

A data dream

Using data science to empower the future of Lindsay Heights



NORTHWESTERN MUTUAL
DATA SCIENCE INSTITUTE





Dear Friends,

As a result of the Data You Can Use Data Dream grant and their partnership with the Northwestern Mutual Data Science Institute, residents now have the research for planning and to make informed decisions about the future of housing in the Lindsay Heights neighborhood.

Through the Northwestern Mutual Data Science Institute, we've been working with students from Marquette and UW-Milwaukee to gather and analyze existing data. In partnership with residents, we extrapolated trends and insights, and developed strong recommendations to increase home ownership and improve housing conditions in the neighborhood. This project has helped bring more awareness and a better understanding to the challenges and opportunities that residents face with sustaining ownership, rental affordability, property values, crime, and education.

Lindsay Heights residents are active and connected, and well-aware of the challenges and opportunities ahead for our rapidly invested near-downtown neighborhood. This project has energized and equipped resident leaders to be proactive in their response to the looming threat of displacement and unguided gentrification. The readiness of Lindsay Heights residents to take on and overcome these challenges is evident in their knowledge of the issues, level of participation and commitment to the process.

Lindsay Heights residents have led the effort and are working with stakeholders across sectors to identify and implement housing and economic development solutions that work for everyone, especially the most vulnerable members of our community. Now, those same residents will be armed with data to support their continuing work in our community and help allocate resources where they are needed most.

Sincerely,

A handwritten signature in black ink that reads 'Antonio Butts'. The signature is stylized and cursive.

Antonio Butts
Executive Director, Walnut Way

PURPOSE

The purpose of the Walnut Way Data Dream Project is to leverage data science research to access financial support for equitable housing and economic development in the Lindsay Heights neighborhood. This report summarizes nearly 20 years of data on the social, environmental, and economic aspects of Lindsay Heights into several key insights that will inform an actionable strategy for neighborhood resident leadership. Through this collaboration between Walnut Way Conservation Corp. and the Northwestern Mutual Data Science Institute, the vision is to realize an increase in home ownership by providing training, capital, mentoring and resources to the residents of Lindsay Heights.

PROJECT OVERVIEW

Located in the heart of the Lindsay Heights neighborhood, Walnut Way Conservation Corp. is a resident-led neighborhood organization that is committed to sustaining an economically diverse and abundant community through civic engagement, environmental stewardship, and creating venues for prosperity. Chartered by neighborhood residents in 2000, Walnut Way challenges the cycle of poverty by engaging, educating, and employing community members to take leadership roles in comprehensive revitalization strategies. Walnut Way works from strengths-based programming and is called to a vision of abundance. Since its purposeful beginnings, Walnut Way has reclaimed its neighborhood with compassionate and involved residents.

Walnut Way considers its programming in terms of Wellness, Work, and Wealth programming to achieve its mission to sustain economically diverse and abundant communities through civic engagement, environmental stewardship, and creating venues for prosperity. Walnut Way convenes a variety of wellness, work, and wealth building programs including urban agriculture, a landscaping work program, healthy food

Walnut Way Conservation Corp. is a resident-led neighborhood organization that is committed to sustaining an economically diverse and abundant community through civic engagement, environmental stewardship, and creating venues for prosperity.

classes, canning and preservation, and entrepreneurship support programs, and economic development projects that promote social cohesion and lift the strengths and talents in the community.

In November 2019, Walnut Way participated in Data Day, an annual event hosted by Data You Can Use, a community organization of local professionals who help people access data and use it to improve community conditions. The 2019 event was sponsored by the Northwestern Mutual Data Science Institute and held at Northwestern Mutual's Cream City Labs. The Northwestern Mutual Data Science

Institute, a partnership between Northwestern Mutual, UW-Milwaukee, and Marquette University, uses data science research to solve some of the world's most pressing problems while helping build an organic talent pipeline for the region by providing students with opportunities to advance their skills in the field of data science.

As part of Data Day, non-profits can submit proposals for the "Data Dream" competition, with the winner receiving monetary and in-kind resources to execute their project. Submissions are required to focus on using data and data science to advance work that will meet a substantial community need. Walnut Way submitted a proposal requesting support that would help increase home ownership in the Lindsay Heights neighborhood and pitched the project to a panel of judges. Ultimately, Walnut Way won the competition and was awarded \$5,000 or approximately 40 hours of support from the Northwestern Mutual Data Science Institute.

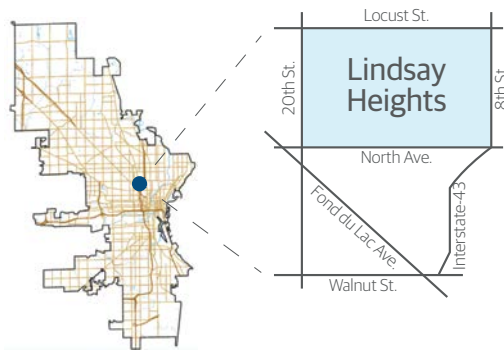
The Northwestern Mutual Data Science Institute, a partnership between Northwestern Mutual, UW-Milwaukee, and Marquette University, uses data science research to solve some of the world's most pressing problems while helping build an organic talent pipeline for the region by providing students with opportunities to advance their skills in the field of data science.



The Walnut Way Data Dream project officially launched in December 2019 as a collaboration between Walnut Way and the Northwestern Mutual Data Science Institute. Through the Northwestern Mutual Data Science Institute, eight undergraduate and graduate students from Marquette University and the University of Wisconsin-Milwaukee were tasked with analyzing 20 years of data and providing the key insights to Walnut Way and the residents of Lindsay Heights.

NEIGHBORHOOD OVERVIEW

The Lindsay Heights neighborhoods is a 110-block area on Milwaukee's north side and home to 9,000 residents. Most of the neighborhood is

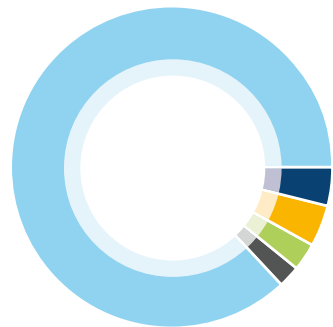


African American (87%) and is also home to other diverse populations (4% multiracial, 4% Asian/Pacific Islander, 3% Hispanic or Latino/a and 2% European American).

As expected, these social determinants have adversely affected the community's health. Over 45% of those who live in the neighborhood live below the poverty level. The two zip codes of 53205 and 53206 that comprise Lindsay Heights rank the lowest of the City of Milwaukee's 29 zip codes in terms of high rates of uninsured (27.6%), obesity (43.5%), and inadequate access to healthy food (64.1%). Homes in Lindsay Heights are in disrepair and are still being torn down, affordable housing is limited, there are elders who need assistance repairing their homes, and there are neighbors who've expressed fear of being pushed out of the neighborhood due to upcoming development projects. Involuntary displacement due to gentrification is a real concern.

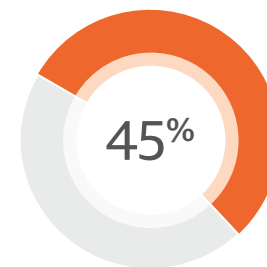
SOCIAL DETERMINANTS

NEIGHBORHOOD DEMOGRAPHICS

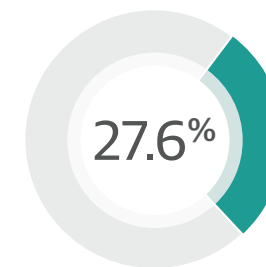


- African American
- Multiracial
- Asian/Pacific Islander
- Hispanic or Latino/a
- European American

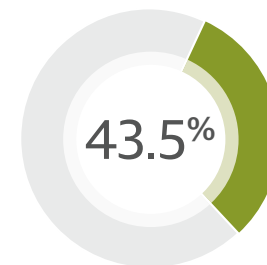
The area was once home to vibrant businesses and families, but the 1950s saw the beginning of a long period of disinvestment. Racial redlining, the destruction of thousands of homes and businesses for freeway expansion, and the disappearance of jobs ripped apart the community's social and economic fabric. Commercial corridors and surrounding neighborhoods deteriorated, property values plummeted, businesses moved out, unemployment rose, and schools suffered.



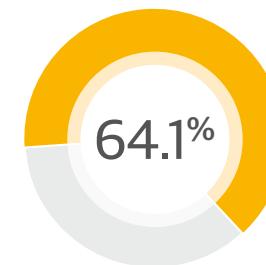
Live below the poverty level



High rates of uninsured



Obesity



Inadequate access to healthy food



One of the biggest challenges is that programs and initiatives are designed without solid data on a neighborhood level, and community organizations are forced to make best guesses about what an intervention should impact. A vast majority of data sources don't deliver neighborhood specific data, and this makes it more challenging to use data to make strategic decisions on projects, programs, and initiatives. The result is the use of zip code level data that's not specific enough to inform programming and partnerships.

Across the community, agencies, stakeholders, and residents work to improve the quality of life in the neighborhood in housing, education, public safety, employment, health and wellness. Walnut Way is a lead convener of housing programs and initiatives in Lindsay Heights and hosts the Lindsay Heights Housing Committee, working with key funders and partners to provide the staffing needed to enhance the work of the Housing Committee. Through the Walnut Way Data Dream project, the Housing Committee will be able to access key data to help direct resources where they're needed most, being more intentional and consequently, more impactful.

PROJECT DETAILS

The purpose of the Walnut Way Data Dream project was to use data science to enable strategic, data-driven decision making to improve the quality of housing in the Lindsay Heights neighborhood.

Large amounts of publicly available data has been collected over the past 20 years. For example, households headed by single females make up 40% of Lindsay Heights households, compared to 22% citywide. We also know in the Lindsay Heights neighborhood the most common monthly rental rate is between \$1,000- \$1,249, higher than the City's most common monthly rental rate of \$800- \$899. But even with this data, the absence of neighborhood level information combined with a lack of resources to canvas the entire population and the expertise to analyze and evaluate existing materials, there is has been a gap in putting the data to use. Additionally, skepticism from Lindsay Heights residents regarding survey data collection was evident. Often, data was collected from residents and no communication loop was established to share the results of what was learned or how the neighborhood could be improved.

These factors, as well as understanding the needs of the community, helped determine the research questions that would drive this project:

- 1 What could happen if residents in the neighborhood had the tools and resources necessary to increase home ownership? To sustain existing home ownership?
- 2 Traditional funding models don't work for this neighborhood because of low income levels. What would need to be true in order to have a non-traditional underwriting approach and/or alternative qualification method to financing models for home ownership?
- 3 Why haven't property values increased in Lindsay Heights in the last 10-15 years relative to the market?

Based on these research questions, five specific focus areas emerged as critical to understanding the current and future housing needs for Lindsay Heights:

- rental affordability
- property values
- home ownership
- schools, and
- crime

Students were split into these five focus areas to begin analyzing the data. It's important to note that each group worked with different data sets with unique geographical granularity and historical range respective of the focus area being studied. The results of this analysis follows on the next five pages.



Rental affordability

Spending around 30% of income is the norm when trying to assess affordability of rent. The analysis found that Lindsay Heights residents have been paying more rent than they can afford, with more than 30% of their income going towards rent. Using data for Lindsay Heights zip codes 53205 and 53206, the cost of renting has been increasing over the past few years. From 2012 to 2018, rent in 53205 has increased by 17.5% and by 11.1% in 53206. There has also been a decline in population in people ages 16 and above year over year. What is interesting is that the unemployment rate has decreased year over year and there is an approximate 2% increase in income since 2012. That said, there is a significant disparity between income in Lindsay Heights and income in neighboring zip codes. Median income in 53205 is \$22,969 per year and \$22,676 in 53206. Median income in zip code 53216 is \$34,350 per year – a gap of more than \$11,000.



RENTAL AFFORDABILITY



Lindsay Heights residents spend more than **30%** of their income on rent

COST OF RENTING



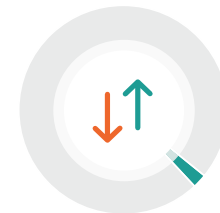
From 2012 to 2018, rent for zip code 53205 **increased** about **17.5%** and about **11.1%** for zip code 53206

POPULATION



There has been an **enormous decline** in population since 2012, especially in the 53206 zip code

UNEMPLOYMENT & INCOME



Since 2012, the unemployment rate has **decreased** while income **increased** approximately **2%**

Property values

The analysis in this area focused on land value, property sales, business property value, tax principal and tax delinquency. Property sales saw an increase between 2002 and 2010 but remained constant between 2011 and 2014. Business property value was distributed evenly across assessment values with retail and service being the most common business type. The analysis checked for a correlation between tax delinquencies and housing assessment. From 2008 onward, after great fluctuation from 2000 to 2008, land values in Lindsay Heights have stayed relatively flat. In addition, between 2005 and 2013, there was a drop in tax delinquencies. There are several tax delinquent properties in Lindsay Heights. The analysis showed that if a resident had a tax delinquency for less than six years, the housing assessment increased. If a resident had more a delinquency for more than six years, the housing assessment was consistent.

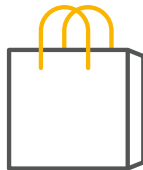


PROPERTY SALES



Increasing from 2002-2010, **constant** from 2011-2014; **Increase** in sales in recent years

BUSINESS PROPERTY VALUE



Evenly distributed across assessment values; Most businesses are in **retail and service**

TAX PRINCIPAL



Most properties with a high unpaid tax principal are **commercial**

TAX DELINQUENCIES



Properties with tax delinquency fewer than 6 years saw an **increase** in property assessment; If the delinquency was for more than 6 years, the assessments were **consistent**.

Home ownership

After reviewing the data on home ownership for Lindsay Heights zip codes of 53205 and 53206, the analysis found that home ownership has decreased from 40% to 30% since 2000. There are seven landlords owning more than nine properties each in the neighborhood. The City of Milwaukee is the largest landlord in the community with ownership of 436 properties. Unlike other cities across the country and even parts of Milwaukee, the data shows this community does not have a lot of out-of-state or out-of-community landlords which could make it easier to work on increasing homeownership. An inflation adjusted comparison of assessed property value from 1999 and 2019 shows overall property values have increased but there is a clustering of declines in property value in the Northwest part of the community. Lindsay Heights zip codes have notably less violations than surrounding neighborhoods. Approximately 66.7% of all violations are residential cases or garbage-related cases for the period between January 2020 to April 4, 2020. Lastly, there has been an uptick in construction permits between 2018 to 2020. Permits have increased from 53 permits total in 2018 to 64 permit applications just from January 2020 to March 2020.



DECREASE SINCE 2000



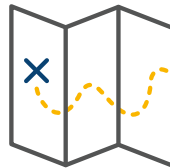
Home ownership has declined from **40%** to **30%**

LARGEST LANDLORD



Own over **436** properties in the focus area

CLUSTERING OF HOME VALUE DECLINES



Northwest part of neighborhood has seen a clustering of declines in property value since 1999

BUILDING VIOLATIONS



66.7% of all violations are residential cases or garbage related from January 2020-April 4, 2020; Northwestern area could play significant role in cost of homes

CONSTRUCTION PERMITS



53 permits total 2018, **64** permit applications from January 2020-March 2020

Schools

There are 14 public elementary schools in Lindsay Heights. This analysis showed that these schools' 3rd grade reading scores are slightly lower comparable with Milwaukee Public Schools and schools statewide. Two schools in Lindsay Heights are scoring higher than most schools in the state. In addition, statewide ACT scores average around 18, MPS schools average around 15, and Lindsay Heights averages around 12. Since 2016, the graduation rate for high schools in the Lindsay Heights neighborhood has increased 8.25%, which is on par with the increase MPS schools have seen (9%) in that same time frame. Since 2010, both Shalom and North Division high schools have seen a 22.7% increase in students enrolling in 2- or 4-year post-secondary institutions, even if not in the next immediate year. An important thing to note is that when the overall population in Lindsay Heights decreases, so does the student population. This could indicate that most students live in the neighborhood and are not leaving the community for their education.



ELEMENTARY SCHOOLS



Lindsay Heights students **underperform** relative to their peers in MPS and in the state.

CHARTER SCHOOLS



Both Milwaukee College Prep schools in Lindsay Heights average test scores are usually **higher** than Wisconsin's

COLLEGE ENROLLMENT



Graduates from North Division and Shalom High have a **high tendency** to eventually enroll in a 2- or 4-year college

STUDENT POPULATION



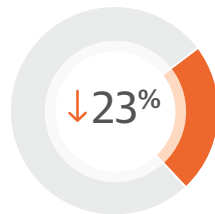
There is a correlation between Lindsay Heights' overall population and the number of students, meaning **most students live in the neighborhood**

Crime

An analysis on crime data in the Lindsay Heights neighborhood showed no correlation between crime rates and housing prices. Total recorded crime showed a decline of 23.07% from 2005 to 2020. There has also been a steady decline in population in zip code 53206 since 2011, while in 53205 the population has fluctuated both up and down. That said, the crime rate in Lindsay Heights is significantly higher compared to the total crime rate for Milwaukee County with assault, theft, burglary, and vehicle theft making up nearly 70% of crimes in the neighborhood. The crime rate in Lindsay Heights is on the same declining trend as that of the entire county.

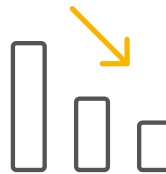


CRIME RATES



Overall crime **reduced** by **23.07%** from 2005 to 2020

NORMALIZE DATA



Crime **reduction** seems to follow the **decline** in population, especially in zip code 53206. This trend did not correlate in zip code 53205.

CRIME RATE CORRELATION TO HOUSING PRICES



No relationship between crime rate and housing prices

CONCLUSION

Since 2008, Walnut Way has been convening efforts to improve the Lindsay Heights neighborhood by implementing the 10-year Lindsay Heights Quality of Life Plan (QLP) with community partners, as part of the Zilber Family Foundation's Zilber Neighborhood Initiative (ZNI). The ZNI continues to move forward with a focus on housing and economic stability in neighborhoods including Lindsay Heights, Clarke Square, and Layton Blvd West. As part of these efforts, Walnut Way is developing the *Lindsay Heights Neighborhood Action Plan*.

The *Lindsay Heights Neighborhood Action Plan* is currently being developed in partnership with Walnut Way and Community Development Management Partnerships (CDMP). It focuses on how to collectively improve affordable housing in the neighborhood, support economic development efforts, and revitalize vibrant commercial corridors with key organization partners, residents, and community leaders.

With this strengths-based momentum taking place across the community, Walnut Way is working to coordinate existing and new efforts to support housing stabilization and economic development efforts. The Data Dream research project is a step towards understanding trends in the neighborhood in order to take informed and effective action. The data and insights from this project will inform Walnut Way's housing and economic development plan moving forward. It will be shared with residents and community planners for the City of Milwaukee's comprehensive plan for Milwaukee's near northside. The information will also be leveraged to advocate for resources for the community. This starts by sharing the data and insights with the Lindsay Heights Housing Committee as well as other partners like the Social Development Commission, Revitalize Milwaukee, St. Ann Center for



Photo credit: Tim McCollow

Intergenerational Care, Lindsay Heights Community Planning Council, various, community leaders, and more.

As a closing point for the project, a self-service dashboard will be created as a place where this data can live on and continue to be analyzed. Residents can use this dashboard with future data sets as well as using Landgrid, the intuitive GIS data webtool the students used to comb through the city's data sources. We will continue to identify gaps where additional data still needs to be collected and analyzed as well as work to detect any unanswered questions that will be required to advance to the next step in improving the quality of housing in Lindsay Heights. We know the work is not done, but this project provided us with a great place to start.

ACKNOWLEDGMENTS

We'd like to recognize and extend a special thank you to the team responsible for more than 600 hours of work to execute this project:

- **Rajasi Tamane** – UW-Milwaukee
- **Thea Robinson** – Marquette
- **Ashvini Patel** – Marquette
- **Aaron Moriak** – Marquette
- **Dan Underwood** – Marquette
- **Eric Kowalik** – Marquette
- **Beau Reeves** – UW-Milwaukee
- **Dhatri Chitta** – UW-Milwaukee
- **Mark Zachar** – Northwestern Mutual Data Science Institute

Additionally, we're grateful for our partnerships with several organizations that contributed to this project:

- Data You Can Use
- LISC
- Loveland Tech
- The Northwestern Mutual Foundation
- Steve and the Team at Community Development Management Partnerships (CDMP)

Finally, we are thankful to the residents of Lindsay Heights. We know the future of your neighborhood is of great importance and that you are committed to doing the hard work that lies ahead. We hope this data and the insights provided will help secure new resources to advance your community.

Data sources:

RENTAL AFFORDABILITY

- <https://www.zillow.com/research/data/>
- <https://data.census.gov/cedsci/>
- <https://data.bls.gov/>

PROPERTY VALUES

- <https://landgrid.com/>

HOME OWNERSHIP

- <https://data.milwaukee.gov/dataset/historical-master-property-file>
- <https://data.milwaukee.gov/dataset/mprop>
- <https://city.milwaukee.gov/PermitRecords2018#.Xuj2XUVKiUk>
- <https://aca3.accela.com/Milwaukee/Default.aspx>

SCHOOLS

- <https://wisedash.dpi.wi.gov/Dashboard/portalHome.jsp>
- <https://milwaukeecollegeprep.com/about-us/results/>
- <https://mps.milwaukee.k12.wi.us/en/District/About-MPS/School-Board/Office-of-Accountability-Efficiency/Public-Items-Emjay/District-Enrollment.htm>
- <https://data.census.gov/cedsci/table?q=ZCTA5%2053206%20Populations%20and%20People&g=8600000US53206&tid=ACSST5Y2018.S0101&t=Populations%20and%20People>

CRIME

- https://data.census.gov/cedsci/table?q=ZCTA5%2053205%20Populations%20and%20People&g=8600000US53205&tid=ACSST5Y2012.S0701&t=Populations%20and%20People&layer=VT_2018_860_00_PY_D1&cid=S0101_C01_001E&vintage=2011
- <https://data.census.gov/cedsci/table?q=ZCTA5%2053206%20Populations%20and%20People&g=8600000US53206&tid=ACSST5Y2018.S0101&t=Populations%20and%20People>
- <https://data.milwaukee.gov/dataset/wibrarchive>
- <https://data.milwaukee.gov/dataset/wibr>

