Zoning Regulations, Public Health, and NIMBYism in Connecticut

A Review of the Literature and Two Connecticut Case Studies

Pearson Caldwell, Annika Davies, and Jacquida Mars

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This paper was written by the authors as part of a practicum to complete the Master's in Arts Public Policy program at Trinity College to support the work of the new Racial Equity in Public Health Commission established by the state of Connecticut in the wake of the COVID-19 pandemic.

Pearson Caldwell lives in West Hartford, Connecticut, and works for Cigna as a proposal content writer. Outside of work, Pearson volunteers with the Democratic Socialists of America (DSA), acting as the Hartford branch co-chair in 2021 and helping to get a policy for the right to no cost legal counsel in eviction cases passed in Connecticut. Pearson will be completing his Master's in public policy at Trinity College in the spring of 2022. Following this degree, Pearson and his brother Fletcher will begin work on a research and writing project about their uncle Ronnie's life, the mental health issues and abuse he lived through, and how we see the systemic failures he faced reflected in our lives today.

Annika Davies received her B.A. in political science and economics with a minor in Hebrew language from Trinity College in 2021. She will graduate from Trinity with an M.A. in public policy this May. In the fall, Annika will start her PhD in political science at George Washington University. She has done campaign work and interned for elected officials in her home state of Pennsylvania and Connecticut. She is passionate about healthcare and welfare policy.

Jacquida Mars received her bachelor's degree in Psychology and a IMJR in Crime, Law, and Justice from the University of Connecticut in May of 2020. She will receive her Master's in Public Policy in May of 2022. After graduation Jacquida will be taking a year off to hone her skills working in the field of Higher Education. From there she plans to pursue her PhD in Learning, Leadership, and Educational Policy. Currently Jacquida works as the program coordinator under the DEI initiative for the Career & Life Design Center at Trinity college. Jacquida has a passion for helping individuals within higher education, along with law and policy.

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1. Executive Summary

This report examines the relationship between zoning laws and public health outcomes, as well as possible public health disparities created by zoning laws. We apply this research to two case studies in Connecticut, examining the Norwich and Waterbury communities.

Zoning Regulations and Health

In this section of our research, we examine the relationship between zoning regulations in the United States and public health outcomes. We conduct this analysis through the lens of three major points:

1. US zoning regulations were created in part to improve public health.
2. Over time, the stated purpose of zoning and land use restrictions have shifted away from public health to other areas like property value.
3. Despite changes in stated purpose, zoning and land use restrictions continue to impact public health. We can analyze the relationship between zoning and health outcomes through social determinants of health.

This approach helps us understand the historical roots of zoning, its unintended consequences, and how zoning ties back to health outcomes. Specifically expanding upon the third point, we look at detailed definitions of different social determinants of health, their baseline metrics, and how we can tie these metrics back to both zoning and health outcomes.

NIMBYism & Opportunity Mapping

To examine the effects of zoning on racial disparities in public health, this report looks at the concepts of "Not in My Backyard" and "Opportunity Mapping" in Connecticut.

So-called Not in My Backyard (NIMBY) efforts—aimed at maximizing property values by excluding potentially disruptive populations (if not by simple racism)—and exclusionary zoning operate by economically segregating residential neighborhoods through minimum-land-use laws that favor single-family housing while physically separating them from less costly multi-family housing and apartment complexes. Many times, Connecticut has justified zoning based on public health and welfare, even though the result of zoning restrictions is to attract higher-income homeowners while protecting their property values.

Whether a project is useful to the community or not, communities are afraid of the unknown. Projects that benefit the community are frequently met with strong resistance, since "NIMBYs" believe that the new development will have a negative externality (which may not be the case!).

The creation of housing structures improves the wider economy by making housing cheaper, increasing the economic conditions of the locality, and creating job possibilities. NIMBYs will stress the possibility of increased crime, lower utility for current residents, and traffic disturbance.

Opportunity mapping is a method of examining local resources and results such as school performance, poverty concentration, safety, and so on. The primary purpose of opportunity mapping is to identify places that are rich in opportunities and those that are poor in opportunities. We can better evaluate who has access to opportunity resources and how to address inequality if we have a thorough awareness of communities. This paper will detail opportunity planning data while also assessing the impact NIMBY actions have had on those who reside close or migrate to these communities. Further research may be needed to determine how these issues might affect future generations.

Both NIMBY and opportunity mapping show the critical lines of intersectionality of race, segregation, and zoning as it relates to the current population of Connecticut.

Case Studies

To examine the effects of zoning on racial disparities in public health, this report looks at Norwich and Waterbury as case studies.

Southeastern Connecticut, where Norwich is located, has a lack of housing, and there is a high number of cost-burdened renters and homeowners. Population in the region is expected to increase, further straining the housing supply. The concentration of affordable housing stock is in Groton, New London, Norwich, and Windham. Norwich has a population of 40,125 people, and the majority self-identified as white. Lower income towns, including Norwich, had the most housing units occupied by renters.

Waterbury, located in the Naugatuck Valley, has a population of 114,403 people and is majority white. White residents in Greater Waterbury own their homes at a much higher rate than Black or Hispanic residents. In the urban core, which includes Waterbury, incomes are stagnant.

Some issues that the health departments in Norwich and Waterbury have been dealing with include language barriers, supply of medical professionals, transportation to providers, and lack of trust and other cultural barriers. There has also been an increase in evictions after the eviction moratorium ended.

Norwich and Waterbury have high rates of age-adjusted asthma-related emergency department visits. Students of color in the Norwich School District and the Waterbury School

District had higher rates of asthma prevalence than white students in 2020. In 2013, Norwich had the highest number of confirmed cases of elevated blood lead levels in children. The concentration of childhood lead poisoning among children less than 6 years old coincides with areas that are zoned for mixed residential and nonresidential.

In both cities, the housing stock is old. As a result of the history of heavy industry in Waterbury, there are a lot of lead poisoning problems that have affected people of color. Renter dwellings tend to be poorly maintained and have lead contamination. The state is considering lowering the acceptable level of lead in dwellings, which would strain the cities' resources beyond the possibility of remediation for all cases. There is a lack of temporary housing and a general shortage in the housing stock, which has been exacerbated by the eviction moratorium.

Recommendations

We recommend that the statutes be amended to require consideration of social determinants of health and the social vulnerability index in the plans of conservation and development that are statutorily mandated to be updated every 10 years by each municipality. We recommend further research to look at a targeted list of social determinants to be compared against targeted areas with different zoning regulations in place to demonstrate the correlation between these community factors and health outcomes. We recommend mapping formerly industrial areas of towns over the social vulnerability index to identify the causes of health disparities and the impact on different neighborhoods. We also recommend that training be conducted jointly between people working in zoning and people working in public health. We recommend sharing developmental plans and examples with residents, addressing the concerns of the community, and making a point of contact on the development team visible to the community. Finally, Connecticut should implement methods to provide disenfranchised people, families, and communities with access to "levers" of opportunity.

2. Background on Zoning in Connecticut

Zoning determines how land can be used. Zoning regulations were originally established to protect private property, meaning more valuable residential and commercial properties, and to prevent change to stabilize the real estate market for investors. The types of activity that are permitted in different areas impact the health of residents, so this report will explore the relationship between zoning decisions and public health. When industrial and residential zones are next to each other, residents are exposed to a wide variety of negative outputs such as noise pollution and toxic chemical waste. Zoning has resulted in discriminatory practices in many cases due to efforts to keep low-income people out of wealthier areas. The outcome has fallen along racial lines, leaving Black and Brown communities relegated to areas zoned for multi-family housing, often becoming a buffer between industrial areas and wealthy, white neighborhoods.

In the past two years, there has been a new focus on zoning in Connecticut. Connecticut's original zoning law, the "Standard Zoning Enabling Act" (now Chapter 124 of the General Statutes) was passed a century ago. The law gives municipalities the authority to adopt their own zoning codes, outlines the criteria that municipalities can consider when writing the codes, explains zoning procedures, and lays out the membership of zoning authorities. Municipalities can consider things like the height and size of buildings, lot size, open spaces, and building and population density when zoning. These criteria restrict who can live in certain municipalities because they dictate the cost of housing. These restrictions lead to racial segregation because white people tend to be wealthier and able to afford to live in towns that have been zoned to be more expensive through restrictions on multi-family housing and lot size.

The "Standard Planning Enabling Act" (now Chapter 126 of the General Statutes) enables towns to zone and plan, according to certain parameters. Under this law, municipalities create planning commissions, which must adopt and revise a plan of conservation and development every ten years. The planning commissions are required to consider the need for affordable housing, health, education, and recreation. The act dictates that zoning commissions must consider the plan when writing the zoning code, but there is no enforcement mechanism to ensure that the zoning commission does so.[1]

In 2021, Connecticut passed "An Act Concerning the Zoning Enabling Act, Accessory Apartments, Training for Certain Land Use Officials, Municipal Affordable Housing Plans and a Commission on Connecticut's Development and Future." This legislation requires that zoning regulations "affirmatively further fair housing," promote housing choice and economic diversity in housing, and address significant disparities in housing needs and access to educational, occupational, and other opportunities. Towns are now prohibited from discriminating based on income source, income level, or immutable characteristics, capping the number of multi-

family housing units, charging unreasonable fees for multi-family affordable housing, and requiring a minimum square footage for housing except for public health reasons.[2]

While these reforms are significant, there remains a question of how zoning impacts public health and the way these impacts affect different population groups, especially communities of color.

3. Zoning Regulations & Health

Background

In this section of our research, we will examine the relationship between zoning regulations in the United States and public health outcomes. We will conduct this analysis through the lens of three major observations:

1. US zoning regulations were created in part to improve public health.
2. Over time, the stated purpose of zoning and land use restrictions have shifted away from public health to other areas like property value.
3. Despite changes in stated purpose, zoning and land use restrictions continue to impact public health. We can analyze the relationship between zoning and health outcomes through social determinants of health.

This structure will help us understand the historical roots of zoning, its unintended consequences, and how zoning ties back to health outcomes.

US zoning regulations were created in part to improve public health.

Prior to the implementation of zoning regulations in the U.S., cities contained residential housing areas directly next to factories dumping heavy pollution, where residents were exposed to pollutants coming from these factories.

We see these living conditions spelled out in detail in Upton Sinclair's *The Jungle*:

> Here and there would be a great factory, a dingy building with innumerable windows in it, and immense volumes of smoke pouring from the chimneys, darkening the air above it and making filthy the earth beneath…And along with the thickening smoke they noticed another circumstance, a strange, pungent odor…you could literally taste it, as well as smell it…It was an elemental odor, raw and crude…

> There were two rows of brick houses, and between them a vista: half a dozen chimneys, tall as the tallest of buildings…and leaping from them half a dozen columns of smoke, thick oily, and black as night.[3]

Zoning regulations helped separate land into different districts or zones designated for specific uses, like residential and commercial, lessening exposure to pollution, and generally improving quality of life to prevent living conditions like Sinclair describes. New York City implemented the 1916 Zoning Resolution, which became the blueprint for zoning across the country. This resolution included an emphasis on the importance of getting "light and air" into the crowded tenement housing of working-class districts to help improve health.[4] From there, cities across the country began to implement similar zoning regulations to help their citizens enjoy happier and healthier lives.

The 1926 U.S. Supreme Court case *Ambler Realty v. Village of Euclid* further encoded zoning regulations into law, citing public health concerns as one of the reasons for their legitimacy.[5]

Notably, the *Euclid* Court decision also established the roots for the legitimacy of exclusionary zoning, setting the precedent for one of the main ways we see zoning employed today.[6]

Over time, the stated purpose of zoning and land use restrictions shifted away from public health to other areas like property value.

Since the Court's decision in *Euclid*, few court decisions have considered the relationship between zoning and public health.[7] This trend continues today in both courts and policies written about zoning.

Even in zoning regulations specifically intended to improve inclusion in cities and other areas, health is rarely mentioned.[8]

Primarily, we see zoning laws used either to exclude access to certain areas or to help make exclusionary areas more inclusionary, as outlined in the other section of this research. In short, and as outlined in greater detail in the NIMBYism and opportunity mapping section of this paper, we see zoning laws used as a tool to hoard wealth into certain communities through the protection and inflation of property value.

Despite changes in stated purpose, zoning and land use restrictions continue to impact public health. We can analyze the relationship between zoning and health outcomes through social determinants of health.

Zoning regulations like low-density zoning or inclusionary and/or affordable housing zoning have externalities or unintended outcomes,[9] which have many effects on public health.[10] There

are some direct links we can demonstrate between housing and health. For example, a study from the Robert Wood Johnson Foundation identified a few common examples of housing conditions which impact health outcomes:

- "Lead poisoning irreversibly affects brain and nervous system development, resulting in lower intelligence and reading disabilities.
- "Substandard housing such as water leaks, poor ventilation, dirty carpets and pest infestation can lead to an increase in mold, mites and other allergens associated with poor health.
- "Cold indoor conditions have been associated with poorer health, including an increased risk of cardiovascular disease. Extreme low and high temperatures have been associated with increased mortality, especially among vulnerable populations such as the elderly.
- "Residential crowding has been linked both with physical illness, such as tuberculosis and respiratory infections, and with psychological distress among both adults and children."[11]

However, the connection between some housing conditions, health, and zoning regulations is much less immediately apparent. In painting a picture of the relationship between zoning laws and health outcomes, we can use social determinants of health (SDOH) as a "missing link" of sorts to act as a lens through which we can look for and analyze a correlation between zoning laws and health.

SDOH are conditions in which people are born, grow, live, work, and age that can create barriers that impact their ability to get and stay healthy. The U.S. Centers for Disease Control and Prevention (CDC) breaks these conditions down into five categories: 1) health care access and quality; 2) education access and quality; 3) social and community context; 4) economic stability; 5) and neighborhood and built environment.[12]

Let's define each of these items in a bit more detail:

1) Health care access and quality – "The connection between people's access to and understanding of health services and their own health. This domain includes issues such as access to healthcare, access to primary care, access to health insurance, and health literacy."13

Some key metrics for measuring this social determinant include:

- The proportion of adults who get recommended evidence-based preventive health care—AHS-08: the current national baseline for this metric is 8%, with a target goal of 10.8%.

- The proportion of adolescents who had a preventive health care visit in the past year—AH-01: the current national baseline for this metric is 78.7%, with a target goal of 82.6%.
- The number of community organizations that provide prevention services—EBBP-D07: this is currently a developmental metric, which means it has no baselines or targets yet-.[14]

2) Education access and quality – "The connection of education to wellbeing. This domain includes key issues such as graduating from high school, enrollment in higher education, educational attainment in general, language and literacy, and early childhood education and development."[15]

Some key metrics for measuring this social determinant include:

- The proportion of high school students who graduate in 4 years—AH-08: the current national baseline for this metric is 84.1%, with a target goal of 90.7%.
- The proportion of high school graduates in college the October after graduating—SDOH-06: the current national baseline for this metric is 69.1%, with a target goal of 73.7%.
- The proportion of children who participate in high-quality early childhood education programs—EMC-D03: this is currently a developmental metric, which means it has no baselines or targets yet-.[16]

3) Social and community context – "The connection between characteristics of the contexts within which people live, learn, work, and play, and their health and wellbeing. This includes topics like cohesion within a community, civic participation, discrimination, conditions in the workplace, and incarceration."[17]

Some key metrics for measuring this social determinant include:

- The proportion of children with a parent or guardian who has served time in jail—SDOH-05: the current national baseline for this metric is 7.7%, with a target goal of 5.2%.
- Bullying of transgender students—LGBT-D01: this is currently a developmental metric, which means it has no baselines or targets yet.
- Food security in children—NWS-02: the current national baseline for this metric is 0.59%, with a target goal of 0.00%-.[18]

4) Economic stability – "The connection between the financial resources people have – income, cost of living, and socioeconomic status – and their health. This includes issues such as poverty, employment, food security, and housing stability."[19]

Some key metrics for measuring this social determinant include:

- The proportion of people living in poverty—SDOH-01: the current national baseline for this metric is 11.8%, with a target goal of 8.0%.
- The proportion of families that spend more than 30 percent of income on housing—SDOH-04: the current national baseline for this metric is 34.6%, with a target goal of 25.5%.
- Household food insecurity and hunger—NWS-01: the current national baseline for this metric is 11.1%, with a target goal of 6.0%-.[20]

5) Neighborhood and built environment – "The connection between where a person lives – housing, neighborhood, and environment – and their health and wellbeing. This includes topics like quality of housing, access to transportation, air and water quality, and neighborhood crime and violence."[21]

Some key metrics for measuring this social determinant include:

- The proportion of adults with broadband internet—HC/HIT-05: the current national baseline for this metric is 55.9%, with a target goal of 60.8%.
- The proportion of people whose water supply meets Safe Drinking Water Act regulations—EH-03: the current national baseline for this metric is 90.2%, with a target goal of 92.1%.
- Blood lead levels in children aged 1 to 5 years—EH-04: the current national baseline for this metric is 3.31 micrograms per deciliter, with a target goal of 1.18-.[22]

Social Determinants of Health and Zoning Regulations

Other organizations have varying ways to define SDOH, with some more or less specific frameworks and metrics,[23] but these CDC definitions give a clear picture of the concept of SDOH, as well as just how broad the scope of data that affects health outcomes can be.

Some of these metrics have a clear, direct link to zoning regulations and housing. For example, under SDOH item 5, the CDC lists blood lead levels in children aged 1 to 5 years—EH04 as a social determinant of health. This metric demonstrates a direct link between housing and health, and we can look for patterns of lead in houses in areas with different types of zoning laws.

Some of these metrics have less obvious ties to housing and zoning, but with further exploration, we can see the relationship that these metrics may have to housing and zoning. For example, the proportion of children with a parent or guardian who has served time in

jail—SDOH05 does not immediately jump out as either a predictor of health outcomes or as something tied to zoning laws. However, if we unpack this metric a bit, we can see how it's tied to both. First, let us look at the CDC definition for this metric in more detail:

"Children with a parent or guardian who has served time in jail are more likely to live in poverty, experience homelessness, and witness domestic violence. They're also more likely to have speech, attention, and behavior problems—and to eventually serve time in jail themselves."[24]

In this short definition, we see a few negative health outcomes listed specifically—speech, attention, and behavior problems—as well as a few conditions which likely lead to their own set of adverse effects on health—poverty, homelessness, and domestic violence.

From the zoning perspective, we can look at differently zoned areas down to the census tract level and examine whether areas with certain types of zoning are more or less likely to have households with a family member in prison. Do areas with exclusionary zoning policies have fewer households with family members in prison? Do areas with inclusionary zoning policies have more?

With the depth and breadth of available health outcomes as well as metrics through SDOH and a whole host of different ways to analyze them, we have access to plenty of tools and lenses through which we can compare zoning regulations to health outcomes.

We can take these lines of questioning a few steps further by looking at publicly available census tract data. For example, looking at the metric for the proportion of high school students who graduate in 4 years—AH-08: the current national baseline for this metric is 84.1%. By looking at census tract data for Waterbury, Connecticut, we can find the percent of adults aged 25 years or older who have finished high school by census tract. Looking at census tract 3501.1 in Waterbury, we see only 56.1% of adults with a high school degree.[25]

Zoning Laws Hoard Access to Better Health

Much as zoning laws hoard access to wealth as previously noted, zoning laws also similarly hoard access to better health outcomes. The National League of Cities conducted a study on the relationship between states who prevented inclusionary zoning measures intended to increase access to affordable housing and health outcomes in those states. They define inclusionary zoning as policies "used by local governments, particularly in cities with high rates of development and high housing costs, to increase the share of affordable housing," with affordable housing defined as "housing available at or below market rate." Their research "found a significant relationship between state preemption of inclusionary zoning and

health outcomes. Adults living in states that preempted [inclusionary zoning] were more likely to have poor or fair self-rated health status even after controlling for state and individual level factors."

Specifically, the study found the prevention of inclusionary zoning and access to affordable housing to have widely disparate effects among different demographic groups, especially Black people. The study showed the change in the probability of poor or fair self-reported health status between states with inclusionary zoning efforts and states without varies the most in the Black community.[26]

When we look at zoning through this lens of exclusion, hoarding resources, and a history of systemic racism, we start to see a longer, deeper picture tying zoning laws and health outcomes together. This picture is, however, extremely complex, multi-faceted, and dynamic. There are a lot of different ways to frame inequality, wealth, and health outcomes, so it is important to differentiate between correlation and causation. For example, we see similar studies conducted on the relationship between health outcomes and income inequality.[27]

We recommend factoring in this holistic and contextual perspective of the nature of zoning laws into any public health studies conducted on the topic.

4. NIMBYism and Opportunity Mapping

In recent years, the problem of racial segregation as it relates to zoning has won increasing attention from major media outlets, prominent social commentators, and community leaders. Journalists, scholars, nonprofit community-based organizations, and the state of Connecticut have conducted research and investigations into various aspects of racial and ethnic zoning segregation over the last few decades. This report highlights significant findings within Connecticut communities including but not limited to Not in My Backyard (NIMBY) policy and how opportunity planning has played an important part in our understanding of the intersection between zoning and racial segregation.

Recent work has argued that zoning has exasperated and maintained racial segregation, disparities in public good provisions, regional inequality, and differing housing costs in urban areas. NIMBY attitudes resulted in economically segregating residential areas through minimum-land rules that tended to favor single-family homes and physically distanced them from less expensive multi-family housing and apartment buildings. Many times, Connecticut has justified zoning based on public health and welfare despite the outcome of zoning regulations being to attract higher income homebuyers and protect their property values. Many times, their true goals were segregation based on racial identity. In the 1917 Supreme Court Case, *Buchanan v. Warley*, a Louisville municipal law restricting the selling of real

estate to African Americans was challenged. It was eventually decided that such racial zoning was unlawful and violated a person's contractual freedom. As a result, ordinances were no longer able to outright reject specific groups of people and were instead forced to rely on more subtle ways of exclusion.

Even more so in the aftermath of the Goldberg[1] grocery store controversy, many town leaders turned to zoning as a legally defensible strategy that allowed suburbs to segregate or exclude what they viewed as "undesirable" or "unneeded" urban influences on the so-called basis of wealth without directly referring to an individual's race, religion, or nationality. The biggest thing to take from the Goldberg case is how even businesses will produce practices that severely limit or exclude specific individuals based on their race or socioeconomic status. We can use this case as a learning mechanism of how to combat NIMBYism within our own state bounds. The Goldberg case is a notable example of how individuals and institutions use their own racial ideals to impart rules and regulations that disproportionately affect Black people in a negative way. In this way, zoning discrimination has become a powerful, long-lasting tool of government-sponsored housing discrimination that continues to affect the present day. The outcomes of discriminatory zoning regulations place a heavy burden on the families and individuals who are looking to rent or buy more affordable housing.

NIMBY is a characterization of opposition by residents to proposed developments in their local area, as well as a moniker for supporters of strict land use regulations. Many times, this mindset leads to further zoning discrimination, which can take the form of an entire town opposing the development of affordable housing or failing to incorporate low-income individuals. NIMBYism disproportionately affects low income BIPOC individuals, leading to greater disparities and segregation.

In Connecticut, Open Communities Alliance has conducted research on a concept called opportunity planning.[28] This is a way to look at neighborhood resources and outcomes, such as school performance, poverty concentration, safety, etc. The biggest goal of opportunity mapping is to identify opportunity rich and opportunity isolated communities. By having an in-depth understanding of communities, we can better determine who has access to opportunity resources and how to remedy inequality. This report will go into in-depth statistics of opportunity planning while analyzing the effect NIMBY accounts have had on individuals who

[1] In March of 1979 Meyer Goldberg, Inc., of Lorain (Goldberg) as plaintiff brought an antitrust action against defendants, Fisher Foods, Inc. and First National Supermarkets, Inc.S, charging a conspiracy between the latter supermarket operations in Lorain County, Ohio to fix prices in violation of both federal and Ohio laws. Generally, it was alleged that defendants had set prices below cost to drive plaintiff out of business. The Supreme Court agreed, holding that welfare was a right and not a privilege and was thus a protected liberty interest. The Court then ruled that welfare is unlike other benefits since the harm of revoking the benefits is great. As a result, a pre-termination hearing was necessary to protect due process.
Browse US Cases - Casemine. https://www.casemine.com/judgments/us.

live near or who relocate to areas that maintain this outlook. Further analysis will be conducted as to how these factors will affect future generations.

NIMBY Connecticut

NIMBY has two distinct usages and categories of users; "In some circumstances, it connotes the unwillingness of individuals to accept the construction of large-scale projects by corporations or governmental entities nearby, which might affect their quality of life and the value of their property. Project proponents (which usually consist of the sponsoring corporation, construction labor unions, contractors, etc.) tend to use the phrase in this manner. The phrase is also used by social service and environmental justice advocates to imply an absence of social conscience expressed by a class, race, or disability-based opposition to the location of social-service facilities in neighborhoods"[29]

The negative connotation comes from the fact that individuals opposing high impact projects on environmental grounds tend to have middle- and lower-class origins. On one hand, it suggests that people opposed want poor people and poor neighborhoods to bear the burden of toxic waste facilities; on the other hand, opponents are willing to sacrifice blue collar jobs that would be generated by construction and operation. The argument that NIMBYism is a good thing for communities is no longer justifiable today. During the 1990s, environmental justice advocates and other social justice activists adopted a negative use of the phrase and reinforced it as a class-based ideal.

Homeowners in each of these places shared a common ideology; owning a piece of land in each area allows them to have a say in what happens to the areas surrounding it. This idea comes from old laws that have tried to limit how one property owner can harm another. Over time, homeowners have expanded this idea to go past the boundaries of their own property. Homeowners are hyper aware of how their schools and streets are being built and run, but often we see opposition to affordable housing because of engaged homeowners. NIMBYism prevents a diversity of housing types beyond single-family homes from being built, such as apartments, duplexes, and accessory dwellings, which disproportionally affects the Black and Brown low-income communities in those areas.

As urbanization brought Black and Brown people into white communities, white homeowners responded by creating deed restrictions, intending to keep Black and Brown people relegated to certain areas to protect property values. While these deed restrictions are no longer legally enforceable, municipalities now use zoning to restrict housing for lower income households.

"Modern-day suburbs tend to have more of these exclusive zoning laws than inner cities, largely because the suburbs are zoned for single-family housing rather than other kinds of multi-unit housing…In Connecticut, for example, research shows that most of the land zoned

for residential property development requires an acre of land for each housing unit."[30] This minimum lot size and inflexibility about how those lots can be used curtails housing supply[31] and makes existing housing even more expensive. Connecticut's median home value is $331,589, and the state's minimum wage is $13.00 an hour.[32]

In Westport CT for the last 18 years there has been a debate over creating more affordable housing in the area. The deal includes a provision that allows the town to maintain its moratorium on plans submitted under the 8-30g state legislation, which allows developers to skirt municipal zoning regulations provided a specific percentage of the construction includes affordable housing.

This law was a major topic of controversy during the conference, with commissioners claiming it is the sole reason this development is being built in this location. They said it violated Westport's zoning and highlighted worries about traffic and scale, with more than 150 units planned for the area, which is mostly made up of single-family houses. For years, the developer has tried to construct on the Hiawatha Lane property, gradually growing the size and being disallowed by the commission. Officials stated that it wasn't until the idea was extended and presented as an affordable housing project under 8-30g that it was allowed to move forward, albeit without the commission's backing.

Residents and former commissioners questioned the developer's intention to truly address the state's affordable housing need, particularly in Westport, because the development would go in one of the town's few affordable areas, replacing homes that could have been purchased by the people the developer claims to want to help.

Westport is one example of NIMBY in action. Westport, Connecticut is known to be an upper-class white area. Many residents are against the creation of affordable housing because they feel it will diminish their own homes value or the individuals who will be taking these places could also move into the one family homes that are already available.

Opportunity Mapping

Connecticut was first introduced to opportunity mapping in 2009 by a report produced by the Kirwan Institute for the Study of Race and Ethnicity and commissioned by the CT Fair Housing Center. This first look at opportunity mapping exposed deep geographical inequalities in opportunity based on race and ethnicity. The creation of opportunity mapping confirmed the idea of "two Connecticut's," one with resources and one without. Opportunity mapping is divided into 5 categories: exceptionally low, low, moderate, high, and extremely elevated levels of opportunity. In Connecticut, an extremely high percentage of government subsidized housing units, almost 85%, are in exceptionally low, low, or moderate opportunity areas. These areas also tend to be in Black and Latino communities.

Diving deeper into Connecticut mapping shows that 73% of Blacks and Latinos live in low and incredibly low opportunity areas compared to 26% of whites and 36% of Asians, as evidenced by Figure 1. The majority of extremely high opportunity areas land within these areas.

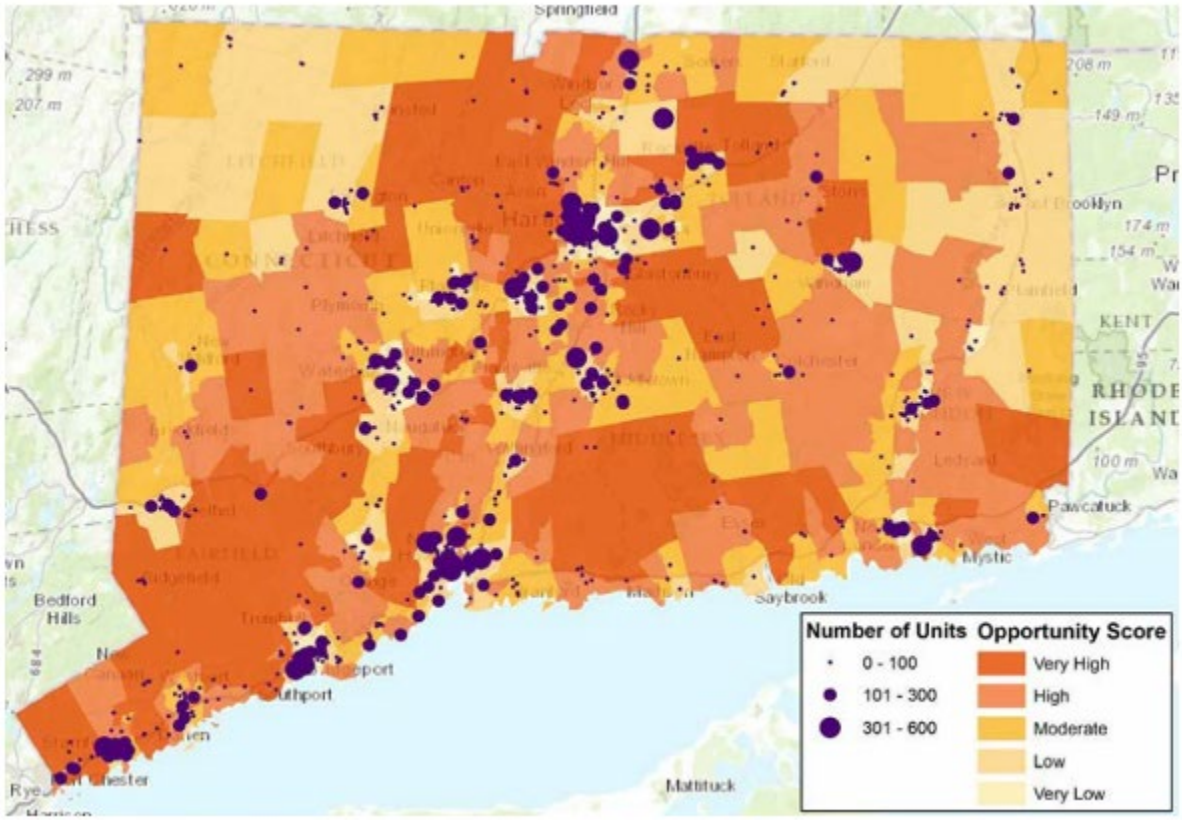

Figure 1[33]

Connecticut is defined by severe degrees of racial, ethnic, and economic division. With 67 percent of the state's population of color living in only 8% of the municipalities, Connecticut is one of the most racially and ethnically divided states in the country. To put it another way, 93.5 percent of the state's land area is disproportionately white residents (72 percent or more), whereas 5.8% of the state's land area is disproportionately minority residents (30 percent minority or greater). On average, Black families earn 55 percent of what white families earn, Hispanic families earn 44 percent of what white families earn, and Asian families earn 97 percent of what white families earn. As a result, Blacks and Hispanics require far more cheap housing than whites and Asians.

When race and ethnicity patterns are laid over the map of opportunity, we see that access to opportunity is not available on an equal basis. These deep opportunity disparities with race

have many implications across multiple factors including health outcomes and educational achievement gaps. To combat these disparities, we must first look back to how we got to the current state of segregation. History has 4 main factors: placement of public subsidized housing, redlining, racial covenants, and exclusionary zoning.

Often when it comes to citing subsidized housing state, funding polices influence where affordable housing is built. Over the years, the location of subsidized housing has been placed in higher poverty areas compared to other states. One measure of analyzing affordable housing development is to consider location compared to the racial/ethnic and higher poverty composition of the state. A disproportionate number of people of color are in these concentrated areas of poverty. In some areas of Connecticut that are majority white, there are 506 people per square mile. In racially concentrated areas of poverty where minorities making up more than 50% of the population, there are 7,400 people per square mile. This is due not only to the urban vs. suburban aspect of these areas, but also the lack of affordable housing and opportunities for the individuals who live there. Many times, these disproportionately white areas do not offer or want affordable housing in these areas. This exclusionary attitude denies people of color the opportunity to have the same quality of life as their white counterparts.

Local opportunity has a significant impact on people and families' ability to succeed. Education, health, and job results are all influenced by where you live. According to recent research by Harvard researcher Raj Chetty,[34] a young person from a low-income family who transfers to a high-opportunity location before the age of eight will earn $302,000 more over the course of their lifetime than if they stayed in a lower-opportunity area.

Redlining is an outlawed practice that manifests itself in other ways. A federal agency devised a system for evaluating mortgage risk by neighborhood. The system used race as a component in predicting neighborhood instability. This means that people of color in these areas have historically been unable to secure a home loan and, as a result, have been unable to accumulate wealth. This became detrimental to securing generational wealth and mobility, leaving many families stuck in the same generational circumstances.

Racial covenants in some property deeds have wording that expressly prohibits persons of color from ever inhabiting a certain property. (In Shelley v. Kraemer, the United States Supreme Court banned the enforcement of such wording.[35]) Racially restrictive covenants were widespread tools of discrimination used by white homeowners to prevent the migration of people of color into their neighborhoods during the first half of the 20th century. Although the United States Supreme Court ruled in Shelley V. Kramer that racially restricted covenants could not be enforced, the practice of adding such covenants into title documents remained widespread. Nonetheless, seventy years after Shelley and 60 years after the Fair Housing Act, racially restricted covenants are still ubiquitous in deeds. This might be for a variety of

reasons. First, because covenants run with the property, they become a permanent part of the land title. Second, removing covenants is a costly and time-consuming operation. Third, most property owners may be unaware that their homes are subject to racially discriminatory covenants.

Exclusionary zoning often prohibits or limits specific forms of development to diminish the possibility that they can be created. Exclusionary strategies commonly used include prohibiting multi-family housing, demanding huge lots, mandating excessive parking, and imposing minimum square footage requirements for houses. Zoning has been identified as one strategy used to keep people of color out of communities and cities. Because individuals of color have a disproportionately lower income, municipalities can effectively exclude them by mandating bigger minimum lot sizes, lower maximum density (units per acre), and a variety of additional conditions.

Access to opportunity has an impact on education, employment, income, health (both physical and mental), imprisonment, and overall life outcomes. Because location is so essential to the resources accessible to each of us, and because certain groups reside in places with restricted access to a variety of options, it is critical to understand how all these elements interact to influence individuals' future lives.

5. Case Studies

In the following section, Norwich and Waterbury are used as case studies to examine the effects of zoning on racial disparities in public health. These cities were chosen because they have been relatively neglected in research on urban communities in Connecticut.

Norwich

Currently, there is a lack of supply of housing in southeastern Connecticut appropriate to its population.[36] Specifically, there is a need for lower-cost home ownership opportunities and rental housing. The share of cost-burdened renters and homeowners, meaning renters or homeowners who spend at least 30 percent of their income on housing, has gone up from 32 percent for renters and 25 percent for homeowners in 2000 to 48 percent for renters and 30 percent for homeowners in 2015.[37] Between 2015 and 2030, the southeastern region expects a 6.3 percent increase in the number of households.[38] The region has a variety of regulations governing future land use; all the municipalities allow for the construction of single-family housing, but only some allow for multi-family housing or encourage the construction of affordable housing. More than 60 percent of housing in the region is currently single-family. Fourteen municipalities allow for two-family homes in at least one zoning district intended for single-family units. Seven municipalities limit zoning for two-family homes to commercial or

multi-family zones. Four municipalities do not allow multi-family housing to be developed. There are six municipalities with Incentive Housing Zones, which are areas that offer density bonuses to developers, and three municipalities using other inclusionary zoning practices.[39] Public sewer systems are also limited in many parts of the region, making new construction more difficult.[40] There are almost 17,000 deed-restricted assisted or cost-subsidized units of housing[2] in the region, but 80 percent of these units are in Groton, New London, Norwich, and Windham.[41]

Figure 2: City of Norwich Demographic Characteristics[42]	
Population	40,125
White	61.2%
Black	11.1%
Native American	1.1%
Asian	8.2%
Hispanic	14.4%
Owner-occupied housing unit rate 2015-19	51.6%
Median value of owner-occupied housing units 2015-19	$164,200
Median gross rent 2015-19	$1,061
People under 65 with a disability	9.8%
People under 65 without health insurance	5.6%
People living in poverty	13.1%

The Uncas Health District (UHD), which encompasses Norwich and the surrounding towns, set out three goals after conducting a community health assessment: 1) reduce the impact of chronic disease, specifically focusing on healthy eating and tobacco use; 2) achieve the lowest rate of opioid misuse, addiction, and death; and 3) ensure there is sufficient transportation to meet the healthcare needs.[43] One of the approaches that New London County is taking to achieve the first goal is to "increase outreach efforts to the business community and local zoning enforcement officials to address the number of fast food restaurants allowed in communities."[44]

Residents of the UHD identified abandoned houses and transient housing conditions as a concern. Lower income towns, including Norwich, Sprague, and Griswold had the most housing units occupied by renters, with 47.8 percent, 31.2 percent, and 27.0 percent of housing units occupied by renters respectively. Higher income towns, including Salem, Lebanon, and Lisbon had the fewest housing units occupied by renters, with 5.7 percent, 9.0 percent, and 9.2 percent of housing units occupied by renters respectively.[45]

In terms of asthma, New London County's average daily density of fine particulate matter (PM2.5) was similar to Connecticut; New London County had a PM2.5 of 10.3 and Connecticut had a PM2.5 of 10.5. Norwich and Sprague had the highest rate of age-adjusted asthma-related emergency department visits with 147.1 per 10,000 population and 120.7 per 10,000 population respectively. Salem, Bozrah, and Voluntown had the lowest

[2] Deed-restricted affordable housing means the property is restricted to being used for affordable housing.

rates with 39.4 per 10,000 population, 59.9 per 10,000 population, and 60.5 per 10,000 population respectively.[46]

In 2020, the Norwich School District asthma prevalence overall was 17.6 percent. 18.7 percent of non-Hispanic white students had asthma, while 23.5 percent of non-Hispanic Black students had asthma and 20.7 percent of Hispanic students had asthma.[47]

In 2013, Norwich also had the highest number of confirmed cases of elevated blood lead levels in children among the towns served by the UHD. Between 2010-2014, most of these cases were located in neighborhoods in Southeastern Norwich.[48] It is critical to note that the concentration of childhood lead poisoning among children less than 6 years old coincides with areas that are zoned for mixed residential and nonresidential.[49]

The UHD is currently working to identify communities with the greatest needs and assets. This effort is being undertaken in conjunction with the Eastern Connecticut Health Collaborative, which is doing a community needs assessment across multiple communities in a standardized way. The survey conducted by the hospitals in the area will be used as a baseline. The collaborative is still working to come up with specific metrics that can be used to identify needs (P. McCormack, personal communication, March 14, 2022).

The UHD has expanded from covering urban areas in the early 2000s to now covering nine more rural towns. Rural communities do not tend to have language barriers, but they do not have a lot of medical professionals and have a lack of transportation to providers. In urban areas, there appears to be more access, but people still to struggle to get the care they need due to a lack of trust and other cultural barriers. This has been borne out in lower rates of vaccination amongst people of color, who tend to live in urban areas. Interestingly, there are also low rates of vaccination in Griswold, which is made up primarily of white residents who do not want to be vaccinated.[3] The people of color are persuadable, whereas the residents of Griswold are not. The UHD is working with community partners who are able to build trust with Black and Brown community members prior to vaccine administrators arriving (P. McCormack, personal communication, March 14, 2022).

Access and hesitancy are the two categories of barriers to vaccine uptake in communities of color, and especially in Black communities. Some access issues include distant vaccination sites, lack of transportation, and an inability to miss work. In terms of vaccine hesitancy, historical racism, like the Tuskegee syphilis study and the use of Henrietta Lacks' cancer cells, and institutional racism have bred distrust. All these factors lead to vaccine hesitancy. A study

[3] "The most hardcore opponents of coronavirus vaccination — the group who say they'll never get one — tend to be older, whiter and more Republican than the unvaccinated Americans who are still persuadable…"
Talev, M. (2021, July 28). *Understanding the unvaccinated*. Axios. https://www.axios.com/covid-unvaccinated-repiblican-white-south-4681dcbd-57f3-40c3-9719-cb798fa8846b.html

found that Black individuals overcome their vaccine hesitancy more quickly than white individuals because of a motivation to protect themselves and their communities. Once presented with convincing evidence, there is an incentive among Black individuals to get vaccinated to protect themselves and their communities from disparities in health outcomes.[50]

The eviction moratorium meant that landlords were working with tenants and UniteCT, but UniteCT aid ended, and landlords started sending notices to tenants. Water was cut off by landlords, or utilities were put under the landlord's name so they would turn off and could not be turned back on. The UHD has been forced to condemn these properties, and landlords would prefer to pay the $4,400 relocation fee rather than to allow tenants to stay without paying. The number of complaints, consisting of tenants calling different municipal organizations to explain that their water or utilities have been shut off, have gone up. The tenants who have been experiencing these issues are not necessarily people of color; they are impoverished people and younger people. Many people of color in the region have good jobs and have landlords who are of the same ethnicity, so there tends to be a communal way of dealing with issues (P. McCormack, personal communication, March 14, 2022).

There are pockets of the community that have old housing stock. They tend to be renter dwellings that are poorly maintained and have lead contamination. People living there struggle to make ends meet. The UHD prefers to address problems with the units without taking property out of the housing stock because condemnation is not always the best approach. Tenants often assume that being relocated will make them better off, but that is not normally true. The units to which they are relocated are generally smaller, they require children to change school districts, and are not within walking distance to work. In September, there was a lot of flooding in the area and people throughout the municipal government were receiving calls about housing. People did not have anywhere to go. There is a lack of resources or a capacity to help with issues other than lead poisoning in children. The city only has two apartment buildings that are considered lead safe, so people often must be relocated to hotels. Many people who must be relocated once are relocated again in the future because the available housing stock is of poor quality and is still expensive (P. McCormack, personal communication, March 14, 2022).

The local health employees want to make things safer, but, if the state lowers the safe amount of lead, they do not have the resources to address the number of cases that will develop. Dealing with lead requires skilled resources, not just money. People need to be trained, able to work onsite, and communicate with landlords and tenants. Parents are concerned about losing housing and having to deal with the Department of Child Protective Services in cases where their children have lead poisoning (P. McCormack, personal communication, March 14, 2022).

The UHD has looked at the location of farmers markets and food deserts and setting up food delivery sites in high need areas. In Norwich, a soup kitchen had to move and be relocated to a Catholic school in a different community. Community members said the location was bringing crime and drugs to the neighborhood, and property owners worried about property values. The location was zoned to allow the soup kitchen, but the community pushed back on its presence. This is a case of NIMBYism; there must be community buy in when changes are made, and this community buy in can be achieved through better communication and encouraging involvement from residents in early stages of development. Additionally, in Lisbon, an incinerator site was set up in an area away from other development in Lisbon. The site was right up against low-income housing in Norwich, so Lisbon got the tax base with no environmental impact while Norwich received no tax base but all the environmental consequences (P. McCormack, personal communication, March 14, 2022). Development in one municipality impacts surrounding municipalities, so there needs to be collaboration across towns to ensure that the impacts of development are equitable.

Waterbury

There are 40,937 households in Waterbury, and there are 47,830 housing units. 40 percent of those units are single-family while 60 percent are multi-family. This differs drastically from Greater Waterbury, where 67 percent of the housing units are single-family while 33 percent are multi-family.[51] 53 percent of renter-households are cost-burdened whereas 32 percent of homeowners are cost-burdened; cost-burden disproportionately impacts Black and Latino households because they are more likely to be renters.[52] In Waterbury, 38.8 percent of the housing stock was built before 1950, and, in Greater Waterbury, 33.2 percent was built pre-1950.[53]

Figure 3: City of Waterbury Demographic Characteristics[54]	
Population	114,403
White	38.9%
Black	21.7%
Native American	0.2%
Asian	2.4%
Hispanic	37.4%
Owner-occupied housing unit rate 2015-19	41.4%
Median value of owner-occupied housing units 2015-19	$130,700
Median gross rent 2015-19	$969
People under 65 with a disability	10.3%
People under 65 without health insurance	9.2%
People living in poverty	23.4%

The Greater Waterbury Health Partnership set its health priorities as access to care; access to health influencers like food, housing, and health education; and addressing health risk factors,[55] similar to the goals of the UHD. The Health Partnership also identified that "Housing instability contributes to many health risk factors such as lack of access to medication, lack of access to care or mental

illness and substance abuse."[56]

In the urban core, which includes Waterbury, incomes are stagnant, unlike in the outer ring. The median household income in the region varies significantly. Urban core residents earn an average of 50% less than residents of the inner and outer ring towns.[57]

In Greater Waterbury, 69 percent of residents own their homes, but only 44 percent of Waterbury residents own their homes. 70 percent of whites in Greater Waterbury own their homes while only 32 percent of Black residents and 35 percent of Hispanic residents in the region own theirs.[58]

There are high rates of emergency department encounters and avoidable admissions in Waterbury related to asthma. 28 percent of Waterbury residents, 23 percent of Greater Waterbury residents, and 20 percent of Connecticut residents on the whole report frequent asthma attacks at a rate of once a week. Housing quality factors, like mold and dust, contribute to higher rates of asthma in Waterbury.[59]

In 2020, the Waterbury School District asthma prevalence overall was 18.8 percent. 16.9 percent of non-Hispanic white students had asthma, while 21.7 percent of non-Hispanic Black students had asthma and 18.2 percent of Hispanic students had asthma.[60] The Waterbury Board of Health is responsible for hiring school nurses in the city, and there are currently about 15 vacancies (A. McGuckin, personal communication, March 8, 2022).

The Waterbury Health Department prioritizes its work based on the CDC social vulnerability index. Social vulnerability captures the negative effects of external stresses on health in communities. Examples of these stresses are disasters or disease. The aim is to reduce social vulnerability to decrease suffering and economic impacts. The Social Vulnerability Index considers 15 U.S. census variables to create a system to identify communities that benefit from support in the face of disasters.[61] Focus is directed toward the census tracts that fall into the highly indexed category. These communities have been part of Waterbury's push for vaccine equity in conjunction with the state because there is a lack of vaccine confidence in historically underserved communities. There is concern that a lot of resources are being expended without being specifically responsive to the needs of these communities. Waterbury has worked with a lot of religious organizations in the city because they have connections to underserved groups and can help to inspire confidence (A. McGuckin, personal communication, March 8, 2022).

Waterbury is historically a city of industry, with brass and other mills as well as Timex making the city their home. As a result of heavy industry, there are a lot of lead poisoning problems, especially with the old housing stock. Anecdotally, the people live in housing near these old factories are people of color (A. McGuckin, personal communication, March 8, 2022).

Currently, the acceptable level of lead is 20 μg/dL, but the state is considering lowering that level to somewhere between 3.5 and 5 μg/dL. The city would be completely overwhelmed if this change were to be made because of a lack of resources. Each house or apartment with a level of lead above the acceptable level requires case management and remediation, including moving the family out and finding temporary housing. There is a lack of temporary housing and a general shortage in the housing stock, which has been exacerbated by the eviction moratorium. Each case can cost anywhere from $13,000 to $130,000. Lead paint is also still used in outdoor infrastructure, which continues to perpetuate lead poisoning problems, especially with many people of color holding construction jobs (A. McGuckin, personal communication, March 8, 2022).

6. Recommendations

Currently, there is a dearth of research on the relationship between zoning regulations and racial disparities in public health.

Statutorily mandated plans of conservation and development (POCD) must be completed every ten years by every municipality in Connecticut. Section 8-23 of the Connecticut General Statutes, as amended by Public Act 15-95, sets forth required procedures by which each municipality must prepare or amend and adopt a POCD. We recommend that the statutes be amended to require consideration of SDOH and the social vulnerability index.

SDOH includes the number of people receiving preventative healthcare treatments, the proportion of people living in poverty, the rate of cost-burdened renters and homeowners, and the blood lead levels in children. In Norwich and Waterbury, data has been collected related to these metrics. There are observed racial disparities based on the lack of trust between communities of color and healthcare providers, higher rates of poverty in cities with more residents of color, high rates of cost-burdened renters in cities where most renters are people of color, and high concentrations of elevated blood levels in children near industrial and commercial areas. To fully understand the scope of these racial disparities, we recommend further research to look at a targeted list of social determinants, compared against targeted areas with different zoning regulations in place, down to the census tract level. A full public health study of this nature will help demonstrate the correlation between these community factors and health outcomes.

We recommend mapping formerly industrial areas of towns over the social vulnerability index. The purpose of creating these maps is to identify the causes of health disparities and the impact on different neighborhoods. Zoning boards have considered the historic uses of land in creating regulations, but they have not sufficiently considered the impacts of these uses on

disparate racial health outcomes. Examining whether areas that were used for industrial purposes have been zoned for affordable housing or for family housing that is predominantly occupied by people of color can inform future zoning practices. Creating these maps for Connecticut could assist in this process.

We also recommend training be conducted jointly between land use and public health professionals. The people working in these two areas are not likely to cross paths and are therefore unable to work at the intersection of their expertise, which prevents an exploration of the effects of zoning regulations on racial disparities in public health by city and state officials.

The three main recommendations to combat NIMBYism include sharing developmental plans and examples to residents so they can understand what will be introduced, addressing the concerns of the community, and making a point of contact on the development team visible to the community. As observed in Norwich, community buy in is essential to future development.

Connecticut should implement methods to provide disenfranchised people, families, and communities with access to "levers" of opportunity. The "Communities of Opportunity"[62] paradigm is one approach to overcoming opportunity isolation. Both Waterbury and Norwich can benefit from more community involvement to mitigate NIMBYism and exclusionary zoning. Investing in places that support community development projects, attract employment with decent salaries and chances for promotion, demand high-quality local services for all communities, encourage stronger linkages between fair housing and community development frameworks, and address these discrepancies while expanding opportunities for all people in the region creates the possibility of utilizing these levers of opportunity. As a result, we expect to see improvement in opportunity ratings and quality of life in the state.

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