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COMMENTARY



Engaging Community and Growing Partnerships: A Mapping Equity Exhibit in Dayton, Ohio

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ABSTRACT

This is the story of a mapping exhibit that unfolded during COVID at a large, urban community college in Dayton, Ohio. The culmination of a six-month collaboration between geography/GIS students and faculty and the planning committee of Sinclair's annual Summit, this exhibit *Vestiges of Redlining: Mapping Equity in Dayton, Ohio* promoted community conversations that focused on visualizing 'what is' and on exploring 'what ought to be'. This paper frames the exhibit through the lens of public and community geographies and discusses the necessary collaborations that created the exhibit, promoted the exhibit in public facing spaces, and spurred social action and new partnerships.

KEYWORDS

Community geography; public geographies; redlining; equity; map exhibit

Introduction

"When you know it's an issue going on in your community, but see it blown up a map... it really makes you see the scope of the issue." - exhibit visitor

The insights of this visitor underscored the importance of 'doing geography' that impacts the community. This paper centers on an exhibit – *Vestiges of Redlining: Mapping Equity in Dayton, Ohio* – that was the result of a collaboration of geography/GIS students, geography faculty, and educational activists comprised of faculty and staff outside of geography. The initial concept for the map exhibit emerged during the planning of the 2021 Sinclair Equity Summit. The annual Equity Summit is a one-day, college-wide opportunity for faculty and staff to "review, data, and best practices in serving underserved and at-risk populations" (Prokes 2023). Each year the summit has tackled topics that help faculty and staff better serve our student population. Examples of summit topics have included: "Mind the Gap: Equity in a Time of COVID" (2020), "The Power of Shared Voices: Are we Listening?" (2022), and "Opportunity: Equity is Key" (2023). During the planning process of the fourth annual summit (2021), the group decided to focus on historical redlining of the local area and its long shadow – *Vestiges of Redlining: Boundaries & Barriers, Visible & Invisible*. This idea was the beginning of a six-month active collaboration where geographers were one of the many diverse voices in the room. The group's mutual goal was to create a public exhibit that could be shared and received in the broader Dayton community.

The maps in this exhibit offered a visual representation of the redlines drawn in 1937 that divided our communities along racial lines by limiting access to financial resources and ultimately homeownership. The divide has continued to

impact our communities through inequities in access to healthcare, education, food, and greenspace. This exhibit used the power of maps to explore how and to better understand why some of our communities have more or fewer resources and opportunities than others and to begin conversations about how we view, conceptualize, and respond to racism. Initially created for Sinclair's Equity Summit, the positive community response led to requests to bring the exhibit to public spaces throughout the greater Dayton area.

This public-facing exhibit was possible through many types of collaborations, but this paper will focus on three. First, the exhibit was conceived in conversations with co-chairs of the Equity Summit and then guided by a committee of geographers and activist educators. The efforts of this group resulted in an exhibit focusing on equity in Dayton neighborhoods that could be experienced by a diverse audience. The ideal experience expressed among the organizers is that attendees of the exhibit would have their own 'aha' moments when the maps sparked a personal insight into a problem related to equity in Dayton. Second, once the exhibit was on display, geography faculty drew upon their established networks to promote the exhibit which immediately expanded the potential audience and opened the door for new collaborations. Finally, the exhibit led to connections with community organizations resulting in more collaborations and shifted how these organizations approached equity related issues in Dayton. The multiple collaborations emanating from this Mapping Equity project are central to this paper.

Commitment to equity and community geography

The key term for this project is 'equity', commonly defined as 'fairness or justice in the way people are treated'

(Britannica N.D.). This notion of fairness in how people are treated is at the heart of our work at the college – an open enrollment institution where the stakeholders are everyone in the community-at-large. Equity, one of three strategic priorities, is central to nearly all college initiatives. One initiative – the annual Equity Summit – brings together faculty and staff to focus on better serving our students and community. Not surprisingly community colleges, with their public-service mission, are supported to work in community settings in impactful ways. Equity, then, is embedded in many of the community projects that take place in the college's Geography/GIS programs. One of many community projects, the Mapping Equity in Dayton Exhibit exemplifies the college's longstanding commitment to civic engagement through the vehicle of community geography with students.

Geographers have long been engaged in community work, but lately, this work has solidified under the subdiscipline of 'community geography' (see Shannon et al. 2021). Common to those engaged in this work is a commitment to equity and social justice. They see their work as a "means of empowerment for underrepresented or under-resourced groups to address local issues" (Rock 2022, p. S239). This work is beneficial to local organizations who do not have access to the necessary research data and technical resources that can be used to work for social justice. These resources can be used in a variety of ways including as advocates for social, political, economic and environmental changes in policies and practices. This focus aligns with the attitudes of our students as noted by Jones et al. (2023):

Today's students are more socially engaged in their communities (the university, their families, their friends, broader social networks) than ever before. In an increasingly interconnected world, the usefulness of public-facing work in geography gives our students the tools they need in order to do good work with their education and to help push for a more just world (Jones et al. 2023, p. 6)

This makes sense at the community college where our students, often older, returning students, are working to support themselves or families, and are enthusiastic and eager to work on meaningful projects that are impactful in our local community.

Common to the practice of community geography is the commitment to engage in/with the community in a direct way to 'co-produce knowledge (Barrett and Bosse 2022). This commitment to work alongside non-academics and/or non-geographers is critical to fully understanding and exploring the multiple, varied perspectives held about issues faced by the community. Working as one of many voices requires a shift in how one thinks of the academic 'expert'.

Rather than being the disinterested expert or the useful outsider who is able to help an existing cause, the 'process pragmatist' is an engaged practitioner skilled in the art of relationship building, listening, collaborating and acting with others. Research becomes part of an ongoing process of sustaining a local alliance of organizations working together for the common good. (Harney et al. 2016, p. 318)

Key to this approach is recognizing that community members are knowledgeable actors who are keenly aware of

the circumstances of their everyday life. Still, these collaborations do not happen without a great deal of effort on the part of each participant. All collaborations require time, trust, expectation setting, patience, careful listening, negotiating between individuals and groups, and creating spaces where all participants can meaningfully participate in decision-making (Rock 2022). Relationship building and community engagement requires significant time and effort. No collaboration is the same, differences in communication, methods, design, and dissemination of results always exist (Fischer et al. 2022). For faculty faced with competing demands for their time, this can be challenging.

A critique of this approach to community work is that the participants – academic faculty/researcher and community members – have competing and perhaps, incompatible goals. Examples include differences in terms of objectives (research versus activism), timeframes (long versus short), and outcomes (publication versus social change) (Warren et al. 2018). Another substantial critique is that this research that leans on community voices lacks rigor. Warren et al. (2018) responds to this claim by highlighting the value of community voices in fully understanding the problem being studied. From that perspective, research that fails to include the diverse voices of the community lack the rigor required for substantial, complete research. As work in community geography becomes more established, this collaborative approach to research will become more acceptable in scholarly work (Robinson and Hawthorne 2018).

Although numerous benefits result from practicing community geography, three ideas are particularly instructive. First, projects where students engage directly with the community are beneficial because students have the opportunity to develop 'reciprocal relationships' where students and community participants can learn from each other (Rees et al. 2020). For students, this means that beyond the technical and geographical skills that they are learning during instruction, they develop project management and interpersonal skills. By connecting their classroom learning to real world project experience, they enter the workforce with more confidence and understanding of how 'real' projects work. Second, faculty members have the opportunity to develop sustainable research agendas as they build relationships in the community. These relationships have the potential to become a reliable network for smaller student projects, student internships/employment or larger, longer term research projects. Finally, practicing community geography can lead to visible, public-facing projects that expand knowledge about geography and the community. As Smith (2013, 189) notes: "There are some impressive examples of 'geography in public.' These span digital media, books, broadcasting and more immediate public engagement through events and interventions." Engaging with the public through a variety of media, including exhibits, help to expand our discipline.

The initial approach to the Mapping Equity in Dayton Exhibit departs from what might be typical of a community geography project. First, we are working with a community of faculty and staff inside the college who could be characterized as education activists and non-geographers. This initial project led to collaborations outside of the college.

Second, although geography/GIS students were essential to the project, with the exception of the intern/lead cartographer, most students were only available for short periods of time. Even on shorter projects, students benefit enormously from this work as they learn to work on teams, practice project management skills and engage with clients who most often have different ways of working. Third, the exhibit was clearly a public-facing project that had an impact beyond the college. At Sinclair we have long done public facing geography, but always on a much smaller scale. Partnering with nonprofit and government agencies on geography/GIS projects, we have consistently shown our work in public spaces. Like others, our projects have turned into sustainable partnerships. The public-facing work – *Vestiges of Redlining: Mapping Equity in Dayton, Ohio* – is the focus of this paper.

Designing mapping equity exhibit

This mapping exhibit was created to support the Sinclair College's Annual Equity Summit – a daylong event attended by over 500 Sinclair faculty and staff (November 2021). This collaborative effort explored how historical redlining, while

no longer practiced in the same way, has impacted the lives of people in Dayton. The mapping team worked closely with the data and map committee to determine which maps would tell the continuing story of redlining in Dayton, Ohio. The original exhibit included 37 maps on nine posters, 48 by 48 inches, and covered the following themes: historical redlining, general demographics, education, health, and green space. The exhibit eventually was expanded to include a theme on Voting as well as additional panels related to environmental hazards and police violence. The final exhibit had over 50 maps. Initially this exhibit was displayed at Sinclair's Welcoming Center (see [Figure 1](#)) with a second exhibit displayed alongside a national traveling exhibit "Undesign the Redline" (Designing the WE 2021).

This project was carried out over six-months with firm deadlines. While challenging to work on a single large exhibit, COVID provided a unique opportunity. Our GIS lab was closed and the Liberal Arts and Social Science Dean agreed that a student lab worker could be retained as an intern to create maps. As the project progressed, the intern and lead cartographer, Katie Wosyk, was eventually joined by other students to complete and expand the original project.



Figure 1. Vestiges of Redlining: Mapping Equity in Dayton, Sinclair student Center, October 2021. Photo credit: J. Housel.

The data and maps committee was comprised of Housel and seven educators (albeit faculty and staff activists) who served on the Equity Summit planning committee. Meeting regularly over the six-month period, the committee was tasked with making three critical decisions – identify the themes of the conference, determine the maps that would address each theme, and make critical decisions on the design of the exhibit. The role of the geography department was to manage the project; provide technical expertise; create the maps, graphs and text; work with a graphic designer; and organize the production and installation of the exhibit. The completion of the exhibit in a timely manner required regular and ad hoc meetings to get feedback on the maps.

Geography faculty guided the group through the messy and sometimes frustrating decision-making process. Trish Burke-Williams, Equity Summit Co-chair, commented on the committee on data and mapping:

Every time the subcommittee met there were at least seven voices in the room looking at the maps and what made it fascinating was they all came from different backgrounds – some are sociologists, some are advisors, some are English faculty. It made for a very strong response to the visualization (Hanauer 2021).

Collaborations of this sort can be challenging and is often messy as each participant comes to the table with a unique perspective. This required creating a space that supported trust, close listening, and decision-making. Arriving at firm decisions was sometimes challenging, but it did resemble ‘real life’ processes. From the student perspective, this was a messy and, at times, disorganized process. For example, the committee sometimes suggested maps without the necessary understanding of the data (e.g. availability, margin of error, accuracy, or scale). We offered our technical and geographical expertise to the committee to guide them through decision-making. Intern Wosyk reflected on the messiness of the process:

It was a definitely an interesting process – deciding what data we were going to use, how we were going to portray the data, where we were going to get the data. I have such a messy ArcGIS with this whole project with so many different layers that we were going to use and then we didn’t use and it was just a process ... creating all these different things and then deciding hey let’s look at it from this point of view instead (Hanauer 2021).

Co-chair Burke-Williams saw the messiness as part of the process of a true collaboration where you are working together to solve a puzzle and no one in the room ‘knows’ the solution. “Any good problem-solving process involves messiness, because if you know where you are exactly ending up then you’re not actually solving a problem” (Hanauer 2021). Here the ‘problem’ was producing an exhibit that was meaningful to a diverse audience. Every attendee – students, faculty, staff, and community members – should see value in the exhibit and interpret it from their own perspective. For example, a healthcare worker would be able to think about the data from a health perspective, while a k-12 teacher might consider the everyday situation of their student population.

The decisions were made with an eye toward the resulting exhibit. What themes would appeal to a range of

audiences? What collection of maps might create an ‘aha’ moment for a person attending the exhibit? And importantly, what map design would move the attendees from understanding and exploring the maps to a moment of sudden insight? This design decision was critical and had to be decided early on. The decision was that apart from several large maps which would have a redlining grid layer overlay, nearly all maps would have one layer. The decision was made to simplify and allow the participants to draw their own conclusions about the maps. Related maps were placed in close proximity to help the attendees detect patterns. Burke-Williams commented on the effect that these straightforward maps had on the audience: “This allows a person who’s not very aware of geographical techniques to be able to make connections; a really great way of linking geography and mapping to the general public” (Hanauer 2021).

Another critical component to creating an impactful exhibit was working with Amanda Romero, a graphic designer, who guided mapmakers through the process of designing a template for the panels. Each themed pair of panels used the same template. One panel contained a large map with a descriptive explanation of the map (see Figure 2). The second panel was a ‘windowpane’ of nine sections – filled with smaller maps and short explanations related to the data (see Figure 3). The templates resulted in a modular exhibit that could be easily digested by viewers and also eased the expansion of the exhibit as students joined the effort.

Early on a print format was selected for the exhibit. Sinclair’s Student Services and Diversity Offices generously funded professional printing of two gallery quality exhibits which opened simultaneously on campus.

This collaboration worked!

The maps in this exhibit provided information about the ‘Vestiges of Redlining’ in the Dayton area in a format that was easy to understand and could be interpreted by a diverse audience. Evidence of the ‘impact’ was seen when students, faculty and staff, and community members visiting the exhibit provided feedback in facilitated conversations. Some left written comments citing personal connections they were making with the maps.

“I think the maps really put into perspective how redlining affects and still affects. Every diagram seems like they could be switched for another because each instance is so similar.”

“As a future teacher I believe this information is important. It gives you an understanding of your students’ health and where they come from.”

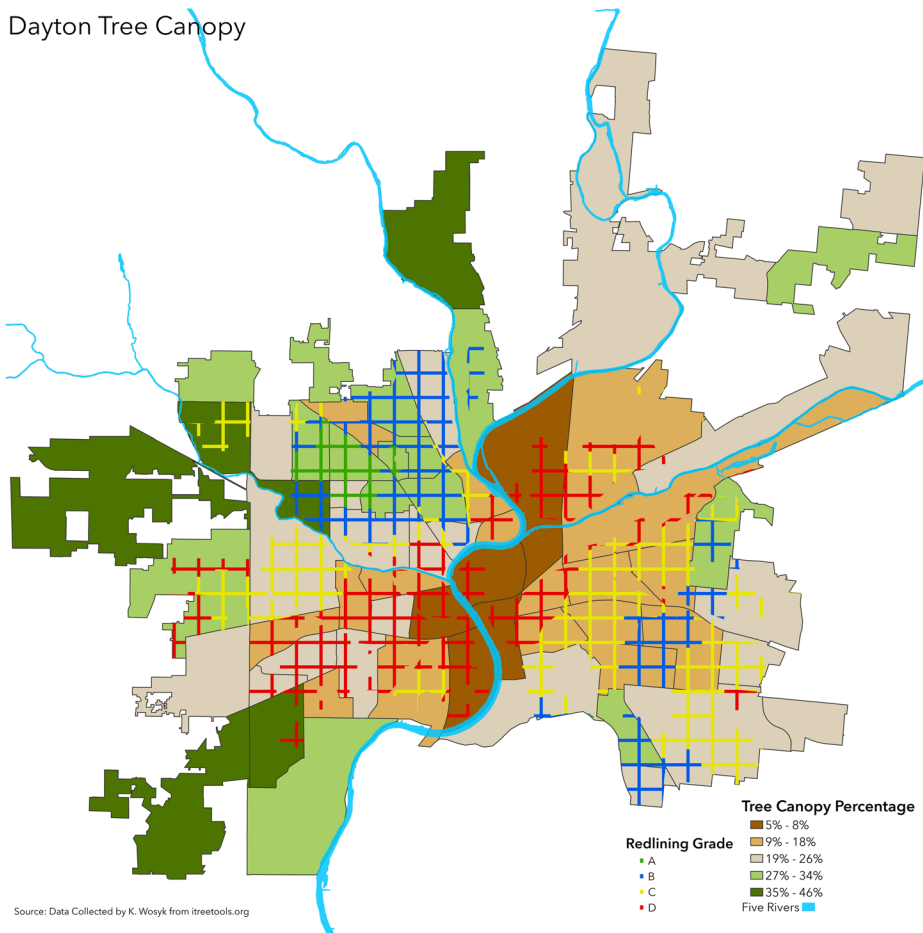
“Have things gotten better or worse the last 50 years? Have our leaders kept any promises?”

Following the Fall Equity Summit, community leaders toured the exhibit. Most often, these leaders had worked with the geography department on projects or were potential partners, including, city planners, librarians, university faculty, local conference organizers, directors of nonprofits and others. These conversations led to identifying additional



Green Space in Dayton, Ohio

Dayton Tree Canopy



Redlining and Impact on Trees

One of the lingering effects of historical redlining has been decreased canopy coverage, or in other words **fewer trees, in red color-coded neighborhoods**. In this map, we can see the relationship between Dayton's red and yellow coded neighborhoods and their tree canopies today.

Why do trees matter? Tree canopies provide several very important services to urban areas. We call these ecosystem services, and they include but are not limited to: the creation of oxygen through photosynthesis, carbon sequestration, slowing of storm water runoff, providing shade and visual interest, wildlife habitat, increasing property values, preserving soil, lowering temperatures, and reducing air pollution. Moreover, trees have even been shown to increase social ties and life satisfaction and decrease crime! You can use the Arbor Day Foundation's Tree Benefit Calculator to find out the how much value the trees in your neighborhood provide.

References
 Arbor Day Foundation. n.d. National Tree Benefit Calculator. Retrieved from <https://www.arborday.org/calculator/index.cfm>

Bonan, G. (2015). *Ecological climatology: concepts and applications*. Cambridge University Press.
 Lewis, D. F., Carlyle-Moses, D., & Tanaka, T. (Eds.). (2011). *Forest hydrology and biogeochemistry: synthesis of past research and future directions* (Vol. 214). Springer Science & Business Media.
 Nandoro, A., Rudolph, K. E., Moretto-Frosch, R., & Casey, J. A. (2021). Redlines and greenspace: The relationship between historical redlining and 2010 greenspace across the United States. *Environmental health perspectives*, 129(1), 017006.

What is a tree canopy?

Tree canopies can be simply defined as the leaves and stems which extend from the trunk of the tree. The data for this map was collected by assessing the aerial photos of each neighborhood in Dayton in the summer of 2021 using the tool i-tree.

Canopy shape, size, height, and uniformity are all highly variable for different trees, and even trees of the same kind. Some familiar examples you might see around Dayton include:

- Willow trees with their sweeping, hanging branches and narrow leaves
- Sugar maples with their round canopies and stereotypical maple leaves that turn red in the fall.
- Crabapple trees, which are shorter, and have flattened oval canopies that grow upright.
- Red Oak, another round canopy tree, with a canopy that can grow quite high.
- American Beech, which trees have canopies that can vary widely from tree to tree, typically based on the branching structure of the trunk.

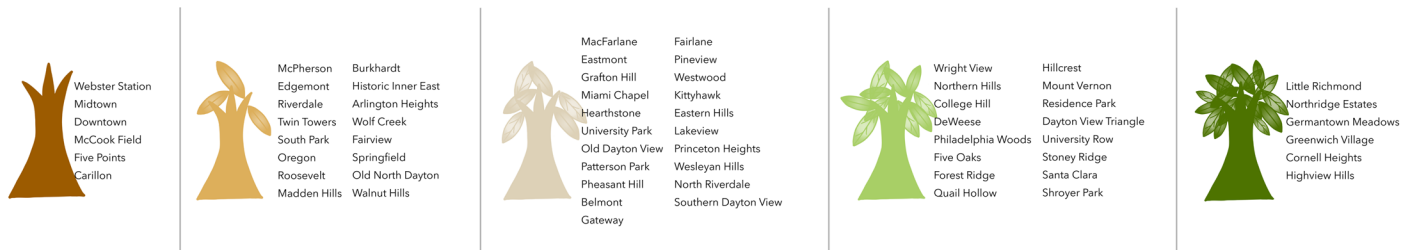


Figure 2. Green space in Dayton, Ohio. Mapping credit: Katie Wosyk.

venues to display the exhibit, exploring supplemental programs, and discussing future mapping collaborations. The exhibit made geography relatable to a broader audience.

Since the initial display, this exhibit has been on permanent display at Sinclair's library and has been requested by many local community groups. Working with the libraries, we produced a third standalone version of the exhibit. This traveling exhibit was on display for two years across the region, including, the Dayton Metro Library (main and three branches), Wright Memorial Library (Oakwood, Ohio), Dayton Aviation Heritage National Historical Park, Trotwood Board of Education,

and the Imagining Community Conference (See Figure 4). These requests for the exhibit underscore the impact that the maps had on the attendees. This has brought visibility to not only the work completed by geography students at Sinclair, but also to the discipline of geography.

Library collaboration: Engaging multiple publics

Central to engaging with diverse audiences was moving the exhibit into public spaces namely the two main library systems in the county. Partnering with libraries makes sense



2021 EQUITY SUMMIT
VESTIGES OF REDLINING
 BOUNDARIES & BARRIERS
 VISIBLE AND INVISIBLE

Green Space in Montgomery County

Visiting Parks can Improve Mental Health *

Recently, the Wall Street Journal published an article entitled, "For Better Health During the Pandemic, Is Two Hours Outdoors the New 10,000 Steps?" Research supports an answer in the affirmative. It turns out being in parks can improve **mental well-being**.

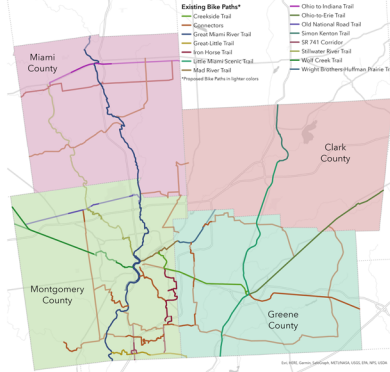
The **COVID pandemic has created mental stress** for many. The lockdown and social distancing and even virtual learning and virtual meetings can create feelings of isolation, depression, and anxiety. ... Spending time outdoors offers physiological and psychological benefits. The Japanese refer to this as "**forest bathing**." Specifically, studies have shown that green spaces can improve mental health. Outdoor time can result in a number of benefits, such as improving memory and attention. Spending time in parks is also associated with a reduction in crime and aggression.

According to the Journal article, pediatricians in California write prescriptions for spending time outdoors. They have found that **visiting green spaces decreases the parents' stress and increases children's resilience**.

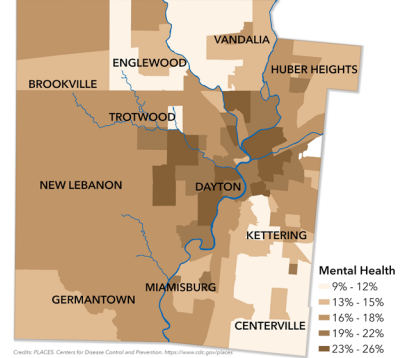
If you or your family feel like you could use a mental refresh, now is the perfect time to get out to one of our many parks and spend a couple of hours a week. You may find that your focus and creativity are increased, and your overall mental health is improved.

* Excerpt from: Roesch, L. (2021). Use Montgomery Parks to Improve Mental Health. Posted on 23 March 2021. Retrieved from <https://www.montgomeryohio.gov/use-montgomery-parks-to-improve-mental-health/>

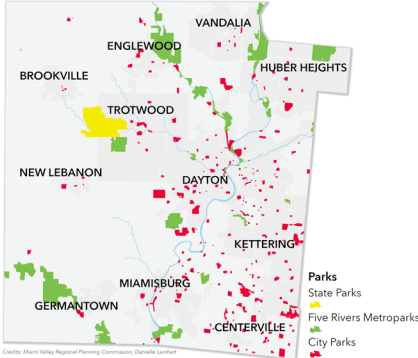
Miami Valley Regional Bike Paths



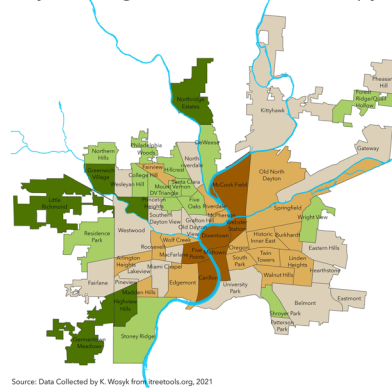
Mental Health Distress Prevalence



Parks in Montgomery County



Dayton Neighborhoods: Tree Canopy



Montgomery County Park Information

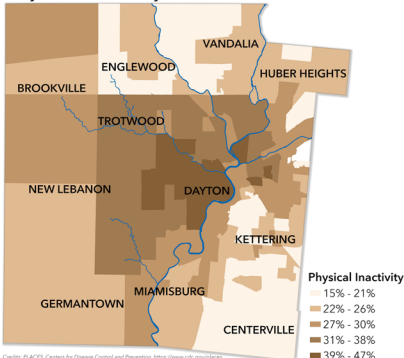
Five Rivers Metroparks 5 Largest Parks

- Englewood Metropark 1920 Acres
- Germantown Metropark 1747 Acres
- Taylorville Metropark 1122 Acres
- Carriage Hill Metropark 832 Acres
- Upper Twin Conservation Area 662 Acres

City Parks Totals

- Dayton 68
- Centerville, Washington Township 55
- Miamisburg, Miami Township 26
- Kettering 22
- Huber Heights 13
- Trotwood 10
- Englewood 9
- Vandalia 8
- New Lebanon 4
- Brookville 4
- Germantown 2

Physical Inactivity



Recreation in Montgomery County

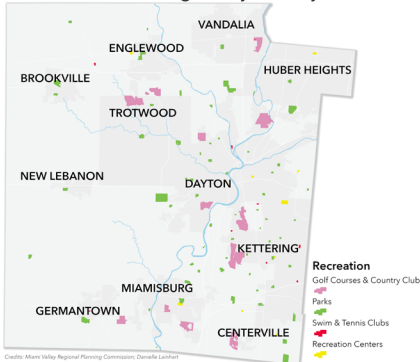


Figure 3. Green space window map. Mapping credit Danielle Lainhart and Katie Wosyk.

given their “ability and responsibility to address issues around diversity, equity, inclusion and accessibility” (Sadvari, Quill, and Scott 2022). For our local libraries, the exhibit aligned with their mission to serve the public:

The exhibit supports the mission of the library, which is to provide diverse opportunities for lifelong learning, personal growth, education, and enjoyment. Plus, It met many of the criteria for exhibits: Historically and educationally significant, directly

relevant to the local community, a timely topic, suitable for display in a public space, and fit our space, high quality, and affordable (K. Hale, e-mail to author, March 15, 2024).

More particularly to this exhibit Elizabeth Schmidt, Wright Memorial Library’s Adult Services Coordinator, commented that “the exhibit was a good fit with our ongoing programs on racism. I liked that it was local, showed Redlining’s impact in Dayton, and naturally brought up conversations about how



Figure 4. Photo from Imagining community exhibit. Dayton arcade. Photo credit: J. Housel.

our past still influences Oakwood and the entire Dayton area” (E. Schmidt, e-mail to author, March 15, 2024). The libraries, then, were interested in partnering with us to display the exhibit and potentially offer programming related to redlining in what would be a new collaboration.

Turning the panels into a durable, flexible traveling exhibit that could be easily displayed in a multitude of unique spaces required that we collaborate with our library partners to understand their needs. The current format was not going to be easily transported or displayed in libraries (or other) spaces. Meeting with the library staff responsible for making exhibit decisions, we learned that the best way forward was to print the map panels on vinyl sheets with gromets on the top/bottom for easy storage, transport, and flexible options for display. This required additional funding for printing a new exhibit which was graciously supplied by the college and allowed the expansion of the exhibit to include new panels related to the environment, education, policing, and voting.

During these initial meetings a tentative schedule was outlined for the core group of libraries where the exhibit would be displayed. In addition, we discussed the possibility of offering facilitated discussions for groups and suggested programming related to the exhibit. Most libraries took advantage of these offerings. Supplemental materials were supplied, including a book of the original redlining documents and a guide that attendees could use to explore the exhibit. Upon request, we guided groups through the exhibit with facilitated conversations. These maps provided the community with a new way to consider equity using a spatial lens and to think about geography differently. With the new focus on Diversity, Equity and Inclusion (DEI), we found this exhibit provided a way for

organizations to consider equity using a spatial lens and promoted both a closer look at the needs of a neighborhood, and a discussion of social action. Groups in all sectors (environment, health, education, government among others) requested facilitated group tours.

Wright Memorial Library took advantage of the exhibit by supplying additional programming and offering group facilitated conversations. While the exhibit was displayed, they organized a well-attended opening and three programs related to the exhibit – *History of Redlining*, *Tree Equity in Ohio*, and *Dayton Mediation Response Unit: A New Policing Model*. Most attending the exhibit and/or programming were curious and viewed it as a learning opportunity. Several others thought the library should not have supported the exhibit. Schmidt recalls “one person being outraged that there was an exhibit panel about police violence. She thought it was disrespectful toward law enforcement... Other patrons expressed their appreciation that the library hosted the exhibit. Still, the overwhelming response was that this exhibit was appropriate and important” (Schmidt, e-mail to author, March 15, 2024). This is a reminder that working in the public sphere can leave us open to a variety of reactions – positive and negative (Jones et al. 2023).

Once an individual toured the exhibit or attended a program, they often suggested that an organization they were affiliated with might be interested in an organized tour. Examples of organizations who participated in an organized facilitated discussion included: National Park Service Museum staff, nursing community health classes, DEI committee of a major hospital system, book clubs, university faculty, and League of Women Voters among others. Two nursing classes from a local

university toured the exhibit after two nursing students had by chance visited the display during lunch. They recommended the exhibit to their professors who then arranged a tour for two classes. For the nursing students, the exhibit offered a way to explore the connections between the socio-economics, education, environment and the well-being of the community. The range of insights offered by the nursing students provided evidence of their renewed understanding of the relationship between healthcare and other facets of everyday life.

“There are many disparities that result from redlining. They follow us into our health, education, and quality of life and impact us decades later.”

“Areas that have a higher rate of poverty are more likely to have health disparities, such as asthma and diabetes and have limited access to healthcare.”

“These are definitive lines that show the inequality of income and health equity and a lack of green space.”

“The cascading effects of redlining in the 1930s are witnessed today in health, education, violence, health, and housing.”

“I thought the world life expectancy map of the countries with free healthcare having the highest life expectancy was an important statistic to recognize.”

While most of the nursing students commented on health aspects of the maps, one student commented on the way that the maps were displayed “I enjoyed how the maps overlapped each other so individuals are able to make connections and comparisons between subjects.” Another commented that the exhibit was “Education on a community level...Nothing can change if people are not aware.” Schmidt extends that thinking by reflecting on the importance of this exhibit to the community:

The library was a good entity to share this with the community. Some community groups I've worked with do not want or are not able to talk about uncomfortable topics. Redlining is uncomfortable. Oakwood is an affluent community that was valued highly in these surveys, while other properties were devalued. Facing that fact could make current residents feel guilty, defensive, or even angry. The library open house, programs and tours (given by Housel) welcomed people and focused on education, not blame. I thought the exhibit did the same thing. (E. Schmidt, e-mail, March 15, 2024).

The traveling exhibit led to more opportunities for educating the public about geography. Even those who could not attend the exhibit learned about geography through interviews, newsletters, newspapers, websites and talks. Examples included: Oakwood Register, Huntington Dispatch, Parthenon (Marshall University), library websites, a state-wide spot-on Spectrum TV News, Imaging Community Symposium (University of Dayton), and Marshall University.

Drive Electric Dayton (DED) collaboration: advocating for policy changes

Periodically, someone who learned about the exhibit would have an ‘aha’ moment and a new idea. This happened in the Fall of 2022 when I had a conversation with Tim Benford, then president of DED, on a pickle ball court. During a break, Tim mentioned that the DED was focused on a problem – expanding the access of charging locations in the greater

Dayton area. This led to a conversation with Rap Hankins, current President of DED, who was most interested in the location of charging stations in the community as he was interested in the “correlation between historical redline districts and the lack of electric vehicle (EV) infrastructure” (R. Hankins, e-mail, March 6, 2024). Following this early conversation, the potential for a community project was presented in the cartography class and a team was formed to gather data and create maps that might be useful to the DED leaders.

Three students – Ashley, Kody, and Ian – formed a team and met to familiarize themselves with the subject matter. Ashley had just started driving an electric car and was eager to learn more. What they quickly discovered was that the topic was complicated – different types of EV charging stations, public versus private locations, the challenge of renting and owning an EV and so forth. Armed with new information, they met with two DED leaders. That meeting produced a great deal of information and may have overwhelmed the students. Similar to the Mapping Equity project, the collaboration was a bit messy, perhaps frustrating, but after several meetings with the students bringing data and then maps to the table, the team created several maps which described the problem of where charging stations were located. The placement of the charging stations aligned with the historical redlining maps as well as other maps in the equity exhibit. Meeting regularly with Drive Electric Dayton, the team produced maps which demonstrated the lack of charging locations in areas which are often neglected (see [Figure 5](#)).

DED leadership used these maps to support and promote the placement of charging stations in underserved and often overlooked neighborhoods. Specifically, Hankins used the maps in three ways:

- DED used these maps to inform the City of Dayton and the Miami Valley Regional Planning Commission (MVRPC) for the need to place electric vehicle supply equipment (EVSE's) throughout underserved communities. MVRPC has allocated \$1.5 million dollars toward this endeavor.
- The maps also allowed Drive Electric Dayton, when talking to municipalities at last Fall's Ohio Municipal League's Conference, to make the statement that we cannot allow the 21st century to follow the path of redlining in the past.
- The data has allowed Drive Electric Dayton to factually state in our By-Laws and Principles that it is essential that underserved communities have the same accessibility to electrification infrastructure that other communities have. If we are to create conditions of equity, electrification in underserved communities is essential. (R. Hankins, e-mail, March 6, 2024).

These maps supported policies, and the collaboration worked, in part, due to the specificity of the problem. The students could narrowly focus on searching for concrete data, separating the different types of charging stations, and mapping it against other criteria (such as, historical redlined areas, median income, rental housing among others). This provided the maps DED needed to present facts about the

EV Charging Stations: Location & Type

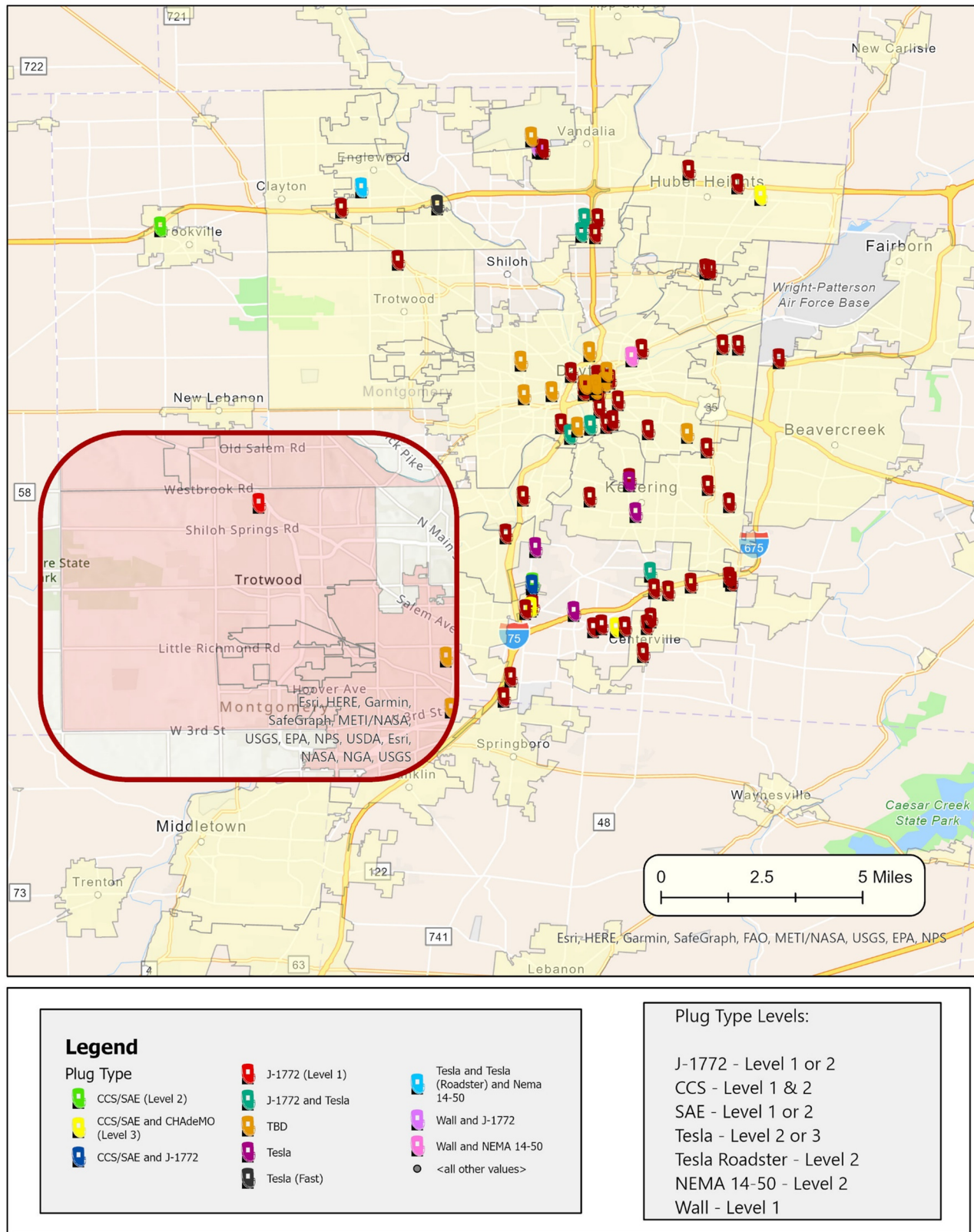


Figure 5. Drive Electric Dayton map. Mapping credit: Ashley O’Neal, Kody Kesler and Ian VanDonkelaar.

problem and possible interventions. This project exemplified what makes a good partnership – time, trust, expectation setting (Rock 2022). Hankins (e-mail, March 6, 2024)

expressed that the collaboration worked because the “students were extremely easy, flexible, and tailored their research to our needs and outcomes”.

League of woman voters of greater Dayton (LWVGD) collaboration: Shifting practice

In October of 2021, Chris Corba, Executive Director of the LWVGD, was invited see the Mapping Equity exhibit. During discussions about the various ways the community had been redlined, Chris realized the possibilities inherent in visualizing data. Reflecting on that moment: “My “aha” was when I saw the disparity of resources in the areas redlining had negatively affected. I wondered if it might have affected voting as well” (C. Corba, e-mail, March 7, 2024). We met again with a few league members and decided to create maps related to league work. In the following weeks, Jeremy Lisco, a GIS student, collaborated with the league to produce maps related to polling locations (ideal vs actual) and voter turnout by race/ethnicity. Lisco had regular meetings and conversations with the league team to understand the issues, identify data, and work with the league to develop a narrative of the data and maps. His work was eased by using the exhibit templates. In fact, league members, impressed with the collaboration, invited Lisco to co-present at the Imagining Community Symposium. These panels on Voting joined the exhibit, raised more questions and spurred more discussion.

As the collaboration continued, the focus increasingly became about voting turnout. The data and maps motivated the League to make some changes – a new committee was formed to meet to talk and act on this voting turnout problem. Another cartography student, Jennifer Bryant, joined the new committee. She was tasked with

creating a series of maps that showed voting turnout by precinct in Dayton over eight election cycles. She compared similar elections (General, State, Local) and elections in consecutive years. This data showed voting turnout (overall trending downward) depended on the type of election cycle with the lowest turnout during local elections (see Figures 6 and 7). Bryant’s patience and ability to explain the maps helped the committee make decisions based on factual data. Visualizing the data motivated the league to consider ways to energize eligible voters to vote.

These maps make it abundantly clear that voter registration efforts, while important, aren’t enough. Several audiences have seen the maps and there’s been an audible gasp when they see the discrepancy between the number of registered voters in a precinct versus actual voter turnout. (C. Corba, e-mail, March 7, 2024).

These eye-opening maps jumpstarted a pilot project – the Voter Empowerment Initiative – with the goal of developing relationships in low turnout neighborhoods and sparking more grassroots efforts to get out the vote. The Voter Empowerment Committee has grown to include 12 league members working to support grassroots efforts to get out the vote in six neighborhoods across Dayton. Bryant and Housel had the opportunity to co-present a workshop on Voting Turnout and Empowering Voters at the Ohio State League Convention (June 2023). Since that time, similar initiatives popped up across the state. The league continues to give talks on voting turnout locally which has been helpful in encouraging active civic engagement of all sorts.

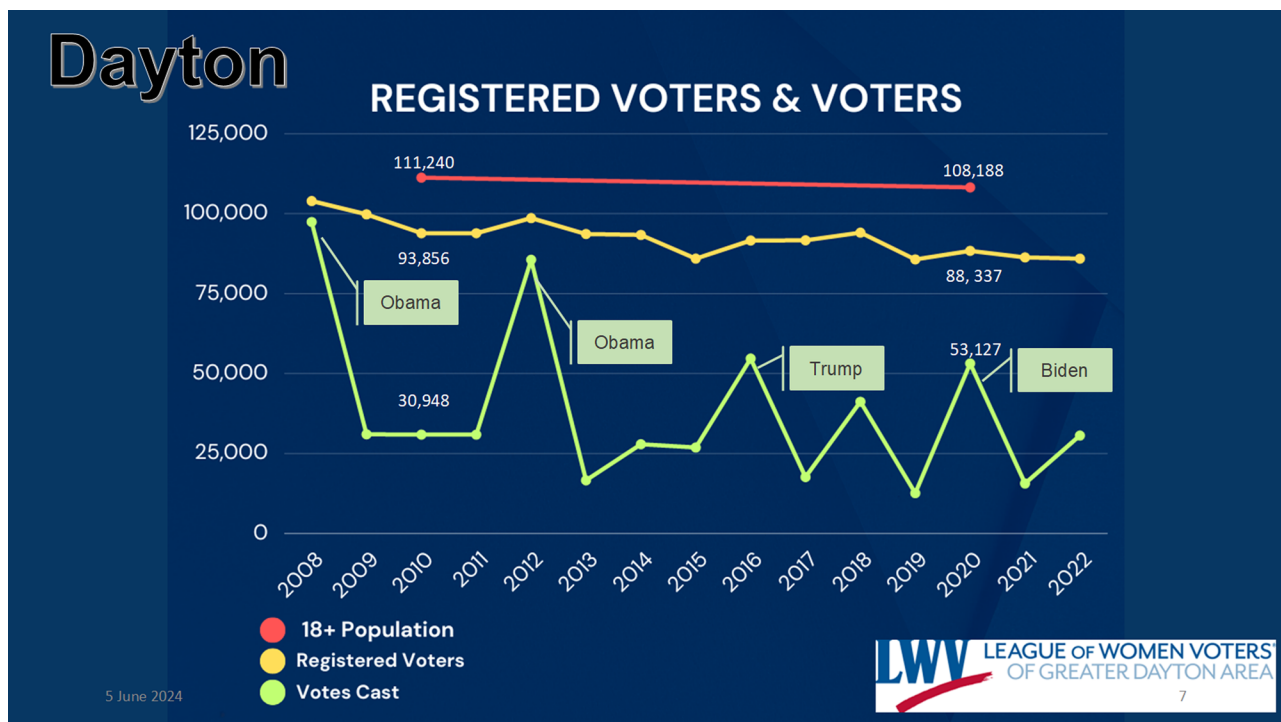


Figure 6. Graph of voting turnout. Credit: Jennifer Bryant.

Mapping Dayton Voter Turnout

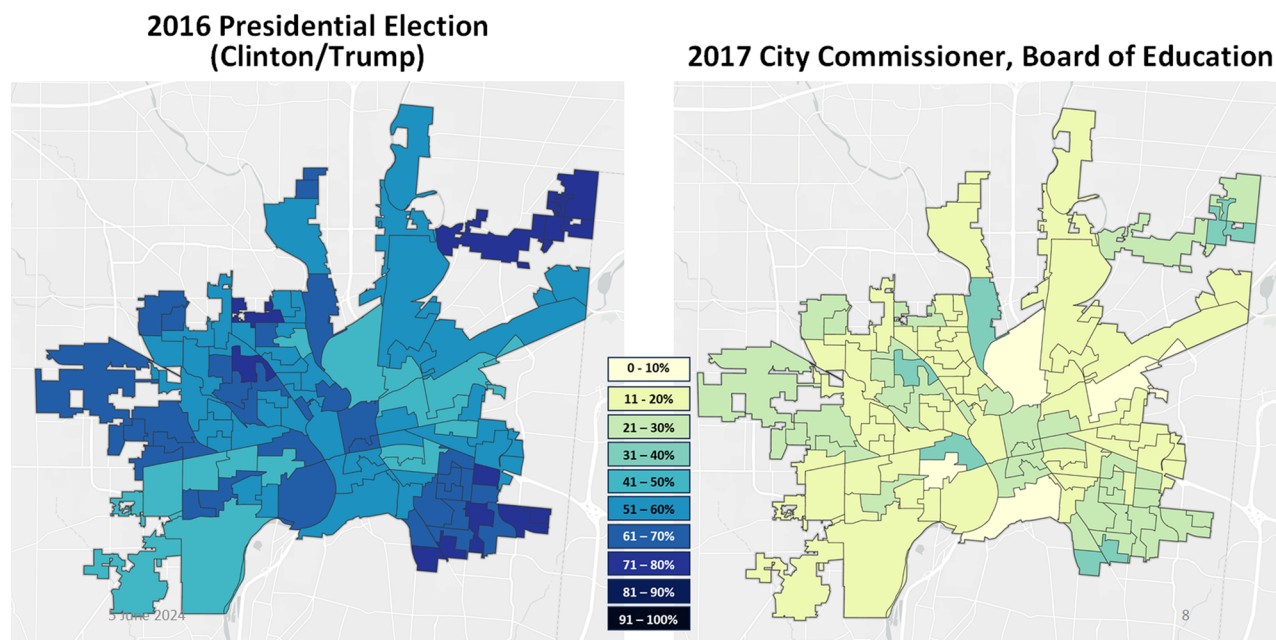


Figure 7. Example of voting turnout maps. Mapping credit: Jennifer Bryant.

Conclusions

This exhibit opened in Oct of 2021 and closed in Oct of 2023. Over that time, it was displayed in ten different locations and found a permanent home at the college. Ten students worked on the exhibit and related projects. During the showings, the exhibit created a buzz about geography and mapping in the community. For geography students and faculty five lessons became evident.

First, as geographers, we experienced the benefit of having diverse voices on the planning committee focused on the project and process. By creating a space for meaningful discussion, listening closely, and sharing knowledge, mutual understandings developed. This intentional inclusion of diverse voices on the planning committee created an exhibit that was accessible to visitors from all walks of life who might experience from their own unique perspective – an ‘aha’ moment.

Second, students benefited from working on collaborations by connecting their classroom learning to ‘real-life’ projects. In addition, students had the opportunity to acquire and improve their professional skills in communication, project management, organization and technical areas. The lead student cartographer commented: “The project was a building block in my professional development. I had never worked on a project like that before at any of my previous jobs, so it helped me gain more experience working on projects in a professional environment” (Wosyk, e-mail, April 2, 2024).

Third, for the exhibit to have a broad impact, it required the use of established networks to bring people, particularly community leaders, to the exhibit. This was important as the exhibit was first displayed in Oct of 2021 – when people were reticent to be in public spaces. In addition, we (faculty and students) were available to speak or be interviewed for news outlets. This increased awareness of our work – across the region and state.

Fourth, we will never know the full impact of the exhibit. We can measure it in terms of number of requests to display the exhibit, number of tours and programs given, visitor comments provided, new partnerships and projects, and new advocates of geography at the college. What we do not know is how many visitors had an ‘aha’ moment or insight that changed their understanding of a local problem, motivated them to learn more about an issue, or called them to action.

Finally, this exhibit was part of a larger movement to increase awareness of geography. This seems necessary in a time where enrollments are depressed and colleges are questioning the role of liberal arts and social science disciplines. Smith notes: “geography’s greatest potential and distinctiveness lies precisely in its willingness to cross borders, synthesize knowledge and to make sense of the differences between places (Smith 2013, 190).

The Mapping Equity Exhibit was the result of a dedicated, diverse group of ‘experts’ who included both geographers and educator activists who were concerned about their local community and particularly the disadvantaged and at-risk populations. The resulting exhibit helped others to understand, explore, and make sense of our place – Dayton, Ohio. Making sense of place is what geographers do, but to do it well we must make space for community members in our projects.

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References

- Barrett, E., and A. Bosse. 2022. Community geography for precarious researchers: Examining the intricacies of mutually beneficial and co-produced knowledge. *GeoJournal* 87 (S2):159–70. doi:10.1007/s10708-020-10358-2.
- Britannica Dictionary, s.v. equity, accesses. May 1, 2024. <https://www.britannica.com/dictionary/equity>
- Designing the WE. 2021. Undesign the redline. [Interactive Exhibit] Sinclair Community College, Dayton Ohio. November.
- Fischer, H., D. Block, A. Bosse, T. L. Hawthorne, J. K. Jung, H. Pearsall, A. Rees, and J. Shannon. 2022. Doing community geography. *GeoJournal* 87 (S2):293–306. doi:10.1007/s10708-021-10457-8.
- Hanauer, J. 2021. [SWOGIS] November 16. *Sinclair GIS Day 2021 Presentation*. [Video]. YouTube. Accessed March 1, 2024. https://www.youtube.com/watch?v=U_72Q5YpHrM
- Harney, L., J. McCurry, J. Scott, and J. Wills. 2016. Developing 'process pragmatism' to underpin engaged research in human geography. *Progress in Human Geography* 40 (3):316–33. doi:10.1177/0309132515623367.
- Jones, R., A. Kocher, F. Sultana, D. Smiles, K. McSweeney, and P. Molnar. 2023. Interventions on public geographies. *Political Geography* 111:103007. doi:10.1016/j.polgeo.2023.103007.
- Prokes, C. 2023. Cutting the Curb: Creating a Culture of Accessibility to Improve Success for all Learners. Presentation. Sept 15, 2023. Sinclair Community College. Dayton, Ohio. Accessed April 28, 2024. <https://ohiocommunitycolleges.org/wp-content/uploads/2023/09/Curb-CutEffectOACCsep23.pdf>
- Rees, A., T. Hawthorne, D. Scott, P. Solis, and E. Spears. 2020. Toward a community geography pedagogy: A focus on reciprocal relationships and reflection. *Journal of Geography* 120 (1):36–47. doi:10.1080/00221341.2020.1841820.
- Robinson, J. A., and T. L. Hawthorne. 2018. Making space for community-engaged scholarship in geography. *The Professional Geographer* 70 (2):277–83. doi:10.1080/00330124.2017.1366775.
- Rock, A. E. 2022. Bringing geography to the community: Community-based learning and the geography classroom. *GeoJournal* 87 (S2):235–47. doi:10.1007/s10708-021-10408-3.
- Sadvari, J., T. Quill, and D. Scott. 2022. Practicing map and geospatial information librarianship through the lens of diversity, equity, inclusion, and justice. *Journal of Map & Geography Libraries* 18 (1-2):143–7. doi:10.1080/15420353.2022.2171218.
- Shannon, J., K. B. Hankins, T. Shelton, A. J. Bosse, D. Scott, D. Block, H. Fischer, L. E. Eaves, J.-K. Jung, J. Robinson, et al. 2021. Community geography: Toward a disciplinary framework. *Progress in Human Geography* 45 (5):1147–68. doi:10.1177/0309132520961468.
- Smith, J. 2013. Review essay Geography in public and public geography: Past, present and future. *The Geographical Journal* 179 (2):188–92. doi:10.1111/j.1475-4959.2012.00491.x.
- Warren, M. R., J. Calderón, L. A. Kupscznk, G. Squires, and C. Su. 2018. Is collaborative, community-engaged scholarship more rigorous than traditional scholarship? On advocacy, bias, and social science research. *Urban Education* 53 (4):445–72. doi:10.1177/0042085918763511.