

Environmental Justice and Redlining in Springfield, Ohio

As our world progresses more information on environmental factors that can lead to serious health concerns are becoming more available. Environmental justice is a concern for heavily impacted communities that are also impacted by social constraints such as low-income and racial minorities that have been discriminated against throughout our countries history. Things such as wastewater, old building materials and industry waste that has made its way into the environment can cause major impacts on human health. Cities history of placing disadvantaged, low income and segregated individuals in less desirable areas within the city can leave lasting effects that lead to environmental and social injustice even today (Grove et al., 2017.) These types of ideals are what helped contribute to redlining which is the purposeful denial of basic amenities and inflated housing values to keep the low-income individuals in low income areas helps furthering environmental and social injustice (Wilson et al., 2006.)

Waste Water Management and Combined Sewer Overflows

As urbanized areas continue to grow and become more populated cities must find new ways to handle waste water and treatment. One article suggests there are five major concepts on handling waste water that cities could implement. The first step is to build “soft” infrastructure that allows water to easily pass through, second is the move the main systems away from the center of town, third is the use of ecological processes to help clean water such as constructed wetlands, fourth is the reuse of treated water, and finally use ecological systems that would benefit both humans and nature (Smith, 2009.) The city of Springfield has fifty-five combined sewage overflows throughout the city seen in figure 1. These combined sewage overflows collect excess

rain water and runoff, household sewage and industrial waste into the same pipe system and when it reaches capacity during heavy rainfall untreated sewage overflows into nearby bodies of water which can then negatively impact the surrounding environment (EPA, 2017.) Also seen on figure 2 is the number of combined sewage overflow outputs within each HOLC zone, which only furthers the environmental hazards people may face especially in disadvantaged communities that

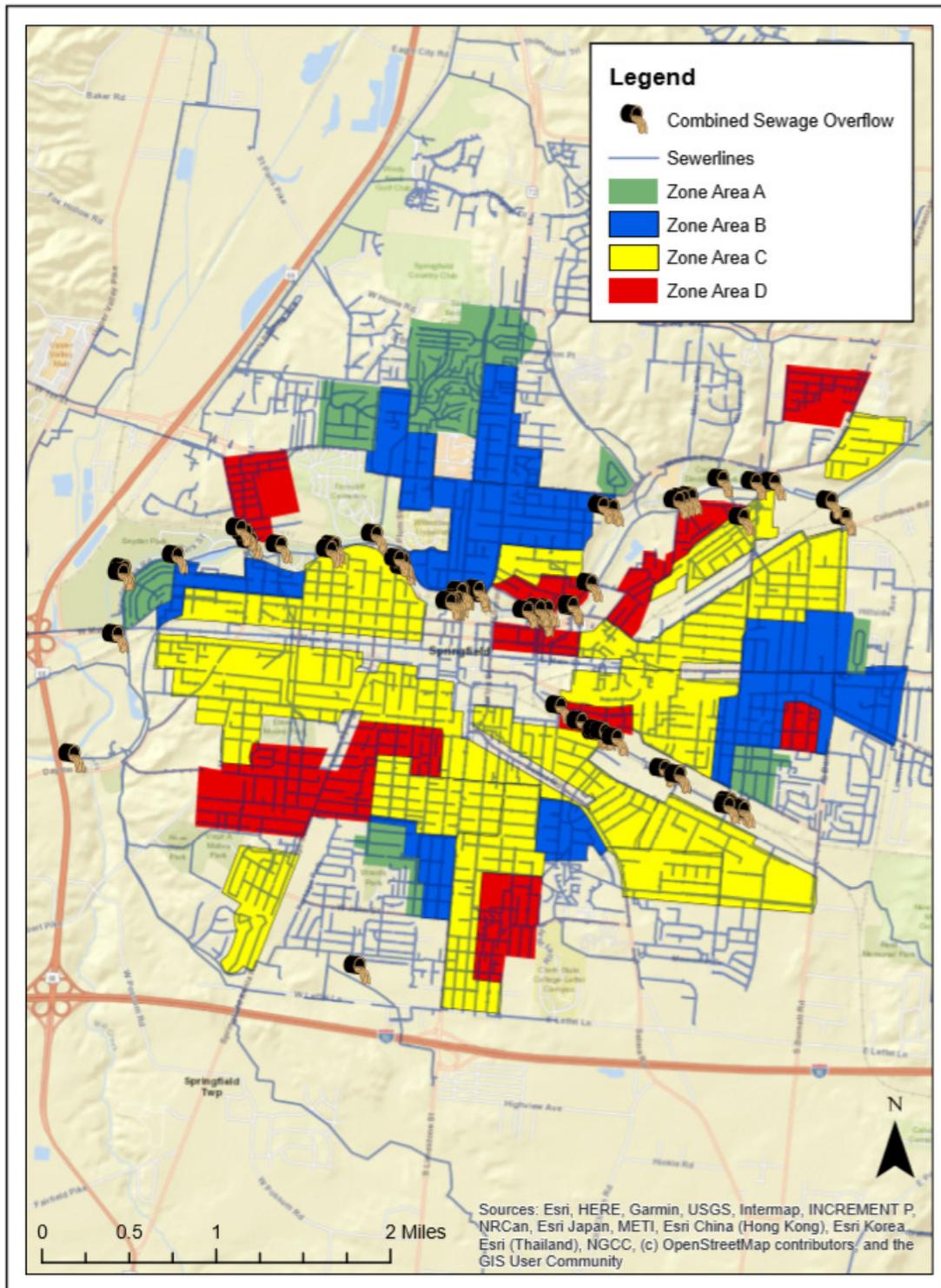


Figure 1: This map represents all of the combined sewage overflows throughout Springfield, Ohio in relation to the HOLC Zone areas represented by A, B, C or D with D being the redline impacted communities.

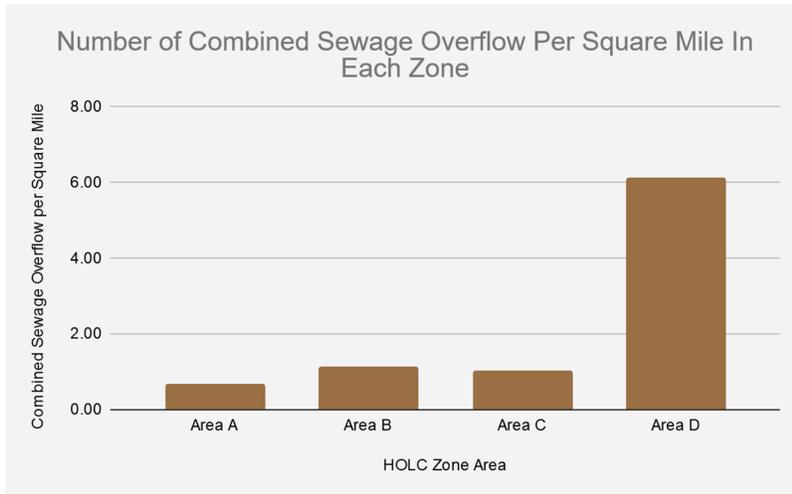


Figure 2: This bar graph represents the relationship between the numbers of combined sewage overflow outputs per square foot in each HOLC Zone areas represented by A, B, C or D. Overall there is not much variation in zones A, B or C. However, zone D has a significantly larger number of combined sewage overflow outputs per square foot than any other zone.

Home Vacancy, Average Home Sale Values and Lead

Housing conditions are frequently influenced by social factors and can impact those living in poor housing conditions. This increases the risk of exposure environmental hazards that can impact health (Rauh et al., 2008.) For these social factors that impact housing conditions we looked at the home vacancy, average home sale and home age as a reference to lead risk throughout Springfield, Ohio. All these factors can be seen on figure 3 which is the map of Springfield below. The number of vacancies per square foot in each redline zone areas is much greater in areas C and D as seen in figure 4 below. The number of vacancies can heavily impact home value which is substantially lower in areas C and D whereas the average home sale values in areas A and B are approximately equal and over double the cost of the average home in zones C and D. As far as home age which is the value, we are using to represent lead risk, majority of Springfield is affected.

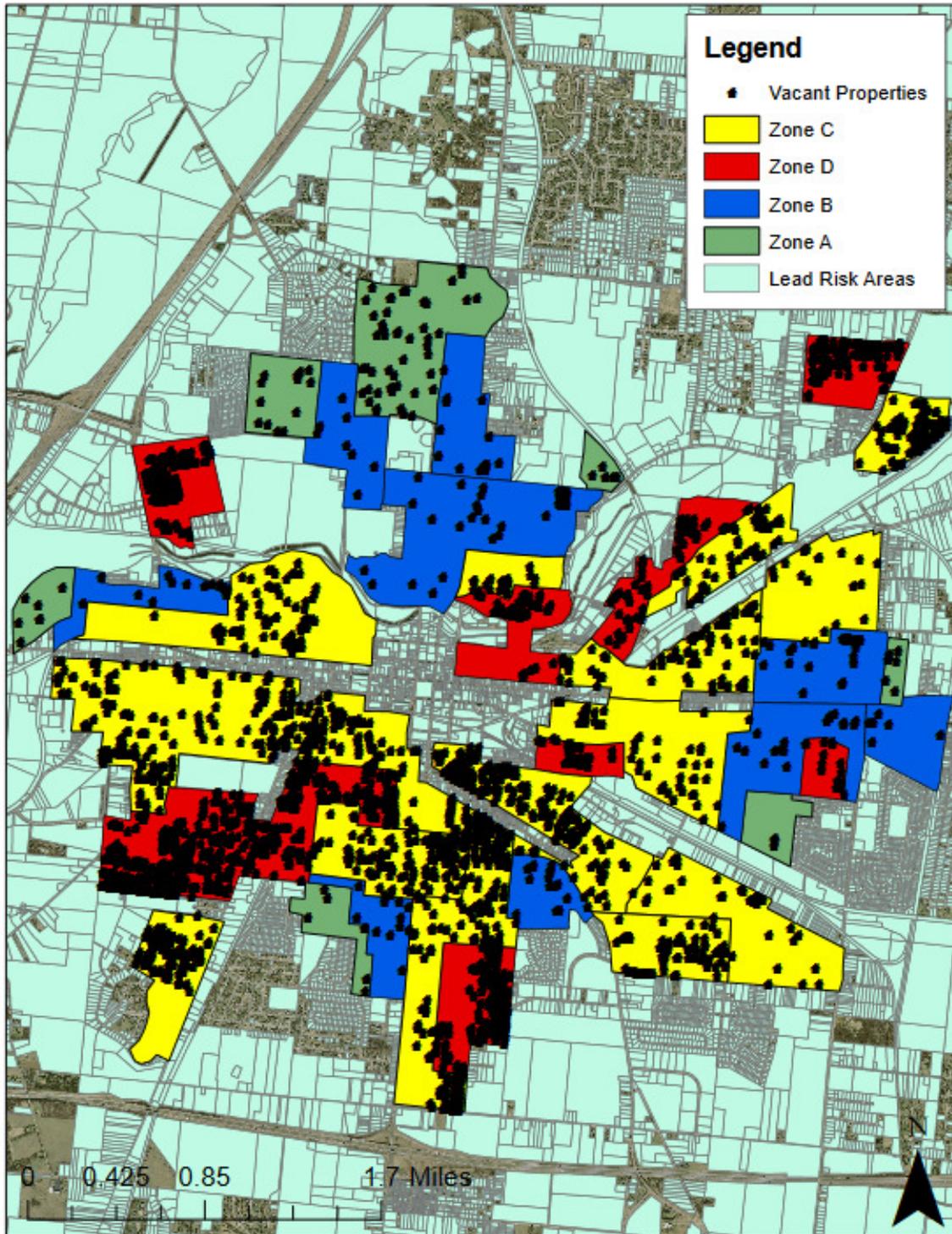


Figure 3: This map represents the HOLC Zone areas represented by A, B, C, or D, the potential lead risk biased upon home age, anything built before 1980 which is representative of lead risk due to building materials used at that time.

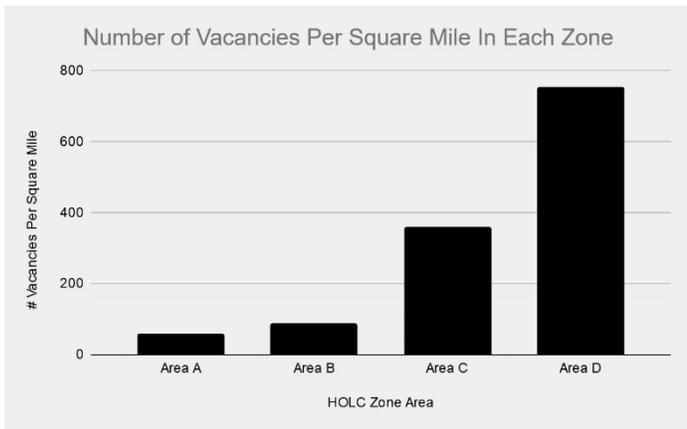


Figure 4: This graph represents the number of home vacancies per square mile in each HOLC zoned areas within Springfield, Ohio. As you can see, and the zone areas decrease the number of vacancies increase.

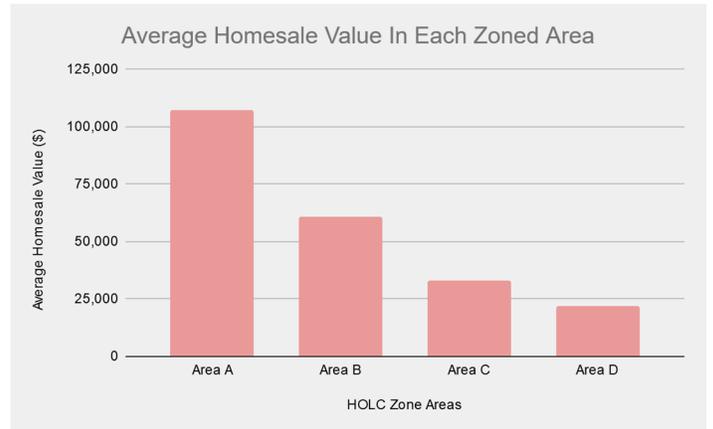


Figure 5: This graph represents the average home sale value within each HOLC zoned areas within Springfield, Ohio. As the zone areas decrease so does the average home sale value.

In conclusion, Springfield, Ohio faces many environment concerns that are also fueled by socioeconomic factors. The city must work together with the community to help inform people about the environmental hazards they may face such as contaminated water and high lead levels within their homes. Some recommendations would be to create new waste water management systems such as the constructed wetland seen in figure 6 below should be constructed to help lower water contaminates going into the environment. Grants should be made available for low income individuals to make home repairs to help minimize their risk of lead exposure, home costs should not be so inflated in HOLC zone areas A and B so that lower income individuals could move to a more desirable area within the city and vacant properties should be looked at for removal.

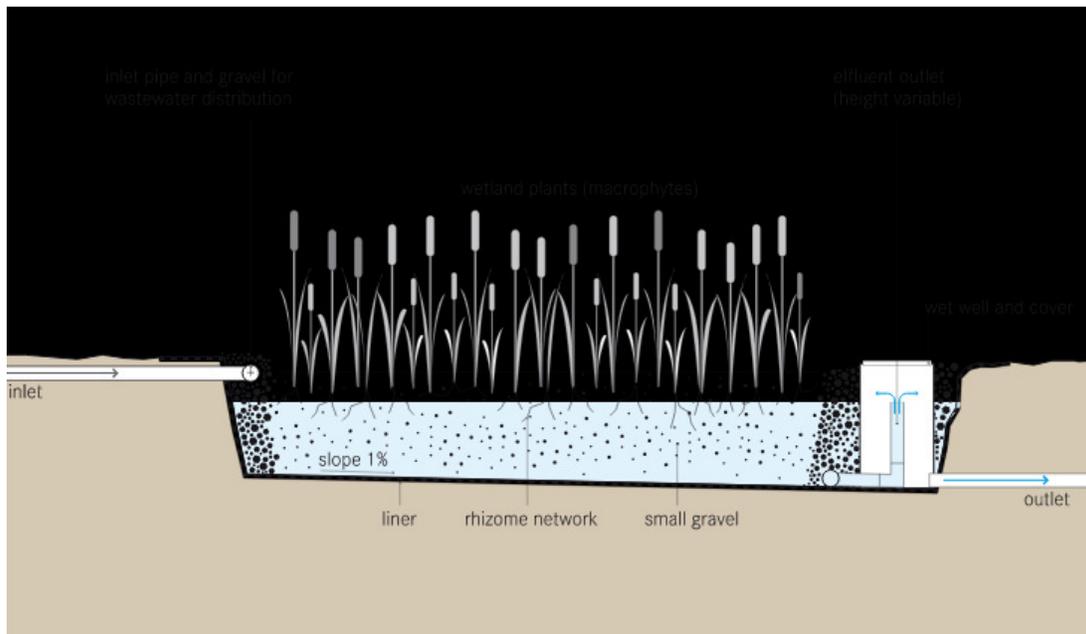


Figure 6: This photo represents the basic concept of a constructed wetland that uses plants and other ecological methods to clean water and return it back to the environment.

References

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