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GET THE LEAD OUT

A Plan of Action for Lead Poisoning Prevention & Remediation in Calhoun County, Michigan

Calhoun County Lead Poisoning Prevention Task Force

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Executive Summary

In January 2016, a number of public health providers and local government officials formed a Lead Poisoning Prevention Task Force in response to renewed concerns about lead poisoning in the community. Battle Creek area public agencies have a rich history of collaborating around addressing lead poisoning. The re-established Lead Task Force has met monthly and spearheaded the creation of this Lead Poisoning Prevention and Remediation Action Plan.

Reasons for new concerns about lead poisoning in Calhoun County include:

- Awareness of lead poisoning from water in Flint, Michigan;
- The Calhoun County Public Health Department concerns about the low number of children under the age of six being tested for lead poisoning in the county and the need to increase testing and reporting of testing; and
- The City of Battle Creek's Community Development Division responsibility to report to the U.S. Department of Housing and Urban Development about its efforts to reduce the impact of lead-based paint.

The most important reason for a renewed focus on reducing lead poisoning is to protect children from unnecessary suffering and health problems. Lead in the human body can cause lower IQ, hyperactivity, learning disabilities, hearing problems and in high levels can cause convulsions, coma, and death.

Lead-based paint is the leading cause of lead poisoning. While the federal government banned lead in residential paint products in 1978, the primary sources of lead exposure for children are still deteriorating lead-based paint, lead contaminated dust and lead contaminated residential soil. Unlike in Flint where lead poisoning was caused by contaminated water, the main sources of lead for children in Calhoun County and Battle Creek are lead-based paint and lead-contaminated dust found in deteriorating buildings. More than 80% of Battle Creek's housing stock was built before 1978.

Children under the age of 6 years are at greatest risk because they are growing rapidly and because they tend to put their hands or other objects into their mouths. Children from all social and economic levels can be affected by lead poisoning, although children living at or below the poverty line who live in older housing are often most at risk.

Childhood lead poisoning is preventable by stopping children from coming into contact with lead and treating children who have been poisoned by lead. Lead hazards in a child's environment can be identified and removed safely. Parents, health care professionals, educators, and the public need education about lead poisoning and how to prevent it. Children who are at risk for lead poisoning need to be tested and, if necessary, treated.

Lead poisoning impacts young children and their developing brain. Children are at risk of lead poisoning if they live in a house or visit a home/daycare built before 1978 that has paint that is chipping, peeling, cracking or chalking. Lead in paint, house dust and soil hurts a child's health and can cause behavior problems such as learning disabilities, hyperactivity and poor hearing. Most children do not show signs

of being sick from lead. The only way to find out if your child has lead poisoning is through a blood test done by your physician or the Health Department.

Drinking water can also contain high concentrations of lead from lead-containing pipes and solder, such as what happened in Flint, MI. This report reviews the water quality from municipal water systems in Calhoun County showing that local public water sources are treated with the proper level of phosphates, are regularly tested, and have low to no lead present in water. The Calhoun County Health Department's Environment Health Division conducted a three-year assessment of water lead levels in area schools and day care facilities served by municipal water sources. Completed in 2015, the study took over 4,000 samples from public and private schools and daycares finding that 16% of 82 facilities had some higher lead levels, most of these conditions were fixed by replacing older faucets and fixtures. Other facilities serving the public and using well water are routinely monitored by the Michigan Department of Environmental Quality.

The Calhoun County Lead Poisoning Prevention Task Force Plan of Action includes the following three program focus areas:

- **Increase lead testing and reporting of testing in children in Calhoun County**

  Goal 1: Promote universal screening for elevated blood lead levels for all children under age six and increase the number of children age zero to six who are tested for lead blood poisoning including children covered by Medicaid and those with private health insurance.

  Goal 2: Continue to engage families of children who have Elevated Blood Lead levels (EBLL) to reduce or eliminate the long term effects of lead poisoning.

  Goal 3: Increase the reporting of testing by private physicians by implementing a countywide Memoranda of Understanding (MOU) concerning communicating lead test results and lead education between health care providers and Calhoun County Public Health Department to ensure appropriate follow up is taken for children with EBLLs ≥ 5µg/dl.

- **Increase lead awareness and public education about the threats of lead poisoning to children**

  Goal 1: Work with schools annually to provide and develop lead educational sessions for students and parents about how kids are exposed to lead, how to prevent lead poisoning, and what to do if exposed.

  Goal 2: Develop a public education campaign to disseminate information related to child testing, lead hazards in homes, and poisoning prevention techniques.

- **Expand the resources for remediating lead in homes and the environment**

  Goal 1: Provide local agencies with quarterly outcome data related to child testing, lead hazards in homes, and intervention activities; and produce an annual report that evaluates strategies and communicates progress towards goals to the public.
  Goal 2: Develop capacity countywide to conduct lead assessments at all properties suspected of being a source of exposure for a child with an EBLL, and to remediate sources of lead poisoning when lead hazards are identified.

  Goal 3: Increase the level of proactive lead hazard reduction activities by improving the capacity and willingness of housing stakeholders to address risks posed by lead sources in homes and the environment.

  Goal 4: Work with local government and the State of Michigan to strengthen the regulatory framework regarding lead hazards in homes and the environment.

The work put into increasing the testing of children, understanding the sources of lead poisoning, creating greater public awareness and understanding the laws surrounding lead remediation and enforcement is intended to reduce the impact of lead poisoning on Calhoun County children and families. The Lead Poisoning Prevention Task Force will communicate its progress to the community each year in an annual report. The hope of the Task Force is that this plan will assist staff in applying for grant funding from local foundations, the State and the Federal government for more resources for testing, public education and housing remediation.

The History of Lead Exposure and Poisoning in America

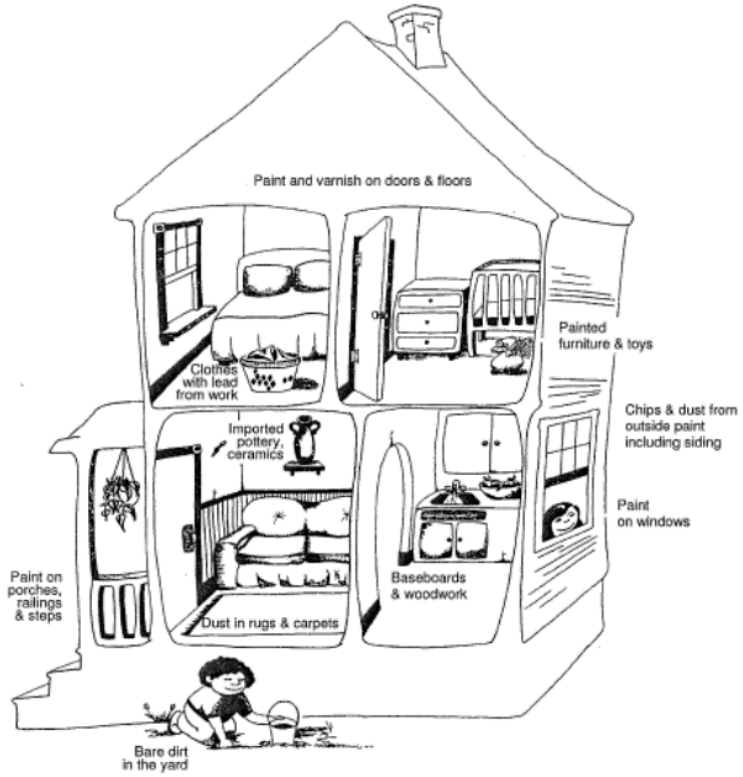
What is lead and why should we be concerned about it?

Lead is a metal which is found in many areas of our environment. It is found in small amounts in the earth's crust and has been used in manufacturing, fuel, paint, batteries, ammunition and other areas. It is toxic. In children, the most serious symptoms related to lead exposure are central nervous system problems, including decreased IQ and cognitive problems at lower levels and severe effects such as seizure and brain damage at higher levels. The toxicity of lead has been known for millennia, but the effects become more clearly understood in the mid-20th century, prompting federal regulations to remove it from paint, gasoline, plumbing and other environmental sources. [1, 2, 3]

What are the sources of lead contamination?

Paint: Prior to 1978, paint contained lead. Lead paint offered advantages, including durability and brighter stable colors. But as the effects of lead became more clearly understood, the lead content of paint began to be reduced in the 1950's and was eliminated in 1978.[1] This move has been helpful in significantly reducing the number of children who are poisoned by lead. But any building which was built before 1978 still may be a source of lead exposure. Lead paint chips and dust may be present even when the home

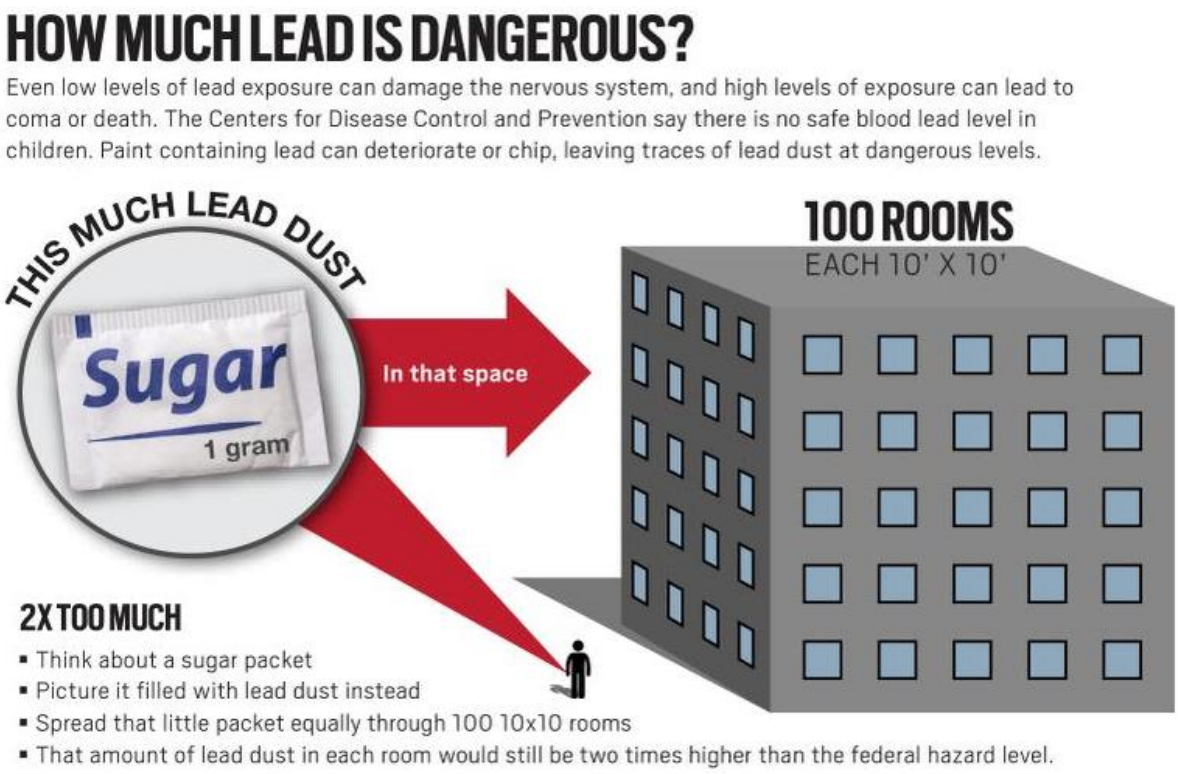
has been repainted or remodeled. The lead content of homes is typically highest around windows. Raising and lowering windows releases lead dust because of friction between surfaces. So children who live in or regularly visit homes built before the late 1970s are at risk for lead exposure. Currently, lead paint in older homes is the most significant source of exposure to lead. [4]



Source: Wisconsin Department of Health Services
Lead-Safe Program

Gasoline: Tetraethyl lead was added to gasoline by General Motors in the early 1920's. This was a result of a search for a fuel additive that would reduce knock and improve the performance of the automobile engine. Lead was very effective in solving these problems, and as a result, the automobile industry thrived. The problems which resulted from lead exposure were quickly exposed, as workers in refineries became ill, developed nervous system problems, and even died. The Surgeon General intervened, and leaded gasoline production was temporarily suspended. Sadly, industry influenced the subsequent investigation, and leaded gasoline again became available. [2]

By the 1970's the effects of the lead particles which entered the environment from automobile exhaust became clearer. While the effects of lead were understood, the scientific verification that exposure to lead through automobile emissions was a public health problem was more recent. In December 1973, the EPA called for a reduction of lead in gasoline. This reduction started in in 1975, and took more than a decade to complete.[2]



Water: The September 2015 public health crisis of lead poisoning in Flint, Michigan due to a contaminated water supply is now well known. Some unique issues in Flint resulted in this community wide problem. Lead in water is much less of a problem in most communities. [1] Most municipal water supplies are free of lead and copper; the source of contamination is the pipes connecting homes to the municipal water system.

The national news coverage of water conditions in Flint, Michigan, has created a great deal of confusion and consternation over the past two years. The water there has been described as being corrosive; images of corroded batteries and warning labels on bottles of acids come to mind.

But is corrosive water necessarily bad? Corrosive water is a water quality condition where the water chemistry dissolves metals (iron, lead, copper, etc.) from metallic plumbing at an excessive rate. There are a few contributing factors but, generally speaking, corrosive water has a pH of less than 7; the lower the pH, the more acidic, or corrosive, the water becomes. By this definition, many natural waterways throughout the country can be described as corrosive. While all plumbing will be somewhat affected over time by the water it carries, corrosive water will damage plumbing much more rapidly than water with lower corrosivity. By itself, corrosive water is not a health concern; your morning glass of orange juice is considerably more corrosive than the typical lake or river.

Exposure to dissolved metals in drinking water increases adverse health risks. Public water systems are required to maintain water at optimal conditions to prevent it from reaching corrosive levels. In older homes, lead was used in water pipes as well as solder of copper pipes. As a result, water moving through

leaded pipes can pick up lead. Municipal water is treated with phosphorus to create a chemical lining in pipes to prevent acidic water and elevated temperatures from leaching lead in the plumbing into water.

Other sources: A pregnant or breastfeeding woman who has lead poisoning can pass the lead along to her baby. Food grown in contaminated soil can also contain lead. Certain hobbies can result in lead poisoning as ammunition and fishing lures can contain lead. Some imported cosmetics, toys, jewelry and cookware, as well as some folk or herbal remedies may contain lead. [4, 5]

What are the risks of environmental exposure to lead for our community?

Lead does not occur naturally in our bodies - if it is present it is because of environmental exposure. Children six years of age and under are more vulnerable to lead poisoning than older children and adults. In children under the age of six, the blood-brain barrier is not yet complete, so lead is permitted to enter the central nervous system quickly in young children when they are exposed. In addition, young children crawl, frequently put things in their mouths, and have higher respiratory rates than older children, all of which increase the risk of lead poisoning when exposed to it. Children who have iron deficiency are also more likely to absorb lead from the gastrointestinal tract.

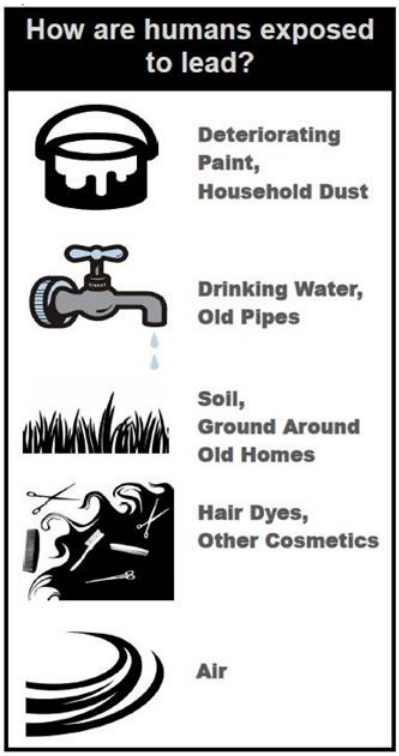
Children poisoned by lead are at an increased risk for lower IQ's, behavioral problems including a decreased attention span, and reduced educational attainment.[6] The behavioral problems associated with lead exposure in children are similar to the symptoms of Attention Deficit/Hyperactivity Disorder (ADHD). Scientists are now studying other possible causes or risk factors for ADHD, including lead exposure during pregnancy or at a young age.[7]

There is no known "safe" level of lead in the blood. The acceptable level of lead in the blood has gradually been lowered as both the toxic effects of lead were better understood and lead exposure was reduced in the environment. In the 1970's a cutoff of 60 µg/dl was considered the toxic level. Currently, the U.S. Centers for Disease Control (CDC) has set the threshold for lead poisoning at set at 5 µg/dl (or parts per million). [5] There is discussion in the scientific and regulatory spheres for reducing the safe level of lead exposure to even lower amount.

How to Reduce and Remove Lead Exposure

The State of Michigan Lead Safe Home Program recommends:

- In housing built before 1978, it can be assumed that the paint has lead unless tests show otherwise.
- Take precautions to limit your child's access to peeling paint or surfaces with known or assumed lead-based paint.
- Children and pregnant women should take extra precautions during the renovation of housing built before 1978. Homeowners and contractors should be using lead safe work methods such as plastic barriers, HEPA equipped vacuums, plastic to catch paint dust and chips, and daily cleaning.



- A Lead Safe cleaning guide is available at www.michigan.gov/leadsafe.
- Regularly wash children's hands, pacifiers and toys. Hands and toys can become contaminated from household dust or exterior soil.
- Regularly cleaning by wet-mopping floors and wet-wiping window sills and window wells every two to three weeks.
- Take shoes off outside before entering the house helps to prevent bringing lead-contaminated soil in from outside.
- Until soil is tested, prevent children from playing in bare soil. Plant grass on areas of bare soil or cover the soil with grass seed, mulch, or wood chips.
- Until the bare soil is covered, locate play areas away from bare soil and the sides of the house.
- Some other items can include lead coatings such as, pottery, cookware, or tableware that is often used to store or cook food. These items can be tested.
- Check and remove recalled toys and toy jewelry immediately from children.
- Use only cold water from the tap for drinking, cooking, and making baby formula. Hot water is more likely to contain higher levels of lead as is water that is heated.
- Shower and change clothes after finishing a task that involves working with lead-based products such as stained glass or lead bullets.
- Help children eat foods high in calcium and iron to keep lead from being absorbed by a child's body.

Childhood LEAD POISONING prevention program

Michigan's Childhood Lead Poisoning Prevention Program (CLPPP) helps provide education and outreach regarding lead hazards and the impact of lead poisoning. Prevention strategies are included in a state work plan for preventing childhood lead poisoning. Technical assistance is offered to health care professionals to support appropriate health services for children with lead poisoning and to local health departments who may provide some direct services. Additionally, this program receives and analyzes the lead testing results data from across the state for use in monitoring the extent to which children are still lead poisoned and to inform policy and practice relative to the continuing need to prevent lead poisoning and to intervene as early as possible when it is detected.

CLPPP also works closely with the Healthy Homes Section of MDCH to improve the health and wellbeing of Michigan citizens. The Healthy Homes Section promotes safe and healthy home environments through comprehensive home-based intervention programs, lead certification and regulations, public education and outreach, and statewide partnerships.

Lead Safe Home Program

The Michigan Department of Health and Human Services also runs a Lead Safe Home Program that offers free lead inspections/risk assessments (a $750 value) and will fund needed Lead Hazard Control work or rehab if needed, up to $10,000 for home owner occupied housing and $6,000 to rental property owner per unit. To qualify, a family must have children under the age of six with an elevated blood lead level of 5 or above, be low or moderate income, living in a home built before 1978, and either own or rent the home.

For target counties with high levels of children with lead poisoning, families can apply for assistance if they have a child under age six or a pregnant female living in the home. Current target counties are Genesee, Ingham, Jackson, Kalamazoo, Kent, Lenawee, Macomb, Oakland, Saginaw and the City of Flint. Calhoun County used to be a target community for this program but levels of testing have decreased so it no longer qualifies. It is a goal of the Calhoun County Lead Poisoning Prevention Task Force to increase testing of children for lead poisoning so that Calhoun County can again become a target community for the State's Lead Safe Home Program.

For families looking to have their home tested for lead, call 866-691-5323(LEAD) or 517-335-9390. A lead testing professional can test all things inside and outside your home that may have lead and could harm your family. A report will be sent to you with all the test results, and explain how to fix the areas or items where lead is a problem. In some cases, residents will qualify for the Lead Safe Home Program to help remove lead painted windows and other lead hazards in the home. Visit www.michigan.gov/leadsafe for more information.

Safe Drinking Water

The lead contamination of water in Flint, Michigan which was caused by the Flint water system switching to corrosive river water without adding the proper amount of phosphorus to protect lead pipes from leaching lead from water supply lines has highlighted the importance of protecting the nation's and Calhoun County's public drinking water supply. State and Federal laws regulate every municipal water system. Each water system has to annually present a Consumer Confidence Report reporting to the public the results of water testing and any system problems. Public water systems are responsible for delivering water in compliance with the Federal Safe Drinking Water Act (SDWA). The federal standards set by the SDWA contain many different thresholds and testing procedures for naturally occurring substances and substances introduced as part of the delivery process of public water; among these are lead and copper.

In order to maintain a safe and secure water system, each water system needs to continue to make improvements to infrastructure assets, process handling, and meter technology. As new drinking water regulations emerge, public water systems must continue to be vigilant in meeting the goals of water source protection, water conservation, and community education.

Most municipal water systems provide groundwater from aquifers to homes. What is groundwater? Groundwater is water beneath the surface of the earth that fills openings, known as pore spaces, in sand,

gravel, or fractured rock. Groundwater begins as precipitation from snow or rain that passes through the soil and accumulates in the pore spaces. What is an aquifer? When enough water accumulates to supply a well, it is considered an aquifer.

Lead in Home Plumbing

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and Children, age six and younger. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Calhoun County cities, villages and townships are responsible for providing high-quality drinking water, but cannot control the variety of materials used in plumbing components in the service lines to individual homes and the plumbing in each home.

When water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking.

Since lead in water is both tasteless and odorless testing your water is the only way to know for sure if lead is present. Testing your drinking water every few years is a good idea for both water well owners and municipal water users. Depending on the testing selected, you can learn a lot about what else may be in your water besides lead. Even though municipal water is regularly checked those tests only check the water that is provided to your home. There may be a number of sources of lead within your home such as old plumbing fixtures, pipes and solder that should be identified.

If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the **Safe Drinking Water Hotline at 1-800-426-4791**, or at www.epa.gov/lead.

For private water well testing, contact your local health department who will be able to provide current testing options. In Calhoun County, contact the County Public Health Department, Environmental Health Division, 190 East Michigan Avenue, Battle Creek, MI 49014, or call 269-969-6341. You can schedule a staff person to sample your water or you can pick up a test kit to do it yourself. There is a minimal charge for these water tests. In addition, many home improvement stores have mail-in do it yourself test kits that may be purchased.

City of Albion

The City of Albion's water comes from two main groundwater wells and three back-up wells, each over 250 feet deep, drawing water from the Marshall-Sandstone formation. Groundwater provides the City of Albion and its water customers a very stable water chemistry that is easily treated with current methods.

During 2016, the City of Albion regularly tests water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic or synthetic organic contaminates. The state allows us to monitor for certain substances less than once per year because the concentrations of these substances

do not change frequently. No violations have been found in the water samples, which included tests for arsenic, copper, and lead. The Action Level for lead in drinking water is fifteen (15) ppb established by the Michigan Safe Drinking Water Act. The City of Albion water sampling in 2009, 2012 and 2015 found results of 0 ppb documenting that City of Albion's drinking water is well within the guidelines of the Michigan Safe Drinking Water Standards.

The State performed an assessment of Albion's source water in 2003 to determine the susceptibility, or the relative potential of contamination. The susceptibility rating is on a seven tiered scale from "very low to very high" based primarily on geologic sensitivity, water chemistry and contaminant services. Some sources received a moderate rating. Significant potential sources are transportation routes, industry and underground tanks. The City of Albion is working to protect its water sources through the Wellhead Protection Program.

For more information, contact the City of Albion Director of Public Services at 517-629-7200.

City of Battle Creek

The City of Battle Creek uses groundwater from the Marshall Sandstone Aquifer, drawn from the Verona Well Field located in the northeast section of the city, as its sole source of drinking water. The City drills wells into the sandstone formation to collect groundwater that is stored in the aquifer.

The City of Battle Creek obtains its water from a bedrock aquifer. The water is pumped from 22 wells; whose depths range from 100 to 150 feet. Ground water provides the City of Battle Creek and its water customers a very stable water chemistry that is easily treated with current methods.

Lead and copper are not found in the water pumped from the wellfield to Battle Creek water customers. These metals can get into water from the service lines connecting the public water mains to the individual homes, especially older homes. The treatment process that the City uses to maintain protection against lead and copper is to apply an appropriate amount of phosphate to the water prior to pumping it into the distribution system. This phosphate treatment works in two ways; first it develops a barrier between the metallic piping and plumbing fixtures within customers' homes, water services and the City's water distribution system to reduce the corrosive action of the water and secondly by coating the naturally occurring iron within the water to prevent its reaction with the water.

The City of Battle Creek has worked with the Michigan Department of Environmental Health (MDEQ) and product vendors to determine the correct phosphate product and dosage to treat its water. Phosphate is an additive approved by the National Sanitation Foundation (NSF) for use in the treatment of drinking water. The City of Battle Creek regularly tests samples for lead and copper. In 2015, sampling showed that the 1.7 parts per billion (ppb) was considerably lower than the action level of 15 ppb for compliance with the Federal Safe Drinking Water Act. The City of Battle Creek, in working with the MDEQ, has taken additional steps in verifying the effectiveness of the current treatment process. Additional homes are being sampled for lead and copper testing. Results of this additional effort will be included in the Consumers Confidence Report that will be available in July of 2017.

For more information, call Battle Creek at 269-966-3481

Village of Homer

The Village of Homer derives its water from three wells, two of which are primary water supply wells located on the east side of Homer Lake. The other well is an emergency standby, and is located just south of the Homer Department of Public Work garage. Homer's water is drawn from the Parma Formation in the Marshall Sandstone Aquifer, and the depths of the two primary wells range from 144 to 167 feet. The Village of Homer is considered a limited treatment facility utilizing phosphate for iron removal and corrosion control, as well as chlorine for a disinfectant.

The Village of Homer has a Cross Connection Ordinance in place to prevent contamination of the water supply. Additionally, the Village has a Wellhead Protection Plan approved by the State to the community's drinking water supply. The State of Michigan has performed an assessment of Homer's gound water to determine the susceptibility or the relative potential of contamination. The susceptibility rating is on a six-tiered scale from "very-low" to "high" based on geological sensitivity, water chemistry and potential contaminant sources. The susceptibility of the Village for the two primary wells is "low" and for our emergency stand-by well, it is "moderately high".

As with all municipal water delivery systems, the Village of Homer works very closely with the Michigan Department of Environmental Quality (MDEQ) to establish approved monitoring systems and controls. In 2015, per the established guidelines, Homer's test results for lead and copper, consistent with past results, were well below the Actionable Levels for lead and copper.

For more information, contact 517-568-44321.

City of Marshall

The City of Marshall uses groundwater from the Marshall Sandstone Aquifer, drawn from the Green Street well field located in the southeast section of the city, as its sole source of drinking water. The City drills wells into the sandstone formation to collect groundwater that is stored there. Currently, the City has 4 wells, 100 ft. deep that provide drinking water.

Groundwater provides the City of Marshall and its water customers a very stable water chemistry that is easily treated with current methods. The treatment process that is used protects against lead and copper by applying the appropriate amount of phosphates to the water prior to pumping it into the distribution system. The phosphate treatment develops a barrier between the metallic piping and plumbing fixtures within customer's homes, water services and the City's water distribution system.

The City of Marshall has worked with the Michigan Department of Environmental Health (MDEQ) and product vendors to determine the correct phosphate product and dosage to treat its water. Phosphate is an additive approved by the National Sanitation Foundation for use in the treatment of drinking water.

The City of Marshall regularly tests samples for lead and copper. In 2014, sampling showed that the 2.0 parts per billion (ppb) was considerably lower than the action level of 15 ppb for compliance with the Federal Safe Drinking Water Act. For further information, contact 269-781-5183.

To review, if you have questions about your drinking water, call:

Battle Creek	269-966-3481
Springfield	269-965-2354
Emmett Township	269-968-0241
Pennfield Township	269-968-8549
Marshall	269-781-5183
Homer	517-568-4321
Albion	517-621-7200

Summary of testing lead in schools and daycares: "Good to Grow" Project

The Calhoun County Public Health Department's (CCPHD) "Good to Grow" project was a three-year (2013-15) pilot program. [8] It was implemented to determine health risks in Calhoun County schools and childcare facilities served by municipal water due to the presence of lead in the drinking water. The project was possible due to grant funding from the U.S. Environmental Protection Agency (EPA) and the W.K. Kellogg Foundation.

During the three years of the project over 4,000 water samples were taken and of these only 37 were found to have exceeded the EPA's guideline limit of 20 parts per billion (ppb). Samples were taken from outlets which are faucets, taps or fixtures where water for consumption is obtained. Some of these outlets were found to be the source of the lead since many older fixtures contain higher levels of lead in the brass. Elevated levels of lead were also found to be caused by the lead solder used to join lengths of copper pipe. When water is unmoving in a pipe for a period of hours, lead can dissolve into the water. Understanding this stagnation time is an important lead control. Routine flushing of pipes and outlets in a water distribution system a couple times a day can significantly reduce the amount of lead that is consumed. The way samples were collected by the CCPHD was designed to specifically look for these higher levels of lead. It was important to know where a problem existed in order to remove the source.

The facilities with samples exceeding the EPA guideline were notified and most facilities elected to remove the implicated outlet or to incorporate water line flushing on a daily basis to mitigate the problem. The low prevalence of lead in the facilities tested is due to a number of factors. Calhoun County municipal water is entirely obtained from water wells tapping the excellent ground water in our area. In addition, with few exceptions, the water distribution systems of the participating facilities showed that water lines and outlets were not a significant source of lead.

Formation of the Calhoun County Lead Poisoning Prevention Task Force

The Calhoun County Lead Poisoning Prevention Task Force first met in January 2016 and has developed the goals discussed below around the three program focus areas of:

- Increasing testing of children ages 0 to 6 years
- Increase awareness and public education of the risks of lead poisoning
- Increase remediation of lead in homes and the environment

The Task Force has maintained its momentum and steadily recruited new members. The Task Force has appreciated the leadership of the Calhoun County Public Health Department and the City of Battle Creek Community Development Division. Active partners have included Community Action, Grace Health, the Calhoun County Land Bank Authority, the City of Albion, the Village of Homer, Integrated Health Partners and the State of Michigan Healthy Homes Section. The Food Bank of South Central Michigan and the City of Marshall have jointed most recently. Participation from other organizations is welcomed.

The Lead Poisoning Prevention Task Force has been meeting monthly on the second Thursday of the month from 1:30pm-3:00pm at the Calhoun County Public Health Department. The Task Force plans to continue to meet monthly to implement the goals discussed below. For more information, contact the Calhoun County Public Health Department at 269-969-6334, or mthorne@calhouncountymi.gov.

Program Focus: Increase Lead Testing in Children 0-6 years

Goal 1: Promote universal screening for elevated blood lead levels for all children under age six and increase the number of children age zero to six who are tested for lead blood poisoning including children covered by Medicaid and those with private health insurance.

Due to a decrease in testing of children for lead in their blood in the county, Calhoun County is no longer a target county for the Michigan Department of Health & Human Services (MDHHS) Healthy Homes Section's HUD Lead Grant because Calhoun County no longer has the numbers needed to quality as a target community. The Health Department stopped lead testing blood in its clinics as its blood testing equipment aged and was not replaced. As testing increases in CCPHD healthcare clinics and report of testing done in private health care provider settings, the Task Force expects to Calhoun County to again become a target area for the state lead testing program.

As a result of the Task Force raising a concern about the low level of lead testing of children for elevated blood levels of lead, the CCPHD worked on a plan to test more children for lead poisoning especially those on Medicaid. CCPHD no longer owned equipment to perform this test yet many of the children who qualify for a lead screening test are routinely seen at the health department for services such as immunizations, and Women, Infants & Children (WIC) services. Through the collaboration of the members of the Calhoun County Lead Poisoning Prevention Task Force, two grants proposals were funded by the Albion Battle Creek Community Foundations to purchase multiple blood lead analyzers for the three

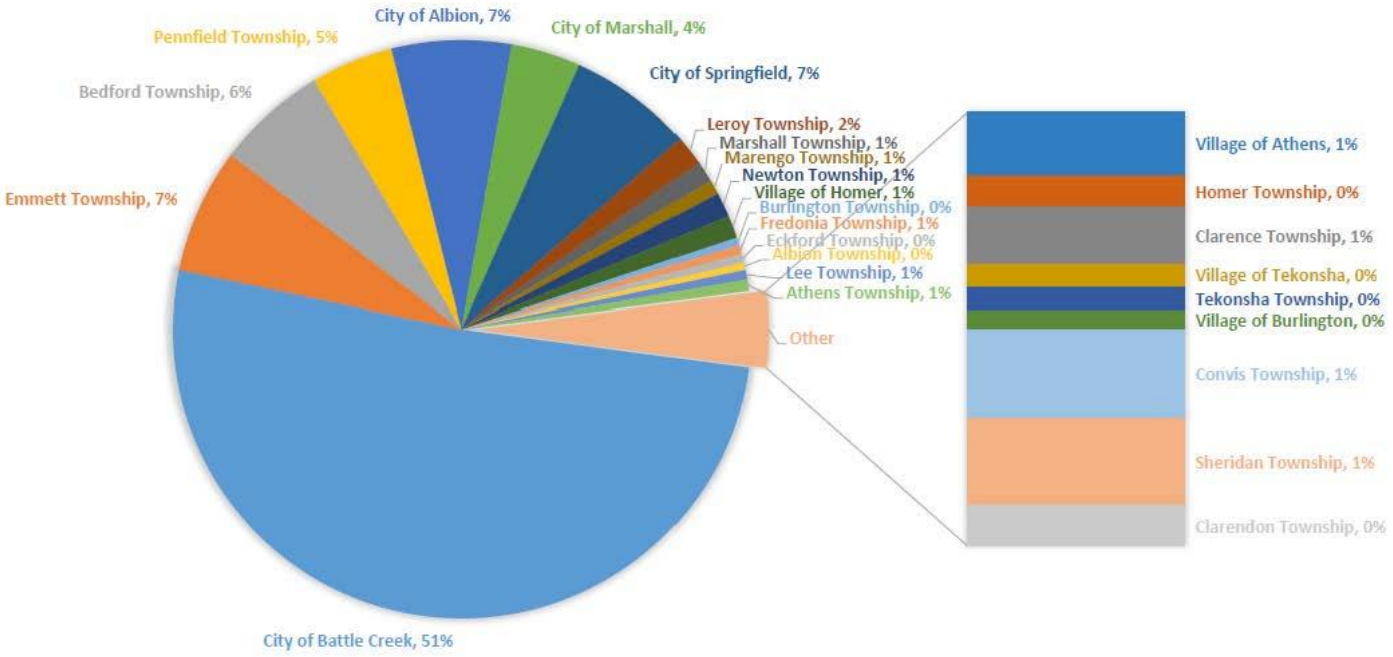
Health Department Clinics (Battle Creek, Marshall and Albion) to begin lead testing of eligible children with a start date of July 2016. Funding was obtained and supplies were purchased, staff trained and services began on July 11, 2016 through the Immunization and WIC clinics at CCPHD. From July 2016 to September 2016, 144 capillary lead tests were done between Battle Creek and Albion Clinics with a total of 20 (14%) returning as elevated above the acceptable limit requiring further action.

Medicaid requires all children to be tested at ages one and two. Children who were not tested between one and two must be tested at least once between age three and six. Some private health insurance plans offer physicians incentives for lead screening. As of August 2016, Meridian offers physicians' offices $25 if children are screened for lead before their second birthday. Priority Health offers $15 and United Healthcare Community Plan offers $50. It is important that when private physician's offices test for lead levels that they report this information to the Calhoun County Health Department and the State of Michigan.

Figure 1: How does testing compare year to year? 2013 - 2015

	Number of Children	Number Tested	% Tested	Number lead poisoned	Number lead poisoned in the City of Battle Creek	% of those tested resulting in lead poisoning
Calhoun County 2013	10,445	1,970	18.9%	68	42	3.5%
Calhoun County 2014	10,149	2,390	23.5%	100	56	4.2%
Calhoun County 2015		1,877		75	41	4.0%
Michigan 2014	720,994	147,841	20.5%	5,702		3.9%

Figure 2: Where is child lead testing occurring in the county?



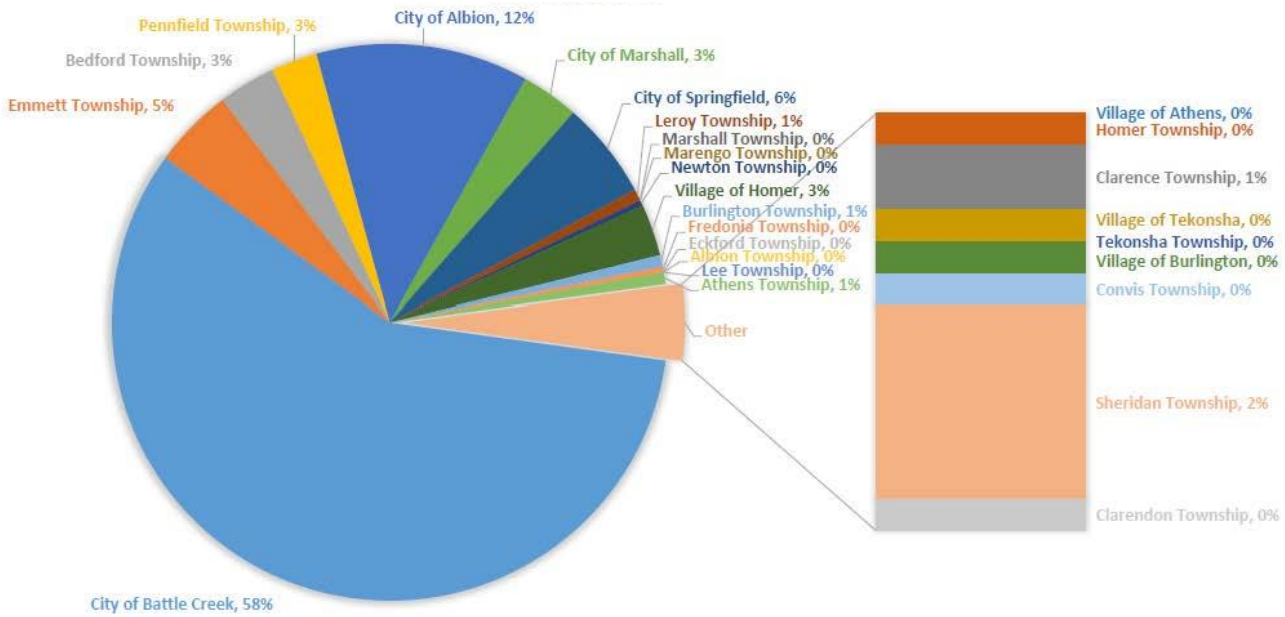
Goal 2: Continue to engage families of children who have Elevated Blood Lead levels (EBLL) to reduce or eliminate the long term effects of lead poisoning.

Every family with a child with a confirmed elevated blood lead level receives a call from a Calhoun County Public Health Nurses (PHN) requesting a home visit and assessment as to the source of lead poisoning. The public health nurses provide education about lead poisoning and seek to remediate the situation causing the poisoning. Because of fear and confusion, too many families refuse to receive this service.

A home visit is offered to the family by a Communicable Disease RN who will help identify potential lead hazard areas and will assist with referrals to programs to help with remediation. Education is given on how to reduce exposure to the lead areas, clean if lead dust is present and eat healthy which helps to reduce lead levels in the blood stream. Repeat blood lead testing is recommended to ensure primary reduction efforts are successful.

The work to increase testing of children has already increased the number of home visits made. In 2015, 16 home visits were made to children with a confirmed diagnosis of lead poisoning. Between January 2016 and October 2016, public health nurses have made 19 home visits to families of children with a confirmed with a lead poisoning diagnosis.

Figure 3: Where are positive lead tests occurring in Calhoun County?



Goal 3: Private physicians will report all lead testing by implementing a countywide Memoranda of Understanding (MOU) concerning communicating lead test results and lead education between health care providers and Calhoun County Public Health Department to ensure appropriate follow up is taken for children with EBLLs ≥ 5µg/dl.

The Lead Poisoning Prevention Task Force identified that there is not a consistent and well utilized process around the communication between all involved parties of getting children tested for lead as well as follow up on EBLLs and remediation of the lead hazards affecting the child. Currently, a medical provider may perform a rapid screening test in the office or have the child sent to a lab for testing. Michigan Department of Health & Human Services (MDHHS) requires that all lead testing be reported within four days of the test. This data is reported to the Michigan Care Improvement Registry (MCIR) at the state level for providers to identify if their clients have been tested and what the results are. Included in an Figure 9 is the statewide lead testing/lead screening plan with questions to be asked of parents of children not enrolled in Medicaid or WIC.

In 2014, only 23.5% of Calhoun County children less than six years of age were tested for lead poisoning. Of these children tested, 3.6% had an EBLL level of 5-9.9 µg/dl and 0.5% were found to have greater than equal to 10 µg/dl . All children enrolled in the Medicaid program or the WIC program are eligible for lead testing, especially at age one and again at age two. Other children that reside in a house that may contain paint prior to 1978 could be exposed to lead and should be tested as well.

With less than 24% of Calhoun County's children under six years of age getting tested in 2015, this subcommittee wants to determine where the gap lies in getting all of our eligible children tested. The

first step is to determine if children are getting tested and if the test results are getting reported to both MDHHS and the MCIR.

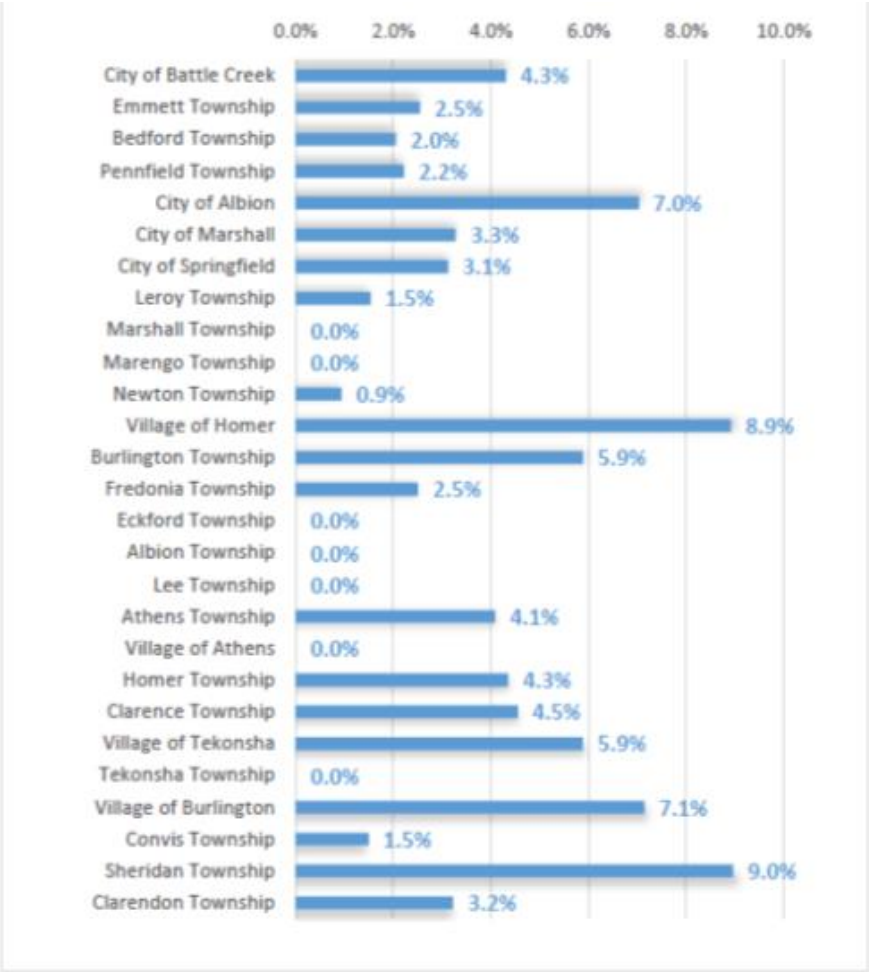
CCPHD is committed to following up on all confirmed EBLLs ≥ 5µg/dl. An elevated lead blood level is confirmed with a venous blood lead test with rules out a false positive from a capillary sample. A capillary sample is collected from a finger poke blood test which screens for lead exposure. A capillary screening test is confirmed with a blood drawn from a vein called a venous blood test. Timely monitoring of children with EBLLs ≥ 5µg/dl is essential for identifying and eliminating the lead exposure and successfully returning blood levels to below 5µg/dl**.**

The Lead Poisoning Prevention Task Force and its subcommittees will work to ensure the collaboration between healthcare providers and the Health Department on lead testing efforts, reporting, follow up and with the MDHHS for any remediation efforts performed on houses of lead poisoned children. Keeping all vested parties involved in the process helps to safeguard the successful outcome of the child.

Organizations Responsible: Calhoun County Public Health Department; Community Action Head Start, Area Medical Providers including Grace Health, Integrated Health Partners, and the Albion Health Care Alliance.

For more information on lead testing or concerns about elevated blood lead levels in children, contact the Calhoun County Public Health Department at 269-969-6363.

Figure 4: Percentage of blood tests resulting in elevated blood lead levels in Calhoun County jurisdictions, 2011-2015



Zip Code	Number of Children Tested for Lead	Number with BLL ≥ 5µg/dl	Percent with BLL ≥ 5 µg/dl	City
49011	21	0	0	Athens
49014	293	14	4.8	Battle Creek
49015	423	14	3.3	Battle Creek, Springfield
49016	1	0	0	Battle Creek (PO Box)
49017	293	13	4.4	Battle Creek
49018	N/A	N/A	N/A	Battle Creek
49021	12	0	0	Bellevue
49029	14	1	7.1	Burlington
49033	10	0	0	Ceresco
49037	471	13	2.8	Battle Creek, Springfield
49051	16	0	0	East Leroy
49068	123	4	3.3	Marshall
49076	5	0	0	Olivet
49092	8	0	0	Tekonsha
49094	1	0	0	Union City
49224	131	11	8.4	Albion
49245	43	5	11.6	Homer
49252	3	0	0	Litchfield
49284	8	0	0	Springport
Total	**1877**	**75**		

Figure 5: 2015 Children Tested for Lead Poisoning in Calhoun County/ Results reported by Zip Code

Source: Data collected by the Calhoun County Health Department. Please see Figures 7 & 8 in the back of this report for data from the State of Michigan for 2013 and 2014.

Program Focus: Lead Awareness and Public Education

One area of focus for the Calhoun County Lead Poisoning Prevention Task Force is to make the general public in Calhoun County more aware of lead risks.

Goal 1: Work with schools annually to provide and develop lead educational sessions for students and parents about how kids are exposed to lead, how to prevent lead poisoning, and what to do if exposed.

To reach this goal, the task force invited members of the Calhoun Intermediate School District and the School Wellness Program manager to join the team.

Five Year Outcome Measures: Five annual reports and annual reviews of educational materials. Other outcome measures include the number of postings on social media and the number of interactions with school around lead education per year.

Current: Currently, the task force has worked with the School Wellness Program (SWP) manager from Calhoun County Public Health Department (CCPHD) to incorporate lead poisoning prevention information into educational sessions, having information on lead available at school based health centers, and information available to parents. A list of public events attended in 2016 is included in the back of this report.

Lead awareness materials and the CDC tool kit were shared with the Calhoun County Public Health Department (CCPHD) School Wellness Program (SWP) staff. This includes the 15 school nurses that provide services in 35 Calhoun County schools as well as the Child and Adolescent Health Center staff located in Battle Creek Central High, Springfield Middle and Lakeview Middle Schools.

A lead awareness newsletter was distributed to all School Wellness Program staff for inclusion in their respective school newsletters as well as being sent to the Media for publishing in the Battle Creek Shopper and Marshall Advisor. SWP staff was encouraged to promote lead awareness through various activities; coloring pages, bulletin boards and announcements.

Future Items: The team plans to reach out annually to small daycare centers that are licensed by the state to provide the centers with information about lead poisoning in children or to determine what information the daycare centers need. Other activities to increase awareness about lead for families with school aged

children include working every fall with the Calhoun Intermediate School District to develop a newsletter about lead poisoning prevention to be sent to area schools during the month of October. The Lead Task Force will review and report on educational activities within schools annually; the task force will continue to work with schools to provide educational information regarding lead poisoning to increase the public's knowledge.

Organizations Responsible: Calhoun County Health Department – School Wellness, Health Education, and Clinic programs; City of Battle Creek Community Development; Community Action, and the Calhoun County Intermediate School District.

Goal 2: Develop a public education campaign to disseminate information related to child testing, lead hazards in homes, and poisoning prevention techniques.

To reach this goal, the Lead Task Force compiled a list of current resources available, created a display for health fairs, attended events within the county, and planned an event for lead poisoning prevention month in October.

Five Year Outcome Measures: Five annual reviews of educational materials and the informational display; determine events/health fairs to attend annually; plan an event around lead poisoning prevention month every October.

Current: A list of current available resources from state and national sources were compiled and distributed to the task force and is included in the references section in this report. It includes toolkits, brochures, and apps available from the Federal and state governments.

Behavioral problems associated with lead exposure in children and Attention Deficit/Hyperactivity Disorder (ADHD) can be very similar and there is a need for children to get tested for lead to determine the cause of behavior. The Lead Task Force created a handout for physicians and medical providers. These handouts were distributed at an information fair through Integrated Health Partners.

Select materials were brought to health fairs/community events and the resources were used to create a trifold display board for those events. Task force members have attended six community events in 2016 to distribute materials and increase the public's awareness of lead and lead poisoning.

The lead toolkits from the Centers for Disease Control and Prevention along with the toolkit from the Michigan Department of Health and Human Services were used to generate promotional activities for lead awareness month in October.

Lead Awareness Event – October 2016: A public event has been scheduled with an expert speaker to discuss topics relating to childhood lead poisoning, prevention and lead in homes. The event will be taking place on October 27, 2016 and will be advertised through various media outlets.

Grant funding will be requested annually for resources to rent the facility, pay the speaker's fee, event advertisements, and refreshments. The Task Force will evaluate each event to see if it is an effective outreach tool to annually organize a lead poisoning prevention awareness and outreach event.

Future Action Items: The utilization of 211/Gryphon Place, the community's source for information and referral to services with just one call, was determined to be a good source for the public to obtain information about lead and for referrals. Gaps were identified within the 211 database, as key local agencies/organizations were not listed under the topics of lead poisoning, lead testing, and lead abatement. Over the next year, the task force plans to work with 211 to close the gaps regarding information and referrals pertaining to lead, which will be reviewed and updated annually. The task force will also work with the Coordinating Council to get organizations/agencies added to the referral tree, which is distributed throughout the community.

A survey will be developed through survey monkey to measure the public's general knowledge and awareness of lead. BC Pulse Parent Groups may be able to complete the survey and provide input.

The Lead Poisoning Prevention Task Force and its public awareness action team will explore funding for a billboard campaign as well as print and radio advertisements. The Calhoun County Lead Task Force will do outreach to Kalamazoo County's Department of Health and Community Services to collaborate within the Region 8 Prosperity Region on public awareness and outreach activities.

Organizations Responsible: City of Battle Creek Community Development; Calhoun County Public Health Department – Clinic, Public Health Nurse, Children's Special Health Care Services and Health Education Programs; and the City of Albion.

Program Focus: Remediate Lead in Homes and the Environment

Goal 1: Provide local agencies with quarterly outcomes data related to child testing, lead hazards in homes, and intervention activities. Annually produce a report that evaluates strategies and communicates progress towards goals to the public.

Five Year Outcome Measures: 20 Quarterly Reports, 5 Annual Reports

Current Situation: Data related to testing is collected by the State and shared with the County Public Health Department, who follows up with families when a child has an elevated blood lead level (EBLL). This information is also aggregated by the State at the zip code level and made public. There is no other coordinated and consistent data sharing between State and local agencies.

Narrative: Quarterly data sharing ensures that adequate testing is occurring throughout the county and that elevated blood lead levels are being reported consistently. Lead task force participants use this data to evaluate the impacts of interventions, track referrals to lead remediation programs, and identify addresses with known lead risks, including properties with repeat cases of children with EBLLs. Annual reports will be used to identify hot spots, describe trends, and benchmark progress. The following chart shows the type and source of data that will be reviewed quarterly:

Data	Source	Responsible Party
Number of children tested in County	State	County Health Dept.
Number of EBLLs in County	State	County Health Dept.
Number of Completed Investigations	County Health Dept.	County Health Dept.
Number & Status of Investigations in Progress	County Health Dept.	County Health Dept.
Type and Number of Investigation Outcomes	County Health Dept.	County Health Dept.
Number of EBLLs at a Repeat Address (since 2011)	County Health Dept.	County Health Dept.
Number of Referrals to Remediation Programs	County Health Dept.	County Health Dept.
Number of Remediation Projects completed	State, Battle Creek	State, Battle Creek
Number of Remediation Projects in Progress	State, Battle Creek	State, Battle Creek

Annual reports will analyze the county-wide data listed above by municipal boundaries (cities, villages, and townships) and by census block groups. Housing characteristics and various demographic data will be considered. Maps will be produced to identify gaps in testing and establish correlations between testing outcomes and other factors. To the extent that data is available, analysis will include age, type and condition of housing, number of child ages 0-6, income, home ownership, race and ethnicity. A data inconsistency is that the State reports lead testing by zip codes which makes matching to Calhoun County census tracks and geographies more difficult for data analysis.

The Calhoun County Public Health Department will be responsible for obtaining the data on lead testing and GIS mapping will be done to identify areas that need more lead testing initiatives. As testing efforts increase and more children are identified as at-risk for lead poisoning, more efforts to identify and eliminate the lead hazards will need to be implemented. The City of Battle Creek will be responsible for the data analysis and GIS mapping portion of the annual report until the Lead Task Force determines a long term plan for how the work will be completed.

Organizations Responsible: City of Battle Creek Community Development, Calhoun County GIS, Calhoun County Public Health, State of Michigan Lead Safe Program, and City of Battle Creek Planning & Zoning.

Goal 2: Develop capacity countywide to conduct lead assessments at all properties suspected of being a source of exposure for a child with an EBLL, and to remediate sources of lead poisoning when lead hazards are identified.

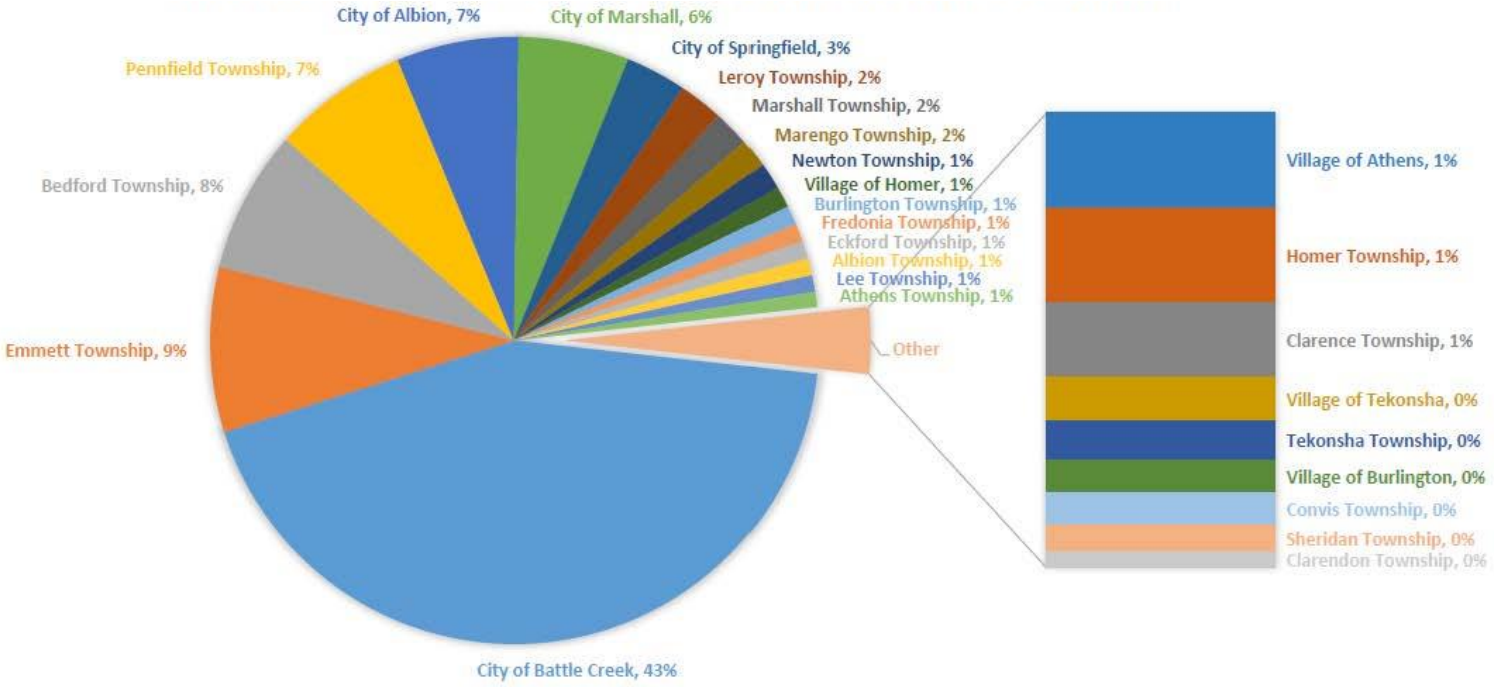
Five Year Outcome Measures: Successful application to HUD for county-wide lead abatement program, designation as a Healthy Home Section target county by the State of Michigan, publication of directory of lead resources, 300 Lead Assessments conducted ($180,000), 125 Lead Remediation Projects ($1,250,000)

Currently, there are few resources available to assess and remediate lead hazards in the home when a child tests positive for an EBLL. Families are referred to the State's Lead Safe Homes Program, but a lead risk assessment is only done if the application is submitted and accepted. There have been few of these projects completed in Calhoun County in the past five years, despite over having 300 children test positive for an EBLL. The Michigan Alliance for Lead Safe Homes, a statewide coalition of organizations concerned about lead poisoning report that over 50% of applications to the Healthy Homes program are denied because of incomplete applications.

Some local agencies have housing programs that can address lead, but they are not large enough to help with the size of the problem, typically aren't available to rehab rental properties, and are not offered county-wide.

The Lead Task Force will address the lack of sufficient resources for doing lead assessments and lead remediation work throughout the county by applying for local, State and Federal grant funds, and by increasing access to currently offered housing programs. The best opportunity for Federal funding will be through the U.S. Department of Housing and Urban Development's (HUD) Lead-Based Paint Hazard Control Grant Program. This program can be used to fund a comprehensive program to identify and control lead-based paint hazards, but does require matching funds, so local or State funds will need to be secured as well.

Figure 6: Where is the pre-1978 housing located in Calhoun County?



Another source of funds is the State's Lead Safe Home Program which can provide lead testing and lead hazard control services. Currently services are available if a family lives in a home built before 1978, are low-to-moderate income and has a child with a lead level of 5 µg/dl or above. If Calhoun County becomes a target county for the State's Lead Safe Home Program, then lead testing and remediation services are available with the requirement to have a child in the home under the age of six or pregnant female living in the home. Calhoun County was a target county in the past, but lost its eligibility due to a decrease in the number of children with EBLLs, part of the reason the number of EBLLs dropped in Calhoun County is because of under-testing, so an increase in testing to more appropriate levels will likely make the county eligible to become a target area again.

Will assessments be done by a local public agency or contracted to a private business? This is a key decision about how to increase the capacity to do lead risk assessments locally. Doing assessments with local agency staff involves securing XRF testing equipment (the analyzer determines if lead is present), laboratory and soil testing, staffing, training, and the maintenance of certifications. This can be costly, at least up front, but gives local agencies better control of the process and grows local expertise.

Outside of new State or Federal funds, scaling up local efforts to address lead hazards in homes will require an inventory of existing housing rehab and lead remediation resources. A number of local agencies have housing rehab programs that either expressly or inadvertently address lead hazards in homes or the environment. An argument could even be made for demolition programs as a lead abatement measure as many of the homes targeted for demolition have the age and condition profile that are most associated with lead risks. Each program will be evaluated for its potential to impact on task force goals.

Organizations Responsible: Calhoun County Public Health Department, City of Albion, Calhoun County Land Bank Authority, City of Battle Creek Community Development, State of Michigan Healthy Homes Program.

Goal 3: Increase the level of proactive lead hazard reduction activities by improving the capacity and willingness of housing stakeholders to address risks posed by lead sources in homes and the environment.

Five Year Outcome Measures: 200 people trained, 100 proactive remediation projects completed with an incentive.

Current Situation: Beyond the lack of awareness about sources of lead in homes and the environment, people often lack the capacity to address them. Local inspectors do not typically see deteriorated housing conditions as potential lead hazards. Homeowners lack training on lead safe work practices or fail to take into consideration hiring a lead certified contractor, even if they have been made aware of the importance of lead certification. Property owners, concerned about the potential for additional costs, often ignore or inadequately address potential lead hazards.

The Lead Task force will provide outreach, training, and incentives to targeted high-risk and/or high-opportunity populations. Because the potential for lead poisoning exists in most housing throughout the county, there is a need for an "all hands on deck" approach to address it. Everyone has a role to play in proactive lead hazard reduction, including property owners, contractors, and public officials. Examples include homeowners and landlords that need to know how to identify a lead hazard and how to deal with it, either by using lead safe practices or by hiring a contractor with the right qualifications. Another example is preparing "influencers", people like housing inspectors or nurses that already visit people's homes and are in a position to identify potential lead hazards with a visual inspection and provide people with information.

Outreach regarding lead hazard reduction will consider the yearly data analysis and the experiences of task force members to target the audiences where it will have the most impact. Hotspot areas in Calhoun County where the oldest housing, highest number of kids, and highest percentage of positive lead tests occur will be targeted first.

Training will build on programming that already exists. The State's Lead Certification Program and the EPA's Renovate Right Program (RRP) both have education content that could be adapted to provide lead awareness trainings. Trainings are envisioned as 2 to 3 hour education sessions that cover lead assessment and remediation more in depth. These would not result in a certification, and would not be appropriate for professionals like contractors, but they could help a homeowner understand what their options are for achieving lead remediation, lead safe work practices, and how to hire a qualified contractor. Likewise, "influencers" like public health nurses, housing inspectors, and other home improvement personnel can be trained in how to identify potential lead hazards and advise housing inhabitants about their significance.

Incentives such as gift cards or matching rehab funds need to be developed either using local resources or including them in grant applications as part of goal number two in this section. These incentives are intended to promote and encourage proactive lead remediation in the community. They will be in addition to resources directed towards families with children with an EBLL, and will likely be lower cost programs that require some leveraged resources (matching component, training requirement, etc.).

Organizations Responsible: City of Battle Creek Planning & Zoning, State of Michigan Healthy Homes Program, City of Albion Planning/Building/Code, local housing inspectors, and rehab coordinators at non-profit housing agencies.

Goal 4: Work with local government and the State of Michigan to strengthen the regulatory framework regarding lead hazards in homes and the environment.

Five Year Outcome Measure: Creation of a "Lead Tools Quick Guide", adoption of four "new tools" in jurisdictions affecting at least 75% of the county.

The current regulatory framework is detailed in the next section of this report. For the most part, there are few regulations or governmental practices currently in place being used by local officials to directly address lead hazards in homes.

A *Lead Tools Quick Guide* will be created that provides a compilation and brief description of state and local laws that directly or indirectly address lead hazards in homes and/or the environment. The guide will describe lead tools that are currently in place including best practices for how local governments can implement them to have the greatest impact. The guide will also have a section that includes lead tools we need. This could include changes to regulations or practice at either the state or local level that will enable the task force to better address lead hazards in homes and the environment.

Promotion of the guide between stakeholders within the county will help build consistency in how lead hazards are addressed regardless of where in the county they occur and improve the capacity of local jurisdictions to address them. After the guide has been created, local jurisdictions will be consulted each year to build consensus on implementing one of the new tools described in the guide throughout at least 75% of the county. Any portions of the guide that identify opportunities for change in State law or practice can be used in developing partnerships regionally to advocate at the State level.

Organizations Responsible: City of Albion, Village of Homer, Calhoun County Public Health Department and City of Battle Creek Community Development

Regulatory framework to reduce lead hazards

Sorting out all the regulatory laws, codes, procedures, rules and certifications that pertain to the elimination, reduction, control, discovery and treatment of lead contaminated properties can be confusing. A basic understanding is important because the regulatory rules are to protect children from the catastrophic and life debilitating effects of lead poisoning. The most important laws governing lead-based paint are summarized below.

Renovation, Repair and Painting Rule (RRP), written & enforced by the U.S. Environmental Protection Agency (EPA), creates a program that any contractor or building firm that performs renovation, repair or painting in houses, apartments, or child occupied facilities, built before 1978 must be trained to follow lead-safe work practices and be RRP certified. Those required to be trained and certified include rental property owners who do their own maintenance and anyone else who performs renovation activities (paint disturbing work) for compensation. There are additional regulations for firms that do lead abatement or the removal of lead hazards from buildings.

An example of a window with lead-based paint hazards.

Michigan Lead Abatement Act, based on EPA 40 CFR Part 745, is state enabling legislation delegating enforcement of lead rules to the State of Michigan under the authority of the EPA. These are lead hazard control activities, defined as a set of measures which are designed or performed specifically to reduce or eliminate lead-based paint hazards in target housing and child-occupied facilities. Lead hazard control activities include, but are not limited to, abatement, interim controls and clearance examinations. These regulations set forth the standards for lead-based paint activities including Lead-based paint inspections, risk assessments and Lead abatement including clearances.

Michigan Landlord Penalty Act, Public Act 434 creates the authority for prosecution of a land lord that does not correct the lead hazards in his property within 90 days of discovery of lead-based paint hazards when a child with EBLL resides in the property.

International Property Maintenance Code (IPMC) is a property maintenance code which establishes minimum standards for basic equipment, light, ventilation, heating, sanitation and fire safety for the maintenance of existing buildings. It is enforced locally, by code, zoning, or building inspectors. Many of the communities in Calhoun County have adopted the IPMC. To the extent that RRP required training and certification rules are fully implemented on contractors repairing violations discovered during an IPMC inspection, repairs would be done in a lead safe manner and the occupants would be protected from lead exposure.

Lead Disclosure Rule, the Residential Lead-Based Paint Hazard Reduction Act of 1992, also known as Title X, protects families from exposure to lead from paint, dust and soil. It requires disclosure of known information on lead-based paint and lead-based paint hazards before the sale or lease of most housing built before 1978. This law is enforced by HUD and the EPA, it requires home sellers and landlords to provide an EPA-approved booklet with all housing transactions and to disclose any known hazards. Sellers must provide homebuyers a ten-day period to conduct a paint inspection or risk assessment.

Housing Law of Michigan, Act 167 of 1917, amended 1992 is a Michigan law to promote the health, safety and welfare of the people by regulating the maintenance, alteration, health, safety, and improvement of dwellings; to define the classes of dwellings affected by the act, and to establish administrative requirements; to prescribe procedures for the maintenance, improvement, or demolition of certain commercial buildings; to establish remedies; to provide for enforcement; to provide for the demolition of certain dwellings; and to fix penalties for the violation of this act. Section 125.539(h) of the Act defines a dangerous building as “a building or structure used or intended to be used for dwelling purposes, including the adjoining grounds, because of dilapidation, decay, damage, faulty construction or arrangement, or for other reason, is unsanitary or unfit for human habitation, is in a condition that the health officer determines is likely to cause sickness or disease, or is likely to injure the health, safety, or general welfare of people living in the dwelling.” Identified lead-based paint hazards can make a building dangerous to all occupants, not just children.

Renovation, Repair and Painting (RRP) Program

The Lead Renovation, Repair and Painting (RRP) Rule establishes requirements for firms and individuals performing renovations, and affects contractors, property managers, and others who disturb painted surfaces. It applies to work in houses, apartments, and child-occupied facilities (such as schools and day-care centers) built before 1978. It includes pre-renovation education requirements as well as training, firm certification, and work practice requirements.

In general, anyone who is paid to perform work that disturbs paint in housing and child-occupied facilities built before 1978 must be certified. This includes all firms, even sole proprietorships.

Types of firms covered include residential rental property owners/managers, general contractors, and special trade contractors including painters, plumbers, carpenters and electricians.

Firms can't advertise or perform renovation activities covered by the regulation in homes or child occupied facilities built before 1978 without firm certification.

EPA's renovation, repair and painting rule requires each firm to be certified, and to have at least one certified renovator (a higher level of training and certification for supervisors of work). The remainder of employees involved in renovation activities to either also be certified renovators or be trained on the job by a certified renovator.

Activities covered by the Renovate, Repair and Painting Rule in general, any activity that disturbs paint in pre-1978 housing and child-occupied facilities is covered, including:

- Remodeling and repair/maintenance
- Electrical work
- Plumbing
- Painting preparation
- Carpentry
- Window replacement

Any activities that disturb more than 2 square feet of painted surface per room or more than 10% of a small component inside a room or more than 20 square feet on the outside of the home require the handing out of the Renovate Right pamphlet.

The following housing or activities are not covered by the rule:

- Housing built in 1978 or later
- Housing specifically for elderly or disabled persons, unless children under 6 reside or are expected to reside there
- "Zero-bedroom" dwellings (studio apartments, dormitories, etc.)
- Housing or components declared lead-free by a certified inspector or risk assessor.
- Minor repair and maintenance activities that disturb 6 square feet or less of paint per room inside, or 20 square feet or less on the exterior of a home or building. (Note: Window replacements, and

partial and full demolition activities, are always covered regardless of square footage. Activities designated as "prohibited" are prohibited regardless of square footage.)

EPA Renovator Training and Certification for work supervisors is part of the RRP regulation from the EPA, it requires that a "certified renovator" be assigned to each job, and that all involved individuals are trained in the use of lead-safe work practices.

To become a certified renovator, a person must complete a renovator training course accredited by EPA or an EPA authorized program which will teach them how to work lead safe.

All individuals working on a building site must be trained. They can either be certified renovators (meaning they successfully completed the accredited training) or they can be trained on the job by a certified renovator (such training must be documented and the documents must be retained).

Ongoing training is required for certified renovators. Renovators are certified upon completion of an EPA accredited renovator training course. Course completion certificate serves as their certification credential.

For initial certification, renovators must take an 8-hour training that includes 2 hours of hands-on learning. To remain certified, a renovator must complete a refresher training course before their current certification expires. The expiration date is based on when the course was taken.

For recertification, renovators must take a 4-hour refresher training that includes hands-on learning every other time they take the refresher course. Renovators who take the online refresher training will be certified for three years; renovators who take the hands-on training in the refresher course will be certified for five years. If certification expires, the 8-hour course must be taken again to regain certification.

Certified renovators are responsible for ensuring overall compliance with the Lead-Based Paint Renovation, Repair, and Painting Program's requirements for lead-safe work practices at renovations they are assigned.

A certified renovator, must:

- Provide on-the-job training to other workers (who have not taken the certified renovator training course) on the lead safe work practices to be used in performing their assigned tasks.
- Be physically present at the work site when warning signs are posted, while the work-area containment is being established, and while the work-area cleaning is performed.
- Direct work being performed by other individuals to ensure that lead safe work practices are being followed, including maintaining the integrity of the containment barriers and ensuring that dust or debris does not spread beyond the work area.
- When requested by the party contracting for renovation services, must use an EPA-recognized test kit or must collect paint chip samples, submit them to an EPA-recognized laboratory, and obtain test results from the laboratory to determine whether components affected by the renovation contain lead-based paint. Note: you must assume lead-based paint is present for

housing and buildings covered by this rule, unless testing is done to determine the components affected are lead-free.

- Be available, either on-site or by telephone, at all times renovations are being conducted.
- Perform project cleaning verification.
- Have with them at the work site copies of their initial course completion certificate and their most recent refresher course completion certificate.
- Prepare required records.

Lead Abatement - Michigan Lead Abatement Act (MCL 333.5451-5477)

What is Lead-Based Paint Abatement? Under the Michigan Lead Abatement Act (MCL 333.5451-5477), lead abatement means an activity designed to permanently remove lead-based paint hazards. Abatement means:

- A project where a company is hired to remove lead-based paint hazards from a house, apartment, day care center, preschool, kindergarten, etc., and a permanent method is used.
- A project where lead paint hazards are permanently removed by a certified lead abatement company
- Lead paint hazards are abated by enclosure (barrier), encapsulation (special paint-like product), replacement of lead painted windows, doors, etc., removal or covering of lead-contaminated soil, and any set up, cleanup, and disposal at the lead abatement worksite.

What is Not Lead Paint Abatement? The legal definition of abatement does not include any of the following work:

- Renovation, remodeling, landscaping, or other work, if the work is not done to permanently remove lead paint hazards. It is not lead abatement if the work is done to repair, restore, or remodel a house or apartment even if the work may reduce or remove a lead paint hazard. Contractors performing this type of work on homes built before 1978 must follow regulation of the Environmental Protection Agency's (EPA) Renovation, Repair and Painting (RRP) Rule and must be certified by the EPA, and use lead safe work practices.
- Work that may temporarily, but not permanently, reduce a lead paint hazard.

The laws for non-abatement work are different from abatement work, but non-abatement work must also be done with lead-safe work practices that reduce dust. Wetting painted surfaces before sanding or scraping the paint, and using special vacuums that have a High Efficiency Particulate Air (HEPA) filter, helps reduce lead dust hazards.

Lead Interim Controls

Interim controls is a set of measures designed to temporarily reduce human exposure, or likely exposure, to lead-based paint hazards including, but not limited to, specialized cleaning, repairs, maintenance, painting, temporary containment, ongoing monitoring of lead-based paint hazards or potential hazards, and the establishment and operation of management and resident education programs.

Michigan Landlord Penalty Act, Michigan Public Act 434

Michigan Public Act 434 permits criminal and civil penalties for landlords who knowingly rent units with lead-based paint hazards to families with children who have elevated blood-lead levels. Penalties can include jail time and fines. Michigan housing law permits the local public health department to inspect rental units when there are suspected health hazards, including when a resident child is found to be lead poisoned. A landlord who has received notice of a governmental inspection and its findings of lead-based paint hazards should be concerned and immediately responsive to orders for repairs.

Lead inspection means a surface-by-surface investigation to determine the presence of lead-based paint in target housing or child-occupied facility, and the provision of a report explaining the results of the investigation.

Lead risk assessment means both of the following;

- An on-site investigation in target housing or a child-occupied facility to determine the existence, nature, severity, and location of a lead-based paint hazard.
- The provision of a report by the person conducting the risk assessment explaining the results of the investigation and options for reducing the lead-based paint hazard.

A copy of this law is included on page 37.

International Property Maintenance Code

The International Property Maintenance Code (IPMC) is a maintenance document intended to establish minimum maintenance standards for basic equipment, light, ventilation, heating, sanitation and fire safety of existing buildings. With the IPMC, responsibility is fixed among owners, operators and occupants for code compliance. It is the standard used by code officials and building inspectors for minimum housing code for enforcement of community standards. The IPMC provides for the regulation and safe use of existing structures in the interest off the social and economic welfare of the community.

It includes a variety of requirements for the exterior property areas as well as the interior and exterior elements of the structure. The code provides requirements that are intended to maintain a minimum level of safety and sanitation for both the general public and the occupants of a structure, and to maintain a building's structural and weather-resistance performance.

Specific parts of the IPMC apply to lead paint risks:

SECTION 304 EXTERIOR STRUCTUE: 304.2 Protective treatment. Exterior wood surfaces shall be protected from the elements and decay by painting or other protective covering or treatment. Peeling, flaking and chipped paint shall be eliminated and surfaces repainted.

SECTION 305 INTERIOR STRUCTURE: 305.3 Interior surfaces. Interior surfaces, including windows and doors, shall be maintained in good, clean and sanitary condition. Peeling, chipping, flaking or abraded paint shall be repaired, removed or covered.

The IPMC requires that peeling, flaking and chipped paint shall be eliminated and surfaces repainted.

Other communities are more explicit in their housing code about lead-based paint hazards. For example, the City of Grand Rapids Housing Code includes a:

- Prohibition on peeling and chipping paint.
- Prohibition on paint chips and residue lying on the ground or horizontal surfaces (this includes window troughs).
- Prohibition on bare soil within 30 inches of any structure (enforced seasonally).
- Requirement that lead-safe work practices are used when working on pre-1978 housing.

Sellers and Landlords Lead Disclosure

Before ratification of a contract for housing sale or lease built before 1978:

- Sellers and landlords must disclose known lead-based paint and lead-based paint hazards and provide available reports to buyers or renters.
- Sellers and land lords must give buyers and renters the pamphlet, developed by the EPA, HUD, and the Consumer Product Safety Commission (CPSC), titled Protect Your Family from Lead in Your Home.
- Home buyers will get a 10-day period to conduct a lead-based paint inspection or risk assessment at their own expense. The rule gives the two parties flexibility to negotiate key terms of the evaluation.
- Sales contracts and leasing agreements must include certain notification and disclosure language.
- Sellers, lessors, and real estate agents share responsibility for ensuring compliance.

Michigan Landlord Penalty Law - Act No. 434

Public Acts of 2004
Approved by the Governor, December 21, 2004
Filed with the Secretary of State, December 21, 2004
EFFECTIVE DATE: January 2, 2005

STATE OF MICHIGAN
92ND LEGISLATURE, REGULAR SESSION OF 2004
Introduced by Senators Clarke, Cherry, Jacobs, Clark-Coleman and Goschka

AN ACT to amend 1978 PA 368, entitled "An act to protect and promote the public health; to codify, revise, consolidate, classify, and add to the laws relating to public health; to provide for the prevention and control of diseases and disabilities; to provide for the classification, administration, regulation, financing, and maintenance of personal, environmental, and other health services and activities; to create or continue, and prescribe the powers and duties of, departments, boards, commissions, councils, committees, task forces, and other agencies; to prescribe the powers and duties of governmental entities and officials; to regulate occupations, facilities, and agencies affecting the public health; to regulate health maintenance organizations and certain third party administrators and insurers; to provide for the imposition of a regulatory fee; to provide for the levy of taxes against certain health facilities or agencies; to promote the efficient and economical delivery of health care services, to provide for the appropriate utilization of health care facilities and services, and to provide for the closure of hospitals or consolidation of hospitals or services; to provide for the collection and use of data and information; to provide for the transfer of property; to provide certain immunity from liability; to regulate and prohibit the sale and offering for sale of drug paraphernalia under certain circumstances; to provide for the implementation of federal law; to provide for penalties and remedies; to provide for sanctions for violations of this act and local ordinances; to provide for an appropriation and supplements; to repeal certain acts and parts of acts; to repeal certain parts of this act; and to repeal certain parts of this act on specific dates," (MCL 333.1101 to 333.25211) by adding section 5475a.

The People of the State of Michigan enact:

Sec. 5475a. (1) A property manager, housing commission, or owner of a rental unit who rents or continues to rent a residential housing unit to a family with a minor child who is found to have 10 micrograms or more of lead per deciliter of venous blood is subject to the penalties provided under subsection (3) if all of the following apply:

(a) The property manager, housing commission, or owner of the rental unit has prior actual knowledge that the rental unit contains a lead-based paint hazard.

(b) At least ninety days have passed since the property manager, housing commission, or owner of the rental unit had actual knowledge of the lead paint hazard.

(c) The property manager, housing commission, or owner of the rental unit has not acted in good faith to reduce the lead paint hazards through interim controls or abatement or a combination of interim controls and abatement.

(2) A property manager, housing commission, or owner of the rental unit is presumed to have prior actual knowledge

that a unit contains a lead-based paint hazard only if 1 of the following applies:

(a) The property manager, housing commission, or owner of the rental unit signed an acknowledgment of the hazard as a result of a risk assessment under this chapter at the time the risk assessment was made.

(b) The property manager, housing commission, or owner of the rental unit was served as a result of a risk assessment under this chapter with notice of the hazard by first-class mail and a return receipt of that service was obtained.

(3) A property manager, housing commission, or owner of the rental unit convicted of violating this section is guilty of a crime as follows:

(a) Except as provided in subdivision (b), the property manager, housing commission, or owner of the rental unit is guilty of a misdemeanor punishable by imprisonment for not more than 93 days or a fine of not more than $5,000.00, or both.

(b) If the property manager, housing commission, or owner of the rental unit was previously convicted of violating this section or a local ordinance substantially corresponding to this section, the property manager, housing commission, or owner of the rental unit is guilty of a misdemeanor punishable by imprisonment for not more than 93 days or a fine of not more than $10,000.00, or both.

(4) The property manager, housing commission, or owner of the rental unit may assert 1 or more of the following as an affirmative defense in a prosecution of violating this section, and has the burden of proof on that defense by a preponderance of the evidence:

(a) That the property manager, housing commission, or owner of the rental unit requested or contracted with a person having responsibility for maintaining the rental unit to reduce the hazard through interim controls or abatement and reasonably expected that the hazard would be reduced.

(b) That the tenant would not allow entry into or upon premises where the hazard is located or otherwise interfered with correcting the hazard.

(5) As used in this section:

(a) “Property manager” means a person who engages in property management as defined in section 2501 of the occupational code, 1980 PA 299, MCL 339.2501.

(b) “Lead-based paint hazard” means that term as defined in section 5458 of the public health code, 1978 PA 368, MCL 333.5458.

Enacting section 1. This amendatory act takes effect January 2, 2005.

Figure 7: 2013 – Children under Age Six Tested for Lead Poisoning: Blood Lead Level Results by ZIP Code

Zip Code	Children less than Six Years of Age	Number of Children Tested	% Tested	*Number with BLL ≥ 5µg/dl (Venous & Capillary)	*Percent with BLL ≥ 5 µg/dl (Venous & Capillary)	City
49011	142	25	17.6	1	4.0	Athens
49014	1,652	297	18.0	16	5.4	Battle Creek
49015	2,230	475	21.3	8	1.7	Battle Creek, Springfield
49016	N/A	N/A	N/A	N/A	N/A	Battle Creek (PO Box)
49017	1,430	473	33.1	18	3.8	Battle Creek
49018	N/A	N/A	N/A	N/A	N/A	Battle Creek
49020	N/A	N/A	N/A	N/A	N/A	Bedford
49029	104	20	19.2	0	0.0	Burlington
49033	82	8	9.8	0	0.0	Ceresco
49037	2,157	226	10.5	5	2.2	Battle Creek, Springfield
49051	160	23	14.4	0	0.0	East Leroy
49068	972	128	13.2	3	2.3	Marshall
49076	278	36	12.9	0	0.0	Olivet
49092	145	20	13.8	1	5.0	Tekonsha
49094	295	56	19.0	3	5.4	Union City
49224	1,065	187	17.6	14	7.5	Albion
49245	393	64	16.3	4	6.3	Homer
Calhoun County	**10,445**	**1,970**	**18.9**	**68**	**3.5**	
Michigan	**710,976**	**143,123**	**20.1**	**5,053**	**3.5**	

In 2013, of the 18.9% of children under the age of 6 years tested for lead poisoning, 3.5% were found to have an blood lead level (BLL) great than or equal to 5µg/dL.

*Children with Elevated Blood Lead Levels (EBLL).

Sources: US Census Bureau, Census 2010 (ZIP Populations) and MDHHS Data Warehouse (children tested and elevated levels). From the 2013 & 2014 Data Report on Childhood Lead Testing and Elevated Levels: Michigan (MDHHS).

Figure 8: 2014 – Children under Age Six Tested for Lead Poisoning: Blood Lead Level Results by ZIP Code

Zip Code	Children less than Six Years of Age	Number of Children Tested	% Tested	*Number with BLL ≥ 5µg/dl (Venous & Capillary)	*Percent with BLL ≥ 5 µg/dl (Venous & Capillary)	City
49011	142	31	21.8	< 6	---	Athens
49014	1,652	419	25.4	22	5.3	Battle Creek
49015	2,230	519	23.3	12	2.3	Battle Creek, Springfield
49016	N/A	N/A	N/A	N/A	N/A	Battle Creek (PO Box)
49017	1,430	353	24.7	22	6.2	Battle Creek
49018	N/A	N/A	N/A	N/A	N/A	Battle Creek
49020	N/A	N/A	N/A	N/A	N/A	Bedford
49029	104	17	16.3	< 6	---	Burlington
49033	82	9	11.0	< 6	---	Ceresco
49037	2,157	612	28.4	19	3.1	Battle Creek, Springfield
49051	160	19	11.9	< 6	---	East Leroy
49068	972	157	16.2	8	5.1	Marshall
49076	278	22	7.9	< 6	---	Olivet
49092	145	16	11.0	< 6	---	Tekonsha
49094	295	57	19.3	< 6	---	Union City
49224	1,065	153	14.4	14	9.2	Albion
49245	393	58	14.8	< 6	---	Homer
Calhoun County	**10,149**	**2,390**	**23.5**	**100**	**4.2**	
Michigan	**720,994**	**147,841**	**20.5**	**5,702**	**3.9**	

The number of children in Calhoun County under the age of six years increased in 2014 from 2013. Of the 23.5% of children under the age of 6 years tested for lead poisoning in 2014, 4.2% were found to have a blood lead level (BLL) greater than or equal to 5µg/dL.

* Children with Elevated Blood Lead Levels (EBLL).

Sources: US Census Bureau, Census 2010 (ZIP Populations) and MDHHS Data Warehouse (children tested and elevated levels). Data from the 2013 & 2014 Data Report on Childhood Lead Testing and Elevated Levels: Michigan (MDHHS).

Acronyms

CDC:	U.S. Center for Disease Control
CCPHD:	Calhoun County Public Health Department
CLPPP:	State of Michigan Childhood lead Poisoning Prevention Program
EBLL:	Elevated Blood Lead Levels
EH:	Environmental Health
EPA:	U.S. Environmental Protection Agency
GIS:	Geographic Information Systems
HEPA:	High-Efficiency Particulate Air
MDEQ:	Michigan Department of Environmental Health
MDHHS:	Michigan Department of Health and Human Services
HUD:	U.S. Department of Housing and Urban Development
IAP:	Immunization Action Plan
Pb:	Lead symbol
ppb:	parts per billion
QHPs:	Qualified Health Plans
RN:	Registered Nurse
RRP:	Renovation, Repair and Painting Rule
U.S.C.:	United States Code
WIC:	Women, Infant and Children
XRF:	X-Ray Fluorescent
µg/dl:	Abbreviation for microgram/deciliter

References

[1] Bump, Philip. (March 6, 2016). Lead contamination exists throughout the U.S. – but Flint has a special history. The Washington Post. Retrieved from https://www.washingtonpost.com/news/the-fix/wp/2016/01/19/lead-contamination-exists-throughout-the-u-s-but-flint-has-a-special-history/

[2] Lewis, Jack. (May 1985). Lead Poisoning: A Historical Perspective. Retrieved from https://www.epa.gov/aboutepa/lead-poisoning-historical-perspective

[3] Kalamazoo County Health & Community Services Department. (April 2007). A Plan of Action for Lead Poisoning Prevention in Kalamazoo County. (Lead Hazard Remediation Program & Childhood Lead Poisoning Prevention Program). Kalamazoo, Michigan.

[4] Uptodate. (May 2016). Childhood lead poisoning: Exposure and prevention. Retrieved from http://www.uptodate.com/contents/childhood-lead-poisoning-exposure-and-prevention?source=search_result&search=Childhood+lead+

[5] Uptodate. (July 2016). Childhood lead poisoning: Clinical manifestations and diagnosis. Retrieved from http://www.uptodate.com/contents/childhood-lead-poisoning-clinical-manifestations-and-diagnosis?source=search_result&search=Childhood+lead+poisoning&selectedTitle=1%7E150

[6] Lead Poisoning and Health. World Health Organization website. http://www.who.int/mediacentre/factsheets/fs379/en/. Accessed October 25, 2016.

[7] Attention-Deficit/Hyperactivity Disorder (ADHD). Centers for Disease Control and Prevention website. http://www.cdc.gov/ncbddd/adhd/facts.html. Updated October 4, 2016. Accessed October 25, 2016.

[8] Lead-Good to Grow. Calhoun County Public Health Department website. https://www.calhouncountymi.gov/government/health_department/leadgood_to_grow/ Accessed October 3, 2016.

Lead Awareness Materials/Resources

Infographics

Lead Infographic. Centers for Disease Control and Prevention website http://www.cdc.gov/nceh/lead/infographic.htm . Updated December 18, 2015. Accessed September 23, 2016.

Fact Sheets & Literature

Lead Poisoning. Michigan Department of Health and Human Services website http://www.michigan.gov/mdhhs/0,5885,7-339-71550_2955_2983_9658-19488--,00.html. Accessed September 23, 2016.

Prevention Tips. Centers for Disease Control and Prevention website http://www.cdc.gov/nceh/lead/tips.htm. Updated June 19, 2014. Accessed September 23, 2016.

Lead. Centers for Disease Control and Prevention website http://www.cdc.gov/nceh/lead/. Updated September 7, 2016. Accessed September 23, 2016.

Coloring Sheets and Other Activities

Lead Poisoning. Michigan Department of Health and Human Services website http://www.michigan.gov/mdhhs/0,5885,7-339-71550_2955_2983_9658-19488--,00.html. Accessed September 23, 2016.

Brochures, Widgets, & Posters

Lead. US Environmental Protection Agency website https://www.epa.gov/lead/documents-and-outreach-materials. Updated November 5, 2015. Accessed September 23, 2016.

About Lead-Based Paint. US Department of Housing and Urban Development website http://portal.hud.gov/hudportal/HUD?src=/program_offices/healthy_homes/healthyhomes/lead. Accessed September 23, 2016.

National Lead Poisoning Prevention Week Toolkit (CDC)

Lead. Centers for Disease Control and Prevention website http://www.cdc.gov/nceh/lead/nlppw.htm#web_banner. Updated October 20, 2015. Accessed September 23, 2016.

Lead Poisoning Prevention Toolkit (MDHHS)

Michigan Lead Poisoning Prevention Program. Michigan Department of Health and Human Services website http://www.michigan.gov/documents/lead/2015_Leadweek__Full_ToolkitforPartners_503259_7.pdf. Accessed September 23, 2016.

Apps

Healthy Homes Basics, US Department of Housing and Urban Development. Google Play website https://play.google.com/store/apps/details?id=gov.hud.healthyhomesbasics. Accessed September 23, 2016.

Guide to Cleaning Up Lead Paint Chips and Dust

Lead Poisoning. Michigan Department of Health and Human Services website http://www.michigan.gov/documents/Lead_Cleaning_Guide_84606_7.pdf. Accessed September 23, 2016.

Lead. US Environment Protection Agency website https://www.epa.gov/sites/production/files/documents/parent_checklist3.pdf. Updated November 5, 2016. Accessed September 23, 2016.

Videos

Lead Free Kids, US Department of Housing and Urban Development . Youtube website https://www.youtube.com/watch?v=QZdv_7G7qpo&list=PL32C6284950E88275&index=68. Uploaded May 7, 2010. Accessed September 23, 2016.

Public Awareness Events Attended 2016

July 2016

- July 24 – City Info. Fair (Battle Creek)
- July 28 – Miranda Park Party (12pm – 2pm)

August 2016

- August 14 - August 20 – Calhoun County Fair
- August 27 – Back 2 School Event at Lakeview Square Mall and Neighborhood Block Party

September 2016

- September 17 – Festival of the Forks (Albion)
- September 24 – Healthy Baby Day (Albion)

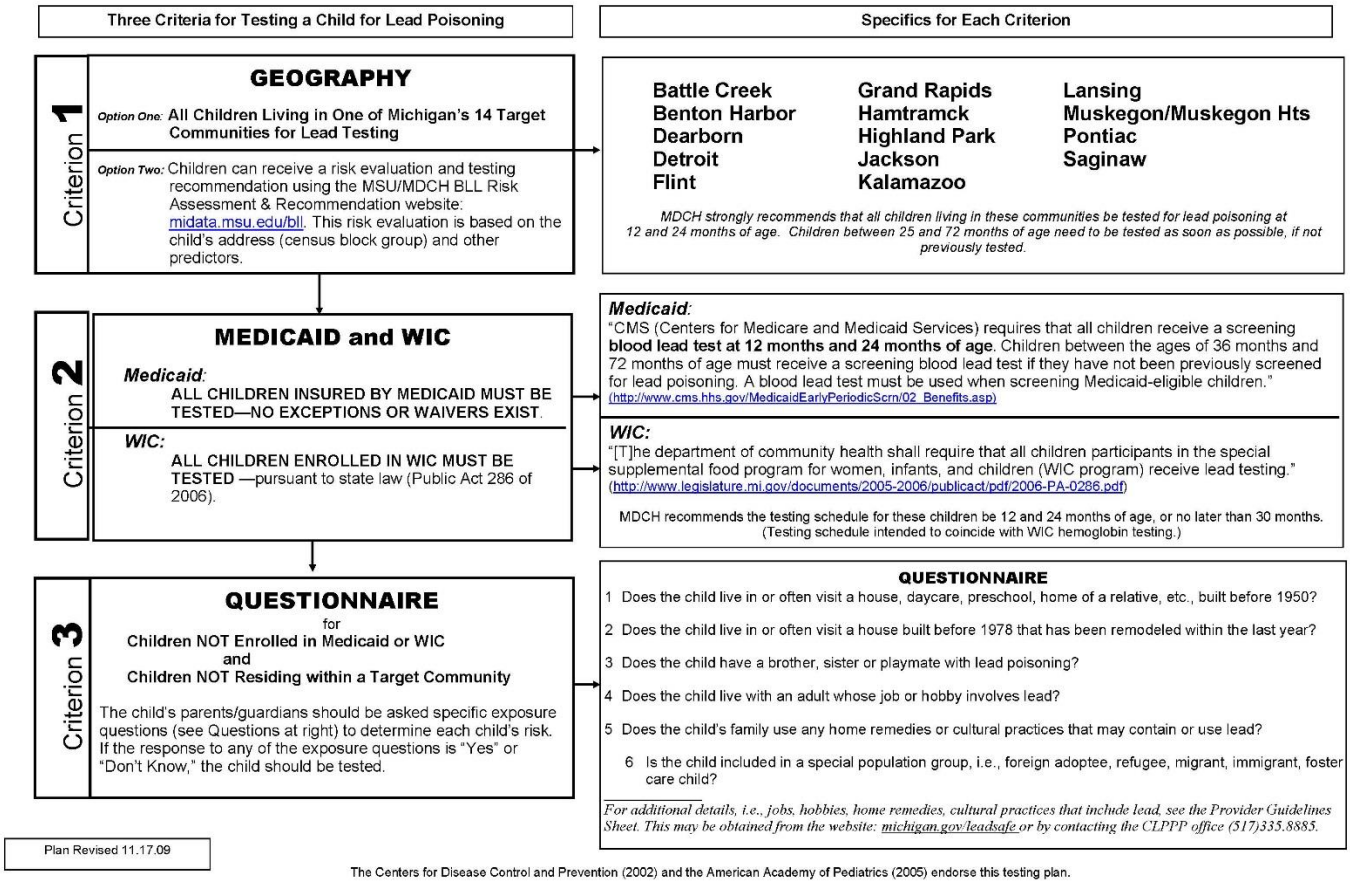
October 2016

- October 12 – Fall Health Fair at Parks & Rec. Full Blast (11am-2pm)
- October 23 thru 30 – Lead Poisoning Prevention Week
- October 4 – Homer Flu and Lead Testing Clinic

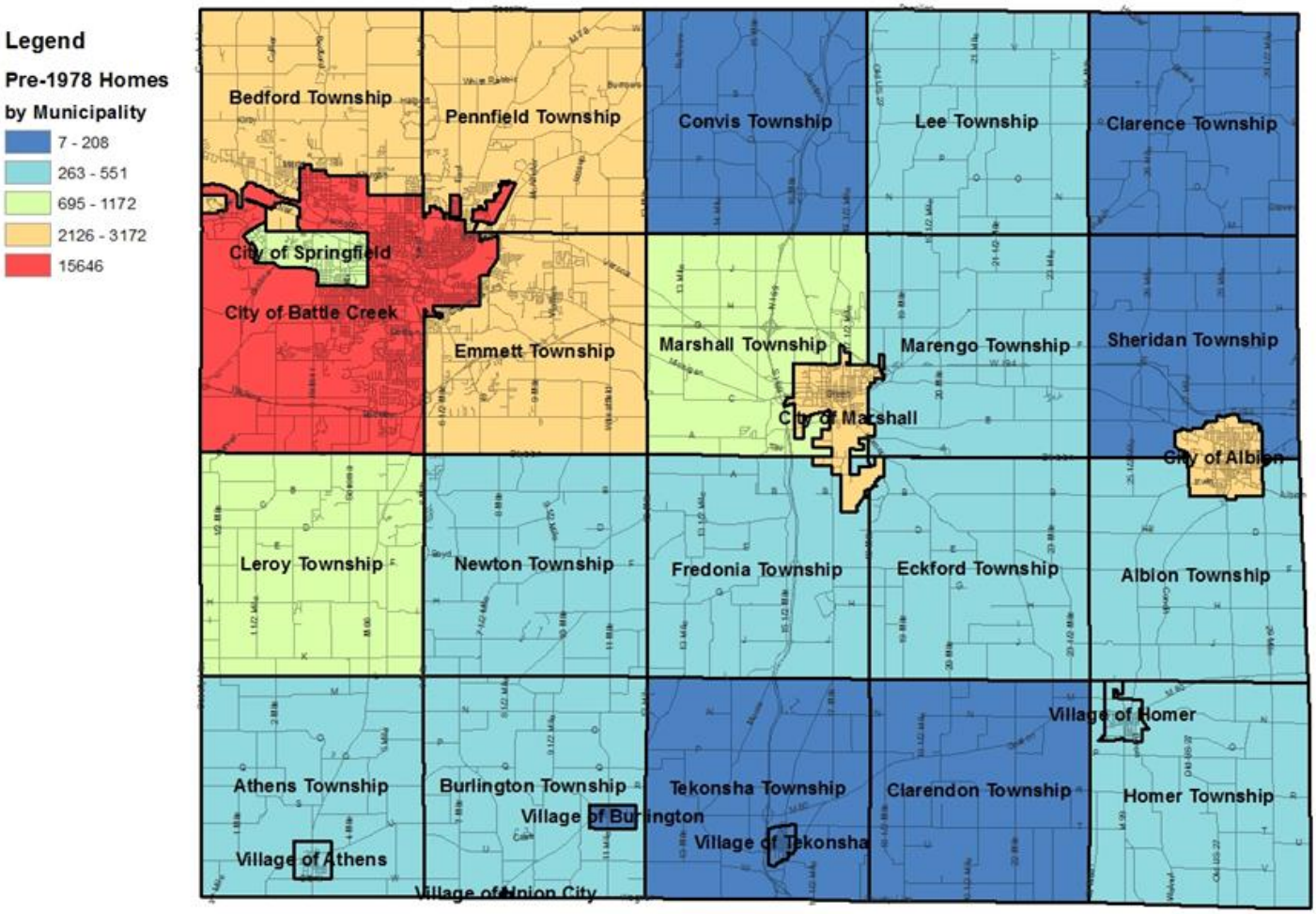
Figure 9: Statewide Lead Testing Plan

Michigan Department of Community Health / Childhood Lead Poisoning Prevention Program

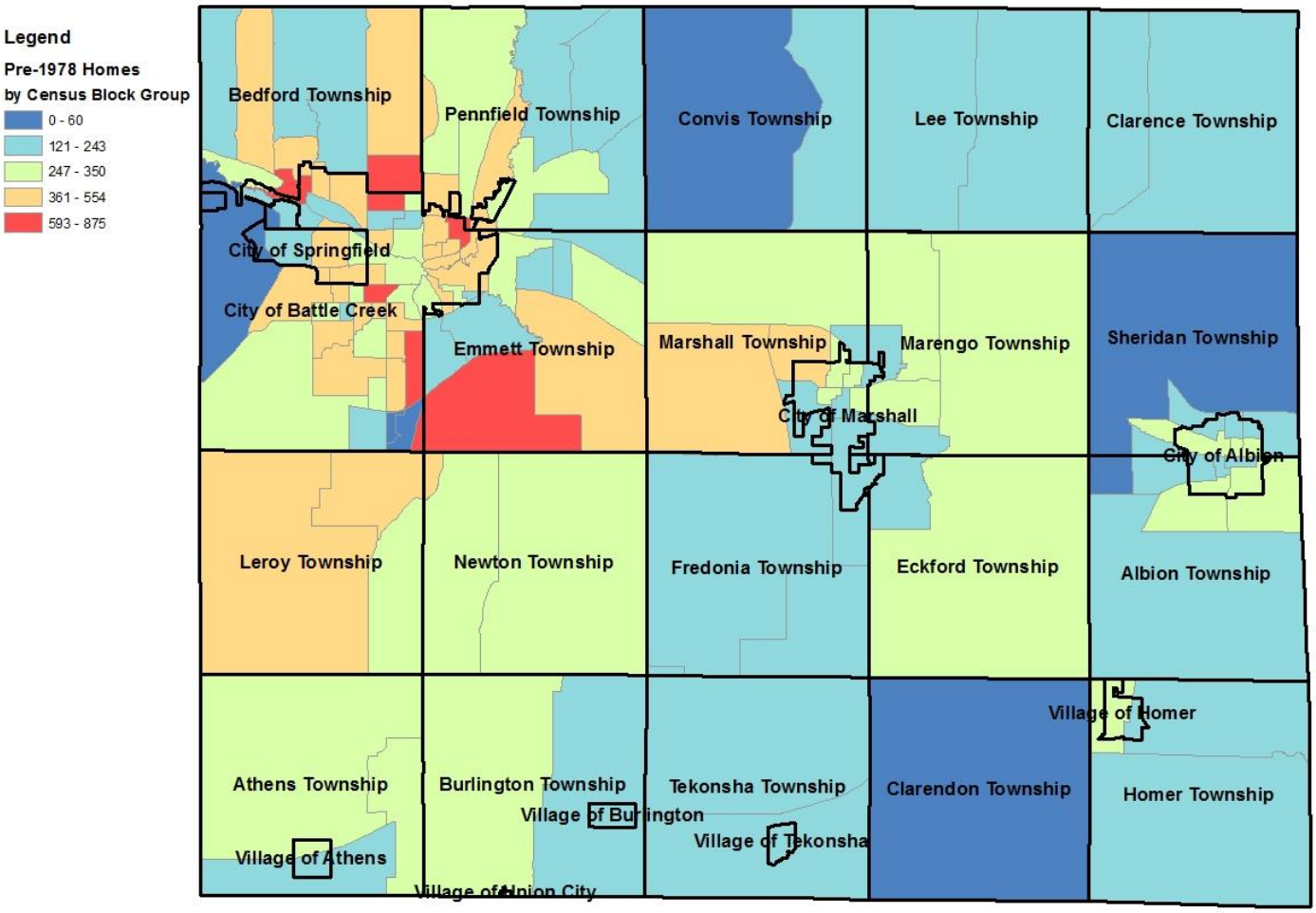
Statewide Lead Testing/Lead Screening Plan



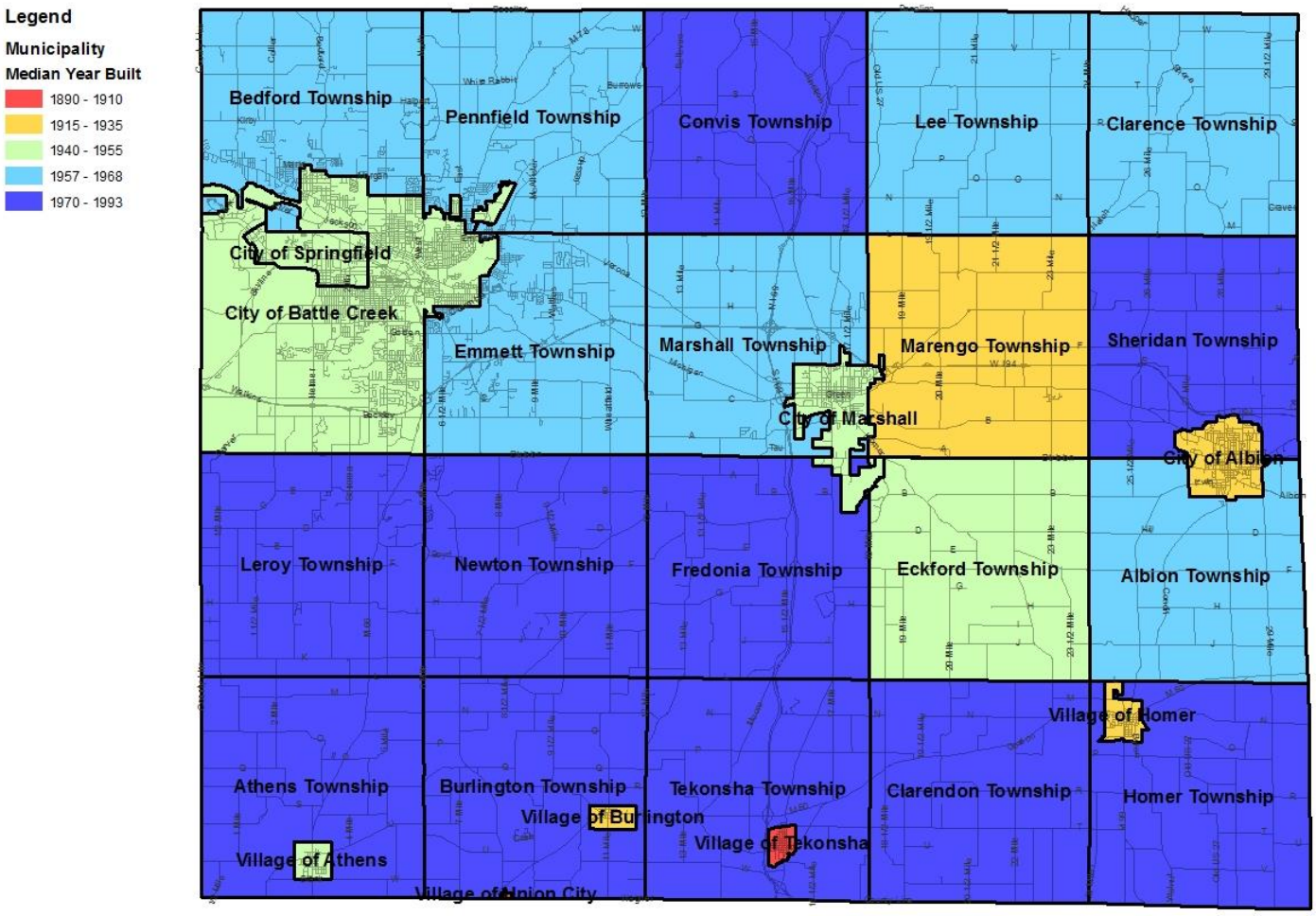
Map 1 - Calhoun County: Number of Homes Built before 1978 in Calhoun County by Municipality



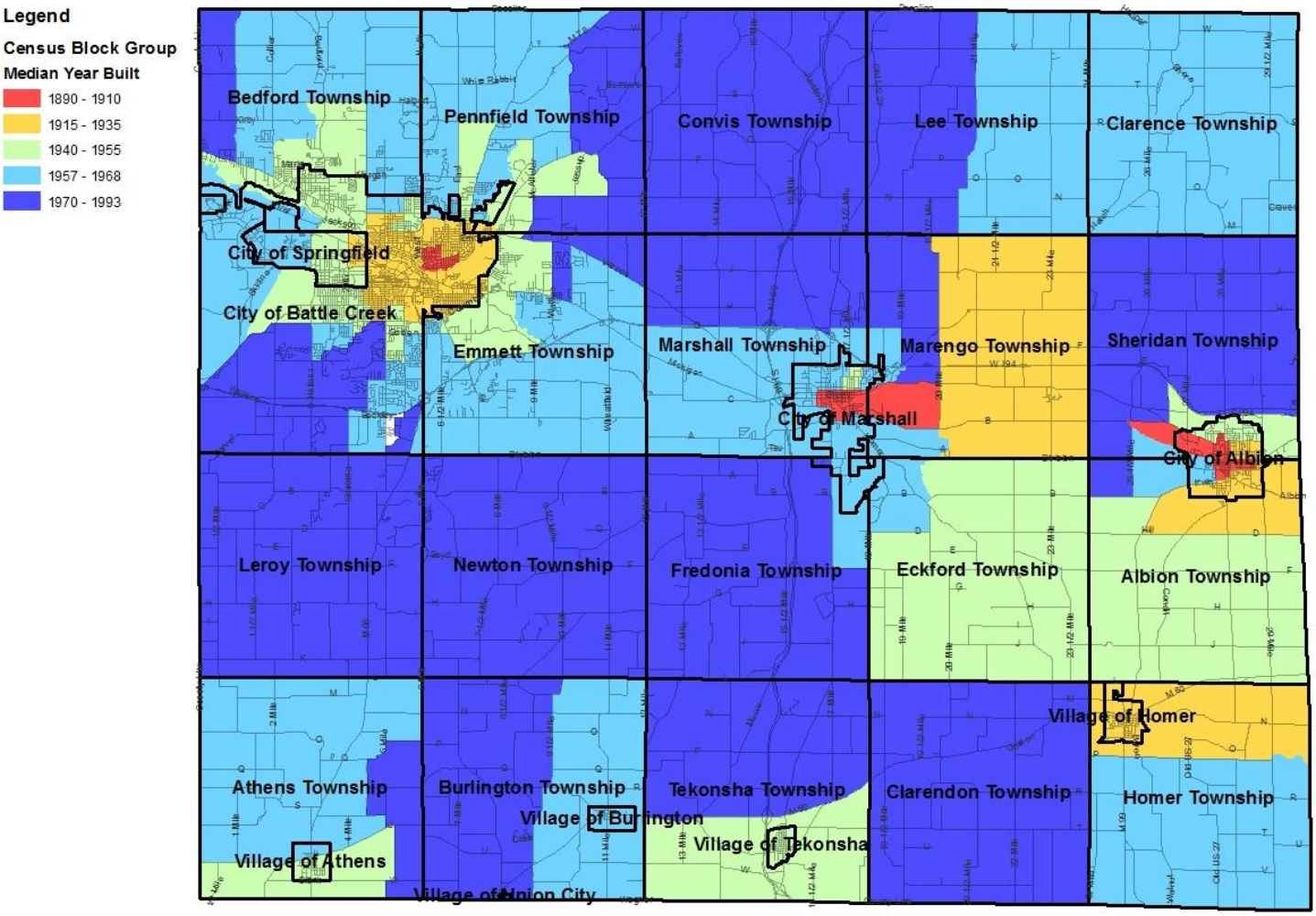
Map 2 - Calhoun County: Number of Homes Built Before 1978 by Census Block



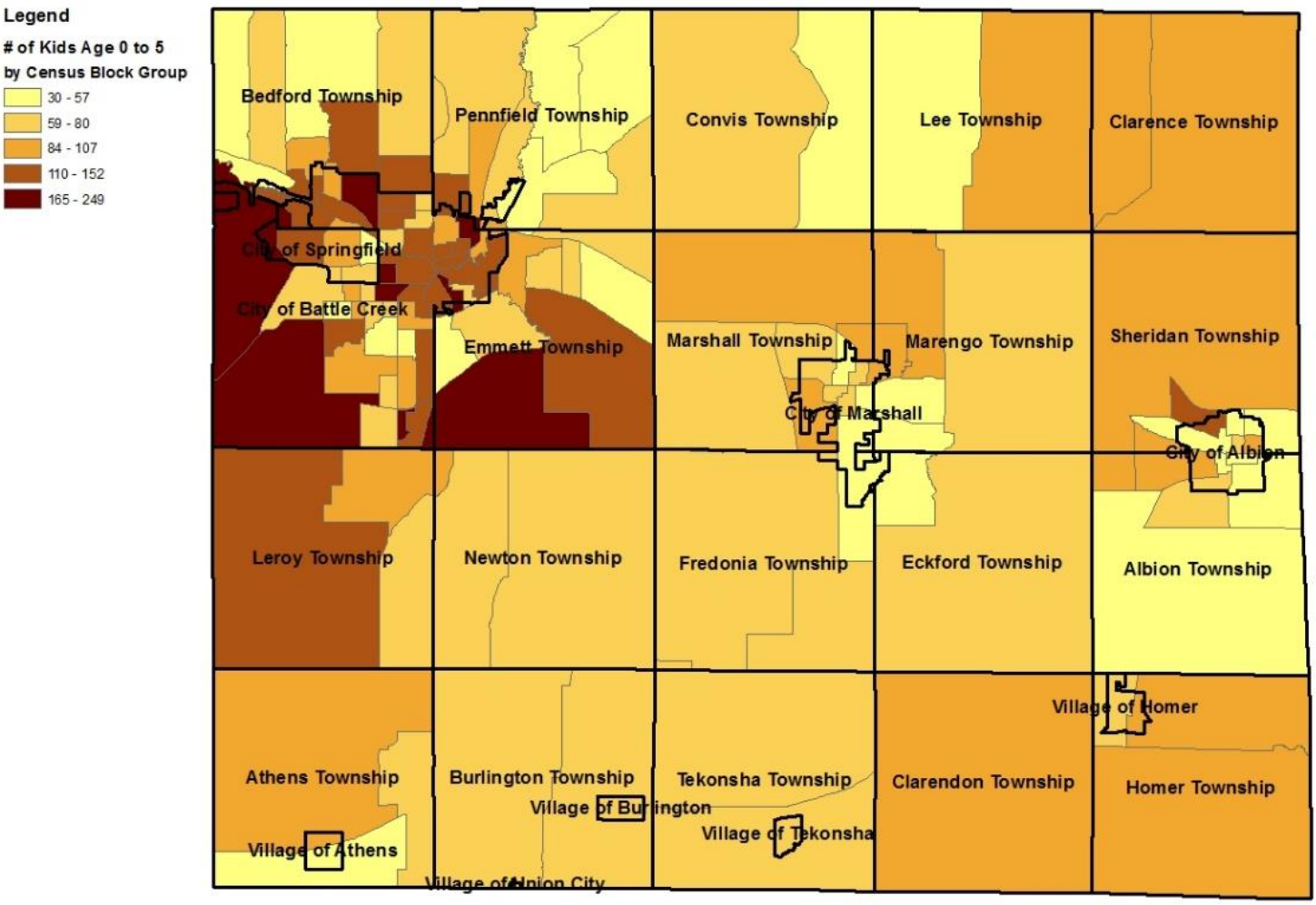
Map 3 - Calhoun County: Median Age of Housing by Municipality



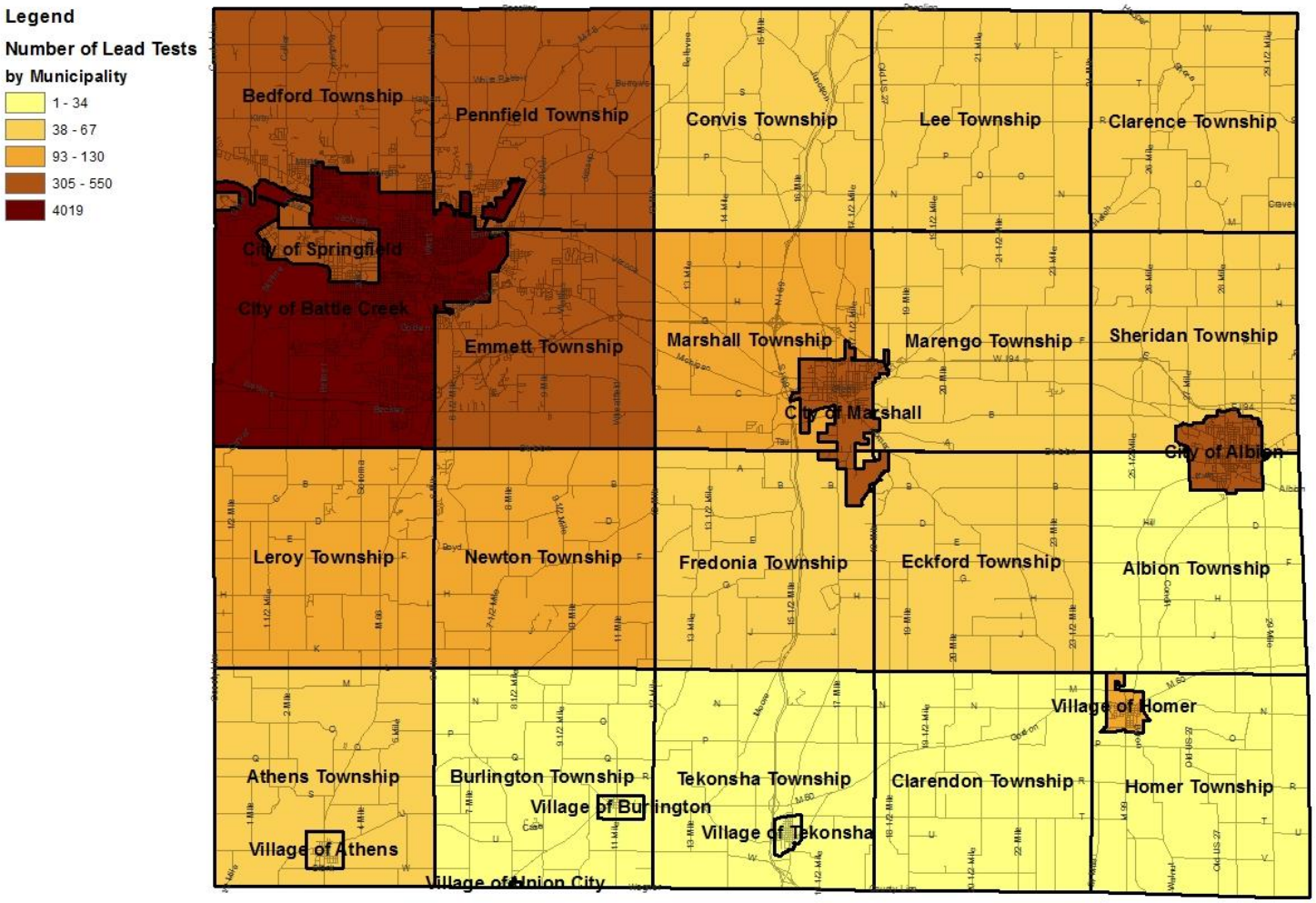
Map 4 - Calhoun County: Median Age of Housing by Census Block Group



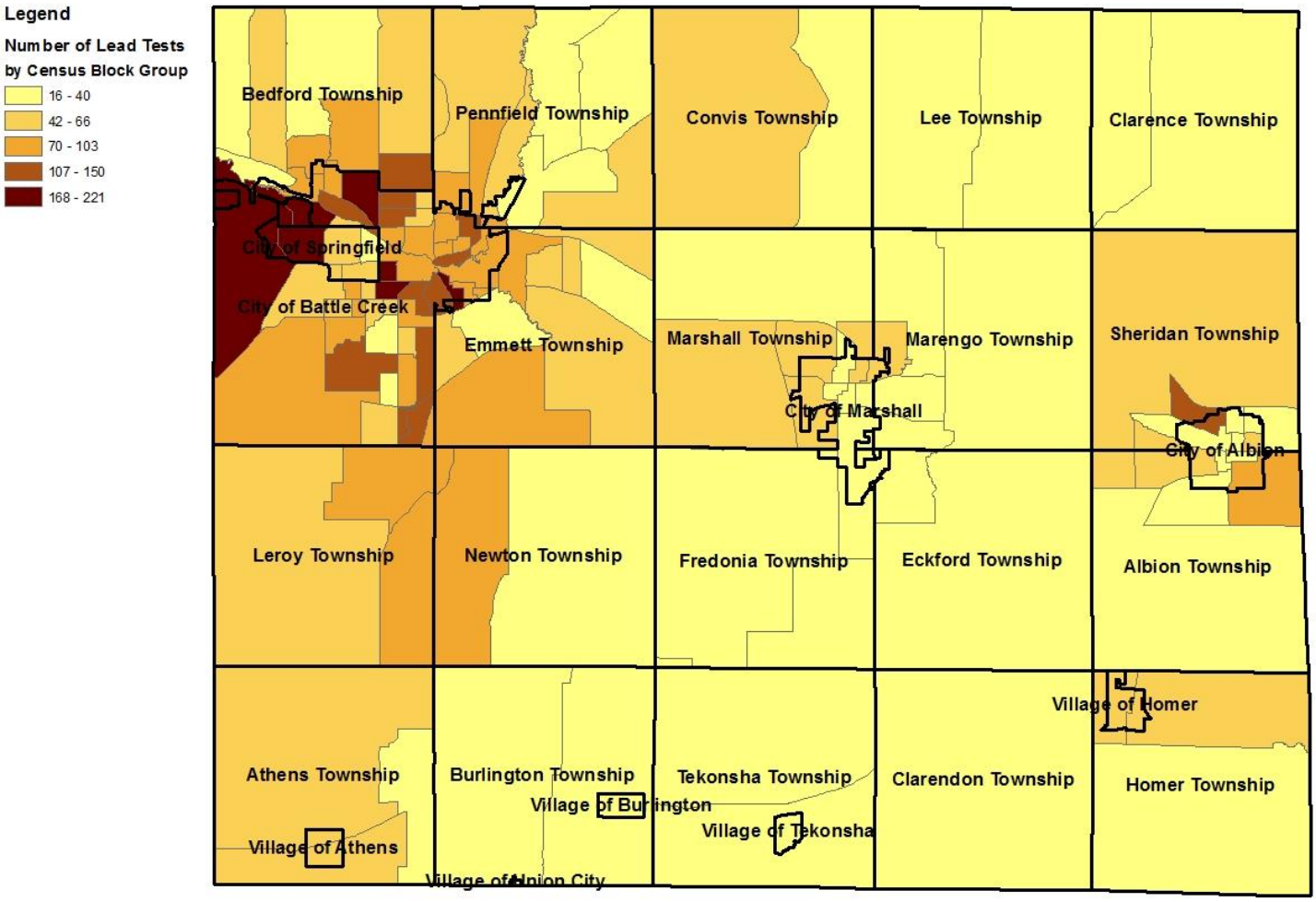
Map 5 - Calhoun County: Number of Children Tested Ages 0-5 by Census Block Group (2010 Census)



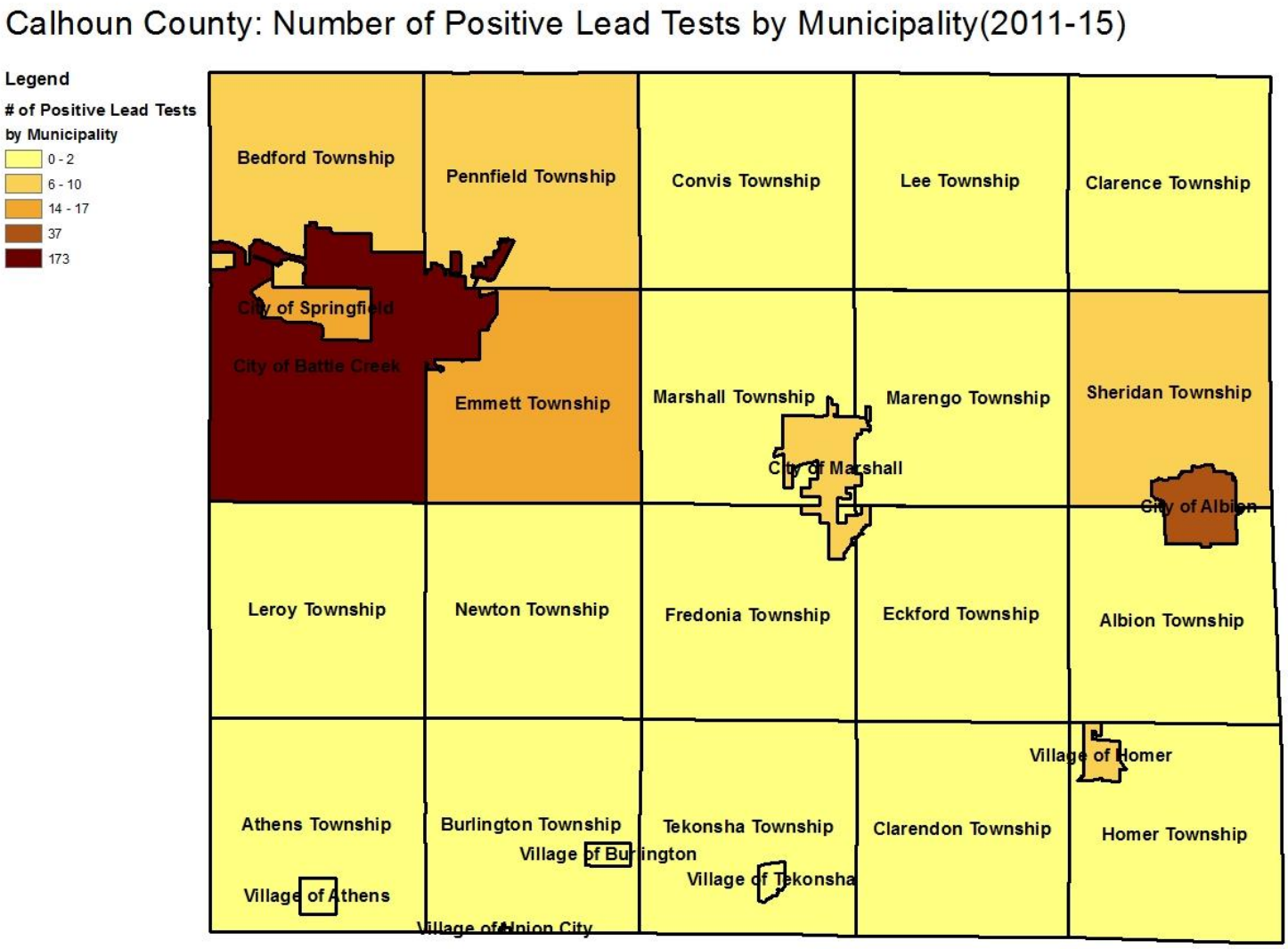
Map 6 - Calhoun County: Number of Children Under Age Six Tested by Municipality (2011-2015)



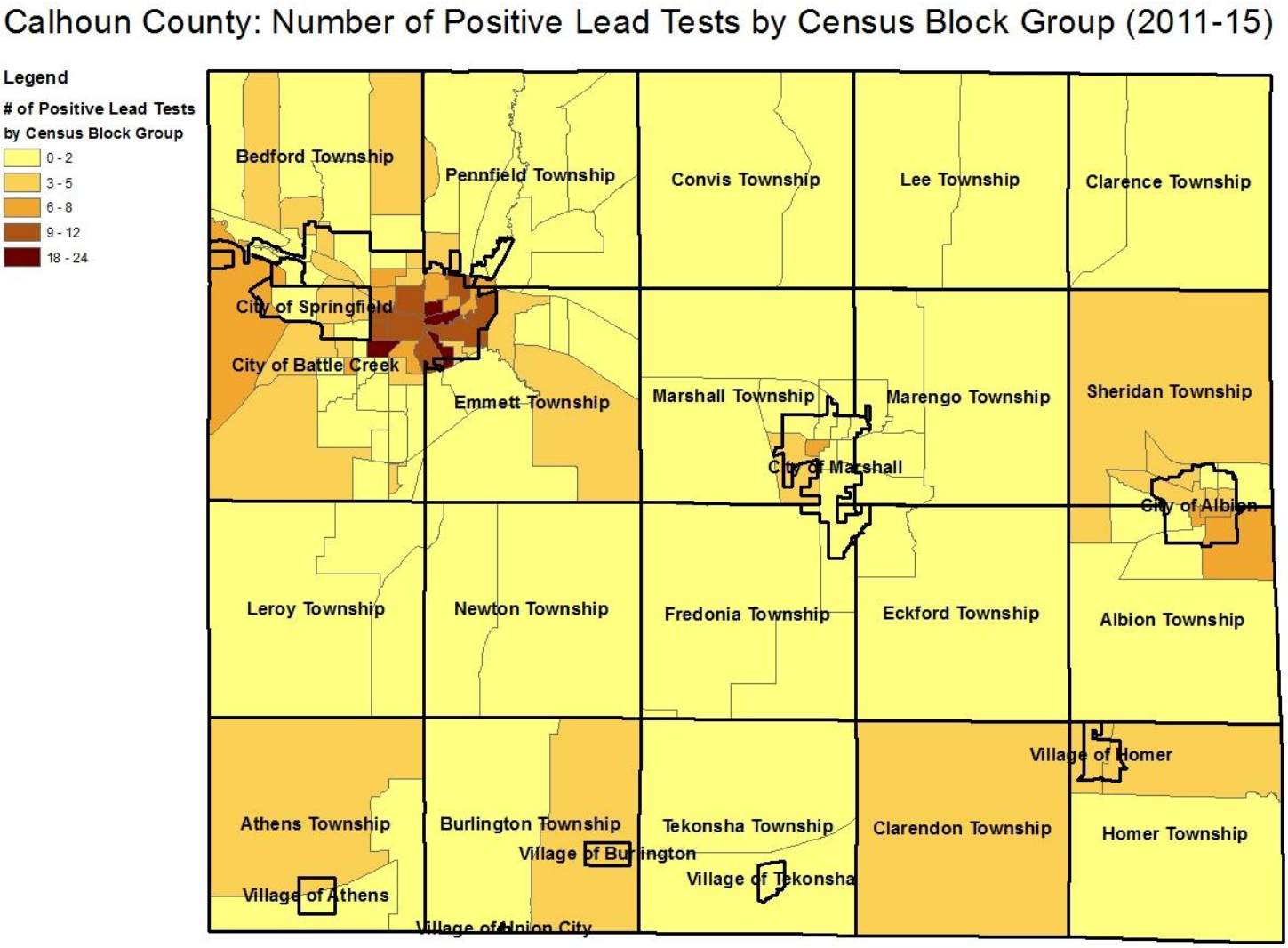
Map 7- Calhoun County: Number of Children Under Age Six Tested by Census Block Group (2011-2015)



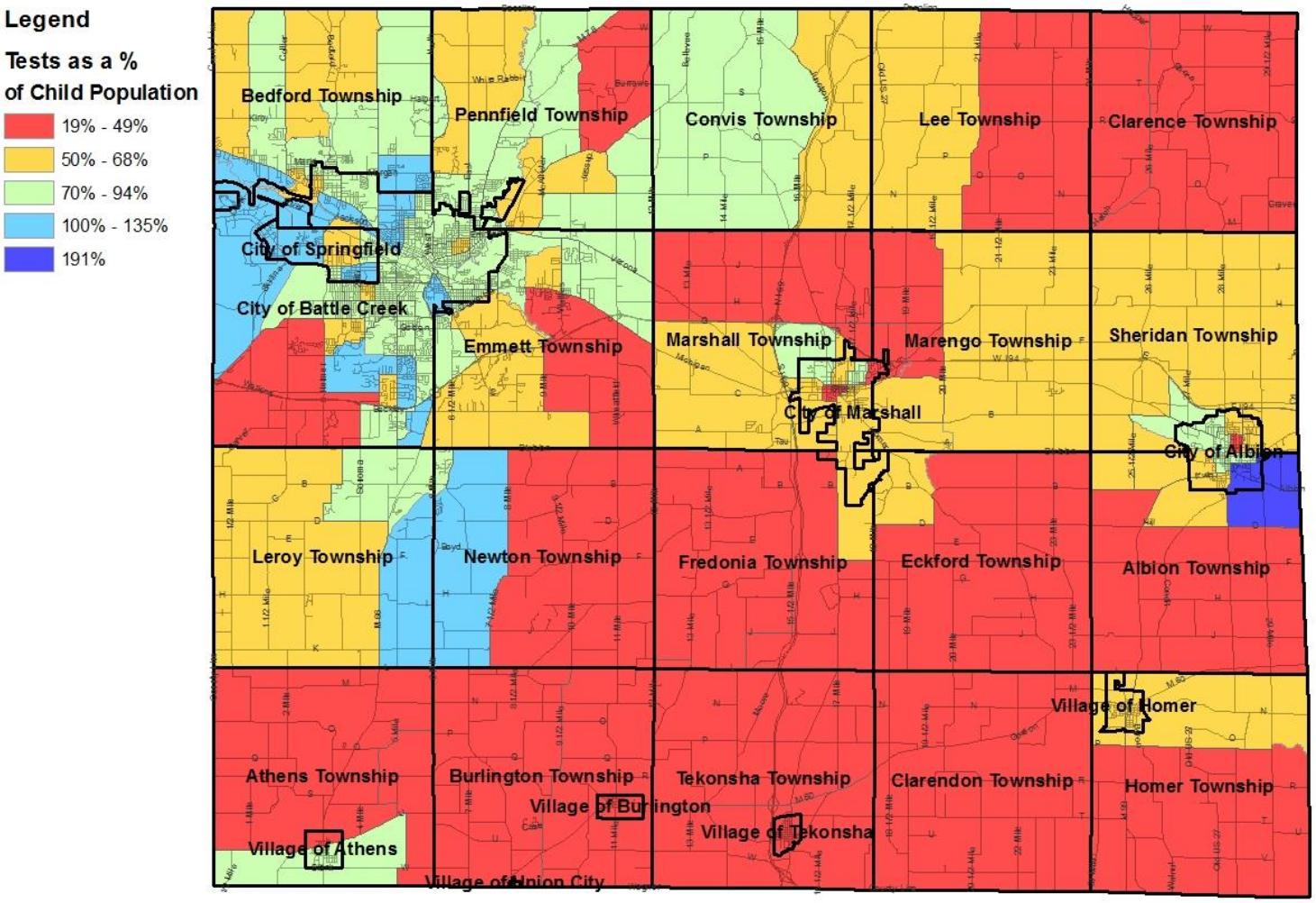
Map 8 – Calhoun County: Number of Positive Lead Tests by Municipality (2011-2015)



Map 9 – Calhoun County: Number of Positive Lead Tests by Census Block Group (2011-2015)



Map 10 – Calhoun County: Number of Lead Tests as a Percentage of the Child Population Tests by Census Block Group (2011-2015)



Map 11- Calhoun County: Percentage of Tests Resulting in an Elevated Blood Level by Census Block Group (2011-2015)

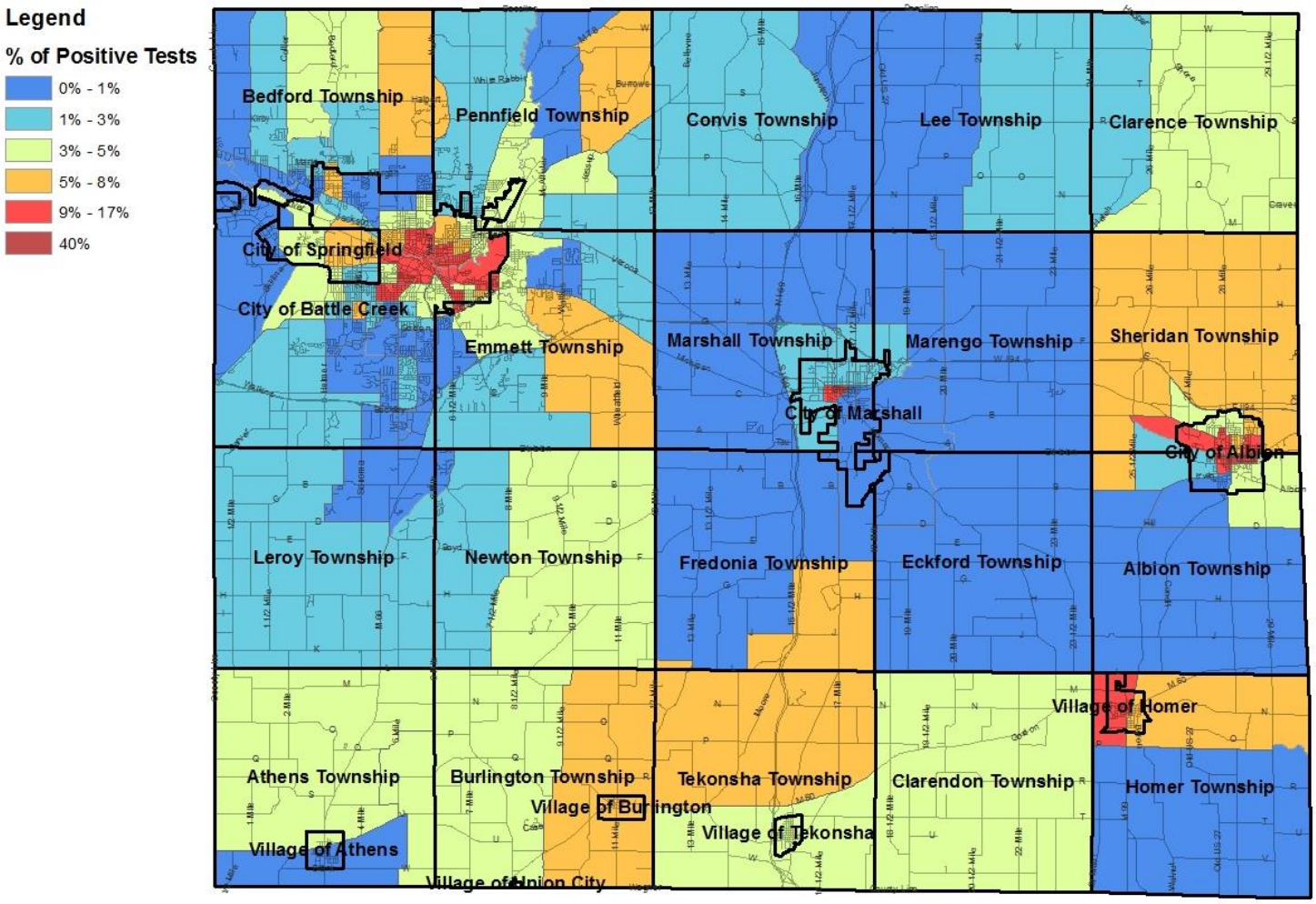


Figure 10: Correlation of the Percentage of Positive Lead Tests and the Median Age of Housing Stock in Calhoun County (2011-2015)