

THROUGH LINES:

AN EXPLORATION OF CONNECTIONS VIA CHICAGO'S ALLEYWAYS

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INTRODUCTION

PROJECT BRIEF

Alleyways are misunderstood. Upon hearing the term, most people are quick to think *dirty, dangerous, or dark*. While all of these reactions are valid, they undersell the magnificence of alleyways.

Defined as “a narrow passage behind or between buildings,” the designation of an ‘alleyway’ can be ambiguous. For our purposes, we will define an alleyway as *a narrow passage bisecting a city block, typically accommodating back of house functions like trash collection, utility routing, and delivery services*.

As noted later in this document, these utilitarian features are vital to ensuring a functional city. At one point in time, the idea of housing utilities at the back of the house was radical. In Chicago, public sentiment regarding alleyways eventually shifted to a sense of pride. Serving as neighborhood capillaries, they provide physical and social connections for Chicagoans. They are home to over-the-fence neighborly banter, garage-based businesses, barbecues, passion projects, and pick-up games. But most importantly, they arm Chicagoans with the single, incontestable claim over other large cities: the clean, garbage-free street.

Today, as vehicles and non-motorized users battle for roadway space, alleyways have made another radical shift, serving as a safe haven for the non-motorized user in cities historically built for cars.

This research topic explores the concept of repurposing alleyway systems as an alternative framework of non-motorized connections, using the City of Chicago as a case study.

“Chicago has more miles of alleyways than any other city in the country, yet it feels as if these ‘through-lines’ remain underutilized.”



“Alleyways have a greater potential.”

Concurrently, Chicago has a sizable disparity in access to non-motorized infrastructure, programming, and recreational facilities, correlating with socioeconomic backgrounds of Chicago’s communities. These disparities not only impact public health outcomes, but also affect access to jobs, education, healthy food, open space, and other integral community resources that contribute to overall quality of life. As climate change continues to change daily life, it’s essential that designers reimagine existing urban systems in a more sustainable manner. Alleyways are an unexplored opportunity to close the gap in access, while promoting non-motorized modes of transportation, and increasing green infrastructure within the existing urban fabric.

Preliminary research has shown that there is a lack of exploration and implementation of sustainable alleyway systems and non-motorized infrastructure within under-resourced communities. This research will employ various methods such as interviews, GIS analysis, surveying, immersive experience, and precedent study to understand how alleyways can be adapted to address a changing urban condition and climate.

While research is proposed to analyze existing conditions in the City of Chicago, the methodology will provide research frameworks, engagement mechanisms, and distinctive design interventions for comparable cities. This analysis aims to identify alleyway reconfiguration criteria based on a set of demographic, destination-based, and site-level factors to ensure processes and recommendations can be replicated elsewhere.

A HISTORY OF CHICAGO'S ALLEYWAYS

Derived from necessity and planned for simplicity, Chicago has the most extensive alleyway network in the country, totaling more than 1,900 miles.¹ Considering the land mass alone, it is remarkable how often alleyways go unseen. What are alleyways? Why do we have them? What do they do for us? How can they work better for us? Before addressing any of these questions, we must understand the history and importance of alleyways in Chicago.

While alleyways can occur spontaneously, the City of Chicago intentionally planned for alleyways from the beginning. The original town plat of 1830 included eighteen-foot-wide alleyways inscribed into “all 58 blocks.”¹ With the national land survey grid informing Chicago’s block structure, the alleyways of Chicago became continuous, predictable, dependable places for trash collection, utility, commerce, and access. Still today, over 90% of the blocks in Chicago contain alleyways.²

Preceding Chicago’s plan in 1830, the Commissioners Plan of New York City was penned in 1811. Similar to Chicago’s, the Plan of 1811 emphasized the orthogonal grid, despite its topographic and shoreline irregularities. Although similar, a prime difference between these two inaugural plans was the inclusion of alleyways. Headed by Governor Morris, Simeon De Witt, and John Rutherford, New York City’s plan did not include alleyways, and instead maximized the amount of real estate available for development.³ Proving to be a major trade-off, today New York City’s sidewalks are crowded with trash, and their city streets congested with service vehicles.^{4,5}

By the 1820’s, American alleyways were propagating due to the popularity of horses in the west, and the need to bring hay in and manure out. Older American cities, like New York, “followed established travel lanes, or were already too dense to add alleys.”⁶ By the time Chicago’s seminal plan was written, the need for utilitarian passages separate from commercial and residential frontages was well-established. This alleyway system was now viewed as urban ‘capillaries’ connecting to the streets, or ‘arteries.’

By providing alleyways within the center of blocks and limiting trash from primary pedestrian thoroughfares, the City of Chicago had managed to limit the spread of rodent borne diseases. On the contrary, New York City “had become one of the dirtiest cities in the world by the late 19th century,” owning a massive rodent problem and historic rates of death from diseases.⁴

The benefit of alleyways was undeniable, sure, but not always understood. Historically respected landscape architects Frederick Law Olmsted and Calvert Vaux planned the community of Riverside, Illinois in 1869, a picturesque community roughly 9 miles west of Chicago.² Riverside inversed the city block structure utilized in Chicago by placing homes on the interior of a block, indulging the trend of curbside trash collection. Furthermore, Riverside made a conscious decision to opt away from a grid-based street network, instead designing a curvilinear system. Until that point, all suburban communities had followed the lead of Chicago by designing their City blocks with alleyways down the center of a gridded network.



Leading up and into the industrial revolution of the early 20th century, community planning continued to move towards an alley-less style. This only increased as the dependency on cars increased. West Coast cities such as Los Angeles utilized interior block alleyways less, in favor of “driveways and side lanes.”⁷ Chicago managed to be planned between the periods of the pre-American-alleyway (New York City) and the industrial revolution (Los Angeles). Although thousands of alleyways have been removed due to differing infrastructure to accommodate vehicular uses, the majority of alleys remain in tact today, proving to be an important piece of Chicago’s urban fabric.

“Chicago is known as the alleyway capital of the country, for good reason”

In the last several years, the appreciation of alleyways in the City of Chicago has re-emerged, even manifesting into a 2001 City-wide Green Alley initiative to improve and better utilize this essential resource. To this day, more than 300 Green Alleys have been installed throughout the City.⁸ Continued investment in these alleys is vital in order to manage utilities, trash, stormwater, and even pedestrians.

Chicago is known as the alleyway capital of the country, for good reason. Chicago’s initial and continued investment in its alleyways has served as an invaluable precedent for other cities and has paid dividends to every citizen of Chicago’s health and quality of life. Perhaps it sounds like hyperbole, but Chicago’s alleyways are as important to the City as Lake Michigan, the Chicago River, or the El. Alleyways tend to fade to the background, and that’s probably for the best. While alleyways aren’t particularly glamorous, Chicago functions as well as it does because of them.



Chicago Alleyway, 1942

REDLINING, HIGHWAYS, AND A SEVERED CITY

Between 1917-1920, nearly one million Black Americans migrated northward seeking political asylum from the deeply racist South.⁹ Despite a perception of greater participation in the democratic process, Northern cities like Chicago utilized other tools of suppression towards Black people in the mid-20th Century. One such tool, developed by the Federal Housing Administration (FHA), was redlining, or a method in determining the credit worthiness of urban areas often driven by “racial compositions of neighborhoods.” The FHA often refused to back loans to

Black people or others that lived near Black people. As Ta-Nehisi Coates succinctly puts it — “redlining destroyed the possibility of investment wherever Black people lived.”¹⁰

This lack of investment in home ownership led to a stark disparity and disinvestment in other amenities such as food access, public transit, roadway maintenance, and access to parks and green space. In 2018, Chicago nonprofit Friends of the Parks published a State of the Parks Report that described in great detail the disparity in access to green space between



Photo source: Google Earth

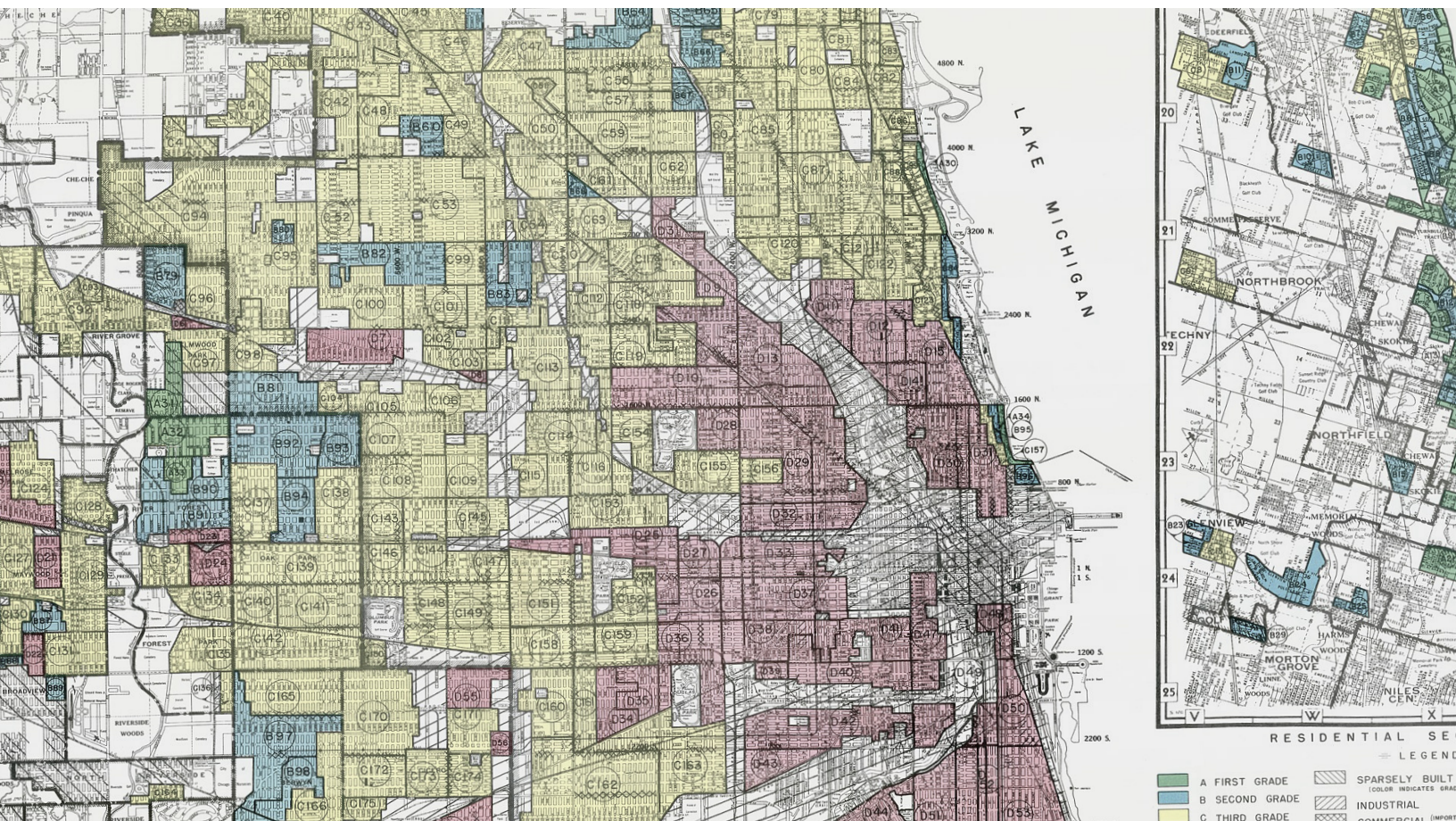


Photo Source: Smithsonian Magazine

white, wealthy neighborhoods and Black, poor neighborhoods.¹¹ This reality is contradictory to Chicago’s adopted motto – *Urbs in Horto* (City in a Garden) – a motto that places emphasis on the importance of integrating natural beauty into an urban context.

Meanwhile, in the post-World War II United States, cities were beginning to adapt to the motorist. In 1950, approximately 50% of American homes owned a car. A decade later, that figure rose to 75%.¹² This led to widespread investments in highway infrastructure designed to make travel within and to the city much more convenient. This aligned with the ethos of popular New York urban planner Robert Moses, who believed in “clearing the slums” and disproportionately locating highways in communities of color.¹³

Following Moses’ lead, the Dan Ryan Expressway (I-90), built in the 1960s, was built on the south and West Sides of Chicago. In total, the expressway displaced more than 81,000 people, with 64% being Black.¹⁴

Over the ensuing decades, new highways were built, interchanges expanded, and roads widened. The ongoing investment in vehicular infrastructure only emboldened sprawl in Chicago and other American cities. An unintended repercussion that was borne out of this investment was a city that was no longer designed for pedestrians and cyclists. Higher speed corridors were far less comfortable – dissuading patrons to activate a street. Local businesses suffer, high impact collisions rise, and the fabric of a city is severed.

It is vital we refocus our attention on investing in pedestrian and bicycle infrastructure in order to re-stitch our urban fabric.

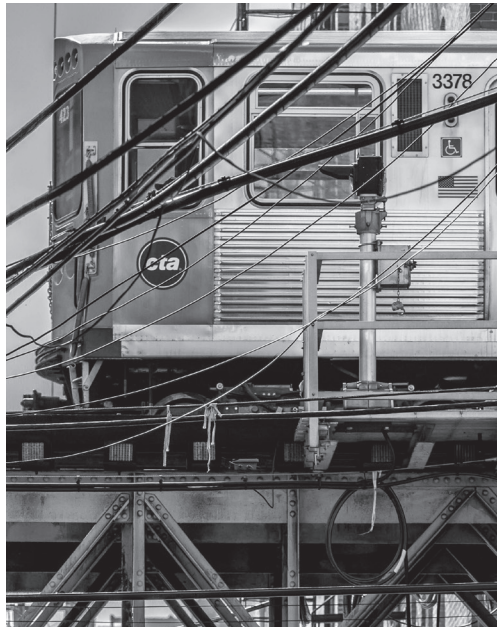
“WHY ALLEYWAYS?”

DISINVESTMENT



As previously noted, Chicago has long-struggled with resource disparities between the north and the South Sides, largely due to a history of racial segregation that still imprints the city today. Lack of investment has shown itself in many ways in Chicago's neighborhoods, one of those being non-motorized infrastructure.

“Low-capital census tracts who would benefit most from increased cycling infrastructure for economic, health and safety benefits, have been comparatively less likely to receive public or private investment than their counterparts”¹⁵



Various city-run initiatives have begun to address this disparity in recent years, largely catalyzed by the Department of Planning's Invest South/West initiative which focuses community development resources on Chicago's South and West Sides. Since 2019, three-quarters of the bike network growth has been on the South and West Sides, funding projects like the Major Taylor Trail, as well as the Bronzeville and Englewood elevated trails. Most recently, the Cook County Bike Plan (2023) and the Chicago Cycling Strategy (2023, CDOT) begin to recognize these historic gaps, and prioritize future investments.



Photo source: Wikimedia Commons


BALANCING USES

With a 34% increase in cycling amid the pandemic, streets are under enormous pressure to serve all users.¹⁶ In many cases, roadways designed for the car struggle to provide a safe user experience for all modes. Chicago averages about six cycling deaths per year since 2016, and in the year 2020, the city saw eight fatalities.¹⁷ For a city with significant bike infrastructure, this is a relatively alarming number. While local governments are shifting their right-of-way goals to address these fatalities, community members are often taking

matters into their own hands. Cyclists and pedestrians have increasingly opted to take the side streets and alleyways adjacent to busy roadways to avoid potential discomfort and vehicular collisions.

These recent non-motorized trends catalyze the re-thinking of alleyway design and configuration to meet the shifting needs of users.

“Alleyways are the Swiss army knives of urban space”

10-12 FT LANES 
have **significantly higher crashes than 9 ft lanes**¹⁸

WHAT CAN ALLEYWAYS DO?

Aside from providing safe, alternative routes for non-motorized users, the reuse of alleyways can contribute to an enhanced quality of life, offering environmental, social, and economic benefits.

Environmental Solutions

Design elements like landscaped medians, permeable pavers and bioswales can contribute to enhanced stormwater management within alleyways to protect against basement flooding and sewer buildup.

Incorporating more green space within the urban fabric combats the heat island effect, cooling urban neighborhoods struggling with rising temperatures. In many cases, those exposed to hotter temperatures are often the most vulnerable neighborhoods, due to a lack of investment in parks, green space, and streetscape.

As temperatures rise, populations with predisposed conditions like a lack in access to cooling systems and poor health conditions are more vulnerable to severe heat events.

*Studies show that in more than 75% of the most populous U.S. cities, there's a correlation between higher neighborhood temperatures and lower incomes.*¹⁹

Social Well-Being

Promoting non-motorized use not only has a positive impact on a city's carbon emissions, but it also improves the overall health and wellness of a community by providing active transportation alternatives.

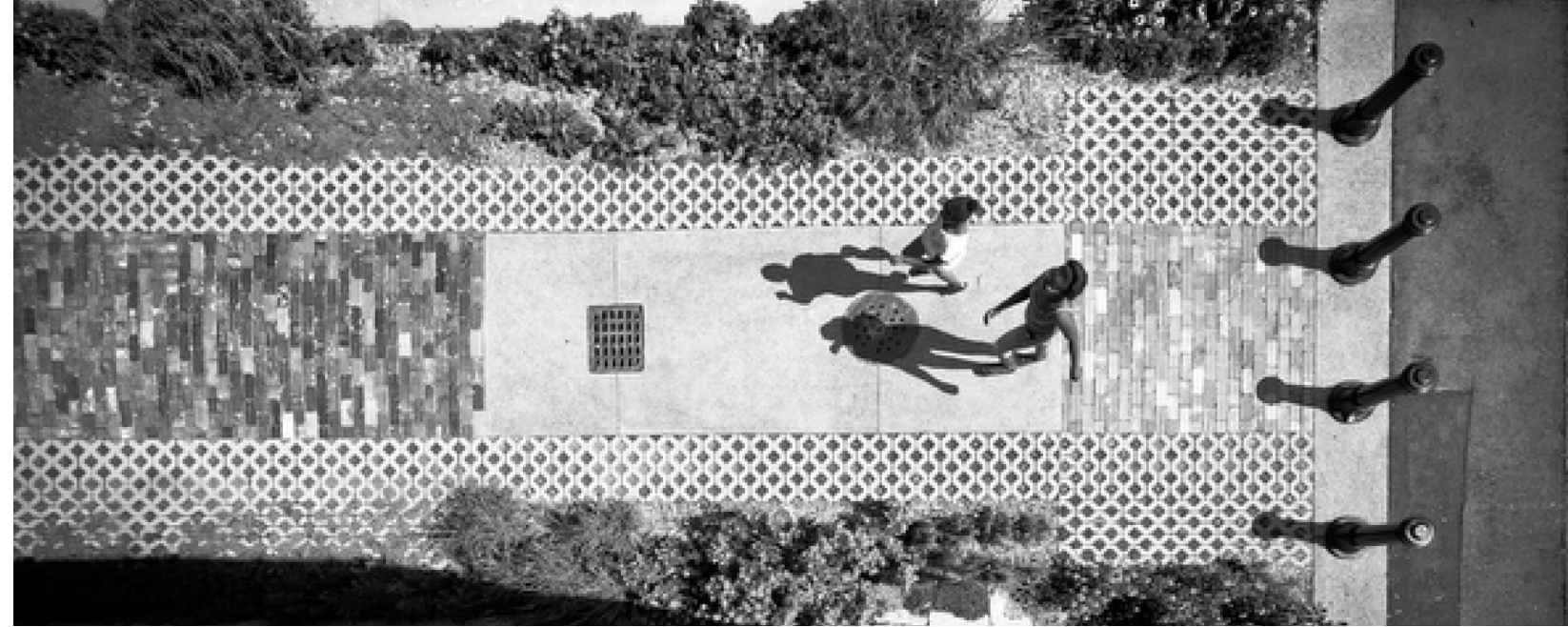
In addition, due to narrow widths, cars inherently drive slower along alleyways relative to high-capacity roadways. Slower speeds significantly increase survival rate in the event of a pedestrian or bicyclist vehicular collision.

Pedestrian deaths are **5X** more likely at **35 mph** than **20 mph**¹⁹

Economic Development

Creating linkages between neighborhoods, commercial hubs, and job centers drives economic development and connects residents to key community destinations like schools, jobs, health care, fresh food and regional destinations through transit stops.

*“Research has shown positive correlations between improved walkability, local retail spending, values of local services and the creation of more job opportunities”*¹⁸



Environmental Solutions (Midtown Green Alley, Marvin Shaouni)



Social Well-Being (Garey Gomez, SPORTS)



Economic Development (Beacon Doughnuts)

WHAT ARE THE LIMITATIONS?

The existing uses of Chicago's alleyways are not to be undermined or removed. Alleyways are a key ingredient in the delicate balance of the city – keeping 24 hour deliveries organized, streets clean, and electricity humming through buildings. As alternative alleyway uses become more broadly celebrated in both Chicago and the U.S., there are still some limitations to retrofits.



Perception and Safety. Alleyways in Chicago are integral to daily life in Chicago, and most residents are proud of their role within the city system. However, alleyways are also hidden corners of the city, often sitting vacant and dimly lit. Underutilized today, these public spaces have low-levels of activity and fewer “eyes on the street”. The “unknown” of an alleyway is something that residents are acutely conscious of, and safety is one of the top concerns when discussing alleyway retrofit.



Intersections. Depending on roadway configuration, some alleyways may experience frequent intersection with the roadway. It's integral to consider safe crossing interventions, and the impact on traffic flow.



Utilities. The utilitarian use of alleyways should be preserved and enhanced. Thought should be given to the organization of above-ground and sub-surface utilities like electrical poles, garbage storage, and stormwater drainage. Utility space should be organized to create a safe path for non-motorized and motorized users alike.



Garage Access. Many alleyways in Chicago provide rear access for both residential and commercial uses. Alleyway retrofit requires coordination between transportation modes in order to provide a safe path for the non-motorized user despite frequent garage entrances. In addition, rear vehicular paths need to remain unobstructed in order to maintain access.



Maintenance. While alleyway retrofit will be planned on a regional level in order to maintain consistency and connectivity, maintenance and care for each alleyway should be shared between the city, neighborhood groups, block clubs, community organizations, and residents. The City of Chicago should establish a trust building engagement process with the community in order to build partnerships, create a sense of place, and instill community ownership and pride.



Prior Investment. Within many socially vulnerable communities in Chicago, there are significant sidewalk gaps. When considering alleyway retrofit, it's integral to consider how the alleyway might connect to the broader system of routes. Early public engagement is absolutely integral to understand community need, infrastructural priorities, and potential usership levels.



Economic Impact. As previously mentioned, increased levels of walkability is proven to provide economic benefits. However, alleyway activation runs the risk of relocating primary street users in the rear, removing integral foot traffic for businesses. Adjacent site design should be considered, giving attention to site circulation and rear activation opportunities for businesses along alleyways.



Universal Accessibility. Surface pavements and materials should be ADA accessible.

Fire and Emergency Vehicle Access. Alleyway travel lanes need to be wide enough to allow emergency vehicle access if needed.

PRECEDENTS

LITERATURE REVIEW

Historical Uses + Recent Trends

In international cities originally built before motorized vehicles, alleyways serve as the vibrant underbelly, hiding some of the best culinary experiences, local commerce, and architectural views the city has to offer in a winding network of pedestrian-scaled paths. Whether they're referred to as *laneways* in the UK, *woonerfs/living gardens* in the Netherlands, or *yokocho* in Japan, these areas capitalize on the opportunity to expand the reaches of the public realm, putting a unique stamp on the urban fabric.²⁰ Aside from providing a unique cultural experience, alleyways within cities like Dubai are shown to enhance walkability, efficiently connecting disjointed street networks to better circulate people.²¹

In recent decades, opinions of alleyways have shifted in the U.S., inching towards the international model. These gradual changes are in part due to climate pressures and disproportionate gaps in access to non-motorized infrastructure based on neighborhood wealth.¹⁵ In Chicago, the Green Alley Handbook (2001) led the way both locally and nationally in re-envisioning underutilized alleyways as opportunities for a greener, more environmentally-sustainable Chicago.⁸

Since then, alleyway retrofit pilot projects, art pop-ups, food windows⁶, and programming have emerged with vigor in Chicago's alleyways and side streets, with the most recent investment being the Lakeview Low Line.²² In addition, Chicago's Vision Zero program²³ has focused attention on non-motorized safety in the City, as Chicago has seen bleak bike safety rankings compared to other large cities.²⁴

Minding the Gap

While there is no shortage of research and precedents that address alleyway retrofit, there are several gaps in knowledge that this research aims to explore. In the past, alleyway retrofit has been implemented on the neighborhood or block level, providing focused investment to a single alleyway or a series of suitable alleyways within a district. This research creates a city-wide framework for investment that connects existing routes, open spaces and community destinations within specific regions lacking in access. Alleyway typologies are offered to envision design interventions within specific neighborhood contexts. This framework can be applied not only to Chicago, but to similarly designed cities.

To understand challenges and opportunities unique to alleyway retrofit projects, precedent interviews were conducted with key partners on projects of similar character.

PRECEDENT INTERVIEWS

Alley to Trail Conversion Pilot Program

Location: Dallas, TX

Key Partners:
Dallas Public Works
Department



Michael Hamtil – The Dallas Morning News

What Set the Stage? An influx in illegal dumping complaints catalyzed the city to clean up alleyways. Converting the alleyways to non-motorized paths was an addition to the pilot project based on community feedback.

Role of Representative: Public Works Department, project management.

Project Goal: Cleanup alleyways and provide walkable trails.

Outcomes: As of January 2022, 581 alleys have been cleaned and converted, with potential in 2024 to expand to other areas.

Hurdles: Lack of pedestrian crossing infrastructure like crosswalks. Some concerns over safety in alleyways. Fire department needed to approve table top crossings. HOA's and NA's were hard to reach. Supply chain issues halted abilities to obtain decomposed granite and associated materials.

Lessons Learned: Removable bollards, table top crossings, and flashing beacons were used to balance existing uses. Partnerships and coordination with city departments were key to expanding the program through implementation and funding. The following criteria was established to aid in alleyway selection:

- No rear garage/entry to homes
- Identified area of inequity
- High crime
- Frequent illegal dumping
- Publicly accessed facilities such as direct routes to schools, DART Stations, recreation centers, or parks
- Few or no utility uses in the alley

PRECEDENT INTERVIEWS

Green Alleyways – South Los Angeles

Location: South Los Angeles, Central Jefferson and Quincy Jones Alley Networks

Key Partners: Urban Studio, The Trust for Public Land, City of Los Angeles Community Redevelopment Agency, Bureau of Sanitation, South Central Art



Green Alleyways – SALT Landscape Architects

What set the stage? South LA Green Alley Master Plan (2014), and Avalon Green Alley Network.

Role of Representative: Community outreach, engagement, and public art.

Project Goal: Transform neighborhood alleys into vibrant, outdoor areas for public use and non-motorized travel. Improvements include heat-conscious pavement, pedestrian safety enhancements, native/drought-tolerant streetscape, and stormwater management features.

Outcomes: The Central Jefferson and Quincy Jones alley networks gives 33,00 residents (51% of those low-income families) a safe space to play outdoors within a 10-minute walk of their home.²⁵

Hurdles: High speeds, inconsistent alleyway widths, balancing utilitarian uses, trash dumping, gaining community trust and ownership; poor drainage and existing pavement conditions.

Lessons Learned: Transparency and community ownership is integral to success. Alleyway retrofit needs to be multi-beneficial, balancing a mixture of utilitarian, transportation, and open space uses. Context is key in understanding the needs of the community and the changing environment. Alleyways should focus on connecting communities to resources already existing within the neighborhood. Fostering city partnerships led to local/state-wide, private/public funding.

PRECEDENT INTERVIEWS

Low-Line – Chicago

Location: Lakeview, Chicago between Southport and Lincoln Avenue.

Key Partners: Lakeview Roscoe Village Chamber of Commerce, Special Service Area 27, Friends of Lakeview, PORT Urbanism, City of Chicago Department of Planning and Development, and Chicago Transit Authority (CTA)



Lakeview Low-Line – PORT Urbanism

What Set the Stage? Lakeview Area Master Plan (2011).

Role of Representative: Public realm design and planning.

Project Goal: Re-envision the underutilized space beneath the CTA 'L' tracks as an art destination, community gathering place, and connection between mixed-use corridors.

Outcomes: Mural walls, interactive light installation, flexible public plaza space, and a new pocket park.

Hurdles: Access points, gaining clearance, trash dumping, debris, remediation, and funding post COVID-19 pandemic.

Lessons Learned: Identifying the surrounding community assets is key to connecting nodes and commercial corridors. Implementation underneath the 'L' tracks is feasible but involves partnerships and coordination between adjacent neighbors, CTA, City of Chicago DPD, and other stakeholders who occupy land beneath the tracks like Spot Hero. Additional attention to remediation, utility configuration, stormwater management, and repaving may be necessary under tracks.

INVENTORY + ANALYSIS

ANALYSIS FRAMEWORK

Precedent review and stakeholder discussions were key in understanding existing and planned projects in the realm of non-motorized route planning and underutilized space activation. These discussions and precedents set the stage for the analysis framework.

Geospatial data analysis is utilized in order to understand the potential of Chicago's existing alleyway network, demographic trends in neighborhoods, and gaps in access. It should be noted that this analysis is rooted in assumptions and quantitative data. While conclusions drawn from geospatial analysis serve as a helpful sounding board; site visits, stakeholder interviews, and community engagement unveil the reality of what a community's unique needs are. This analysis serves as a vehicle for broad observations of city-wide trends. Careful consideration and engagement should be given if neighborhood-specific alleyway retrofit is being considered.

The analysis framework is as follows:

- 1. Existing Infrastructure.** Assess where "connected" alleyways exist that run for longer than 1 mi.
- 2. Understanding Access.** Understand demographics and access to existing infrastructure within Chicago neighborhoods.
- 3. Connecting Resources.** Identify alleyways longer than 1 mi that directly connect to community resources.
- 4. The Big Picture.** Identify neighborhoods experiencing gaps in access with alleyway segments that are continuous for longer than 1 mile.

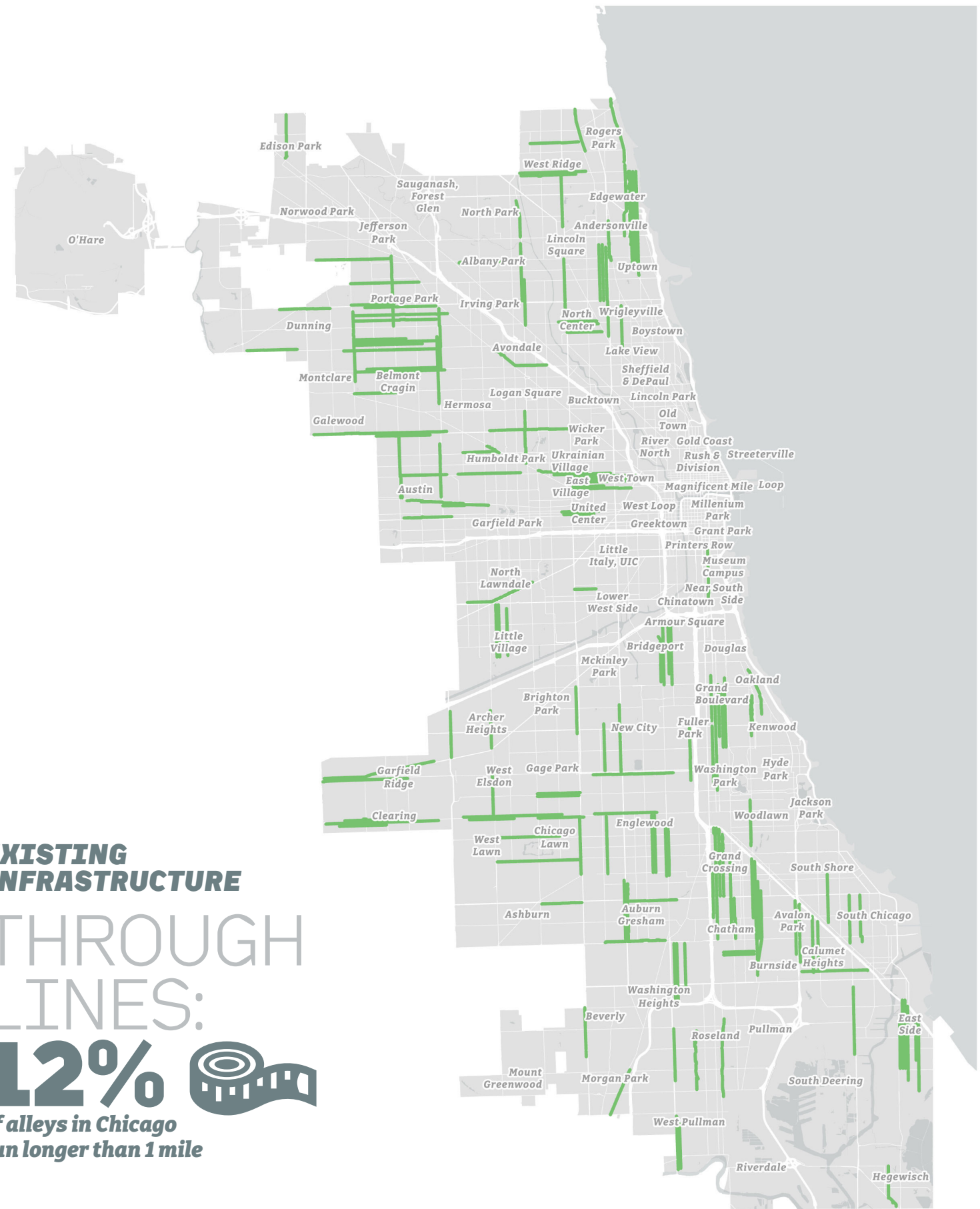
EXISTING INFRASTRUCTURE

Comprised of 1,900+ miles of alleyways, Chicago boasts one of the most extensive alleyway network in the county. However, many of Chicago's alleyways are disrupted by frequent curb cuts, driveways, busy intersections, and dead ends, making connectivity a challenge.

Before new infill solutions are discussed, it's important to understand the infrastructure that exists within the urban fabric today. If alleyways are to be used as an alternative non-motorized framework, it's imperative that they maintain some level of continuity. Busy intersections and driveway curb cuts must be addressed to provide a safe and consistent path for the non-motorized user.

This analysis identifies "connected alleyways" that are naturally occurring in the City today. For the purposes of this analysis, "connected alleyways" are designated as a series of connected routes with entry/exit points within 200 ft of each other. These naturally-occurring alleyways are ripe for retrofit and non-motorized uses.

"Many of Chicago's alleyways are disrupted...making connectivity a challenge"



EXISTING INFRASTRUCTURE

THROUGH LINES:

12% 
of alleys in Chicago
run longer than 1 mile

Alley Length

 >1mi

0 2 4 Miles



UNDERSTANDING ACCESS

A weighted analysis was used to measure the severity of the following demographic and infrastructure conditions within Chicago neighborhoods today:

Social Vulnerability

- Vehicular ownership
- Poverty levels
- Education
- Race + ethnicity
- Disability status
- Exposure to pollutants
- Population density
- Housing unit density
- Walkability

Infrastructure + Access

- Areas more than 0.5 miles away from a neighborhood greenway or protected bike lane
- Areas more than 0.25 miles away from an off-street trail
- Amount of accessible parkland per 1,000 people
- Areas within a 0.25 mile radius of incomplete or missing sidewalk conditions

Average scores were weighted and calculated on a scale of 1-5, with higher scores signifying areas that are most suitable for alleyway retrofit due to existing gaps in access to resources and high social vulnerability levels.

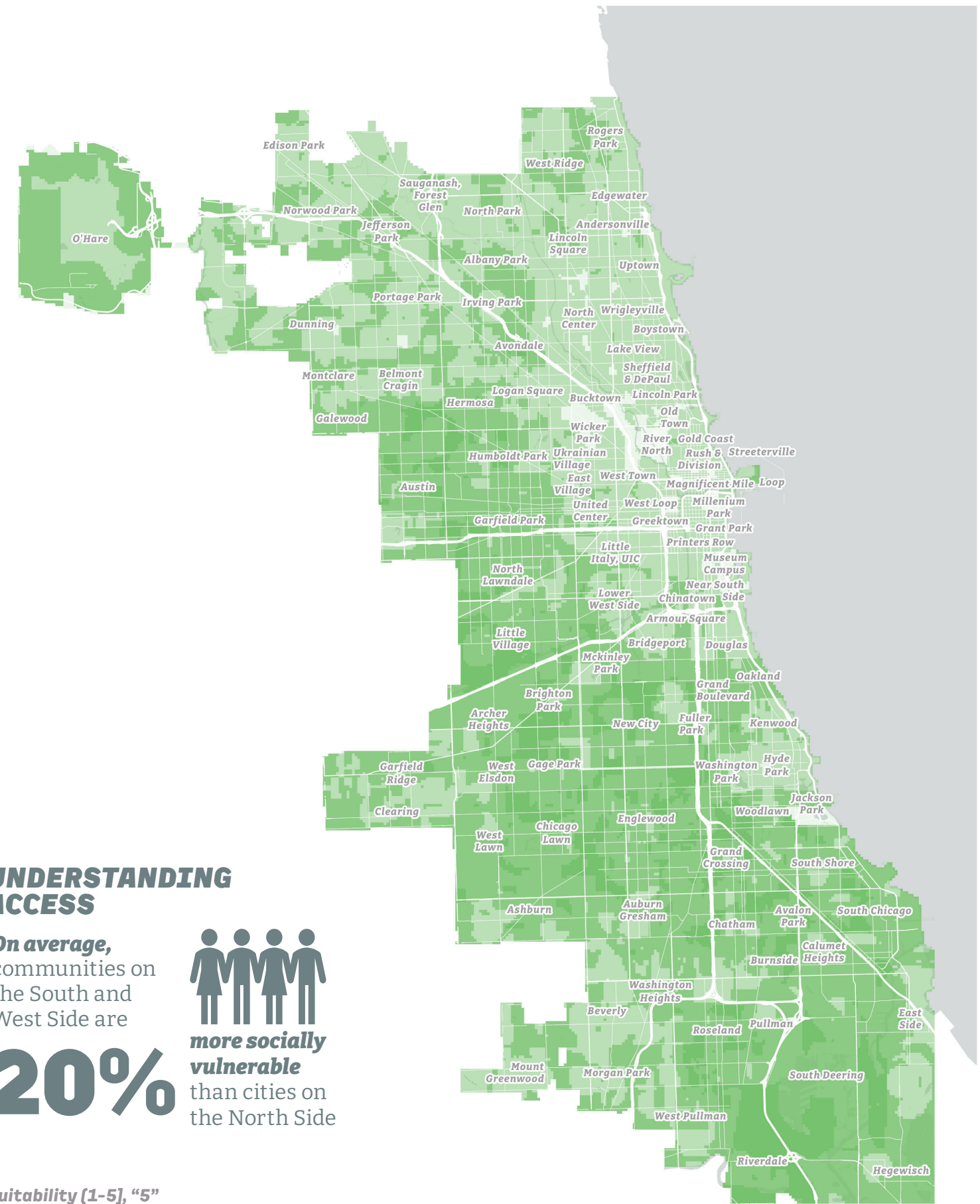
Analysis Limitations

For the purpose of this research, it's assumed that socially vulnerable areas lacking in access to resources should be prioritized for investment and alleyway retrofit. Because this hypothesis is based on theory, "qualitative" discussions were had with key communities identified by "quantitative" evidence of the analysis. Discussions with communities are integral in understanding if alleyway investment would be welcomed and used by the community.

In addition, the analysis assumes that demographic data is equally distributed throughout census block groups, which does not accurately reflect population and household density trends. All data factors used in this analysis do not relate to geolocated positions such as "households", therefore an understanding of location-based value disbursement would not be exact.

Conclusions

For the purposes of this research, it can be concluded that areas on the West and South Side of Chicago trend towards "highly suitable" for alleyway retrofit based on assumptions that socially vulnerable populations with low access to community resources and existing infrastructure are most practical for alleyway retrofit and investment.



UNDERSTANDING ACCESS

On average, communities on the South and West Side are **20%** more socially vulnerable than cities on the North Side



Suitability (1-5), "5" showing high suitability



CONNECTING RESOURCES

In order to connect populations, it's integral to identify where they're going. Community destinations are aggregated to understand where resources are densely populated. Alleyways running longer than 1 mile are overlaid in order to identify which alleyways directly connected to the highest number of community destinations.

Northern neighborhoods experience the most densely populated community destinations. Therefore, continuous alleyways with the most direct connections to resources were seen in North Side neighborhoods. Direct connections on the West and South Side remained consistent, with community resources becoming more sparse on the far South Side.

“In order to connect populations, it's integral to identify where they're going”

For the purpose of this research, “community destinations” are as follows:

Education + Jobs

- Public/private schools
- Chicago libraries
- Daycares
- Total jobs

Transportation

- Bus/transit stops
- CTA rail stations
- Metra stations
- Bus stops
- Divvy stations

Entertainment + Recreation

- Retail
- Restaurants
- CPD: Rec, nature, cultural facilities

Culture

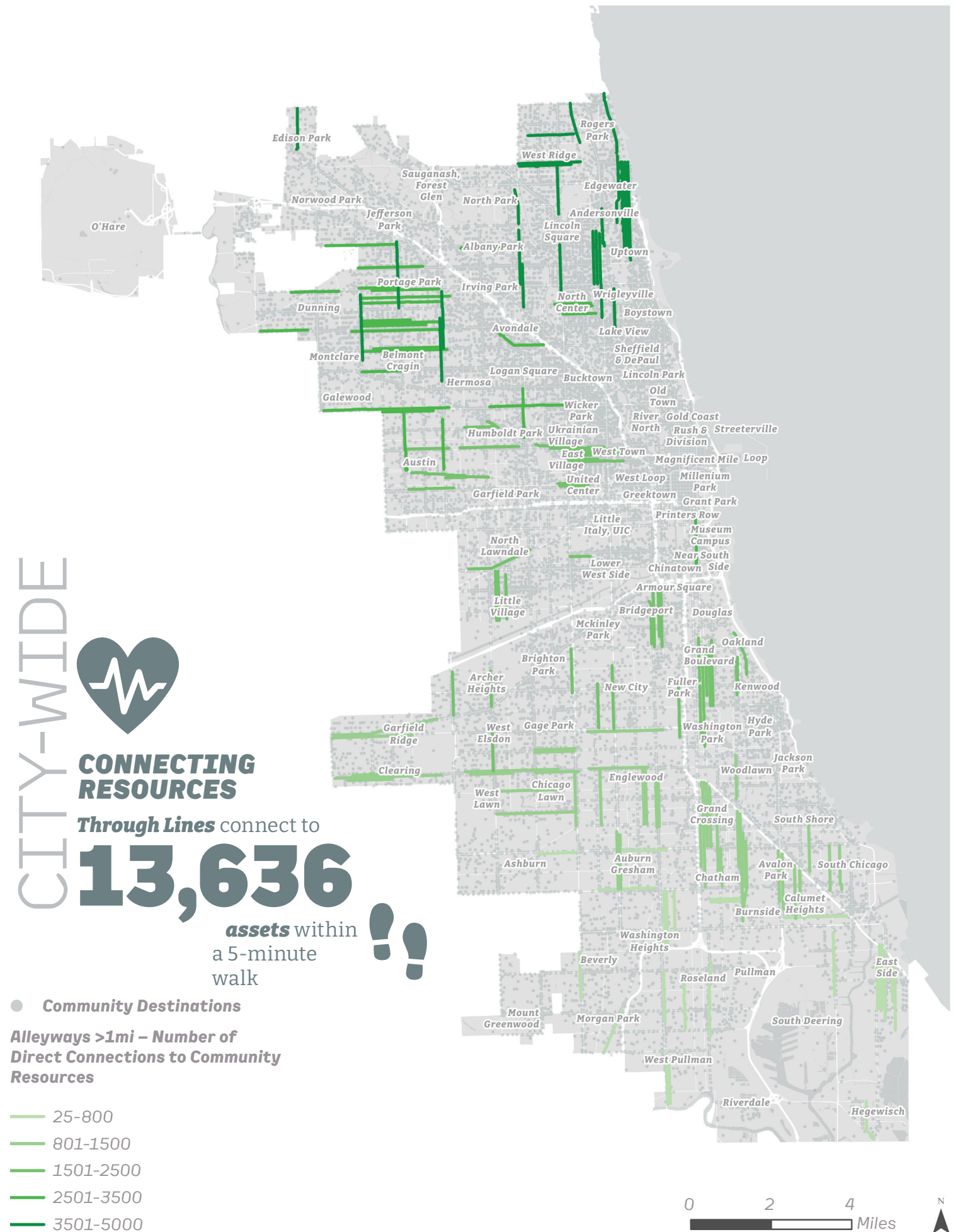
- Museums
- Places of worship

Health

- Health center
- Urgent care centers
- Hospitals
- Chicago service centers

Food

- Grocery
- Farmer's markets
- Community gardens



THE “BIG PICTURE”

Building upon previous steps, the final composite map displays “connected” alleyways with high frequencies of direct connections to community destinations in areas of social vulnerability. According to these factors, the following community areas have been identified for further research:

- North Austin
- Garfield Park
- Bronzeville
- Englewood
- Chicago Lawn
- Grand Crossing
- Avalon Park
- West Ridge
- Chatham

Three of the above neighborhoods were chosen to conduct a more focused research study – North Austin, West Ridge, and Chatham. Each focus area is located in a different region of the city – the North, West, and South Sides. While all three neighborhoods experience some levels of social vulnerability, they each boast a unique culture, history, population, and community context. Each neighborhood provides different opportunities for potential design interventions.

Stakeholder discussions, contextual analysis, site visits, and neighborhood-specific design interventions were completed to model a potential neighborhood-focused approach in all three areas.



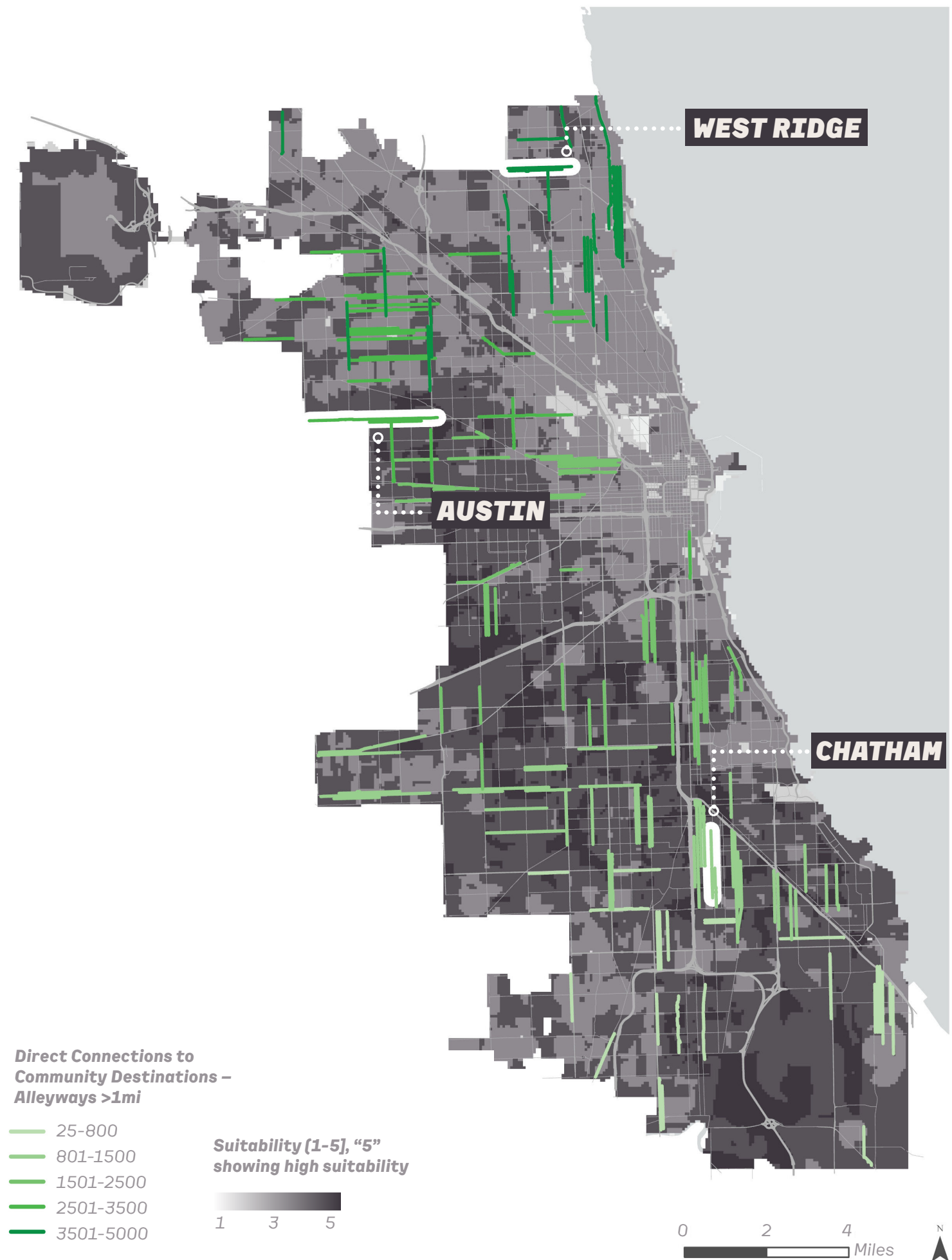
North Austin



West Ridge



Chatham



CRITERIA

COMMUNITY INVOLVEMENT

During visioning phases, community conversation was integral in determining implementation realities, roadblocks, and potential community use. Early phases of research (data analysis, precedent study) were strongly based in assumptions. Quantitative analysis is cross-checked with qualitative feedback derived from community discussions. While alleyway retrofit is perceived as a community solution to gaps in infrastructure and resources, it may not apply to the context of all communities.

During site visits and community discussions, it was concluded that many factors determine if alleyway retrofit is right for a community. These factors include existing gaps in non-motorized infrastructure, level of past community investment, activation opportunities, community willingness, pedestrian/bike culture, and alleyway perception, among others.

Challenges and design suggestions were identified during preliminary discussions with the West Ridge Chamber of Commerce and the Greater Chatham Alliance. These considerations directly influence the design process.

“Until I see an alleyway designed for people, it’s hard to imagine what that would look like”

-Member, Greater Chatham Alliance

Challenges

- Vehicular circulation (rear loading and drop-off, emergency vehicle access)
- Utilities and services
- Maintenance responsibilities
- Safety and lack of “eyes on the street”, need for lighting

Design Suggestions

- Create a more safe bike experience than adjacent high-capacity roadways. Consider maintaining pedestrian connections on primary roadways to service businesses
- Placemaking opportunities
- Community clean-up
- Establishing clear travel lanes through materiality
- Bike stalls and parking to encourage economic vitality of adjacent businesses
- Develop alleyway connections that complement on-street investments
- Introduce more activity and eyes on the alleyway so that users feel a greater degree of safety

“Alleyways are important for maintenance – how do you make them presentable for people to utilize?”

-President, West Ridge Chamber of Commerce

“TYPICAL” ALLEYWAYS

While Chicago’s initial town plat of 1830 called for regular blocks that included standard 18’ alleyways, decades of redevelopment have altered many of the widths and orientations.

As the city has sprawled beyond its central core, unique conditions have imprinted unique characteristics upon alleyways throughout the City. It is hard to describe what comprises a “typical” alleyway in Chicago.

Materiality can vary, as some alleyways utilize modern permeable pavers, others utilize old

brick pavers, while most use standard asphalt. Adjacent properties can vary wildly from commercial, to residential, to vacant land. Even widths vary wildly with some downtown alleyways spanning greater than 24’ while some residential alleyways are barely 13’ in width.

Given the variance of alleyways within the City of Chicago, it is important to establish the ideal conditions for an alleyway retrofit.



PREFERRED CONDITIONS

While there's a broad alleyway network in Chicago, some alleyways face roadblocks that limit design potential and a sufficient use of space. Utilitarian uses should never be removed for the sake of integrating non-motorized infrastructure. See the following preferred alleyway conditions as retrofit criteria:

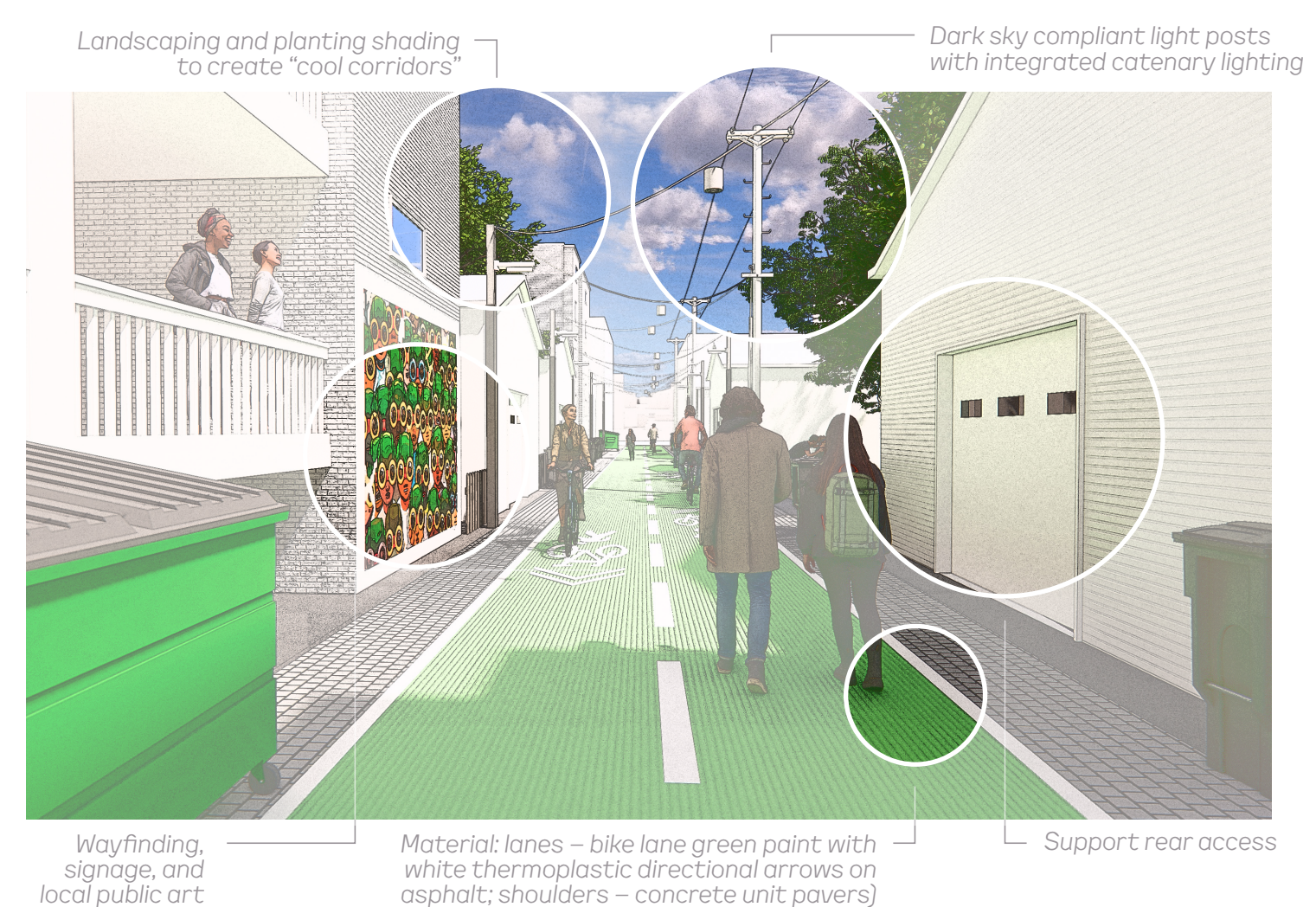
- **Width:** Alleyways must be 12' min., and preferably 16' in width.
- **Connectivity:** Continuously connected alleyways should be prioritized. See maps in analysis section for reference.
- **Need:** Communities that are socially vulnerable or experiencing gaps in access should be prioritized for investment.
- **Direct Connections:** Direct routes to community resources (i.e. parks, schools) should be considered, and alleyways aiding in these connections should be prioritized.
- **Pre-Existing Activation:** In recent years, Chicago businesses have opened service windows fronting alleyways. Consider building upon prior activation.



GENERAL DESIGN GUIDELINES

Design integrations should be context specific. However, there are a handful of design guidelines that should be a baseline for all retrofit in order to create an efficient system:

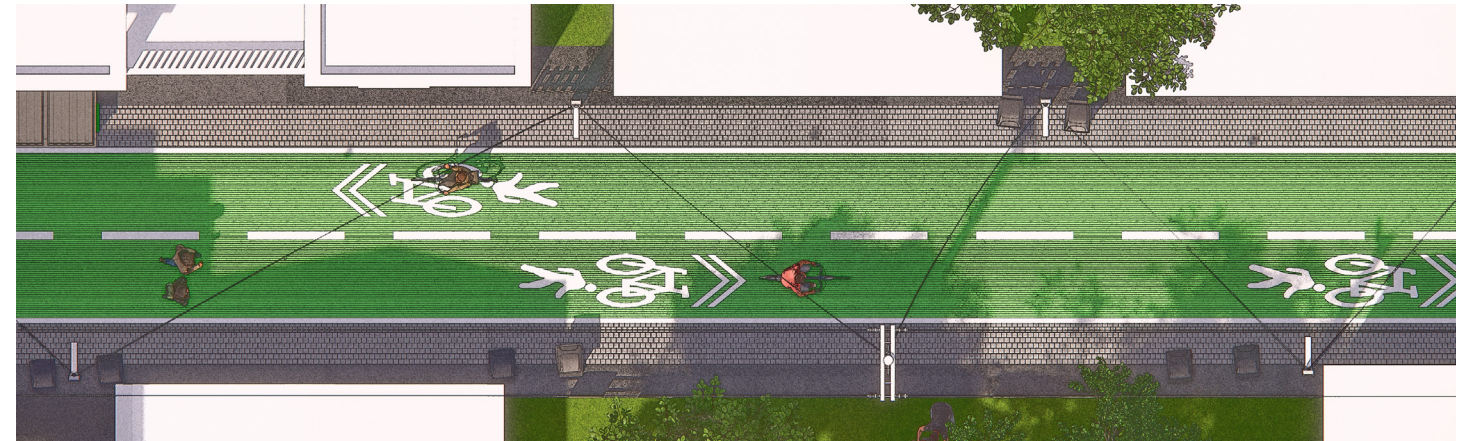
- Remove speed bumps
- Flexible design supporting rear garage access and multi-modal circulation
- Chicago's Green Alleyway design standards for materials and drainage
- Adjacent lot activation
- Wayfinding, signage, and local art
- Energy efficient, dark sky lighting
- Gradation directing water runoff to the center, removing central drainage channels
- Landscaping and planting shading to create "cool corridors"
- Paving/material that delineate between use zones
- Commercial building transparency



Baseline Alleyway Retrofit – Narrower than 14'



Baseline Alleyway Retrofit – Wider than 14'

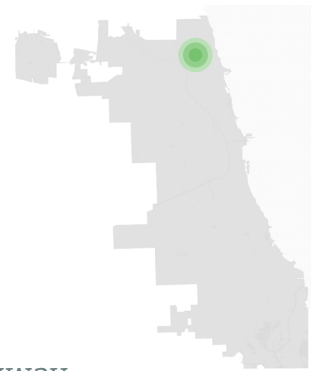


FOCUS: WEST RIDGE

EXISTING CONDITIONS

Located on the North Side of Chicago, West Ridge is a thriving and diverse mix of cultures, with a significant amount of culinary and open space destinations. Today, the community lacks non-motorized connections to route residents to destinations, specifically along Devon Avenue – a key node for Chicago’s Indian, Pakistani, and Jewish communities.

The alleyway of study within West Ridge is directly north of Devon Avenue, supporting key utility functions for the neighborhood including trash, electric, and stormwater management. The alleyway’s existing condition prompts opportunities for bike amenities and placemaking strategies including pocket parks, landscape improvements, and local art, in addition to non-motorized routing.



WEST RIDGE

focus alleyway connects to **231** community assets within a 5-minute walk



CHARACTER IMAGERY – WEST RIDGE

East of Kedzie Ave. & North of Devon Ave.



WEST RIDGE INTERVENTION OPPORTUNITIES

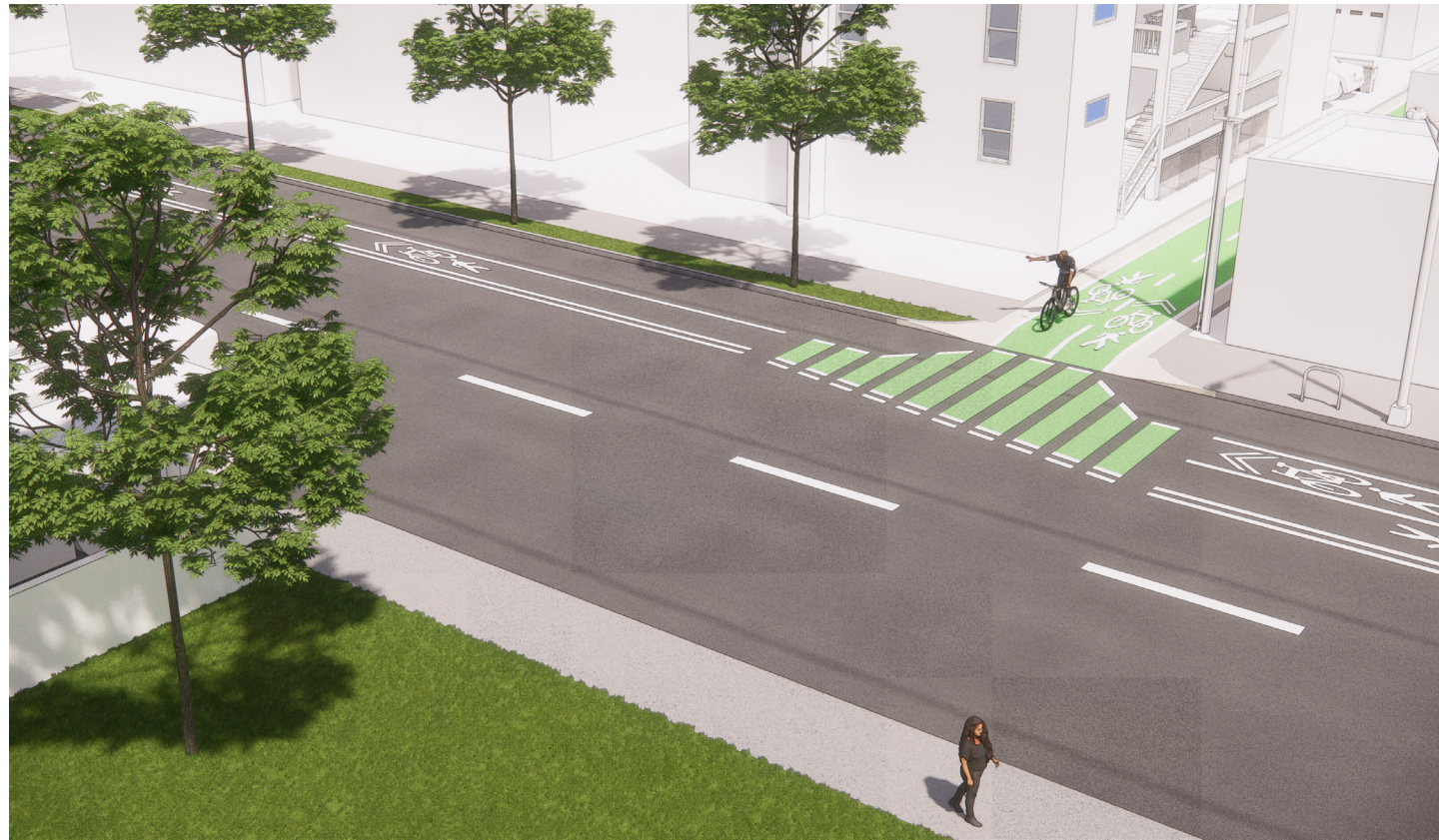
Mid-Block Crossings

Problem

A primary concern of introducing new non-motorized passages within alleyways is establishing crossings where no infrastructure currently exists. This creates conflict points between motorists and non-motorists, especially at high traffic corridors, presenting dangerous conditions for non-motorists, and traffic congestion for motorists.

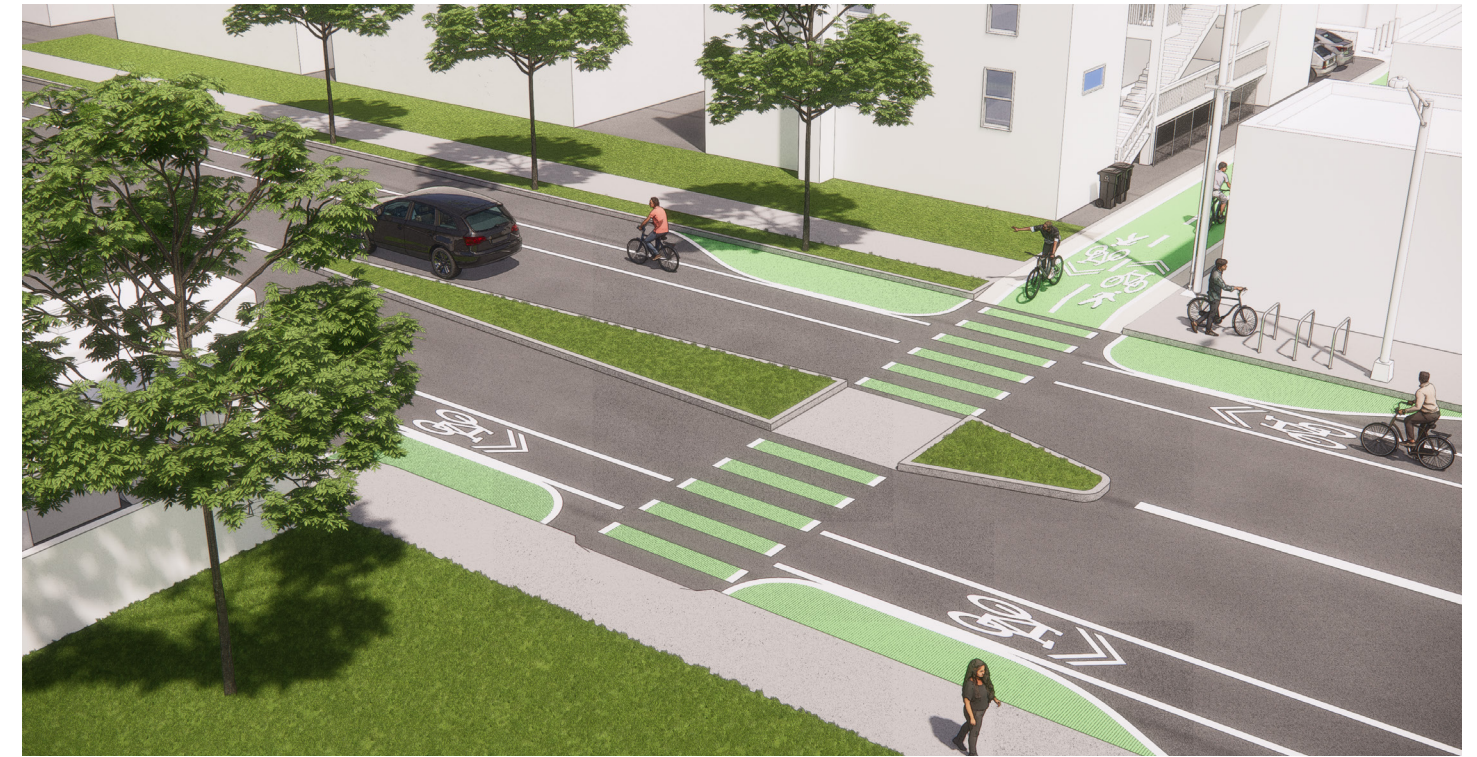
Context

The alleyway of study terminates at Kedzie Avenue, which provides an opportunity to examine a mid-block crossing at a high traffic corridor. The ROW at this location is roughly 66' in width with two lanes of traffic, a left hand turning lane, two bike lanes running in both directions, parallel parking on both sides of the street, and 6' sidewalks. A bus depot is directly across from the alleyway, west of Kedzie.



Low Investment Solution: Bike Lane Connectors

Introduction of new bike lane directing traffic to nearest signalized intersection. Green paint is used to convey cyclist traffic and provide traffic calming. Pedestrians are encouraged to use sidewalks and existing crosswalks at intersections. Options for protected bike lanes or cycle tracks for higher degrees of investment.



Medium Investment Solution: Refuge Island and Painted Curb Extensions

This option introduces a curbed refuge island splitting traffic. Painted curb extensions on either end of the crosswalk provide additional traffic calming while narrowing the distance for crossing. A painted crosswalk is provided, connecting the alleyway to a curb ramp at the sidewalk west of traffic.



High Investment Solution: Traffic Calming and Comprehensive Streetscape Improvements

Traffic calming, pedestrian/cyclist safety, and placemaking elements are utilized in the high investment solution in order to create a more welcoming mid-block crossing condition. The non-motorized experience is improved with curbed extensions, a robust refuge island, a table top crossing, a dedicated crossing signal, and streetscape improvements.

Alleyway Traffic Control

Problem

Arguably the central barrier to introducing pedestrians and bikes in alleyways is the ongoing presence of cars. Compared to streets, more narrow travel lanes introduces slimmer margins for error. Introducing ways of controlling vehicular traffic is paramount to ensuring the safety and success of these spaces.

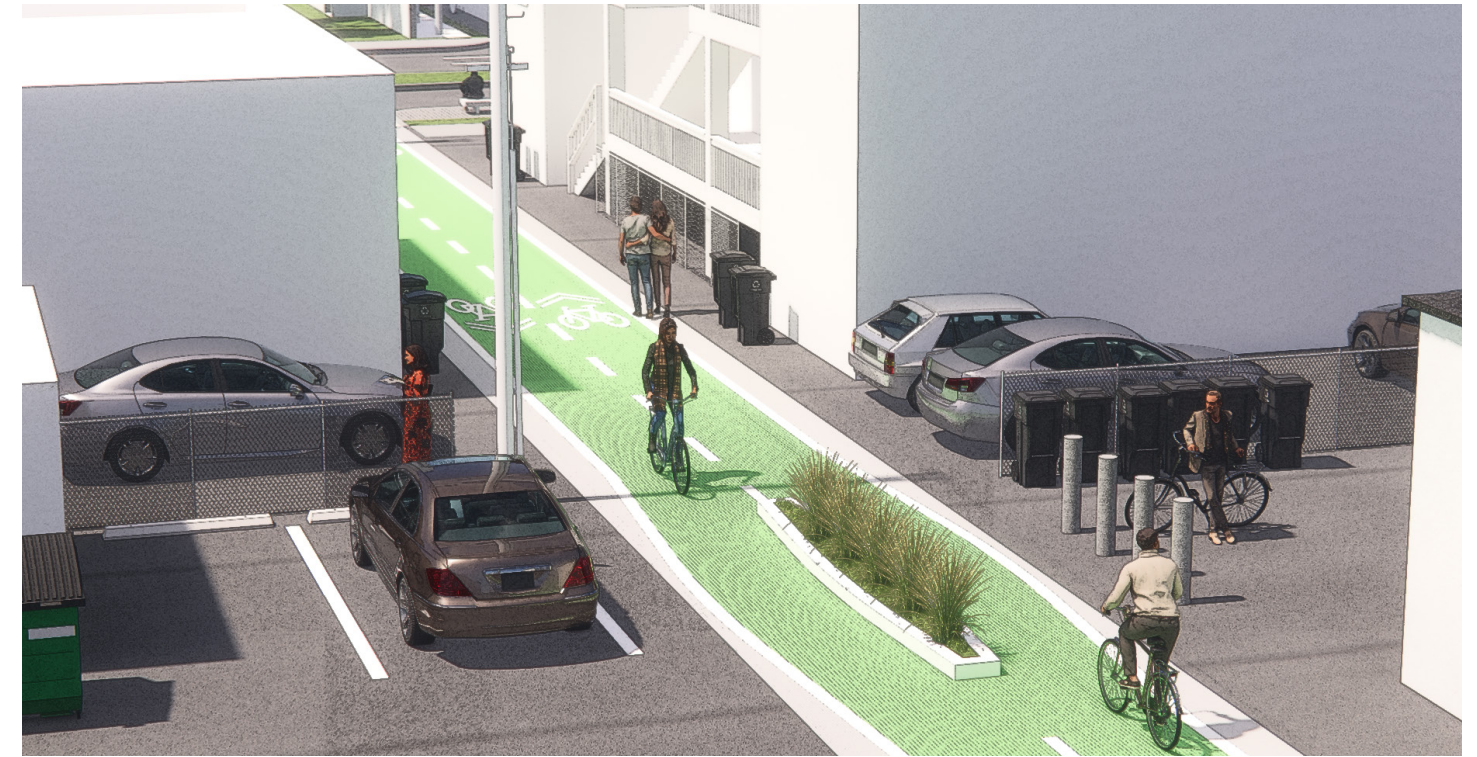
Context

This alleyway's existing vehicular access is fairly typical to most alleyways in the City of Chicago. A mix of commercial, personal, and maintenance vehicles access the alleyway at various points throughout the day. While lowering the amount of vehicular conflict points within the alleyway is important, it is necessary to maintain some vehicular access for back-of-house access and maintenance.



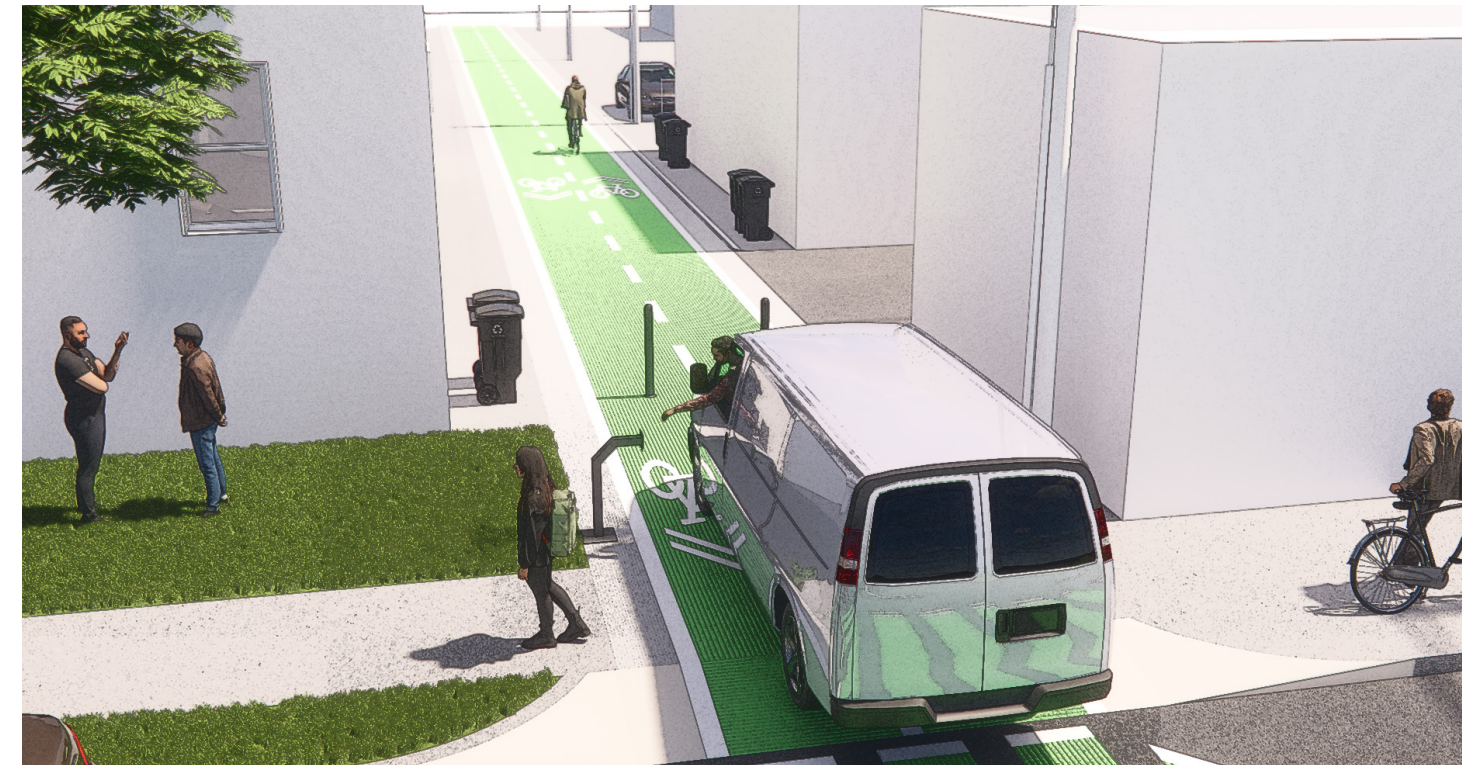
Low Investment Solution: Signage

Introduction of signage at every alleyway entrance signaling bike and pedestrian use. Signage can provide notification to motorists as well as encouragement to utilize other streets if simply using for through traffic. Ground plane improvements also signal to motorists that alleyway contains unique uses.



Medium Investment Solution: Mid-Alleyway Vehicular Barrier

Signage can only do so much, so providing physical barriers at the center of alleyways can ensure only localized traffic from either end of the alleyway is accommodated. Curbed planters or bollards limit through traffic while providing adequate space for pedestrians and cyclists to continue on.



High Investment Solution: Automated Retractable Bollards

Physical barriers at the center of alleyways can still provide unwanted conflicts between motorists and pedestrians/cyclists. Retractable or removable bollards reduce these conflict points by turning away unauthorized vehicles at the entry. For a high tech solution, fobs can be provided to residents and authorized users to allow for seamless access into and out of the alleyway.

FOCUS: AUSTIN

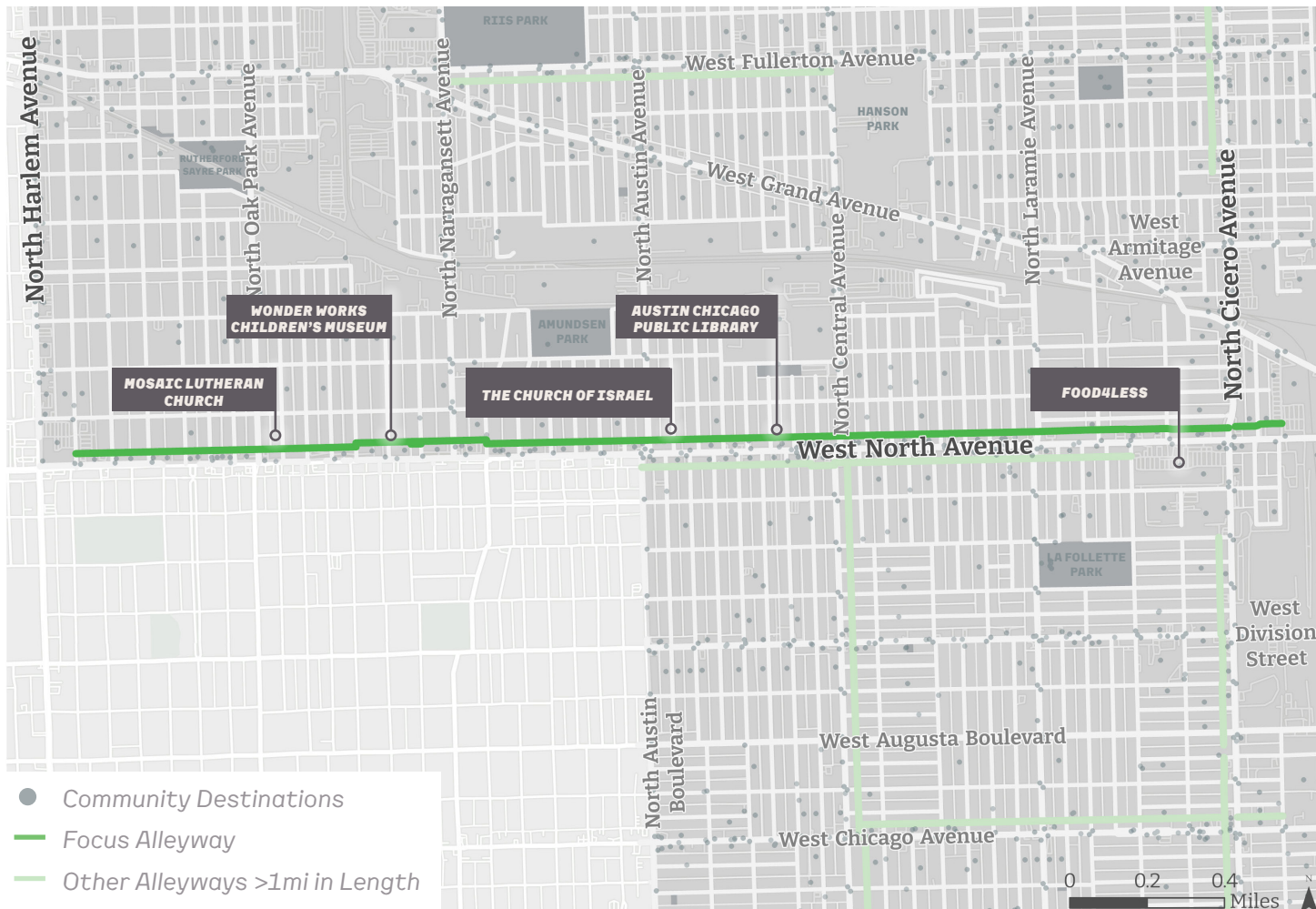
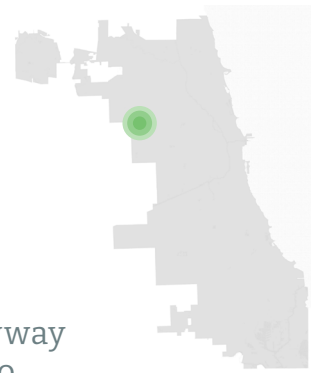
EXISTING CONDITIONS

Located on the West Side of Chicago, Austin is one of Chicago's largest and most populous neighborhoods, with a rich history of Black and African-American culture. Austin has a handful of east/west bike routes, but is largely lacking in protected bikeways and greenways.

The alleyway of study is directly north of North Avenue, running east/west. The typology is more narrow in nature, requiring intentional spatial management for amenities and utilities. Garages front the alleyway, allowing rear circulation for residents. Opportunities exist for safe access and integration with North Avenue. Traffic calming design interventions and non-motorized crossing infrastructure are necessary to ensure safe experiences for all users.

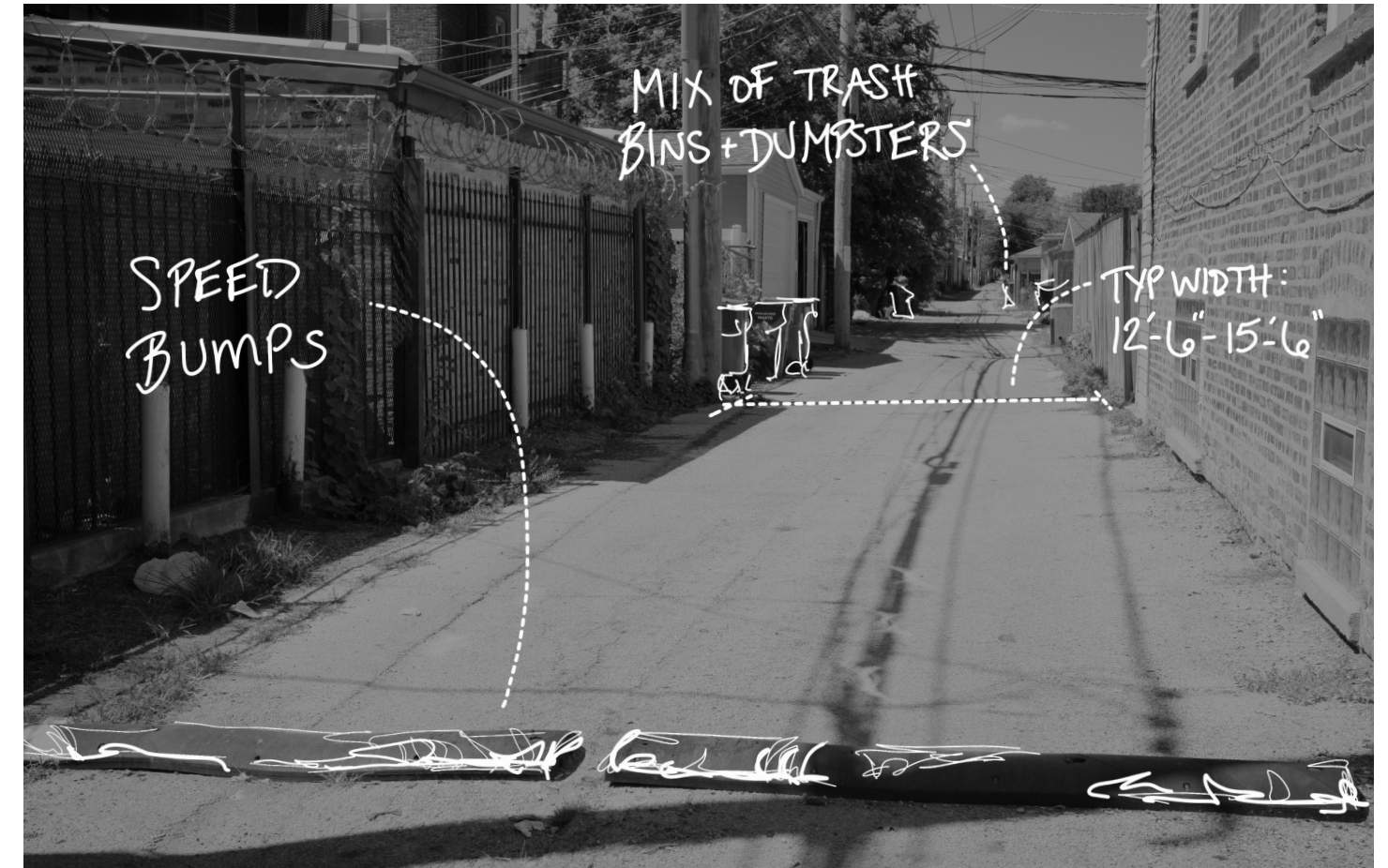
AUSTIN

focus alleyway connects to **244** community assets within a 5-minute walk



CHARACTER IMAGERY – AUSTIN

West of Leclair Ave. & North of North Ave.



AUSTIN INTERVENTION OPPORTUNITIES

Trash Management

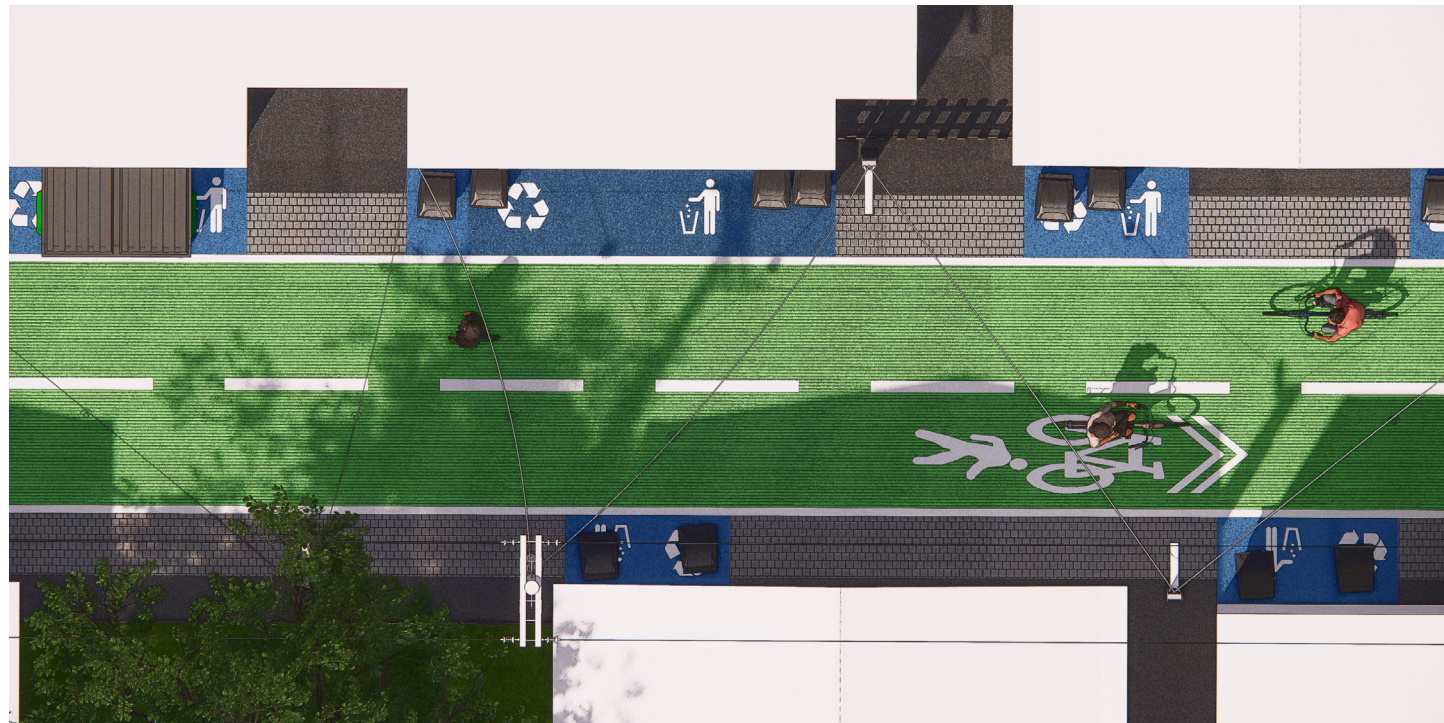
Problem

Introducing new uses within alleyways without disrupting existing uses is paramount to the realization of through lines. Trash collection remains a vital service for all residential and commercial users along alleyways. However, it is far too common for trash receptacles to stray away from the edges of alleyways, limiting the overall width of an alleyway. This is problematic for pedestrians and cyclists looking to pass through as it leads to unpredictable widths and barriers along a route. Developing systems of corralling trash receptacles is important to the viability of through lines.

Context

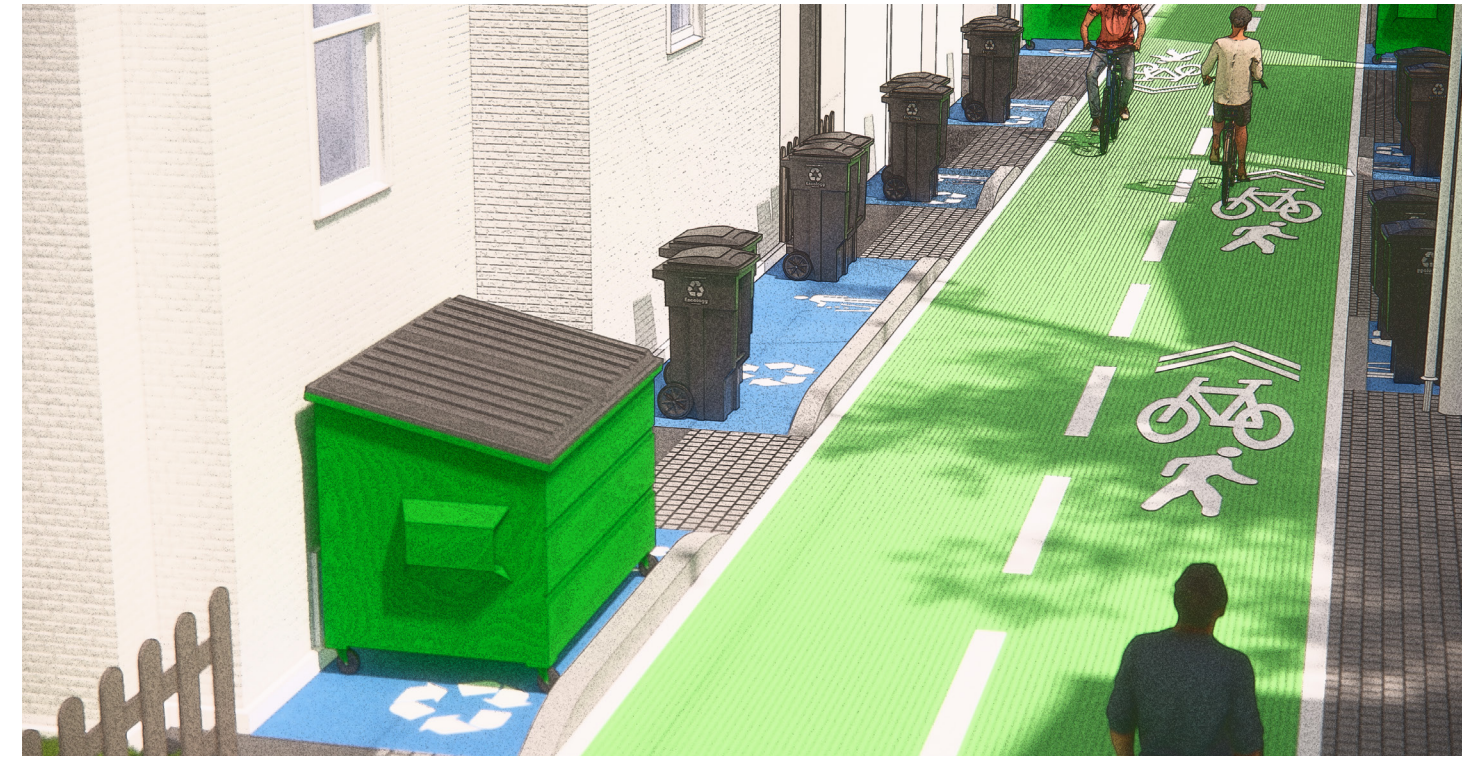
Perhaps the most indelible legacy of Chicago's alleyway system is the relocation of trash from the street to the center of blocks. While seemingly modest, this was instrumental in progressing Chicago towards a cleaner, healthier, and more functional city.

Austin's alleyways, like many throughout the city, have a mix of 96 gallon containers and 2 yard dumpsters depending on the residence and commercial needs. Municipal and private trash/recycling collection services occur weekly, typically with a 36' long garbage truck.



Low Investment Solution: Trash Receptacle Zones

Paint areas designating trash and dumpster space. These guidelines could help to limit receptacles encroaching upon travel paths. A higher investment, longer lasting solution could be the introduction of unique paving like unit pavers delineating areas for trash receptacles.



Medium Investment Solution: Tapered Curb Corrals

Suggested areas can only be so effective when there are no physical barriers. Adding a curb that lines the edge of travel lanes would greatly reduce receptacle encroachment. Leaving ends of the corrals open would allow for refuse collectors to simply roll receptacles around curbs for access.



High Investment Solution: Fixed Below-Grade Trash System

Many major cities around the world have invested in underground waste systems. This would provide a fixed solution that would also be more attractive than systems that put trash on display. A system like this would require significant investment and considerations as many underground utilities are routed through alleyways.

Adjacency Activations

Problem

Urban conditions yield leftover space – it is a natural part of sporadic development. How we utilize that space adjacent to alleyways can greatly improve a user's experience. It is a challenge to develop comfortable and engaging spaces within alleyways, which are commonly thought of as dangerous and dirty.

What are some ways that we can strategically introduce spaces for users within common alleyway conditions?



Low Investment Solution: Activated Facades

Peg boards placed on blank walls can provide flexible functional space. Planters, upright bike racks, fold-out benches, and other accessories can be integrated into the peg boards based on local needs.

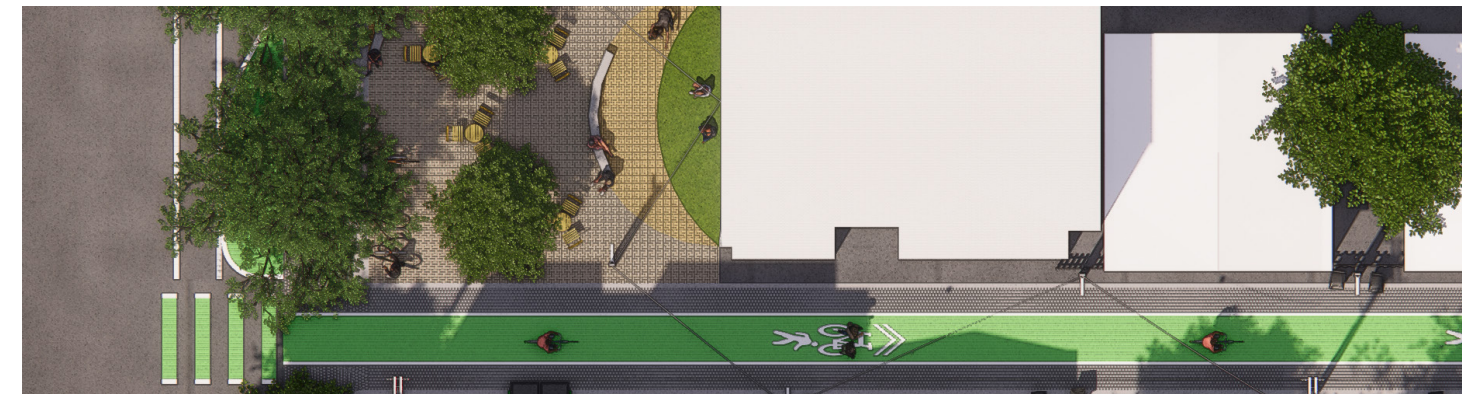
Context

In recent years, Chicago has developed some great linear spaces – the 606, Riverwalk, and the ongoing investment in the Lakefront Trail come to mind. A commonality shared amongst these spaces is an occasional offshoot activation for users to gather. Large or small, these spaces can improve user experience and entice them to more frequently utilize these amenities. Walk through Chicago's alleyways and you will find blank walls, small nooks, and entire parcels of land ripe for activation.



Medium Investment Solution: Pocket Parks

Small nooks between buildings can provide opportunities for pocket parks. Pre-manufactured parklets, bike parking, and planters can be organized to create comfortable spaces for gathering.



High Investment Solution: Vacant Lot Conversions

Many alleyways have entire parcels of vacant land adjacent to them. Developing them as public parks and plazas introduce a highly attractive use to through line corridors. Prioritizing vacant corner lots provides a more visible and attractive condition.

FOCUS: CHATHAM

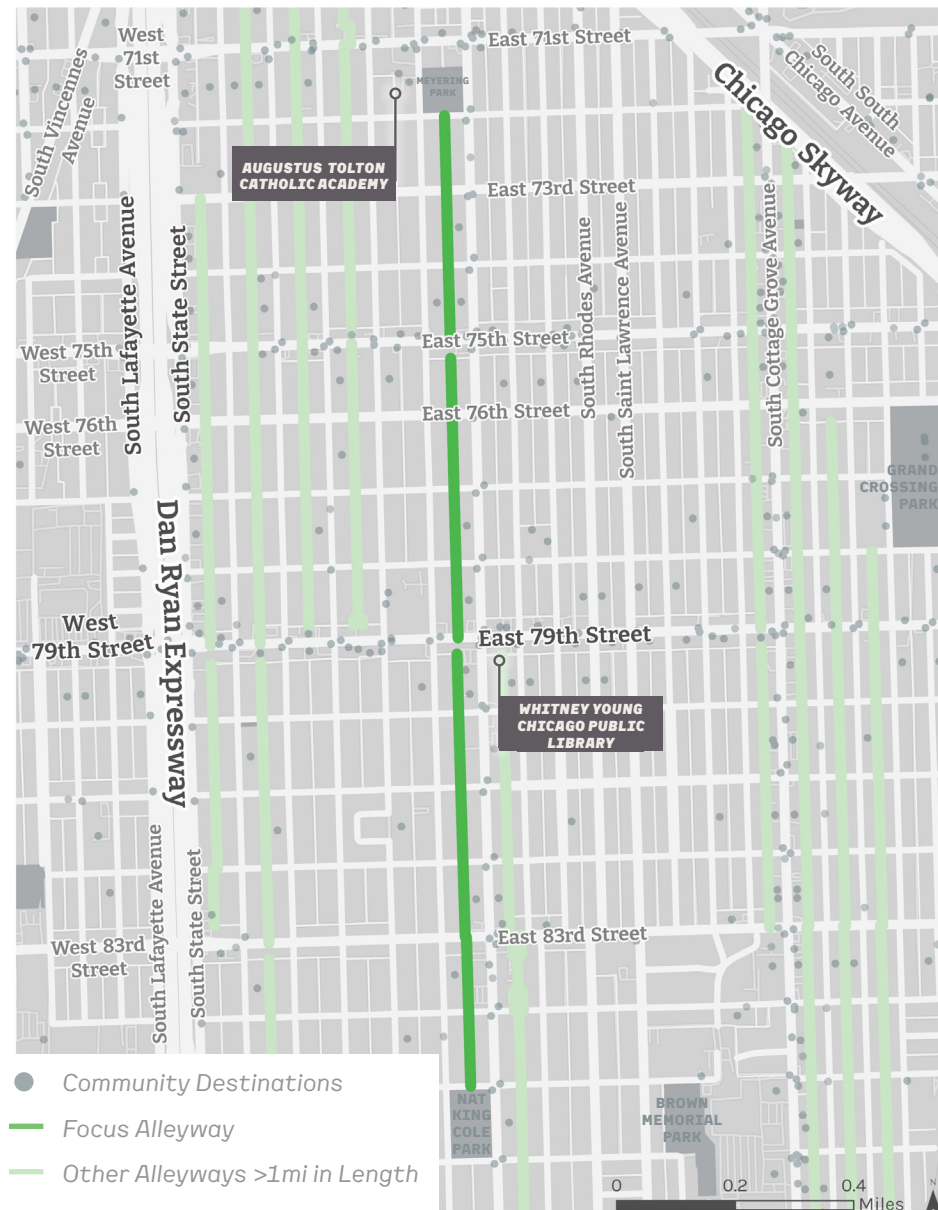
EXISTING CONDITIONS

Located on the South Side of Chicago, Chatham is home to a significant history of Black and African-American culture, architecture, arts, and cuisine. Due to historic disinvestment, Chatham has substantial gaps in access to non-motorized infrastructure, with no protected bike lanes or greenways, and minimal bike routes.

The alleyway of study is currently used for rear garage access, trash, electric utilities, and stormwater management. Running north/south, the alleyway intersects a handful of highly trafficked roadways and could serve as a potential connector between Nat King Cole Park and Meyering Park. For the purpose of this study, alleyways longer than 1 mile were identified based on the assumption that a "connected alleyway" is defined as a series of routes within 200 ft of each other. Because of this assumption, this alleyway study sees multiple route disruptions. The first disruption occurs at 75th, where the alleyway aligns perpendicular to a vacant lot along 75th. The second occurs along 79th, where the alleyway abuts a commercial strip. In both cases, open space activation and route continuation could be considered.

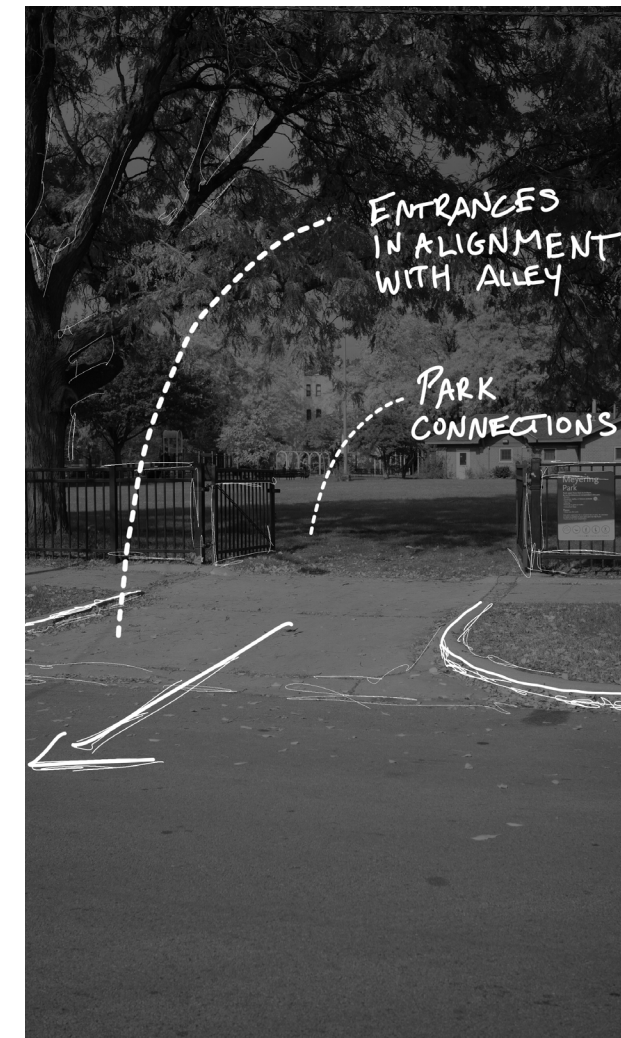
CHATHAM

focus alleyway connects to **135** community assets within a 5-minute walk



CHARACTER IMAGERY – CHATHAM

West of Martin Luther King Drive and between Meyering Park and Nat King Cole Park



CHATHAM INTERVENTION OPPORTUNITIES

Garage Safety and Access

Problem

One of the primary benefits that alleyways has permitted Chicagoans is the ability to house their vehicles off of the streets. This helps with congestion, access, and beautification of frontages along streetscapes within the city. However, the issue of having garages along alleyways creates potential conflict points for bikes and pedestrians routed through them. Given how common garages are along alleyways, designing with them in mind is a necessary exercise in vetting the validity of through lines.

Context

The reality of garages along alleyways is overwhelming – in every block between Meyering Park and Nat King Cole Park you can find more than 16 garages. This isn't a condition localized to just Chatham – at least 12 garages were found in every block along the study alleyway in Austin and 6 garages were found in every block along the study alleyway in West Ridge. The setbacks of garage doors also varies widely, with some being >4' off of the alleyway, and others being right up against it.



Low Investment Solution: Striped Zones

Painting the zone in which a garage exists with a bright color that contrasts the travel lane color provides pedestrians and cyclists an additional layer of notice for where conflict points may exist. Adding in angled stripe zones directly adjacent to garages also indicates to users zones that may be unsafe for passage.



Medium Investment Solution: Vertical Identifiers

Building upon the ground plane, investment in vertical identifiers like bollards would flag to oncoming cyclists and pedestrians that conflict points with vehicles lie ahead.

High Investment Solution

While investigating high investment solutions like flashing indicators, sensors, and other options, it was determined that none of these options were feasibly scalable.

Park Connections

Problem

While Chicago has a robust parks system, access to these parks can sometimes prove difficult. As identified in our analysis phase, large swaths of Chicago have lesser access to parks than other parts of the city. Alleyways, on the other hand, are rarely (if ever) considered pastoral. There is an opportunity to utilize these urban corridors to connect users to an already established parks system.

Context

The alleyway being studied provides a unique condition as it extends more than 1.5 miles in length connecting two local parks – Meyering and Nat King Cole Parks. The alleyway primarily backs up to residences on either side, providing a unique opportunity for neighbors to access both parks in a comfortable manner. It is particularly important to connect resources within this neighborhood, as it experiences I-90 to the northeast and I-94 to the West, restricting comfortable access to neighboring community resources.



Low Investment Solution – Improved Crossing

In both instances, the streets that split the alleyways from the park are lower speed and lower traffic. With this in mind, providing improved crosswalk markings would help to provide safer crossings to parks.



Medium Investment Solution – Curb Extensions

Building upon the crosswalks, curb extensions would help to narrow the road and provide shorter crossings for non-motorized users and visual cues to slow down for motorized users. Elements like park benches and rain gardens can be integrated to establish a park-like vernacular.



High Investment Solution – Park Extension

In this solution, the alleyway serves as a greenway spanning between the two parks. Integrated seating, lighting, and a raised connection provides an attractive solution. Alternatively, a rolled curb could be integrated to provide emergency access on the street.

IMPLEMENTATION

INVOLVEMENT

Community Partners

Follow-up conversations with the West Ridge Chamber of Commerce and Greater Chatham Alliance should be had to discuss design interventions, vision, and implementation. An initial connection with Austin partners should be made to introduce the research idea. To assess community support, potential use, and overall need, public outreach should be conducted in all three communities. Outreach might include flyers, community meetings, stakeholder and anchor institutions collaboration, and surveys. Engagement that utilizes immersive, site-specific walkshops can be used to potentially shift negative perception of alleys.

Municipal Connections

Implementation discussions with the Chicago Department of Transportation, Department of Public Works and Department of Planning and Development are necessary to consider implementation feasibility, funding, and technical roadblocks.

01.  RE-ENGAGE
with **neighborhood groups**
02.  CONSULT
with **City on feasibility + funding**
03.  IMPLEMENT
and **maintain through neighborhood group partnerships**

ADJACENT INITIATIVES

If initial discussions with municipal and community departments spur interest in implementation, adjacent initiatives should be considered.

Branding & Wayfinding. Provide community identifiers at corners to provide additional indicators to motorists that unique street conditions are present. Along alleyway routes, provide directional signage for users.

Maintenance. Alleyway maintenance should be a joint venture between the City, neighborhood organizations, and adjacent businesses and residents, similar to the maintenance duties performed for a primary street.

Programming and Partnerships. Similar to design interventions, placemaking and programming of alleyways should be community-specific. Public/private partnerships should be leveraged for events, programming, local art, and adjacent site activation opportunities. Relevant examples include:

- **Early Activation.** Vacant lot opportunities should be integrated into alleyway design interventions, with potential for extended community space, plazas, neighborhood farms, community centers, local retail, and entertainment space.
- **Cool Corridors.** Use adjacent building shade and landscape improvements to create shaded alleyway routes during hot months. Partner with adjacent private/public owners to thoughtfully consider shade and daylighting not only for property owners but the adjacent activated alleyway to the rear.

METHODOLOGY

APPLICATION

While the purpose of this research was context-specific to Chicago's alleyway system, the research methodology could serve as a framework for similarly designed cities.

“A methodology that’s replicable, but still neighborhood focused, resulting in more resilient and connected urban fabrics”

STEP ONE ASSESS:



STEP TWO IMPLEMENT:



An architectural rendering of a modern public plaza. The scene is set outdoors with a clear blue sky and scattered clouds. In the background, a white building features a large mural of a sun and hills. The plaza is paved with light-colored bricks and includes several trees, including a prominent one in the center and a large tree on the right. People are depicted sitting at tables, some on a low concrete wall, and others on a grassy area. A green bicycle rack is visible near the building. The overall atmosphere is bright and inviting.

CONCLUSION

The problems of this generation demand innovative policy and creative design, warranting a restructuring of the established models. While affordability, equity, and sustainability issues are complex and globally experienced, solutions lie at the neighborhood and site-specific level. The public realm should be designed for the community, prioritized by governing bodies, and preserved by users in order to create long-lasting social, economic, and environmental benefit within the American fabric.

Comprehensive solutions exist within our current infrastructure - and we need to be audacious enough to seek them. Our cities can be more if we can discover the through line.

CITED

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- ² Alleys By Encyclopedia of Chicago Michael P. Conzen – <http://www.encyclopedia.chicagohistory.org/pages/38.html>
- ³ Commissioners' Plan Of 1811 https://en.wikipedia.org/wiki/Commissioners%27_Plan_of_1811
- ⁴ Talking Trash During the Dog Days: A Brief History Of Sanitation in New York City Nicholette Zeliadt – <https://blogs.scientificamerican.com/observations/talking-trash-during-the-dog-days-a-brief-history-of-sanitation-in-new-york-city/>
- ⁵ Cache That Trash Michael Pollak – <https://www.nytimes.com/2011/12/25/nyregion/answers-to-questions-about-new-york.html?mtr-ref=www.google.com&assetType=REGI-WALL>
- ⁶ Wittich, Jake. “Why Are People Lining up in This Lincoln Park Alley? To Get an Insta-Worthy Vegan Treat from Beacon Doughnuts.” Block Club Chicago, 15 Sept. 2020, blockclubchicago.org/2020/09/15/beacon-doughnuts-lincoln-park-alley-vegan-donut-shop-810-armitage/.
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- ⁸ The Chicago Green Alley Handbook an Action Guide To Create a Greener, Environmentally Sustainable Chicago Chicago Department Of Transportation – 2007
- ⁹ “Early Chicago: The Great Migration.” WTTW Chicago, 11 Sept. 2018, interactive.wttw.com/dusable-to-obama/the-great-migration#:~:text=Five%20hundred%20thousand%20African%20Americans,to%20keep%20Chicago's%20factories%20rolling.
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- ¹³ “Repeal Robert Moses.” Transportation Alternatives, Transportation Alternatives, 21 Mar. 2023, transalt.org/blog/repeal-robert-moses#:~:text=Urban%20planner%20Robert%20Moses%20built,city%20blocks%20and%20disassembled%20neighborhoods.
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- ¹⁷ NHTSA <https://www.nhtsa.gov/>
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