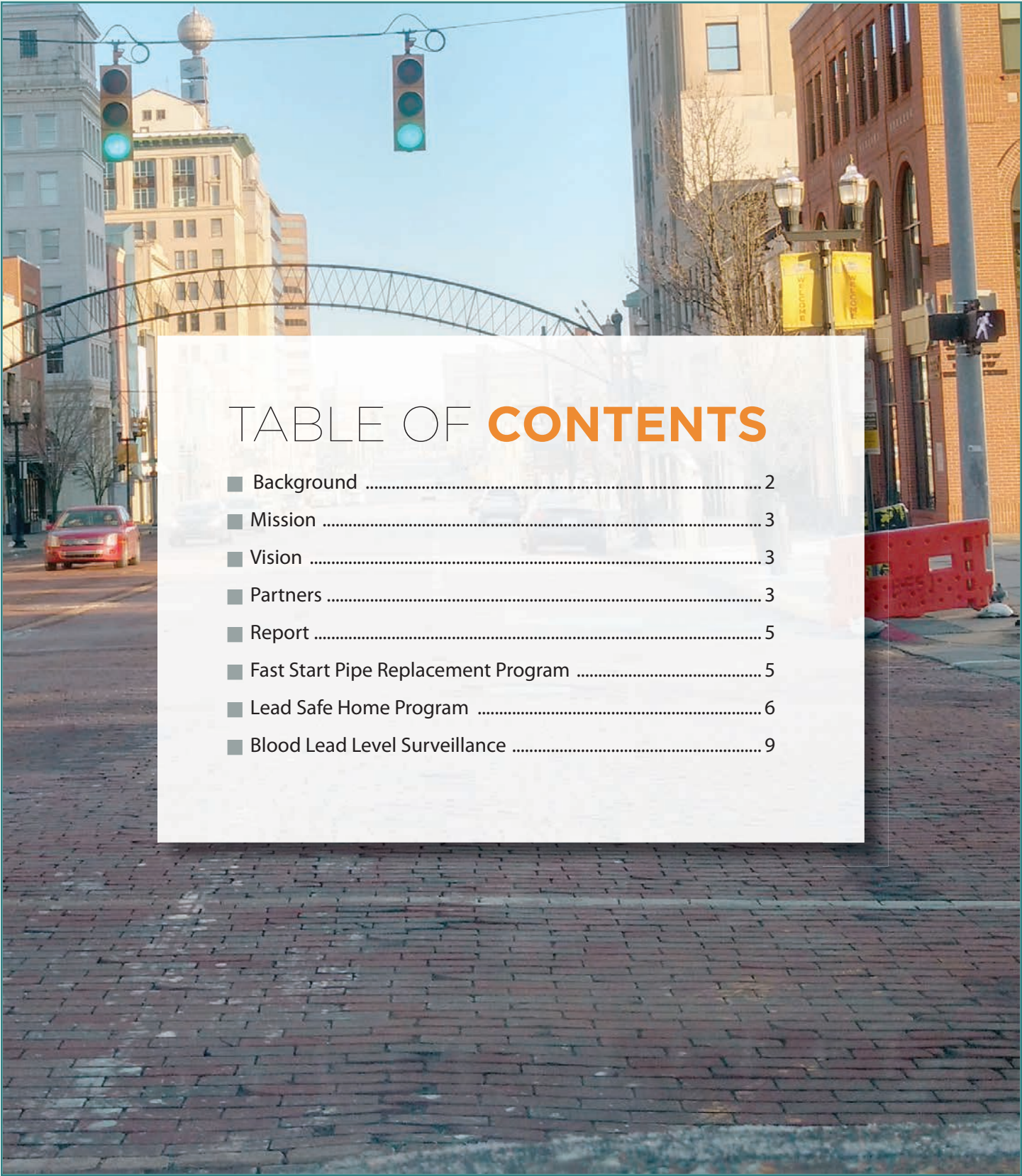


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BACKGROUND ON **FLINT LEAD FREE**

Originally known as the Lead Elimination Workgroup of the Flint Registry, Flint Lead Free is comprised of a diverse group of public, private, and non-profit members, stakeholders, and partners including residents, property managers, housing organizations, legal services, community organizations, foundations, and city/county/state government with the mission to eliminate lead exposure in Flint by 2022. Flint Lead Free serves as a clearinghouse of lead-related programming, education, and training for a variety of audiences such as residents, outreach workers, home visitors, construction workers, and Flint Registry staff. The program's primary prevention and data-driven focus seeks to identify lead risks and service gaps, strategically align resources, and determine cost-effectiveness, return on investment, and translatability of local lead elimination.

Flint is uniquely positioned to eliminate lead exposure because of a confluence of new programs that include lead service line removal, lead fixture replacement, primary prevention and enhanced elevated blood lead level home investigation and abatement, water testing, as well as

community-wide engagement and lead awareness.

With grant support to Michigan State University from the Centers for Disease Control and Prevention's (CDC) National Center for Environmental Health (NCEH) and Lead Poisoning Prevention and Environmental Health Tracking Branch, the Flint Registry contributes to lead elimination efforts by enrolling individuals exposed to the lead-contaminated Flint water, screening for ongoing environmental lead exposure via a survey of environmental risks, and connecting individuals to lead-mitigating services.

This annual report will highlight lead-related trends emphasizing primary prevention efforts currently underway in the City of Flint. Primary prevention refers to the elimination of lead exposure before a child is poisoned. Because there is no safe level of lead exposure and no available treatment, primary prevention is recommended as the intervention most beneficial to children and contributes most significantly to lifetime savings on healthcare and education costs.

Mission

To eliminate lead exposure in Flint, MI by 2022.

Vision

Through tracking and reporting on environmental lead risks, blood lead levels, environmental assessments, and interventions and by providing a clearinghouse of lead-related programming and education/training, Flint, MI will be a model lead-free city through the collaboration of community, agencies, and nonprofit groups.

Flint Lead Free Members

Flint Lead Free is a multidisciplinary group of partners from local, state, and national organizations. This diverse group of partners convenes regularly for strategic conversations related to efforts to eliminate lead exposure in Flint, share best practices, develop new partnerships and initiatives, and provide feedback to the Flint Registry.

- Altarum
- Black Millennials for Flint
- Center for Community Progress
- City of Flint
- Community Foundation of Greater Flint
- Flint Registry
- Flint resident/parent
- Gebrael Management
- Genesee County Community Action Resource Department
- Genesee County Habitat for Humanity
- Genesee County Health Department
- Genesee Land Bank
- Greater Flint Health Coalition
- Legal Services of Eastern Michigan
- Local Initiatives Support Corporation
- Michigan Department of Health and Human Services, Lead Safe Homes Program & Child Lead Poisoning Prevention Program
- Michigan State University Extension
- Michigan State University Institute for Health Policy
- Michigan State University and Hurley Children's Hospital Pediatric Public Health Initiative
- University of Michigan, Child Health Evaluation and Research (CHEAR)

Leadership

A workgroup of the Flint Registry, Flint Lead Free is co-chaired by Jenny LaChance, associate director of MSU-



Photo by Ebony Stith

Hurley Pediatric Public Health Initiative, and Lydia Starrs, health systems navigator at Community Foundation of Greater Flint.

Flint Lead Free Annual Report

As Flint grows local capacity to increase primary prevention efforts, Flint Lead Free will continue to track, monitor, and report data from programs and services to reflect both progress and challenges and to drive programming.

The lead-related data below represent efforts from:

- Michigan Department of Environmental Quality City of Flint residential water sampling
- City of Flint FAST Start program.
- Michigan Department of Health and Human Services (MDHHS) Lead Safe Home Program
- MDHHS Childhood Lead Poisoning Prevention Program

This report is not inclusive of all lead-related activities currently taking place in Flint. Flint Lead Free will continue to engage partners working in primary prevention to obtain supplemental data for future reports – such as home demolitions, fixture replacements, soil testing, etc. The primary challenge to obtaining additional data is sharing with local organizations and partners how their work is or can be categorized as primary prevention. However, by continually engaging partners, Flint Lead Free is making intentional connections to strengthen collaboration, generate greater transparency, and increase access to services and information. Future reports also hope to include mapping to better visualize and target lead elimination effort.

Flint Residential Water Lead Testing Results: ≥ 10 ppb (parts per billion)

The data below reflects the total number of residential water tests with lead results equal to or above (\geq) 10 parts per billion. The results are from resident sampling kits distributed by Community Outreach Resident Education Program (CORE) and the City of Flint. Residents can request a sampling kit or pick up a kit at city hall. All results are posted online by the Michigan Department of Environmental Quality.¹

Flint water testing performed by the Virginia Tech Flint Water Study team can be found on flintwaterstudy.org.

Calendar Year	2013	2014	2015	2016	2017
Number tested			672	25,604	4,482
Number ≥ 10 ppb			77	2,948	267
Percent ≥ 10 ppb			11.5	11.5	6.0

Flint Lead Service Line Replacements

The mission of the Flint Action & Sustainability Team (FAST) Start program is to remove and replace lead and galvanized steel service lines leading to homes all over Flint. The City of Flint began the project in effort to replace services lines damaged during the Flint Water Crisis. Following the switch to the Flint River water was not treated with proper corrosion control, causing the protective lining in pipes to corrode and leach lead into the water. Phase I of FAST Start began in March 2016. FAST Start activity is reported by the City of Flint in phases as crews steadily work across the city to identify, remove, and replace lead and galvanized service lines. Service line replacement data below is reported by calendar year, with some overlap in lines replaced during phases I and II occurring over 2016 and 2017.



Photo by Ebony Stith

Calendar Year	2013	2014	2015	2016	2017
Number of Service Lines Replaced				644	5365

¹ Flint Water Results-Residential Sampling. (n.d.). Retrieved August 27, 2018, from https://www.michigan.gov/flintwater/0,6092,7-345-76292_76294_76297---,00.html

Lead Safe Home Program Overview

Deteriorated lead-based paint, lead in soil, lead in dust and lead in water can present lead hazards and a source of lead exposure. The Michigan Department of Health and Human Services (MDHHS) Lead Safe Home Program (LSHP) aids owner occupants and rental property owners in identifying lead-based paint, lead in soil or dust, and lead in water hazards within their home and provides resources to remediate the identified hazards. In 2016, the Centers for Medicare & Medicaid Services approved a five-year Michigan State Plan Amendment (SPA) for a Title XXI state-designed Health Services Initiative for expanded lead abatement activities in Flint. The SPA allows the MDHHS LSHP to expand eligibility and coverage for pregnant women and children, and focuses on abatement of all lead hazards in homes of Medicaid children and pregnant women.

Purpose of Tables

This set of tables provides information about activities conducted by the MDHHS-LSHP in the city of Flint by calendar year regardless of funding source. This data represents lead identification and abatement activities conducted on city of Flint homes in a historical manner. LSHP cases are completed over a period of 12-18 months and these data points represent the activities that occurred during this snapshot in time.



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Interpretation of Tables

The LSHP process is lengthy given its complexity and the period from application to completed abatement may span one or more years. Depending on factors including when it was received, applications may not move forward to environmental investigation or abatement until the following or subsequent years. Therefore, these tables should not be used to demonstrate the progress of a case over one calendar year. Data users should take caution when associating one variable with another. Summation of the count across years provides the reader with a total number of activities provided for the period. Summation of the count within a year does not provide conclusive data as one household can receive multiple services in a given year.

Environmental Investigations

The purpose of an Environmental Investigation (EI) is to determine the existence of a lead hazard at the subject property and to determine the location, type, and severity of existing or potential health hazards associated with exposures to lead. A lead-based paint hazard is any condition that causes exposure to lead from dust-lead hazards, soil-lead hazards, lead-paint or lead in water.

Between 2016-2017, the LSHP was completing EIs on residential properties without an application for the LSHP. Therefore, during this time, there were more EIs than applications received. Beginning in 2017, a completed and approved LSHP application is required for the EI service.

The data below represents the number of EIs conducted in the city of Flint, the number of these EIs completed on a home housing a child with a blood lead level ≥ 5 micrograms per deciliter ($\mu\text{g}/\text{dL}$), the number EIs completed identifying any type of lead hazard and the type of lead hazard identified. The types of hazard identified provide a breakdown of the number of homes identified with the specific lead hazard.

Calendar Year	2013	2014	2015	2016	2017
1. Environmental Investigations completed	0	0	15	141	259
1a. Environmental Investigation completed on homes with Child with blood lead level (BLL) \geq 5μg/dL	0	0	13	117	62
2. Environmental Investigations identifying any type of lead hazard	0	0	15	116	206
2a. Paint Hazard¹	0	0	14	111	199
2b. Soil Hazard²	0	0	5	33	33
2c. Dust Hazard³	0	0	14	100	180
2d. Water Hazard⁴	0	0	2	19	97

¹ A lead-based paint hazard is defined as any housing component identified by approved lead paint analysis as containing lead paint in deteriorated condition or designated as friction/impact surfaces.

² A soil hazard is defined by Housing and Urban Development (HUD) as any bare soil area accessible to and frequented by children that test above standard protocol measures (below), including foundation drip line and child play areas: Dripline 1,200 ppm, Child Play Area 400 ppm

³ A dust hazard is defined a measurable sample of lead in house dust above the standard protocol measures: Floors \geq 10 μ g/ft², Window Sills \geq 100 μ g/ft² and Window Troughs \geq 100 μ g/ft²

⁴ A lead in water hazard is defined as a measurable sample of lead present in water from the faucets, plumbing materials or service lines within a home, above the standard protocol measure of 15 ppb.

LSHP Applications for City of Flint Households

Except for the years 2016-2017, prior to providing abatement services on a home, a property owner and/or occupant must first submit a LSHP application and that application must be received by the LSHP. This application collects data necessary to determine eligibility of a household for the LSHP. The LSHP then aids owner occupants and rental property owners in identifying lead hazards within their home and provides resources to remediate the identified hazards.

The data below represents the number of LSHP applications received, the number of LSHP applications approved and the number of LSHP applications ineligible. In some instances, the LSHP application could be received in a previous year and approved in the following year.



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An application may be ineligible for services if that the household did not meet eligibility requirements as outlined in LSHP policy. A household is eligible for re-application if the ineligibility factor is resolved or changed. Reasons for ineligibility may include the household being over income or not enrolled in Medicaid, failure to complete application or provide necessary documentation after several attempts by LSHP staff, home in a condition which reflects inhabitability or being structurally unsound or failure of applicant to return contact to LSHP staff for scheduling.

Calendar Year	2013	2014	2015	2016	2017
1. Applications received for city of Flint Homes	2	17	16	95	360
2. Applications approved for city of Flint Homes	0	11	14	82	283
3. Applications ineligible for city of Flint Homes	2	6	2	13	77

The data below represents the number of applications received from homes occupied by a child with a BLL > 5µg/dL as well as individuals residing in a city of flint home where a LSHP has been submitted including number of children under 6 years of age, number of children under 6 years of age with a BLL > 5 µg/dL and number of pregnant women.

Calendar Year	2013	2014	2015	2016	2017
1. Applications received for city of Flint Homes occupied by at least one child with BLL > 5u/dL	2	3	8	26	14
2. Number of children under 6 years of age residing in city of Flint homes with submitted LSHP application	2	15	21	114	179
3. Number of children 6 years to 17 years of age residing in city of Flint homes with submitted LSHP application	1	9	12	84	341
4. Number of children under 6 years of age with BLL > 5µg/dL residing in city of Flint homes with submitted LSHP application	2	4	11	32	19
5. Number of pregnant women residing in city of Flint homes with submitted LSHP application	0	3	3	6	4

LSHP Abatements

The LSHP provides lead abatement activities on households in the city of Flint. These abatement activities are completed to properly encapsulate, enclose, remove and/or replace identified lead hazards. An approved LSHP application is required before abatement work can take place.

The data below represents the number of LSHP abatements complete and the number of LSHP abatements in progress during the referenced year. LSHP abatements in progress is defined as those units where lead hazards have been identified, a LSHP application received and approved, the project bid and awarded to a lead contractor, but work has not yet been completed. In many instances, the LSHP application could be received in a previous year and abatement not completed until the following year.

Calendar Year	2013	2014	2015	2016	2017
1. Abatements completed	0	5	7	43	51
2. Abatements in progress	0	0	0	3	57



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Blood Lead Levels for Children Under 6 Years of Age residing in Flint - 2013-2017

Child blood lead testing in the State of Michigan is reported to the MDHHS Children's Lead Poisoning Prevention Program (CLPPPP). They are responsible for providing:

- Blood lead surveillance, data, and reports
- Lead poisoning education and outreach
- Health services for children with elevated blood lead levels
- Health services for children at risk of lead poisoning
- Funding to local health departments for Elevated Blood Lead Level (EBLL) nurse case management

Since May 1, 2016, children in Genesee County with a Blood Lead Level (BLL) at or greater than 5 µg/dL have been referred to the Children's Healthcare Access Program EBLL Nurse Case Management program managed by the Greater Flint Health Coalition. The goal of EBLL Nurse Case Management Services is to bring every child's venous blood lead level below 5 µg/dL and prevent future EBLLs by overseeing the reduction or elimination of sources of lead (or potential sources of lead) in the child's environment. Nurse Case Management services support the child's continued health and safety, connects them with environmental, social, and medical services, and ensures coordination with their medical home and Medicaid Health Plan (as applicable).

Interpretation of Blood Lead Level Testing

Blood lead testing of children has been traditionally used as a detector of environmental contamination. High risk children are routinely tested at 1 and 2 years of age during well-child doctor visits. These are the ages when children developmentally have strong hand to mouth behaviors and are most at risk for household lead exposure (paint, dust, etc). High risk is designated by the CDC and American Academy of Pediatrics and includes risk factors such as age of home, Medicaid status, parental hobbies/occupation, etc. Since the recommendation for blood testing is not universal and must be determined by an algorithm of risk factors, blood lead testing rates are low and only capture a small segment of the population.

Blood lead testing only reflects recent and/or ongoing exposure to lead. With a short detection window in blood (half life approx. 28 days), blood lead testing does not capture historic and/or cumulative lead exposure. In addition, blood lead surveillance programs (performed at the routine ages of 1 and 2 years) do not adequately reflect lead in water exposure which burdens a younger and more developmentally vulnerable population.

Of note, following the widespread recognition of the Flint Water Crisis, there was expanded testing for blood lead levels (see increase in number of children tested in 2016). Although more children were noted to have BLLs >5 and >10 µg/dL, the percent decreased because of the increased denominator.

Calendar Year	2013	2014	2015	2016	2017
Number tested	3504	3500	3802	7397	3486
Number ≥5 µg/dL	103	129	113	178	95
Percent ≥5 µg/dL	2.94	3.69	2.97	2.41	2.73
Number ≥10 µg/dL	17	20	22	40	21
Percent ≥10 µg/dL	0.49	0.57	0.58	0.54	0.60



Photo by Ebony Stith

Next Steps

Over the next year, Flint Lead Free will continue to identify and engage relevant stakeholders to ensure all the appropriate voices are included in strategic conversations. Flint Lead Free will also continue to track and update primary prevention programs and services, lead elimination data, and lead training opportunities. Future reports will include new lead elimination data sources, and in partnership with Altarum, Flint Lead Free will publish an analysis of the impact of primary prevention in Flint including a cost benefit analysis related to primary prevention efforts underway, including impact on workforce development. It is our hope this annual report will reflect the widespread community efforts to reduce lead exposure, share progress made from new investments and strategic partnerships, demonstrate the positive impact on the health of Flint kids and families, and highlight the amazing work of partners.



Photo by Mike Naddeo

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