

The image is a composite. The left half features a dark teal background with a white line-art map of a city grid. Overlaid on this is the logo for the Metropolitan Planning Council, which consists of a white arch above the text 'MetropolitanPlanningCouncil' in a sans-serif font. Below this, the tagline 'Building Equity in the Built Environment' is written in a smaller, lighter font. The right half of the image is a photograph of a city skyline, likely Chicago, with several tall buildings. In the foreground, two young girls are standing on a rooftop or balcony, looking out at the city. One girl is wearing a light blue dress and the other a white shirt. The overall composition suggests a focus on urban planning and community equity.

MetropolitanPlanningCouncil
Building **Equity** in the Built Environment

Zoning & Land Use Assessment

*Mitigation and Adaptation to Climate Change
Preliminary Findings*

September 2025

Outcomes of focus

TOPIC	DESCRIPTION
Affordable Housing	Diverse and affordable housing options (subsidized, affordable, workforce/middle, market, luxury) are available in every neighborhood including for the job insecure and unhoused populations
Strong Business Corridors	Strong and vibrant business corridors with diverse business opportunities to support the economic needs and resiliency of every community
Limited Pollution Exposure	All neighborhoods feature low levels of pollution, taking into account cumulative impacts on overburdened communities
Accessible Public Transit Hubs	All communities feature public transit options that are convenient and reliable, and serve hubs with housing, businesses, recreation and other services
Productive Land Use	All land in communities is used productively, meaning beneficial to local residents and aligned with community needs
Available Groceries and Healthcare	Affordable grocery options and healthcare providers are accessible in all neighborhoods
Mitigation and Adaptation to Climate Change	All communities feature green infrastructure and energy-efficient building stock that both mitigates and adapts to climate change

Defining climate adaptation, mitigation, and resilience

Climate change is the significant alteration in weather patterns that continue over multiple decades or longer, causing changes to precipitation, temperature, and the duration, frequency, and intensity of extreme weather events.

Climate Adaptation (Manage climate change effects)

- Adaptation is the process of **adjusting to or preparing for a changing environment**. Adaptation reduces the harmful effects of climate change by **managing economic resources and critical infrastructure, encouraging technological innovation, and applying equity principles**.

Climate Mitigation (Prevent future climate change effects)

- Mitigation refers to **methods for reducing the human impact on the environment** – specifically climate ecosystems – including **strategies to reduce greenhouse gas emissions (such as energy efficiency) and methods capturing carbon (such as planting trees)**.

Climate Resilience (Improve the ability to respond and recover from climate change effects)

- Resiliency is the ability to anticipate, prepare for, respond to, and recover from the impacts of climate change. These impacts include extreme weather events, flooding, and sea level rise, as well as the various social and economic impacts of such shocks and stresses. This can include proactively **developing green spaces in urban areas to increase absorption and diversifying economic activities to reduce vulnerability**.

What are Chicago's primary climate change challenges?

Increased rainfall and flooding

- Climate change will increase precipitation in Chicago. **Since the early 1900s, precipitation has increased 12% to 15%**, with rainier summers. When storms hit, they are more intense over shorter periods of time. **Heavier and more frequent rainfalls can lead to flooding** in communities and inside people's homes.

Heat and heat waves

- In Illinois, the **average daily temperature has increased by 1 to 2 degrees Fahrenheit** over the past 120 years, with most of the increase felt in the winter and spring months. Heat is heightened in urban environments due to urban heat island effect. **Urban areas with more hard surfaces like pavement and roads absorb and retain heat**, then release it throughout the day and night, contributing to higher temperatures. This is the **heat island effect**.

Research questions and key findings

RESEARCH QUESTIONS

KEY FINDINGS

Understand the outcome:

Which places and people are most likely to be affected by climate impacts?

- Areas farther from the lake experience much warmer air temperatures, and the built environment—features such as impervious surfaces—creates much warmer surface temperatures in Southwest and Northwest Side areas
- Susceptibility to combined heat and flood impacts is greatest for Southwest, Far South, and Northwest sides
- Black and Latinx Chicagoans experience greatest susceptibility to urban heat and flooding

Understand the zoning:

How is land zoned and used across neighborhoods?

- Parks and Open Space zoning is located throughout the city, although neighborhoods with the most Latinx residents see the least of this zoning type
- Tree canopy coverage, important for climate resilience, is sparse downtown and along the Southwest side, where rates of impervious surfaces are also highest

Understand the relationship:

How is the way land is zoned and used across neighborhoods related to climate impacts?

- Low-density residential areas are disproportionately susceptible to both heat and flooding
- Heat is complex; citywide, larger climate patterns and a wide variety of factors mean that protective factors aren't determinant
- Tree canopy, open space, and parks can have cooling effects on neighborhoods, while manufacturing zoning and industrial corridors and larger roadways are associated with greater heat
- The greatest setback and open space requirements tend to be in RS districts, which also see the most flooding and heat susceptibility; however, setbacks and open space are not required to be green space



Understand the outcome

Which places and people are most impacted by climate risks?

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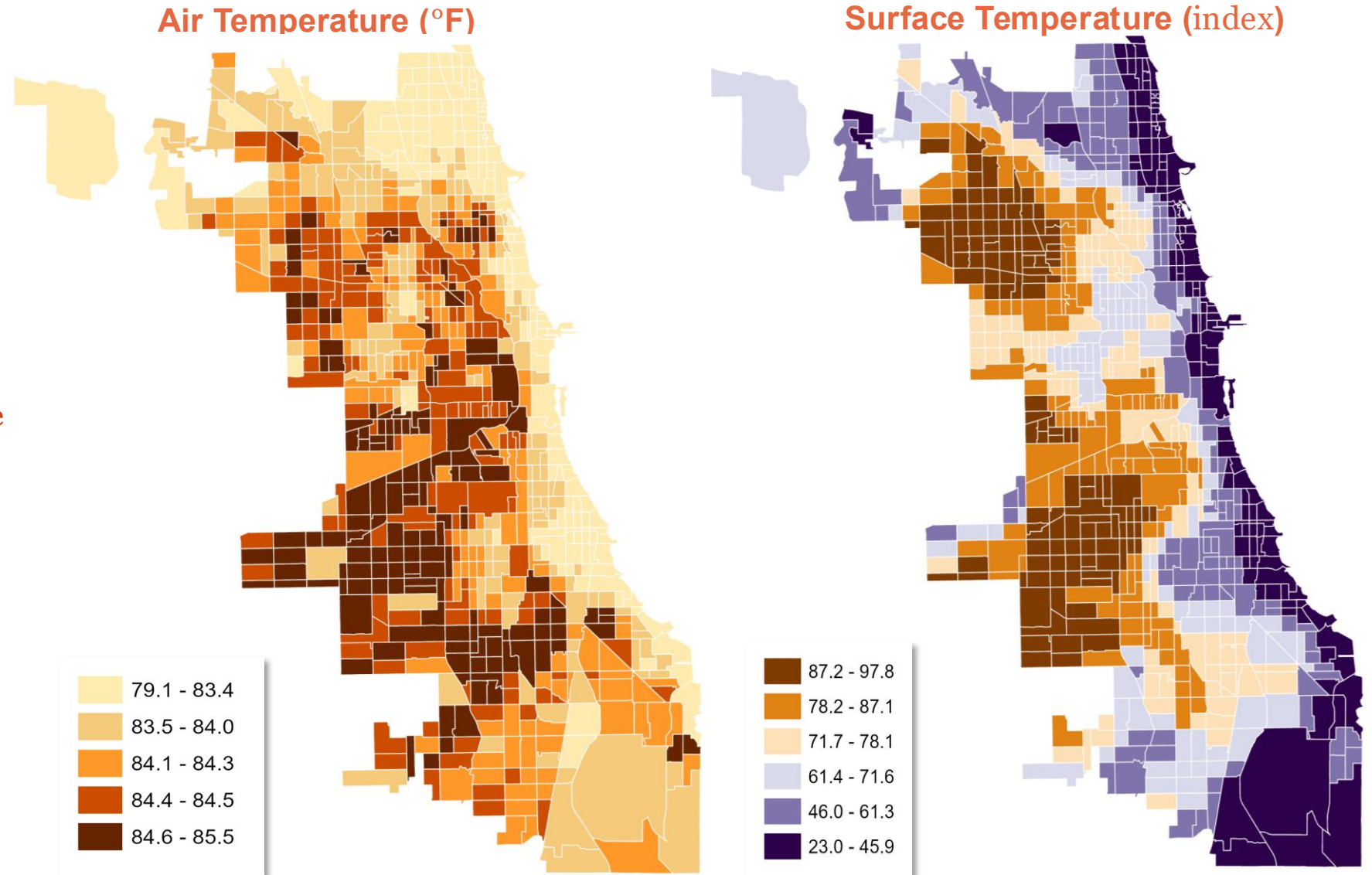
Air temperatures are much warmer farther from the lake; the warmest surface temperatures are on the Southwest and Northwest sides

Cooler by the lake

Air temperatures on a typical peak summer day* are much hotter in areas farther away from Lake Michigan

Built environment features exacerbate heat away from the lake

Surface temperatures are much more variable than air temperatures.** The map indexes relative surface heat across the city, showing two distinct large "heat islands" on the Northwest and Southwest sides, where surface temperatures are much hotter than the rest of the city.



*Heat sensors recorded air temps on 7/28/2023

**indexed values closer to 100 are hottest

Felt heat, accounting for humidity, is also distributed inequitably across the city

South and West sides experience greatest peak afternoon heat

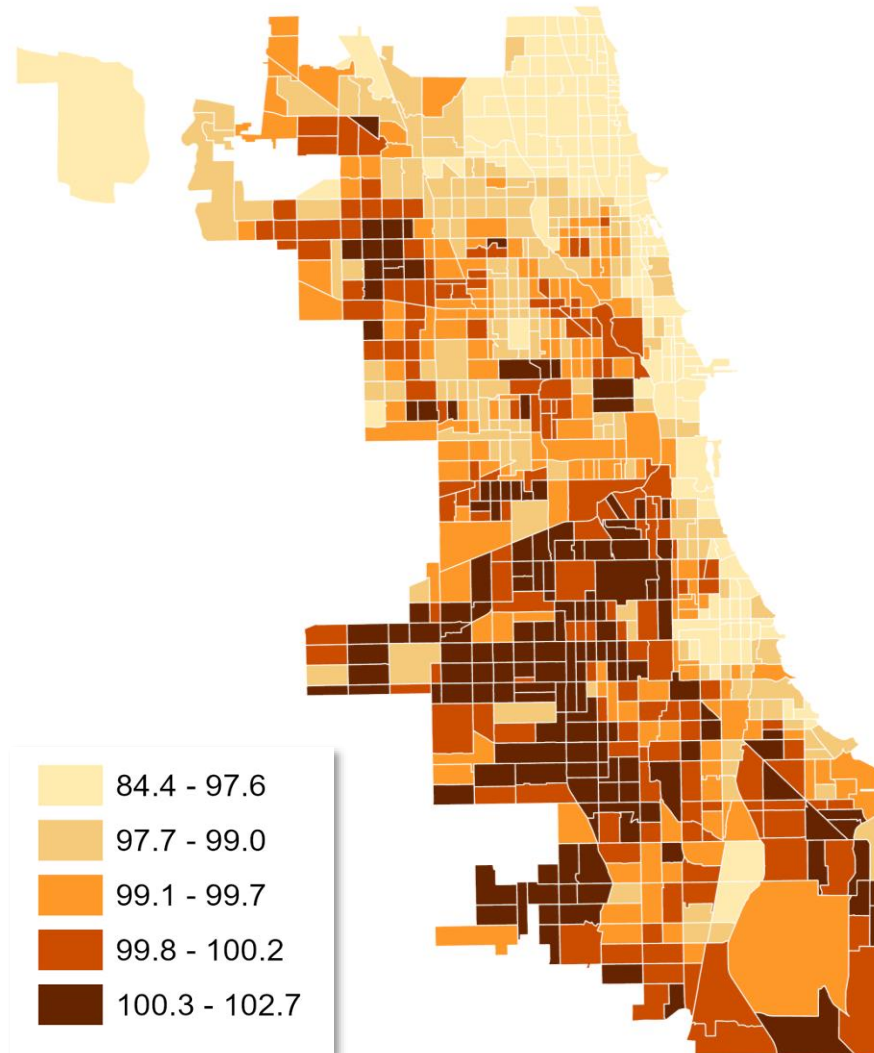
When temperature is combined with humidity, many neighborhoods experience (feel) peak afternoon temperatures over 100 degrees.*

South and Southwest side experiences the greatest heat on average all day long

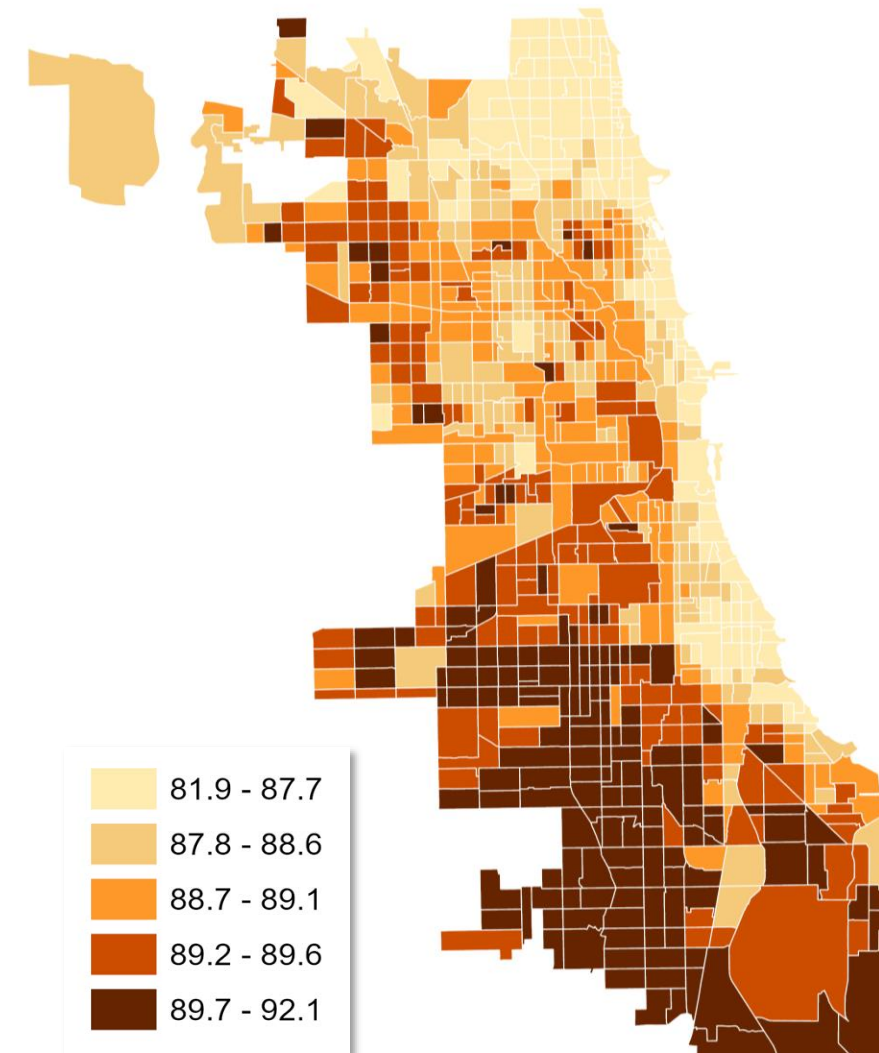
When considering the experience (feel) of average temperature and humidity across an entire summer day, South and Southwest side neighborhoods experience the hottest temperatures.**



Heat Index (afternoon max °F)



Heat Index (all day average °F)

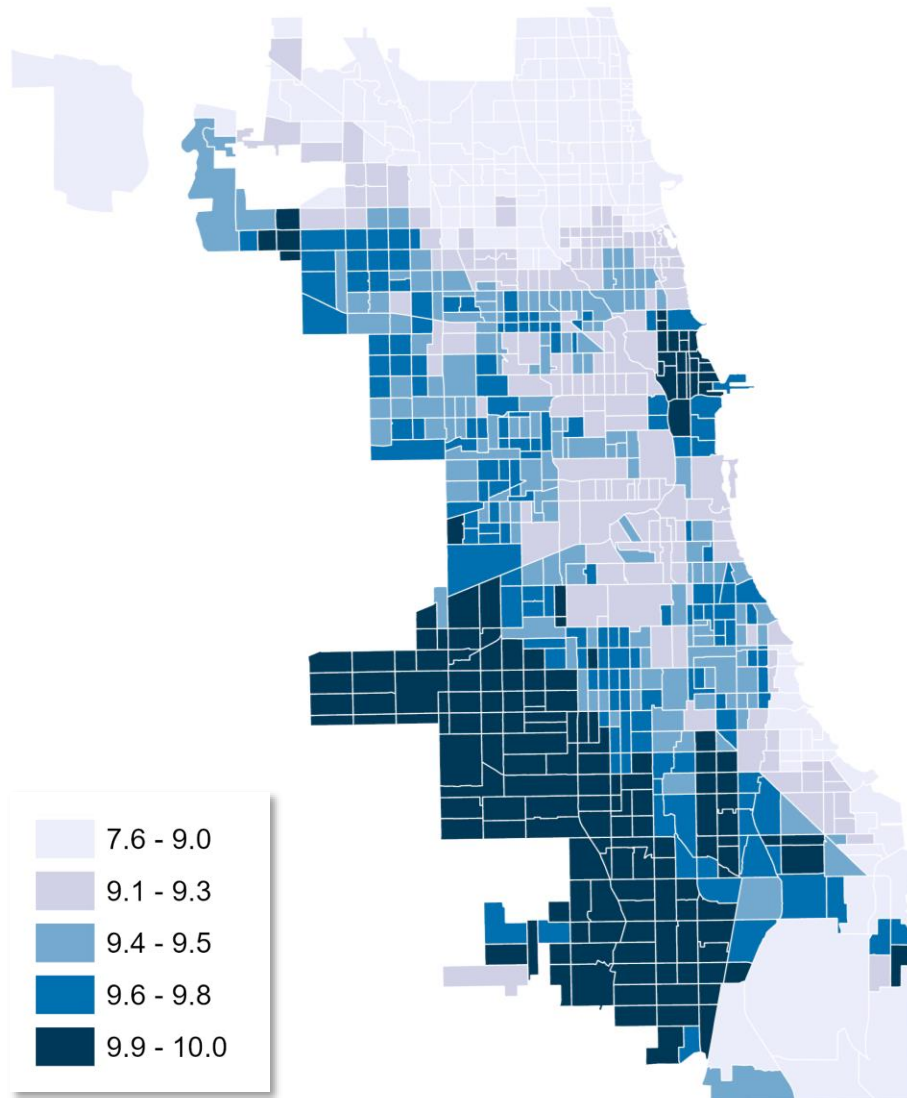


*Index models temperature + humidity to determine afternoon heat experienced on 7/28/2023

**Index uses same model but averaged across entire day

Southwest side and downtown are most susceptible to flooding

Urban Flood Susceptibility Index



Southwest side and downtown neighborhoods most susceptible to flooding

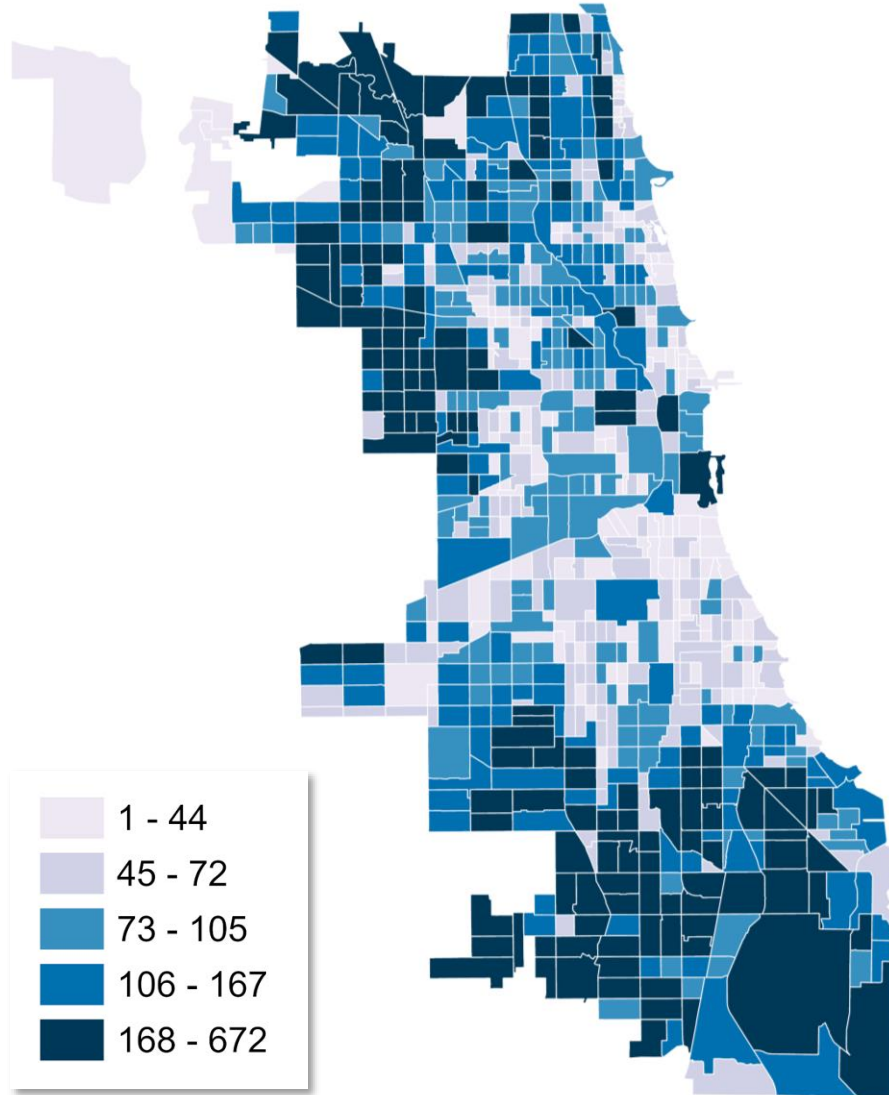
Flooding susceptibility means experiencing greater degrees of overbank flooding, surface ponding, overland flow, water seepage, and basement backups. The implications are more than just a nuisance—they result in property and infrastructure damage.

CMAA's index goes from 1 to 10 with 10 being more susceptible and 1 being less susceptible.

[CMAA Flood Susceptibility Index](#)

311 flooding complaints are most common in the West, Northwest, and Far South sides of the city

311 Flooding Complaints (~Dec 2018 to July 2025)

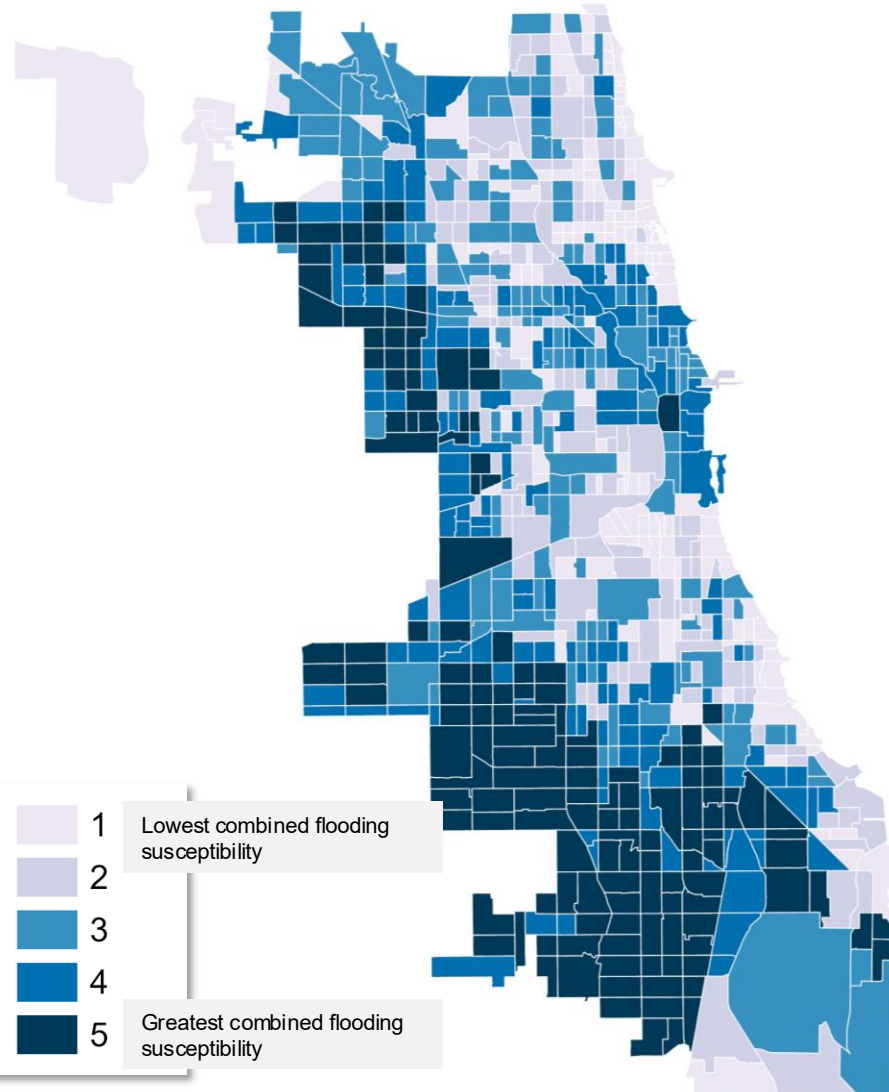


Northwest and Far South sides have the largest number of flooding complaints to 311

The City of Chicago regularly receives 311 service requests from residents. This data includes residents' complaints related to flooded basements and streets since the launch of the new 311 system in 2018 and some records from the previous system.

Though flooding data is flawed, combining data sources into an overall flooding susceptibility index suggests flooding threatens Southwest and Northwest sides most

Combined flooding susceptibility (CMAP and 311)



MPC combined both flood-related measures into a single index.

This combines CMAP's urban flooding susceptibility index with flooding complaints to 311, displayed as quintiles.

Riverine Flooding and Combined Sewage Outflows (CSOs) are predicted to be more common as heavy rainfall events become more frequent

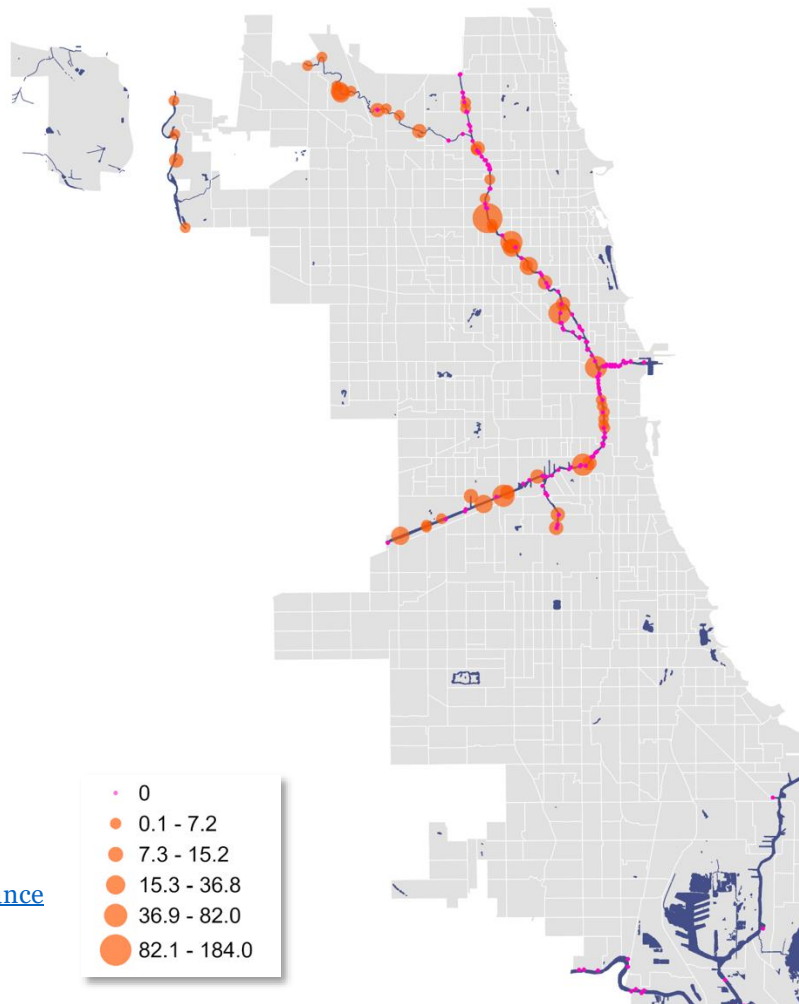
CSOs occur with varying frequency and intensity along the Chicago and Des Plaines Rivers. CSOs occur

when sewers and reclamation plants exceed capacity during heavy rain, forcing untreated wastewater into local waterways at permitted outflow sites.

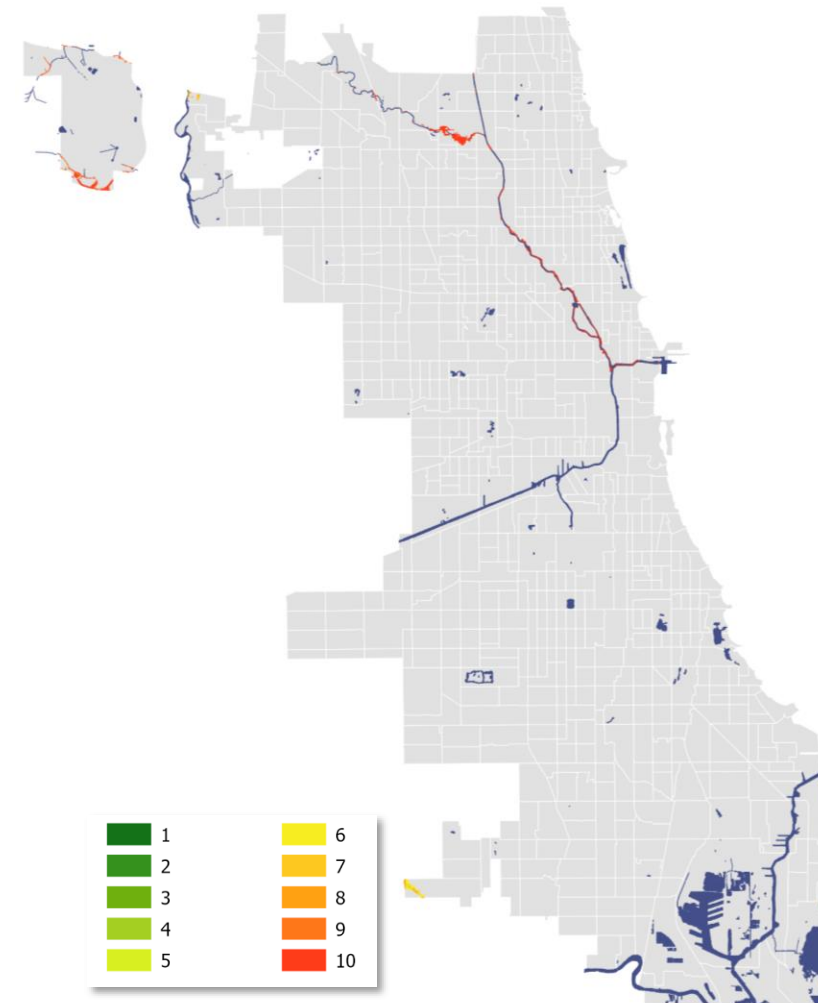
Chicago's river system is generally at low risk for riverine flooding. Some stretches on the North and Main Branches qualify as "High Risk" for riverine flooding.

[MWRD via Chicago Wilderness Alliance](#)
[CMAP Flood Susceptibility Index](#)

Annual Average # CSO Events by Outfall Location (2016-2021)



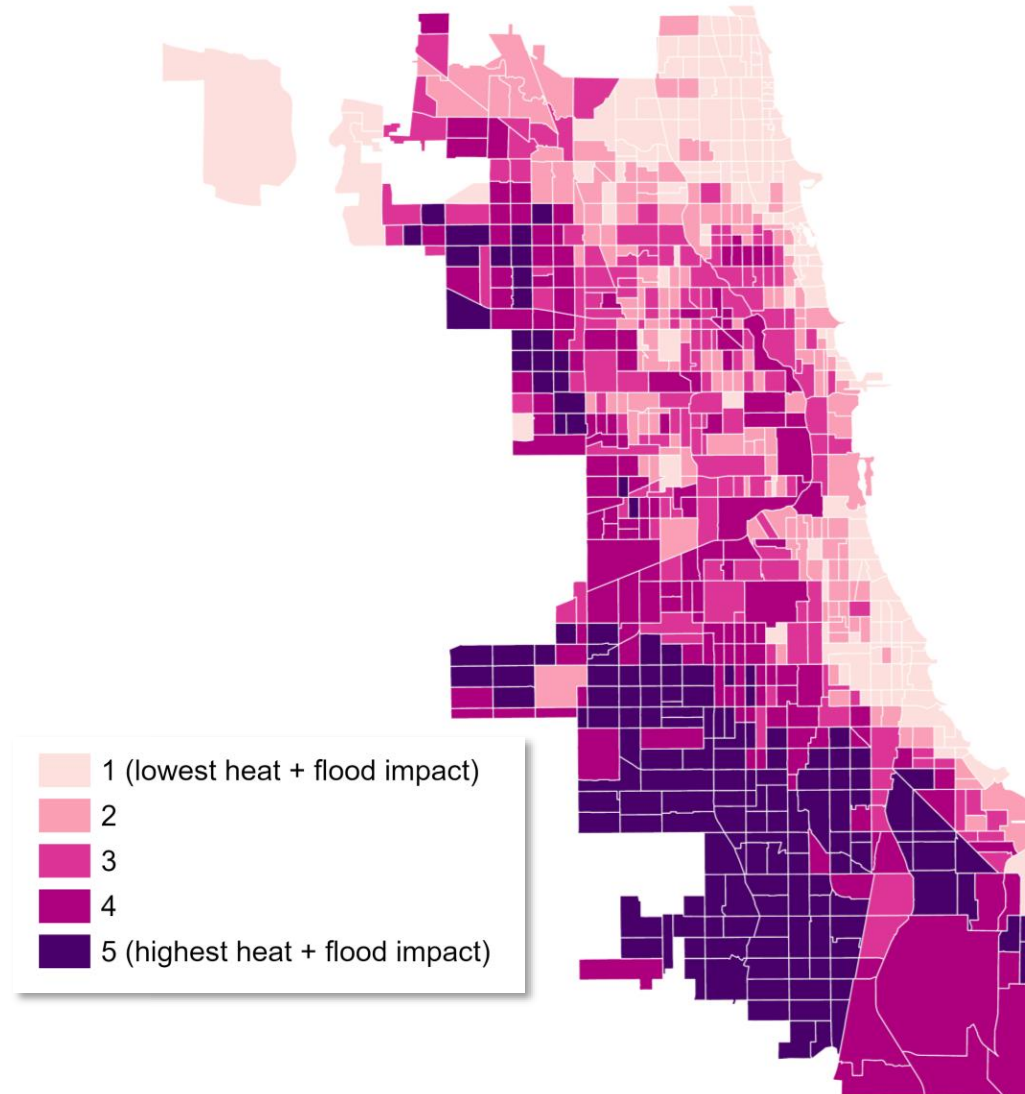
Riverine Flooding Susceptibility Index



Susceptibility to combined heat and flood impacts is greatest for Southwest, Far South, and Northwest sides

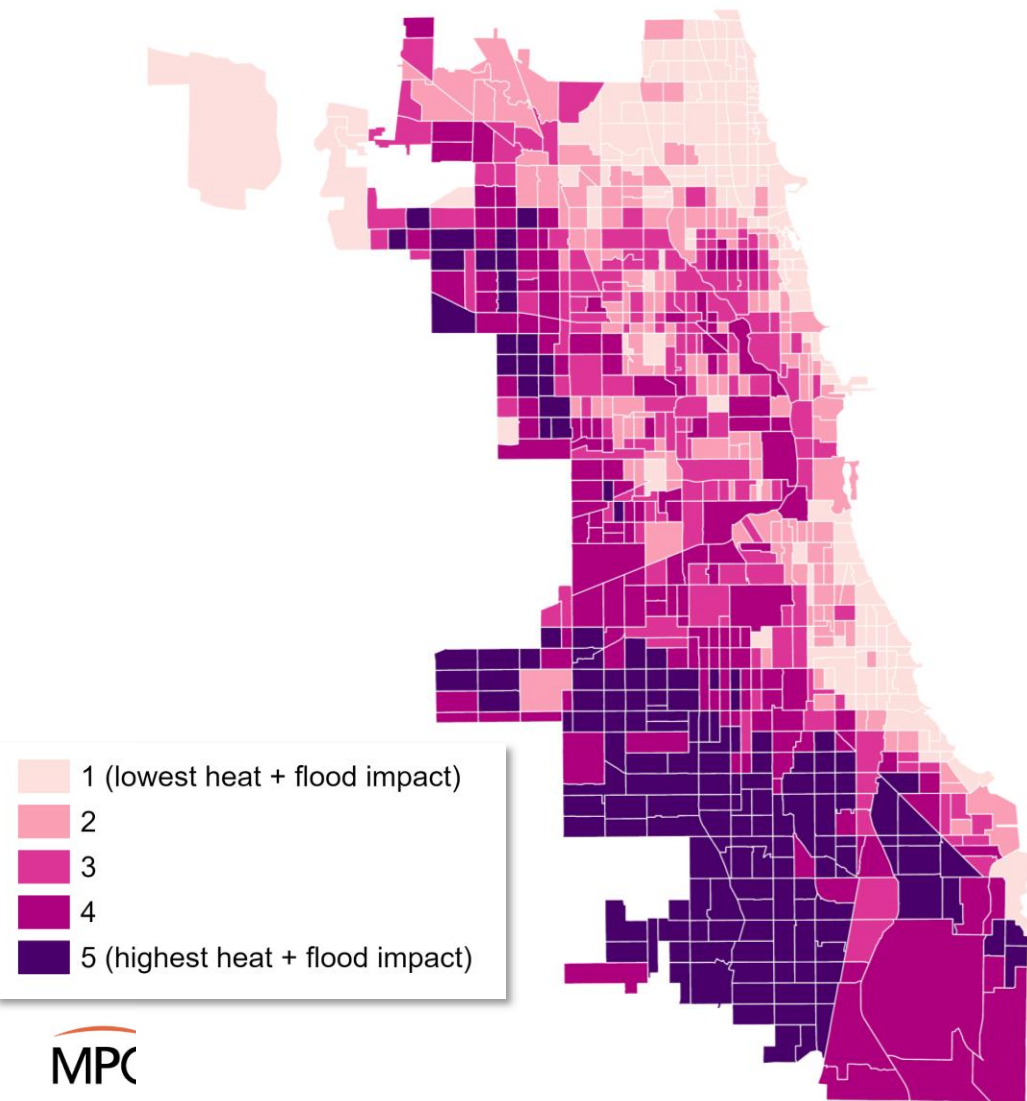
MPC-combined data on combined flood and heat susceptibility into a single index. This combines all-day average heat and the combined flood susceptibility (CMAP index + 311 flood complaints), displayed as quintiles.

Heat and Flood combined



Black and Latinx Chicagoans experience greatest combined impacts of urban heat and flooding

Heat and Flood combined



Racial and Ethnic composition by combined Heat and Flood index

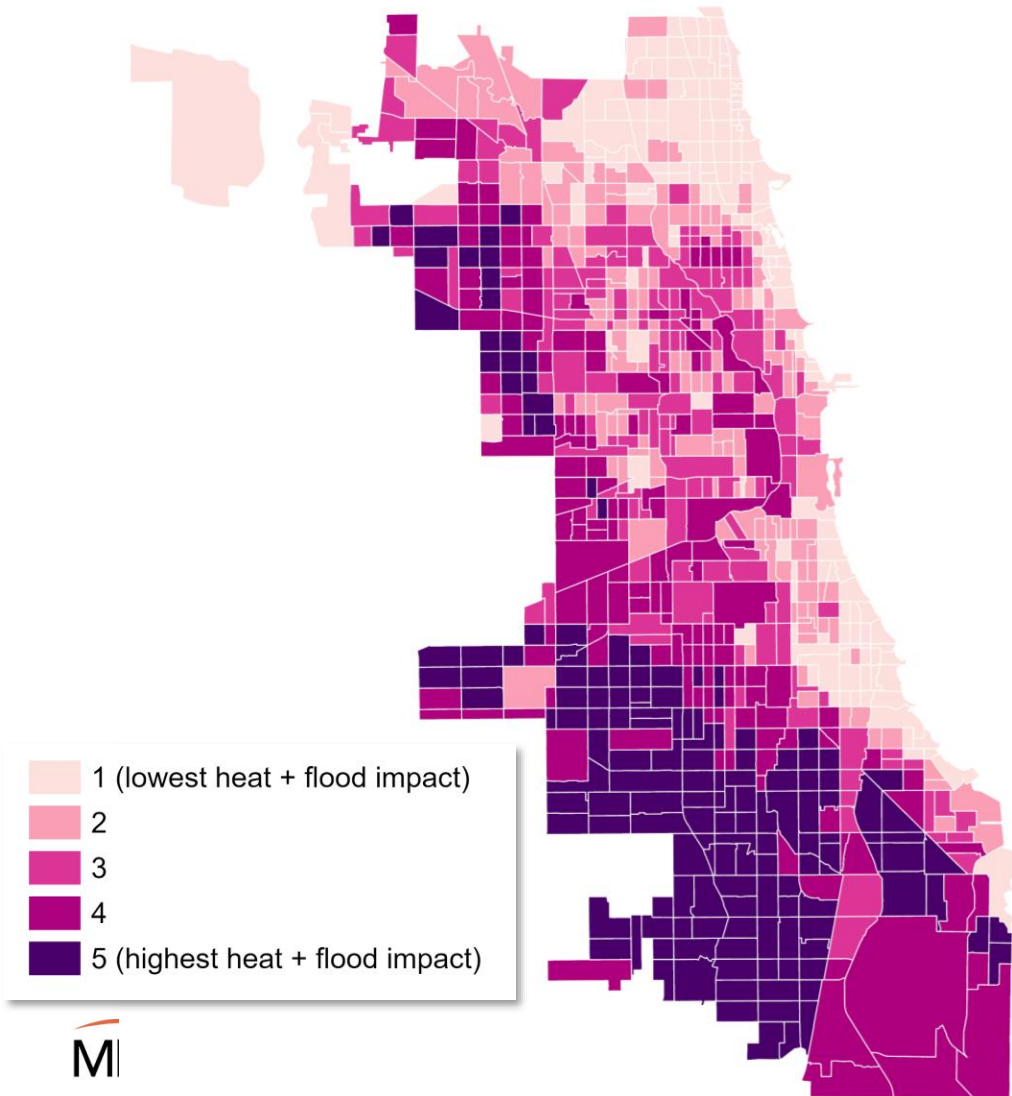
Heat + Flood Susceptibility Quintiles	Percent Black	Percent Latinx	Percent White	Percent Asian	Percent Other
Above the 80th Percentile of Tracts (Greatest Susceptibility)	50%	33%	14%	1%	2%
60th to 80th Percentile	27%	43%	22%	6%	2%
40th to 60th Percentile	20%	33%	38%	6%	3%
20th to 40th Percentile	20%	20%	45%	11%	4%
Below the 20th Percentile (Lowest Susceptibility)	22%	15%	47%	11%	5%
City of Chicago	28%	29%	33%	7%	3%

Created with Datawrapper

Heat + Flood Risk is combined scores of all day average heat and combined flood susceptibility (CMAP + 311), displayed as quintiles

Vulnerable populations such as youth, seniors, and those with prior health conditions also experience greater combined heat and flood risk

Heat and Flood combined



Other demographic data (disability, age, income)

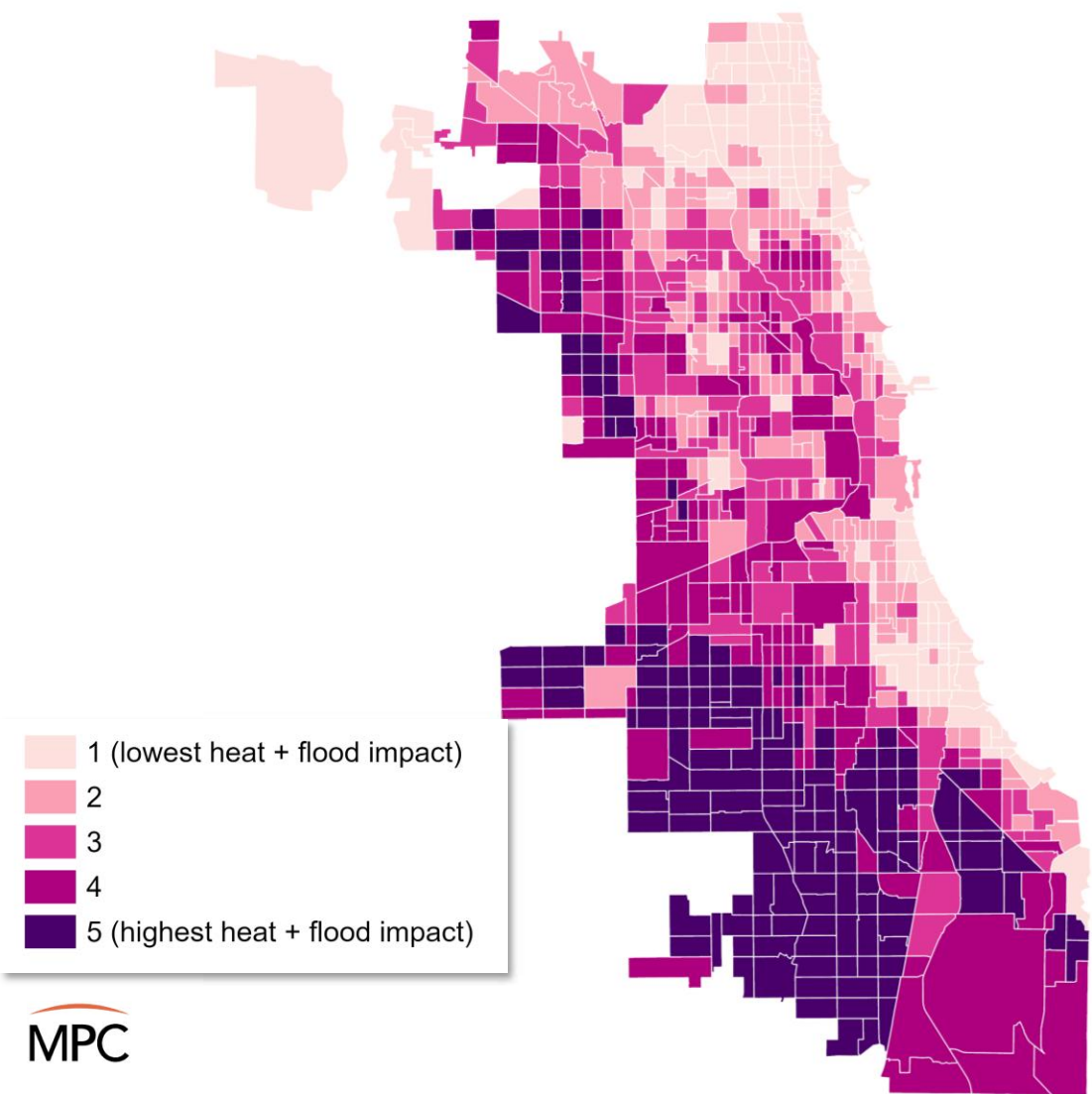
Heat + Flood Susceptibility Quintiles	Percent of Households Earning \$100,000 or More	Percent of Population Under 18	Percent of Population Over 65	Percent of Population Disabled	Percent of Population Uninsured
Above the 80th Percentile of Tracts (Greatest Susceptibility)	29%	23%	16%	14%	10%
60th to 80th Percentile	32%	23%	12%	12%	13%
40th to 60th Percentile	43%	20%	11%	10%	9%
20th to 40th Percentile	45%	17%	12%	9%	7%
Below the 20th Percentile (Lowest Susceptibility)	34%	16%	14%	11%	9%
City of Chicago	37%	20%	13%	11%	10%

Created with Datawrapper

Heat + Flood Risk is combined scores of all day average heat and combined flood susceptibility (CMAP + 311), displayed as quintiles

Vulnerable populations such as youth, seniors, and those with prior health conditions also experience greater combined heat and flood risk

Heat and Flood combined



Other demographic data (health)

Heat + Flood Susceptibility Quintiles	Percent of Population with COPD	Percent of Population with Asthma	Percent of Population with Coronary Heart Disease
Above the 80th Percentile of Tracts (Greatest Susceptibility)	7.2%	10.9%	6.7%
60th to 80th Percentile	6.7%	10.4%	6%
40th to 60th Percentile	5.2%	9.8%	4.9%
20th to 40th Percentile	5.1%	9.7%	4.7%
Below the 20th Percentile (Lowest Susceptibility)	5%	9.4%	4.9%
City of Chicago	5.8%	10%	5.4%

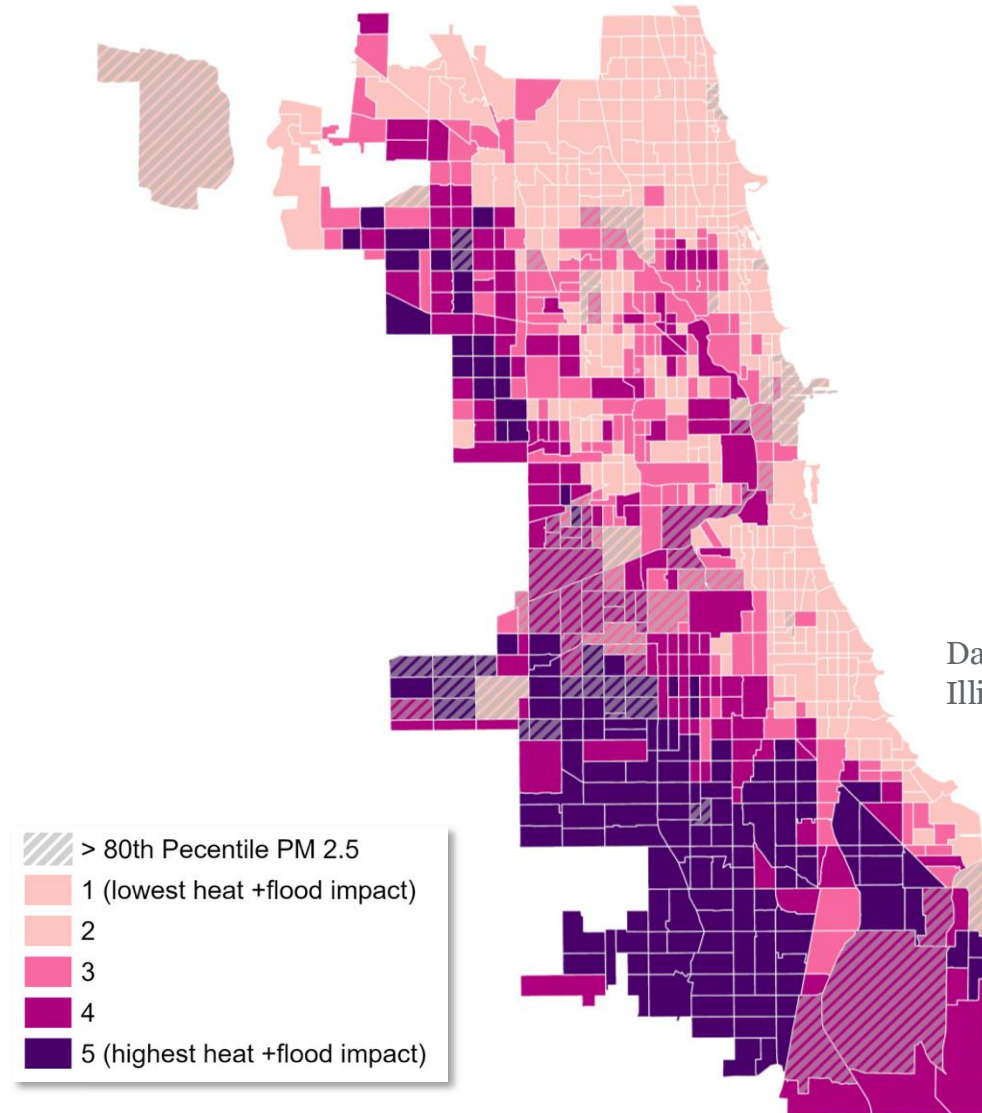
Created with Datawrapper

Heat + Flood Risk is combined scores of all day average heat and combined flood susceptibility (CMAP + 311), displayed as quintiles

Combined heat and flood susceptibility often overlaps with elevated levels of harmful PM_{2.5} air pollution

In addition to combined heat and flood impacts, the Southwest and Southeast sides also experience high levels of air pollution.

This includes neighborhoods such as Little Village, Archer Heights, Riverdale, and South Deering, and others.



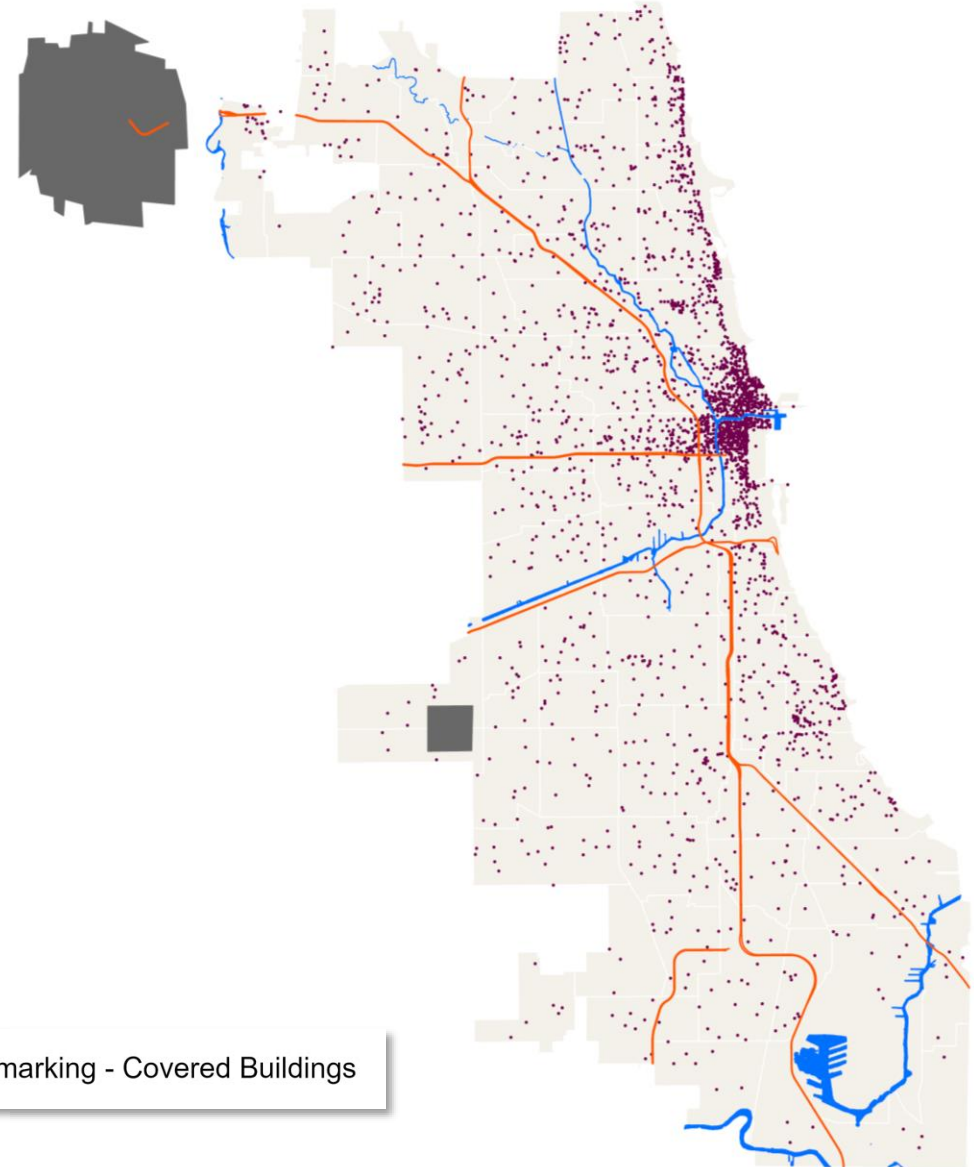
The Loop and River North have the greatest concentration of energy-efficient buildings covered under the Chicago Energy Benchmarking Ordinance

Chicago Energy Benchmarking Ordinance covered buildings

The law covers “existing commercial, institutional, and residential buildings larger than 50,000 square feet”

“The law covers less than 1% of Chicago’s buildings, which account for ~20% of total energy used by all buildings.”

[Chicago Energy Benchmarking Ordinance](#)





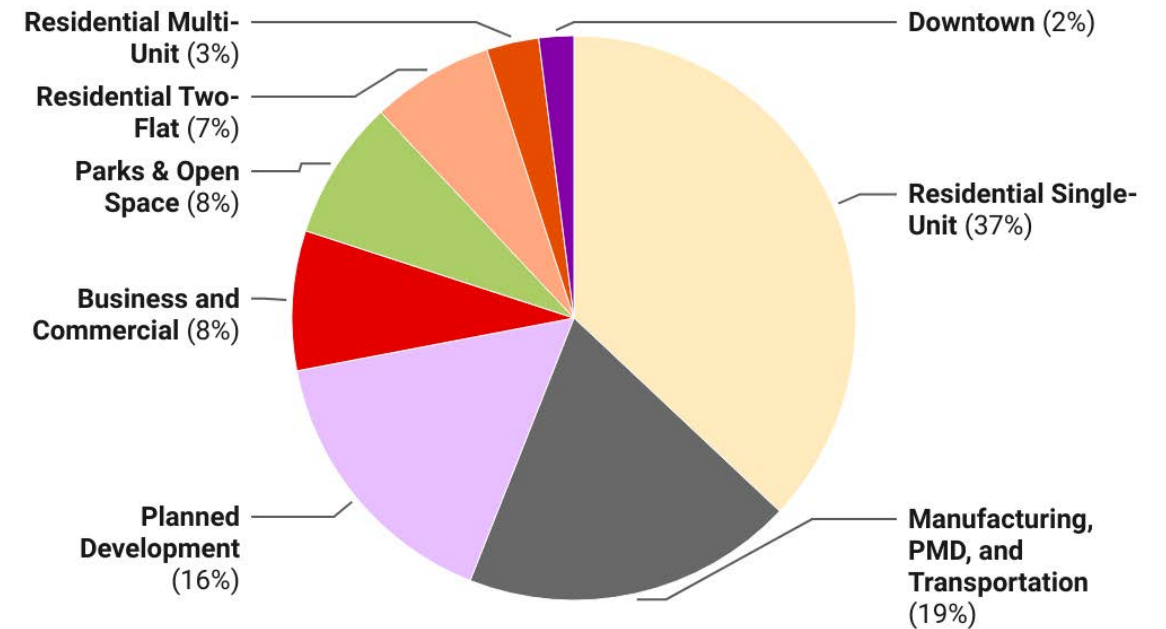
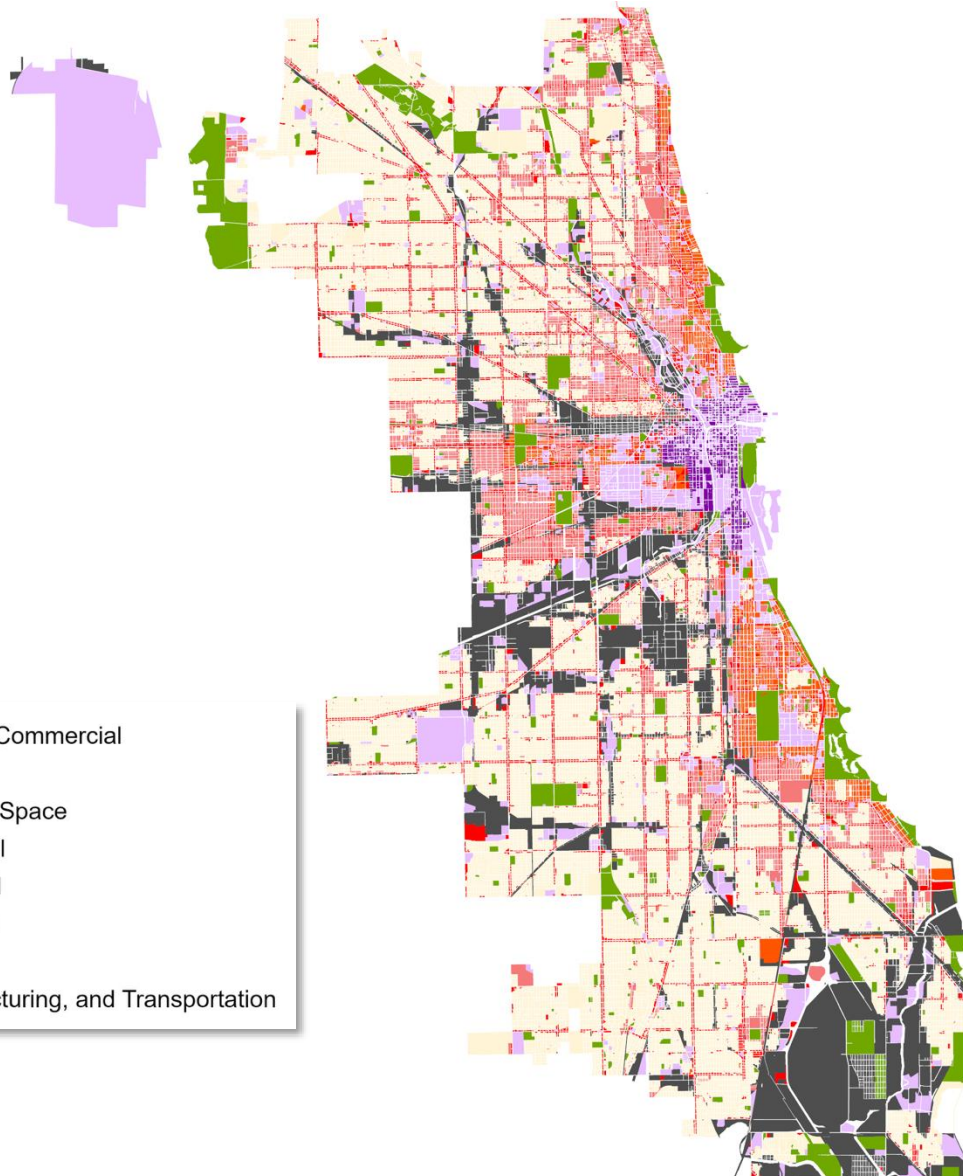
Understand the zoning

...but really zoning, land use, and the general built environment

How do zoning, land use, and built environment conditions differ across neighborhoods?

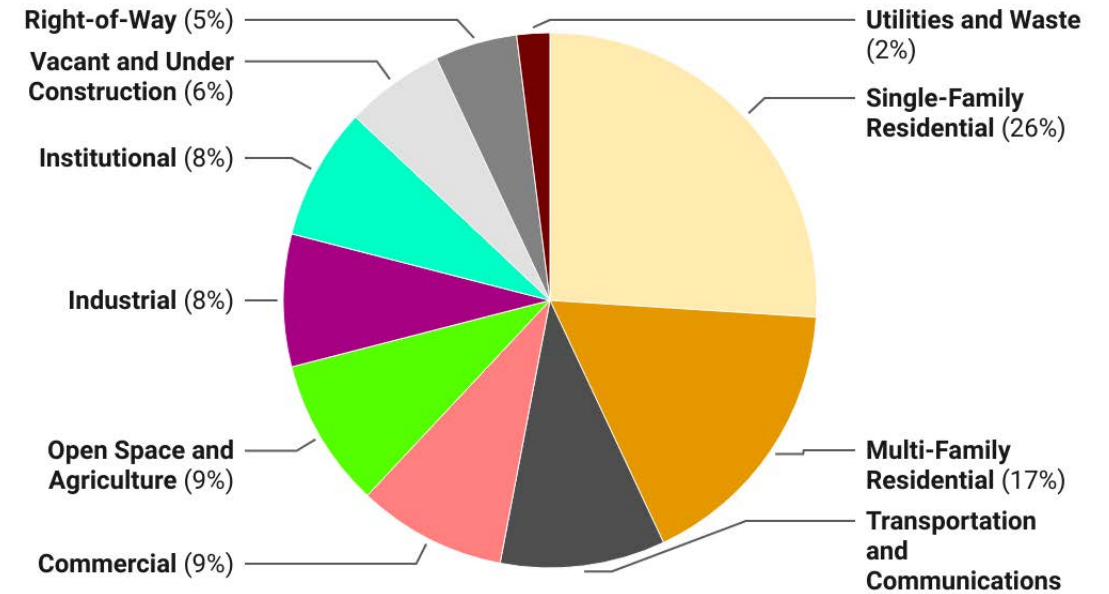
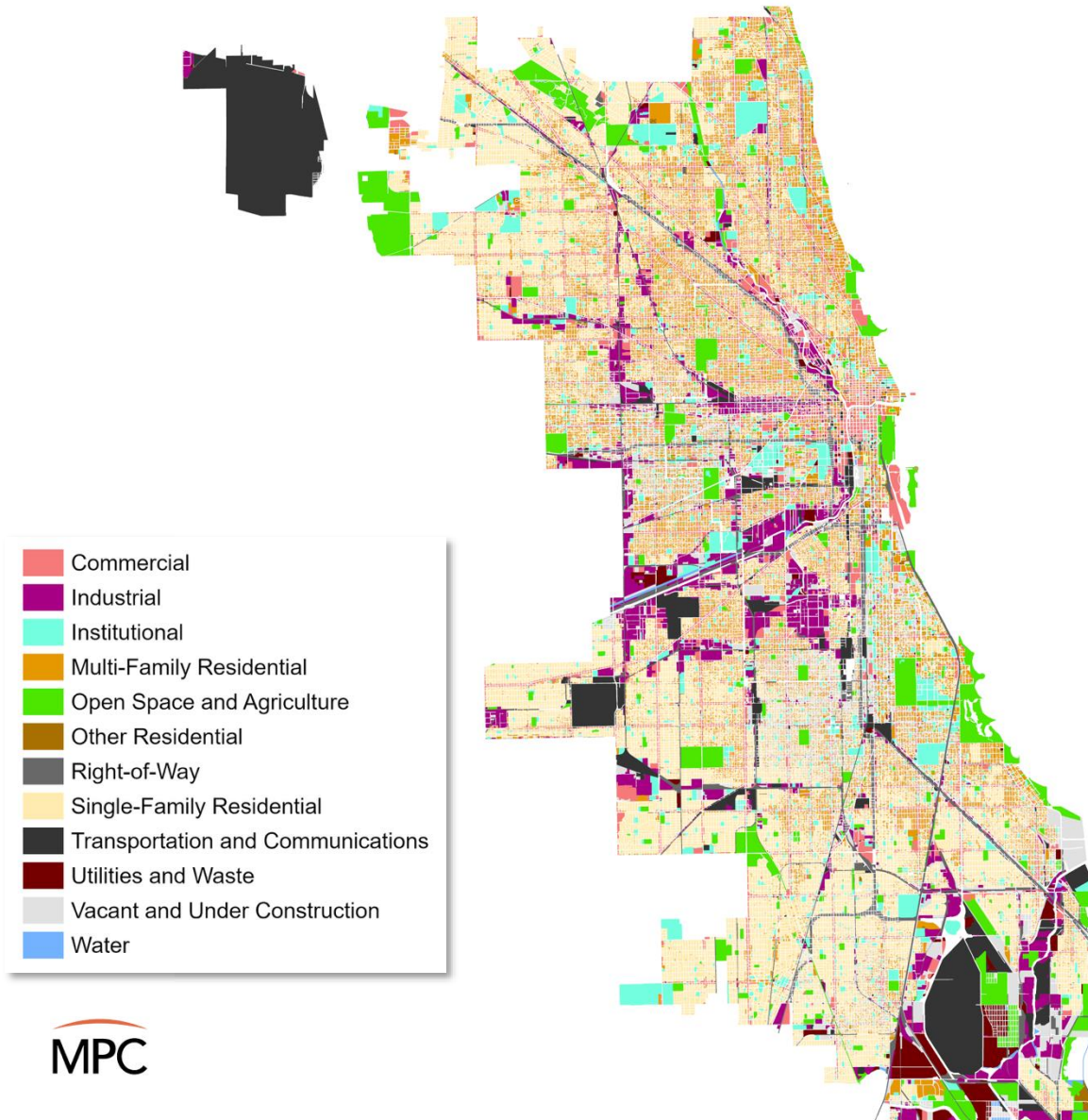
- Parks and Open Space zoning is located throughout the city, although neighborhoods with the most Latinx residents see the least of this zoning type
- Tree canopy coverage, important for climate resilience, is sparse downtown and along the Southwest side, where rates of impervious surfaces are also highest

Chicago zoning breakdown



Created with Datawrapper

Chicago land use breakdown



Created with Datawrapper

Note: excluded non-parcel or not classifiable, other, other residential, and water as they are each below 1% of the total city.

What related built environment factors can we look at?

Land use factors that can be protective when it comes to climate challenges

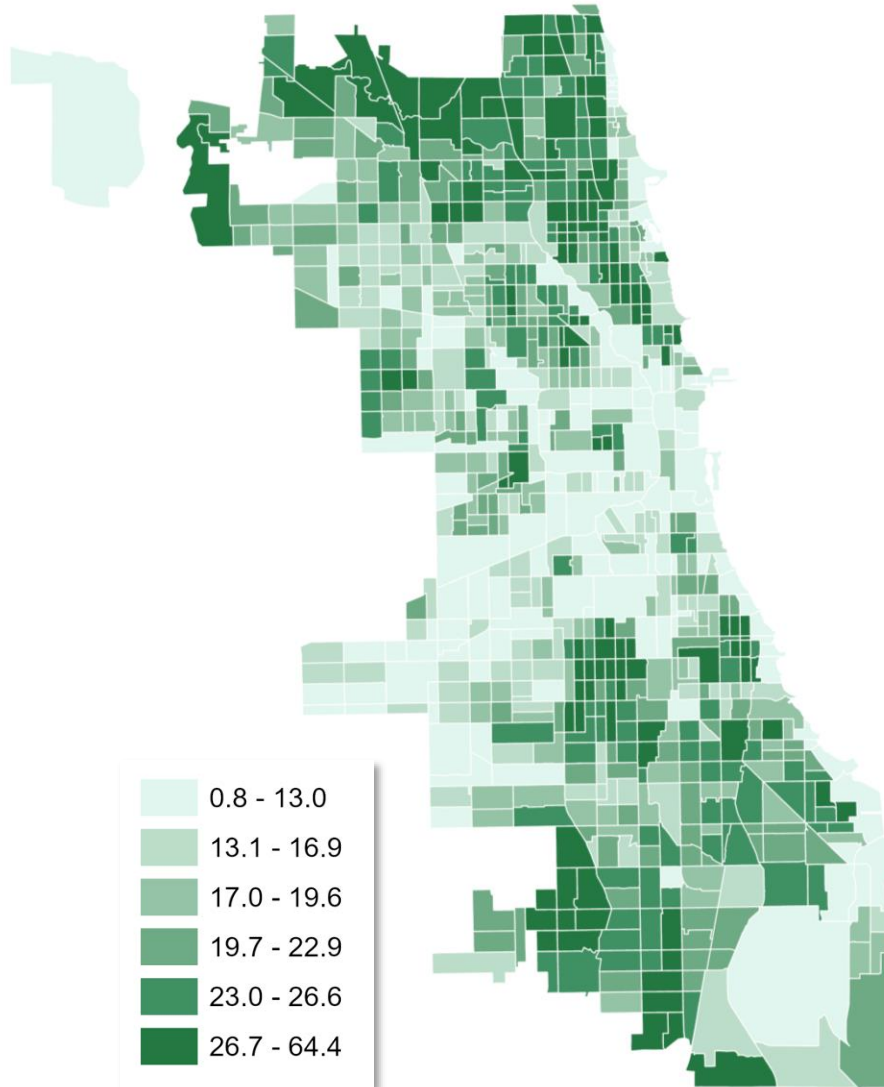
- **Tree canopy** plays a role in heat resilience and stormwater mitigation. Trees are an important part of helping to lower temperatures and intercept rainfall.
- **Green Stormwater Infrastructure (GSI)** uses soil or plant systems, permeable surfaces, landscaping and other methods to store, infiltrate, or evapotranspire stormwater and reduce the amount entering the sewer system. GSI can complement traditional underground pipes and storage (called gray infrastructure) to prevent street flooding, basement backups and standing water on streets and in lots.
- **Designing and constructing both new and rehabbed buildings to minimize energy consumption** for heating, cooling, lighting and other operations. Energy efficiency building strategies can include using renewable sources of energy, designing to minimize the need for heating and cooling, as well as utilizing energy efficient appliances and equipment.

Land use factors that can worsen susceptibility to climate challenges

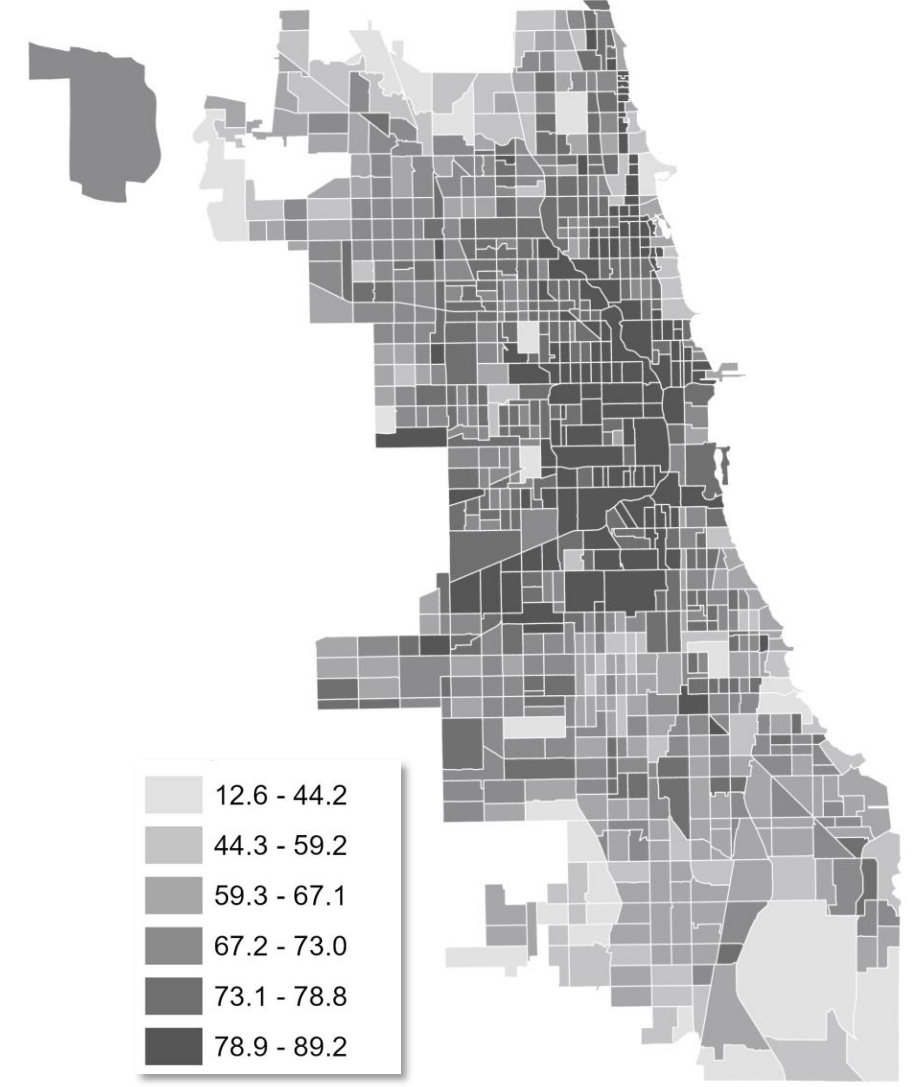
- **Impervious surfaces**, such as pavements, tend to increase heat and flooding.

Tree canopy is sparse downtown and on parts of the Southwest side, which are also where impervious surfaces are highest

% Tree Canopy Cover (2017)



% Impervious Surface (2023)

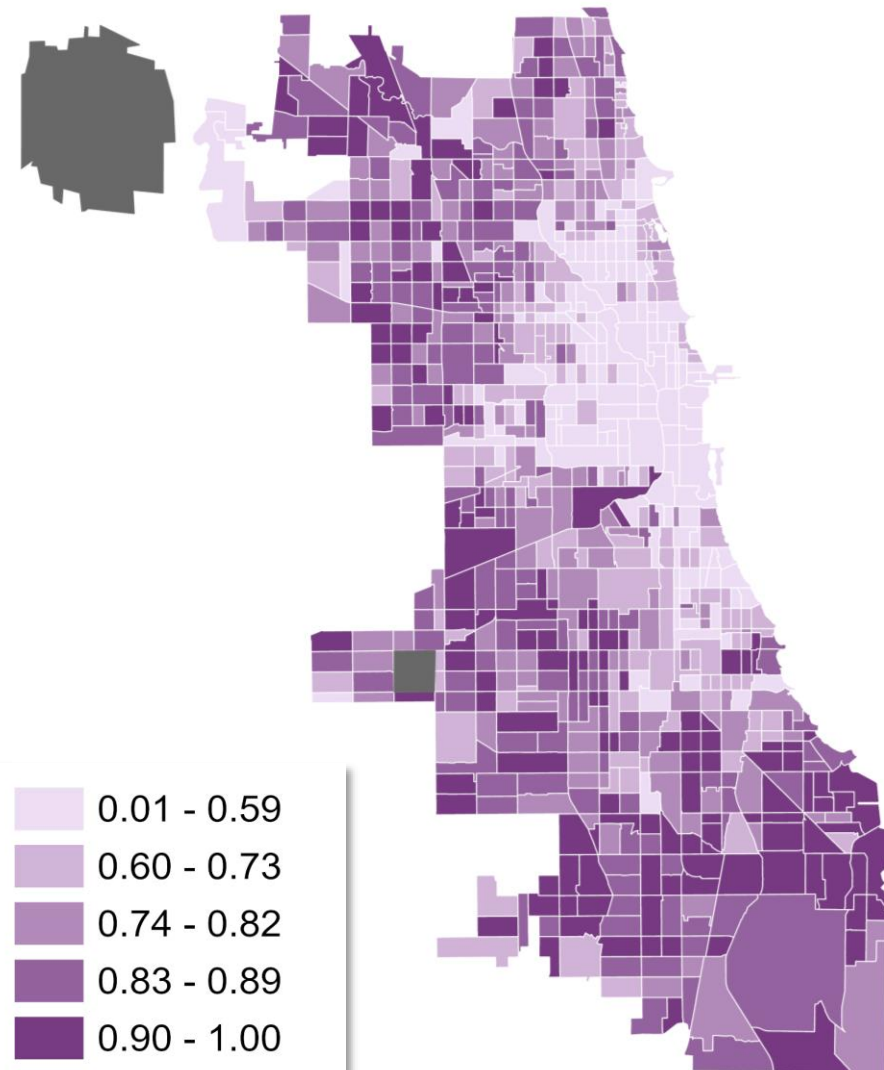


Older housing stock can increase vulnerability to urban heat and flooding

Older housing stock makes many neighborhoods more susceptible to higher outdoor and indoor heat, as well as flooding during extreme rain events

Older housing stock tends to be built with materials and facades that absorb and retain heat, as well as more limited insulation. Older foundations and basements also tend to be vulnerable to flooding.

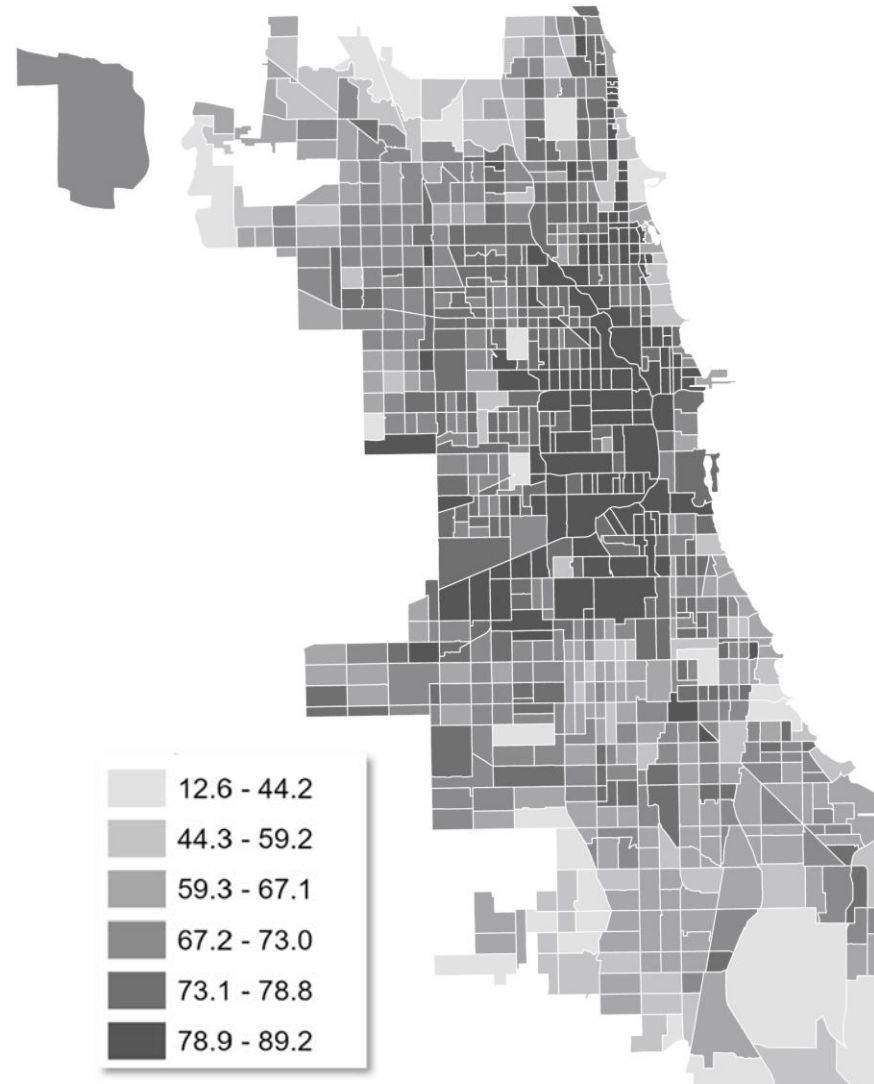
Housing Age – Share of homes built before 1970



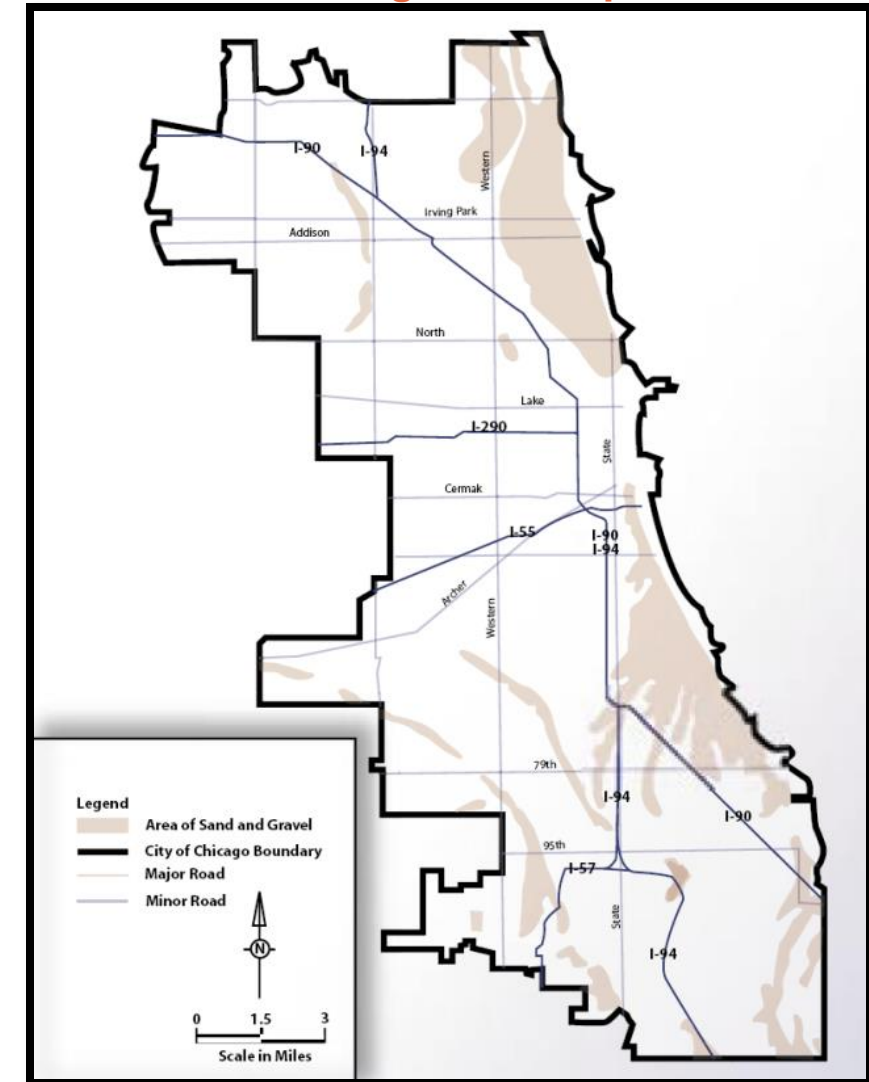
Areas with permeable surface cover and sand/gravel sub-soil are highly flood resilient

Sand and gravel sub-surface soils infiltrate stormwater more effectively than other soil types. Areas with permeable surface cover *and* sand or gravel soil are highly effective for stormwater absorption/flood resilience.

% Impervious Surface (2023)

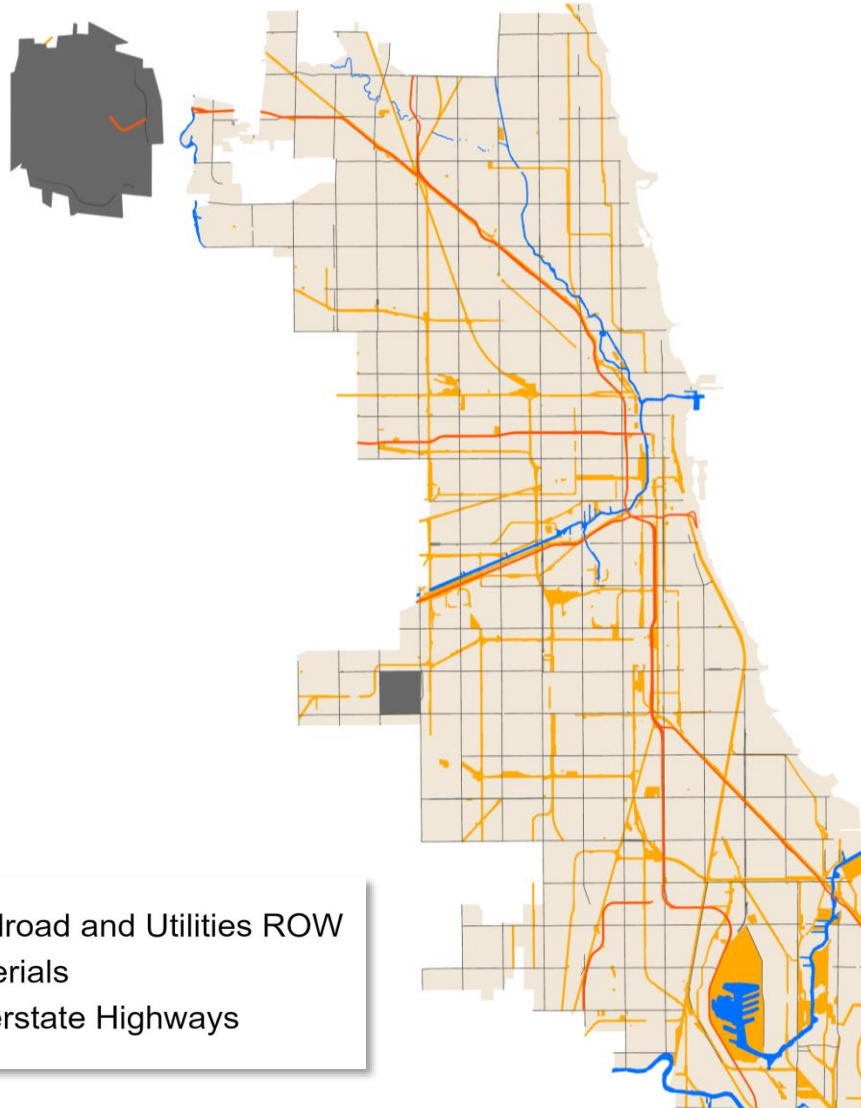


Chicago Soil Map

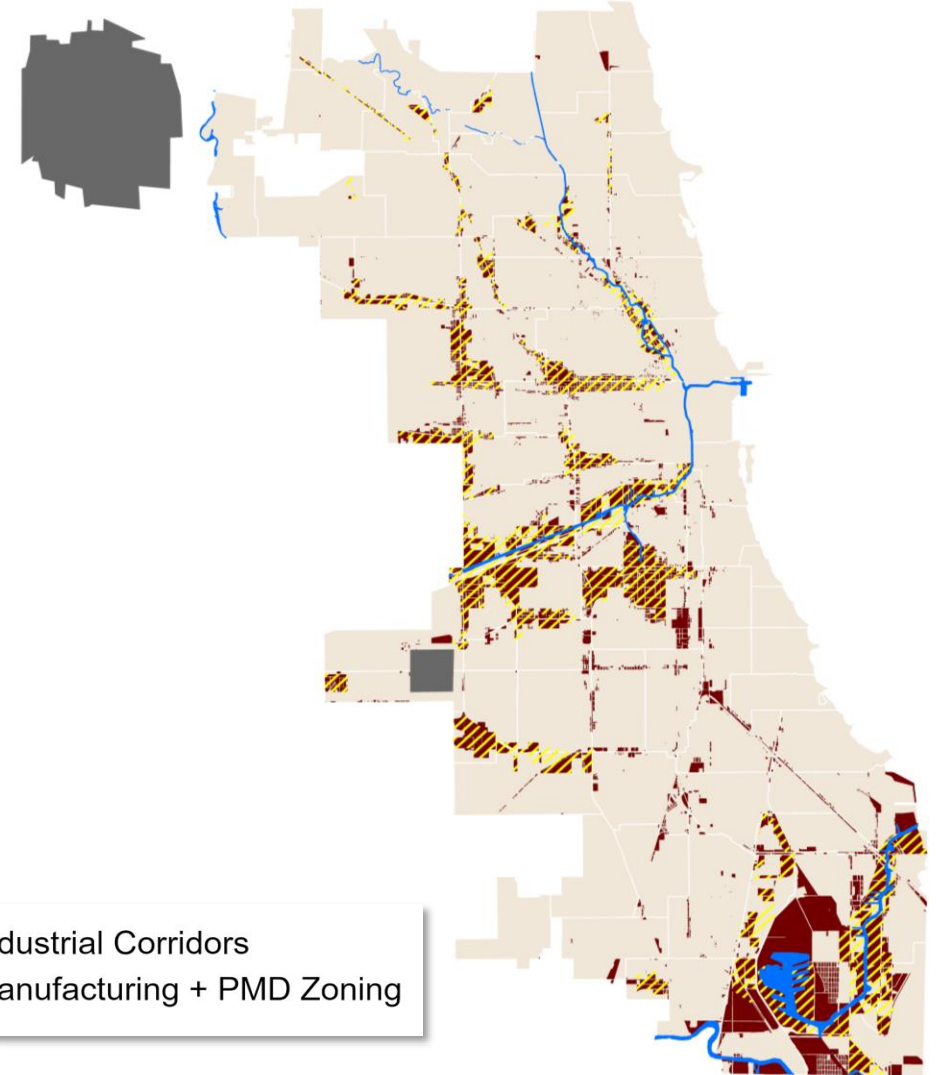


Specific types of land uses could increase susceptibility to climate challenges via impermeable surface cover, traffic patterns, and other factors

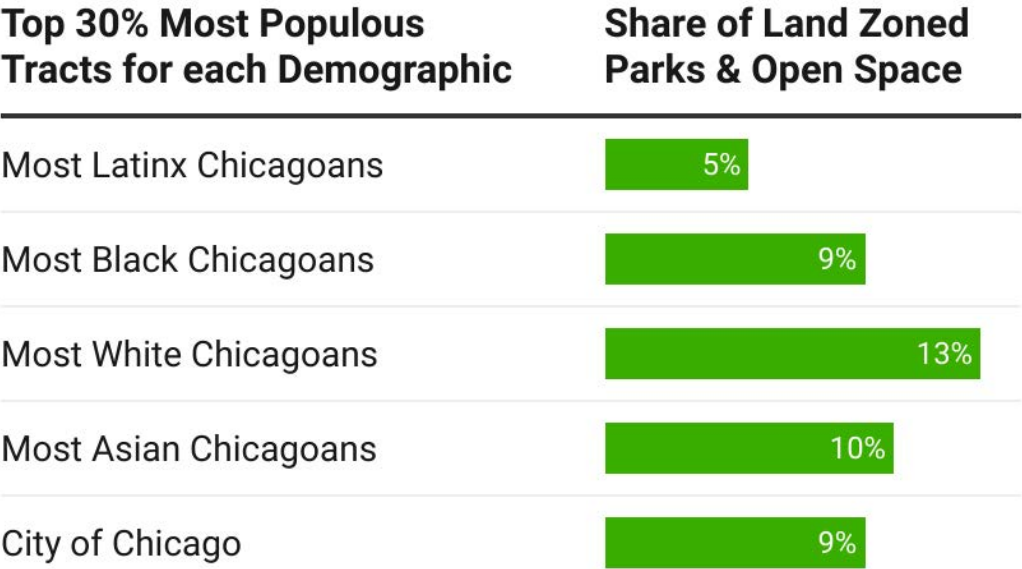
Heavier Types of Right-of-Way



Manufacturing zoning (M & PMDs) + Industrial Corridors



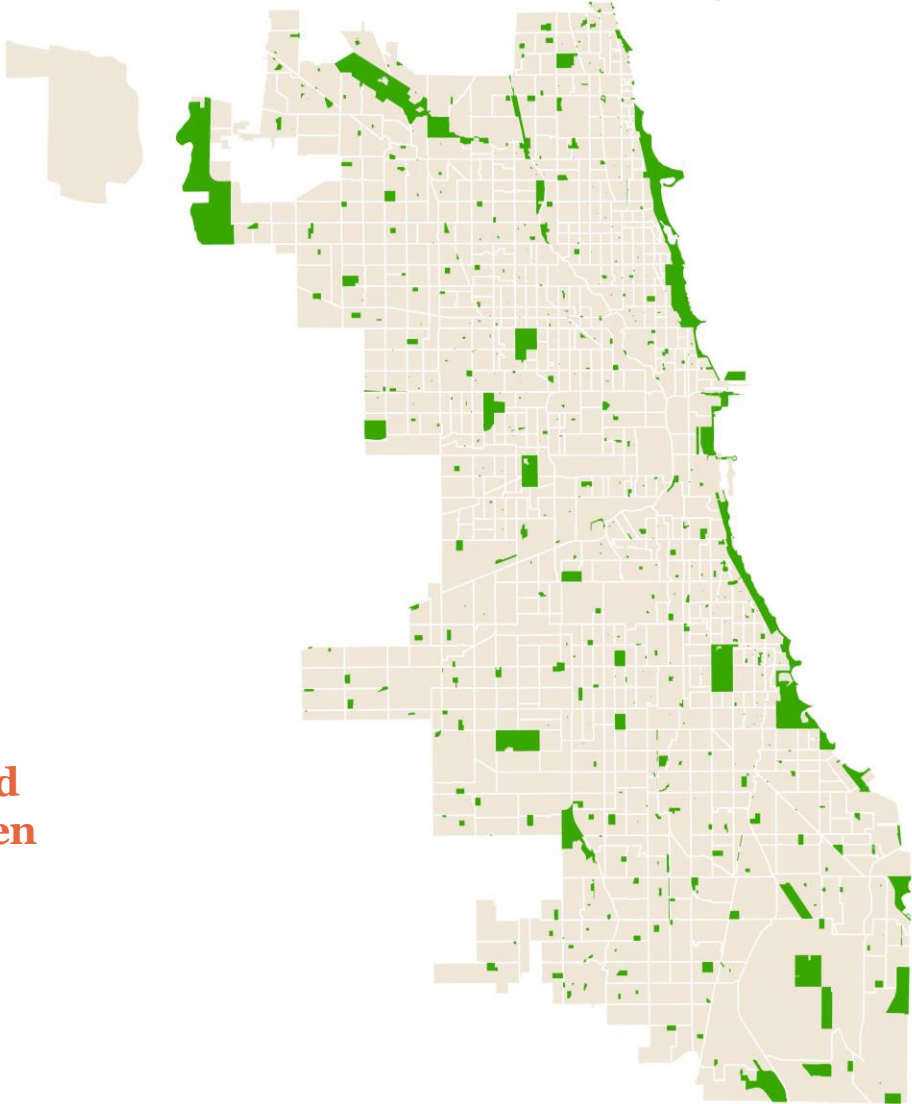
Parks and Open Space zoning is located throughout the city; neighborhoods with the most Latinx residents see the least of this zoning type



Created with Datawrapper

From 2012 to 2023, the city maintained about the same share of Parks and Open Space zoning, adding about 396 acres (<0.5% of land in the city).

Parks & Open Space Zoning





Understand the relationship

*How is the way land
is zoned and used
across
neighborhoods
related to climate
change impacts?*

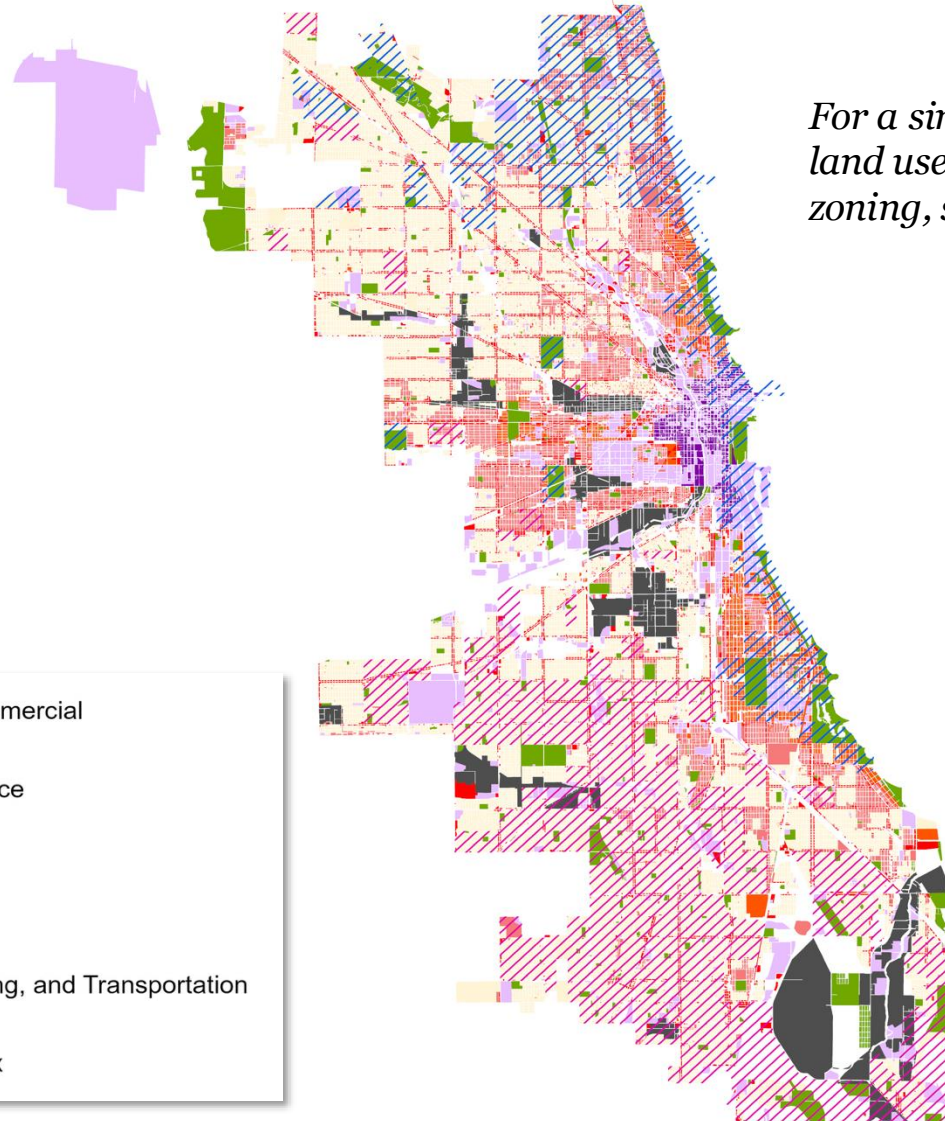
- Low-density residential areas are disproportionately susceptible to both heat and flooding
- Heat is complex; citywide, larger climate patterns and a wide variety of factors mean that protective factors aren't determinant
- Tree canopy, open space, and parks can have cooling effects on neighborhoods, while manufacturing zoning and industrial corridors and larger roadways are associated with greater heat
- The greatest setback and open space requirements tend to be in RS districts, which also see the most flooding and heat susceptibility; however, setbacks and open space are not required to be green space

Low-density residential areas are most susceptible to urban heat

The hottest areas are largely zoned for RS Residential (61% of the hottest areas are zoned RS, compared with 41% citywide). These are primarily on the southwest and far south sides of the city. Notable neighborhoods: West Englewood, West Pullman, Beverly, Roseland, Calumet Heights.

Parks and Open Space are least susceptible to urban heat. Parks along Lake Michigan are among the coolest areas of the city. Planned developments and commercial uses with ample open space (e.g. Millennium Park, Museum Campus, University of Chicago) are also least susceptible.

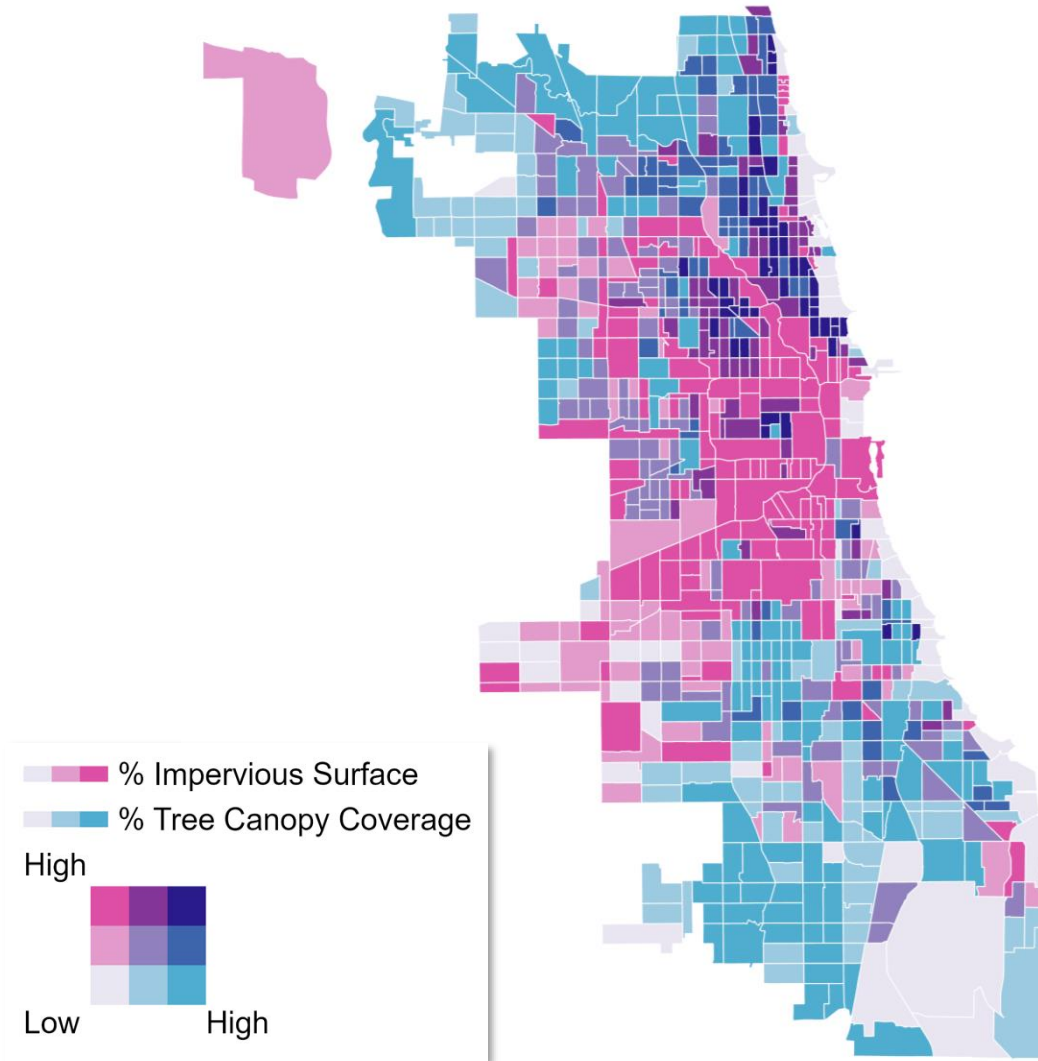
Zoning: Greatest vs Lowest Heat Index



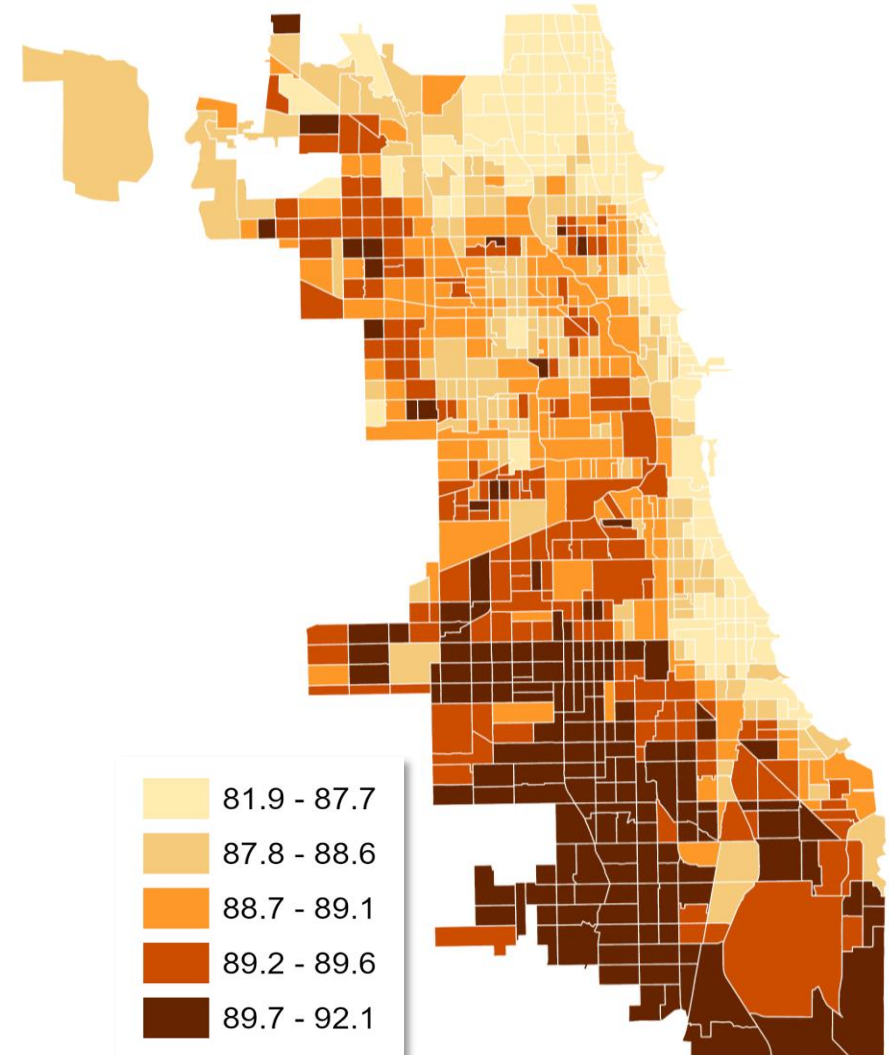
For a similar map that looks at land use categories instead of zoning, see the Appendix.

Heat is complex; citywide, larger climate patterns and a wide variety of factors mean that protective factors aren't determinant

Impervious Surface & Tree Cover



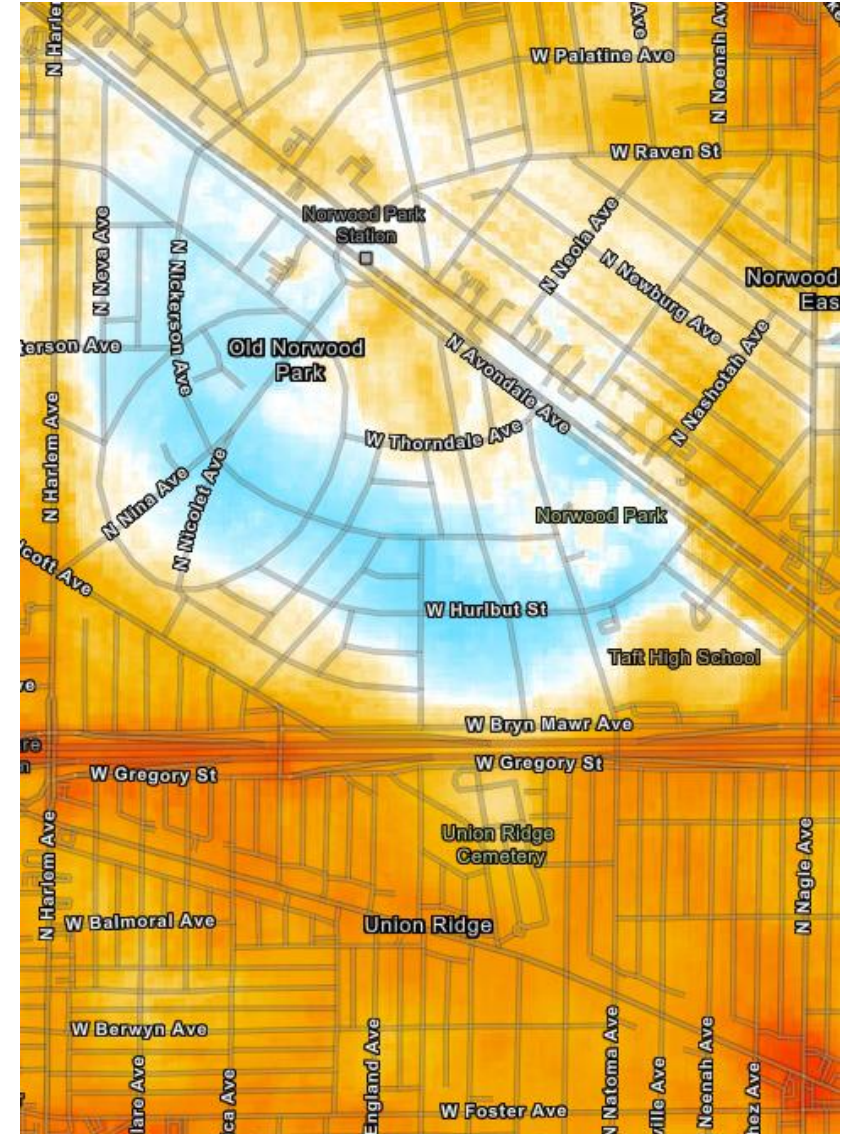
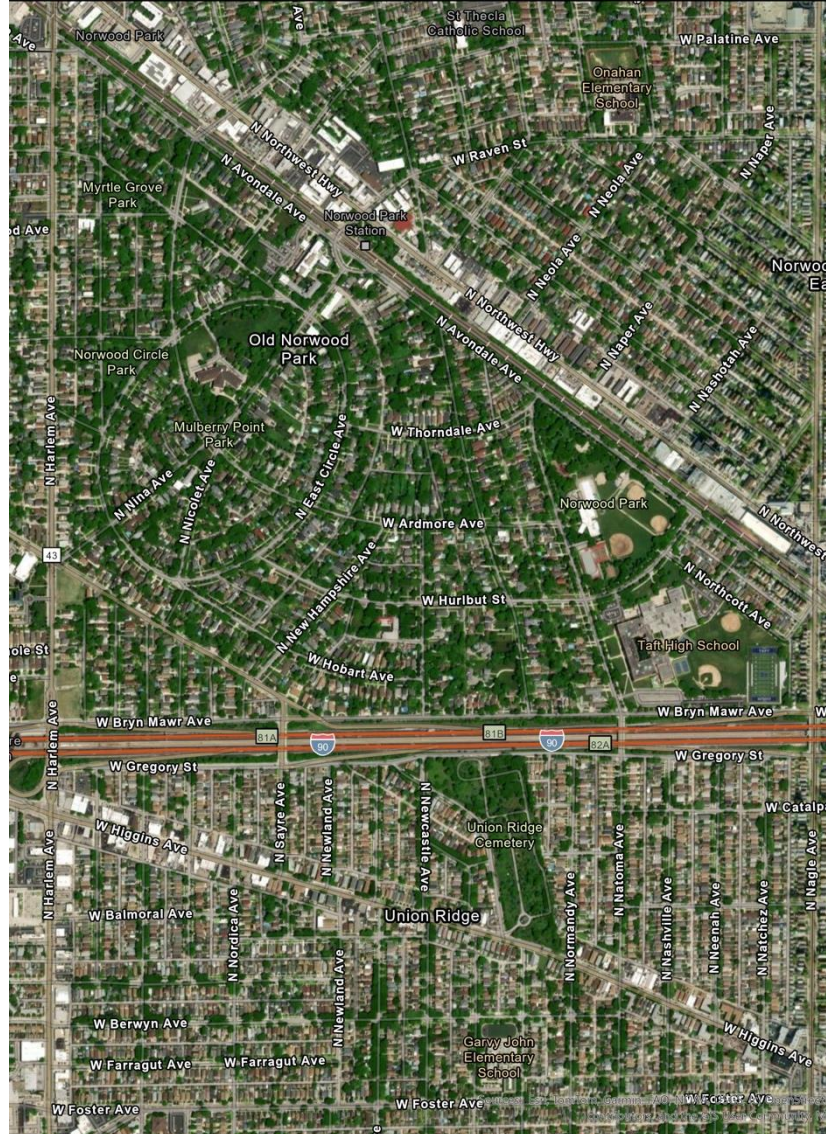
Heat Index (all day average °F)



But protective factors can still help: tree canopy and open space can have cooling effects on residential neighborhoods

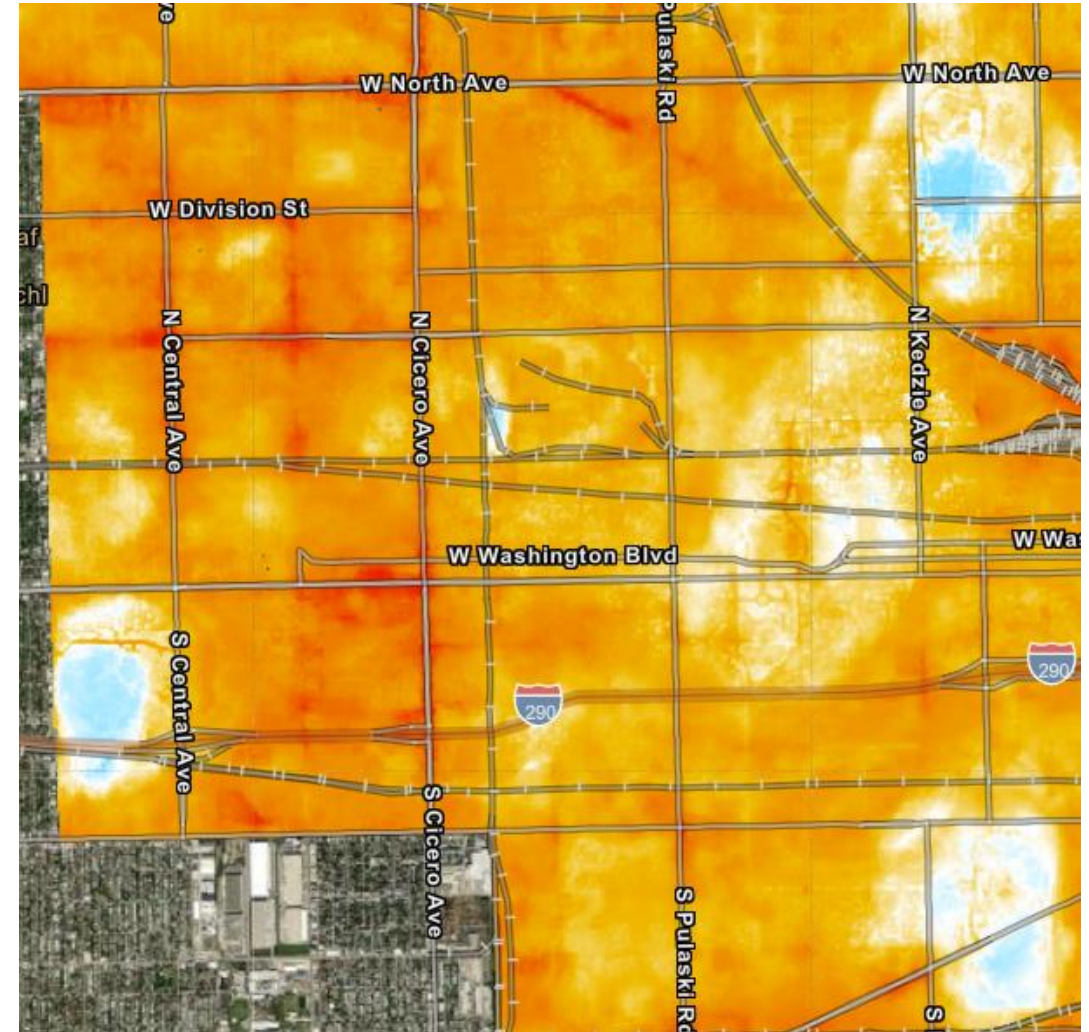
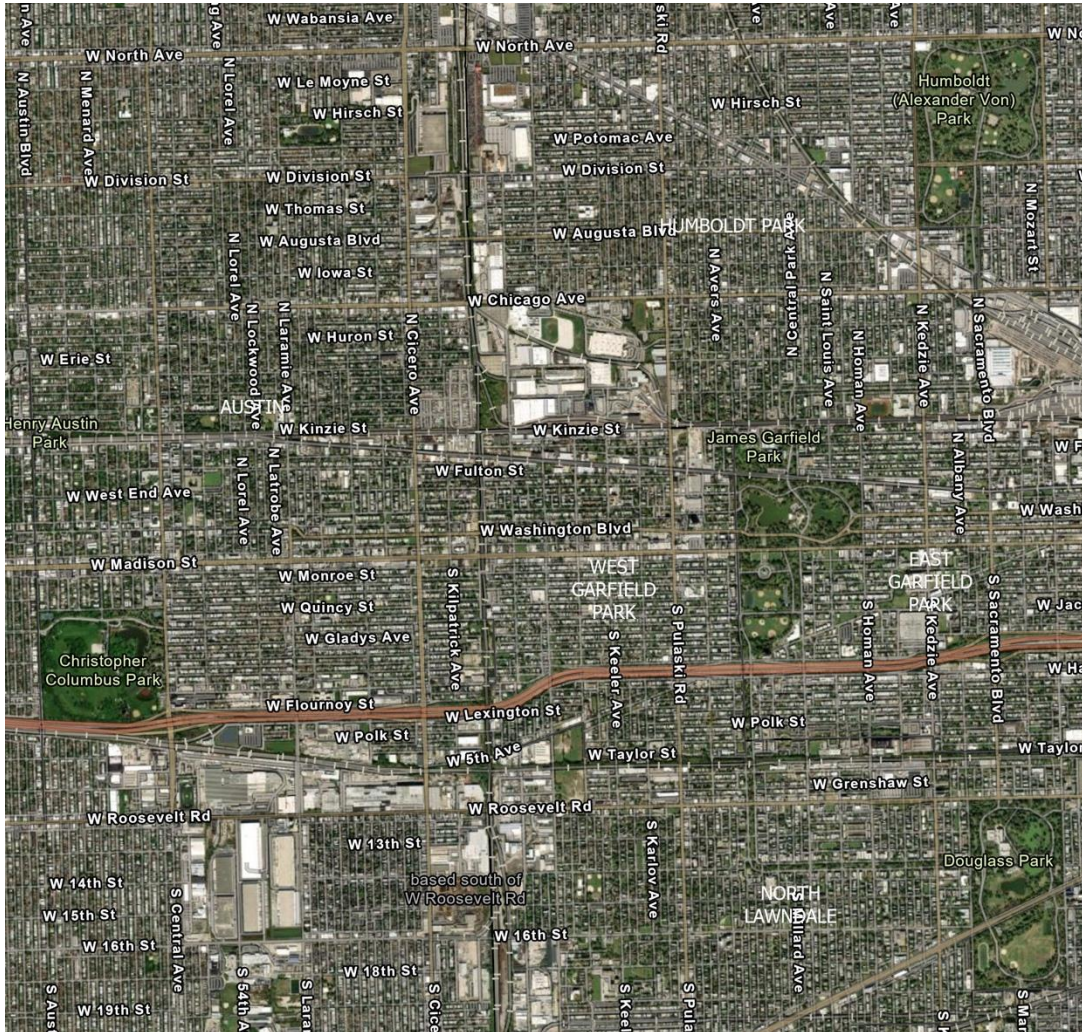
At the neighborhood level, tree canopy and open space are effective at cooling residential areas

Old Norwood Park north of the Kennedy have much cooler temperatures due to an abundance of trees and open space, while the much denser Union Ridge south of the Kennedy have much hotter temperatures due to less tree canopy and open space.



Parks have a cooling effect that extends beyond their borders

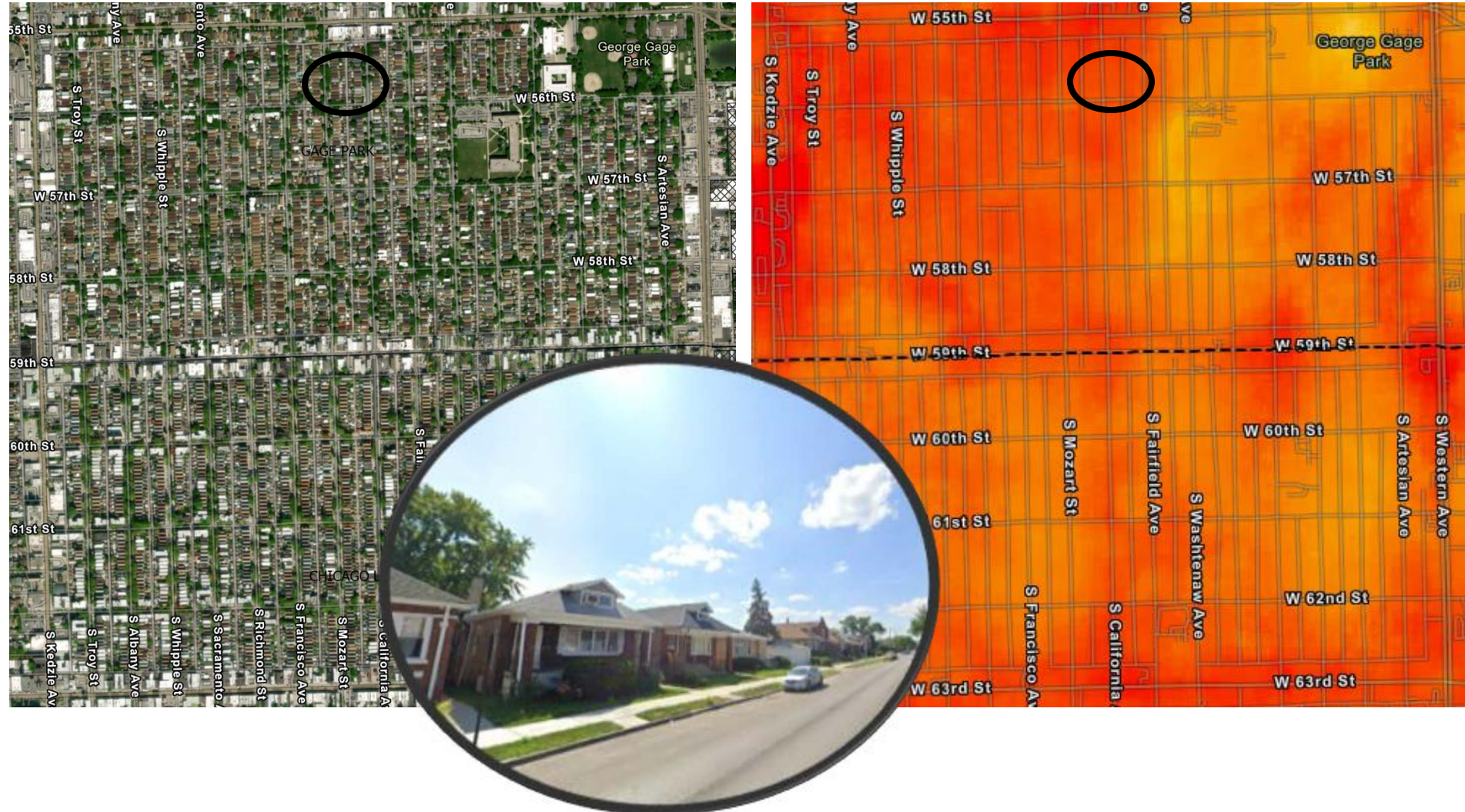
West Side parks' cooling effect: Douglass Park, Columbus Park, Garfield Park Conservatory, and Humboldt Park



Residential areas that lack tree canopy are much more likely to face extreme heat

Residential neighborhoods on the SW side have some of the highest heat index due to insufficient tree canopy and high impervious surfaces.

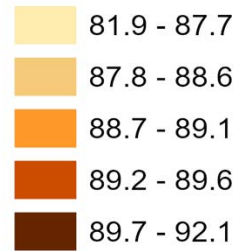
This includes Gage Park and Chicago Lawn.



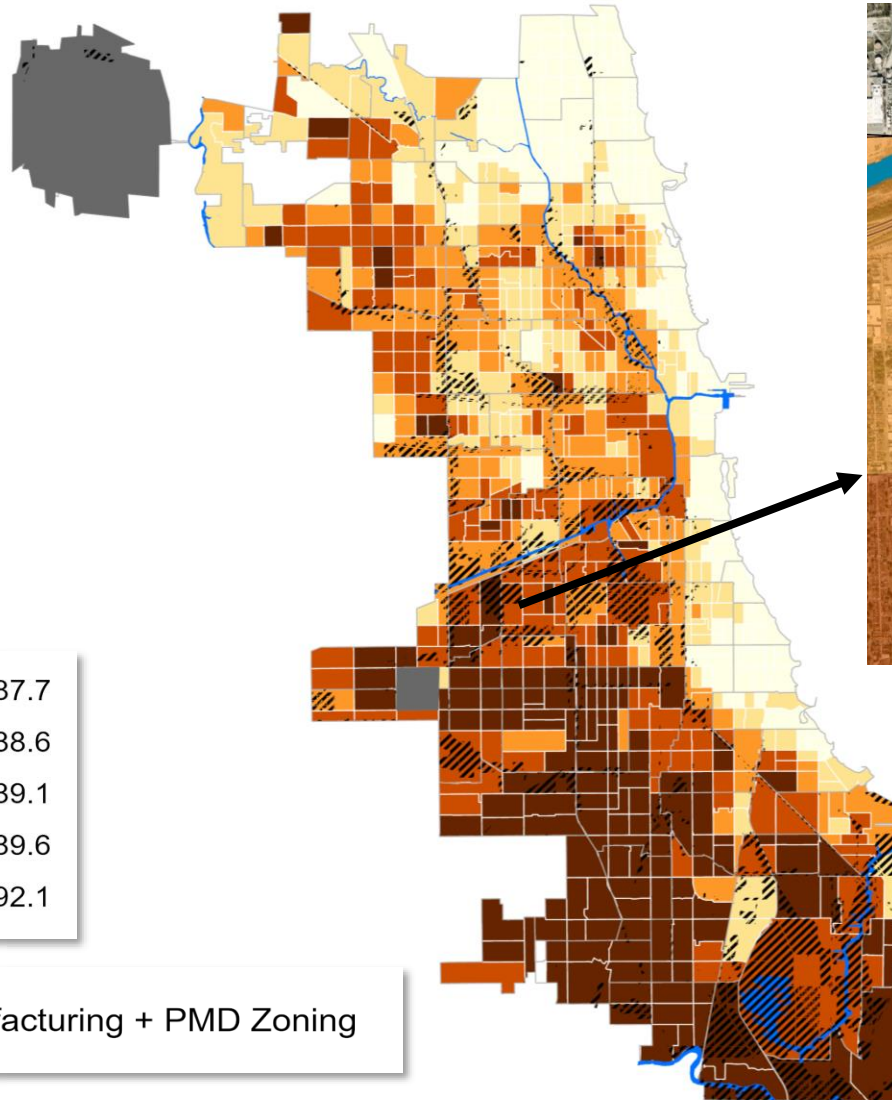
Manufacturing zoning and industrial corridors are also associated with greater heat

Heat Index (all day average °F) and Manufacturing

While single-family residential accounts for most land in the hottest 20% tracts, the next set of highest-heat tracts (60th to 80th percentile) are largely manufacturing or PMD (35%). Industrial areas that retain a lot of heat throughout the day also tend to radiate into adjacent residential areas (e.g. Brighton Park).

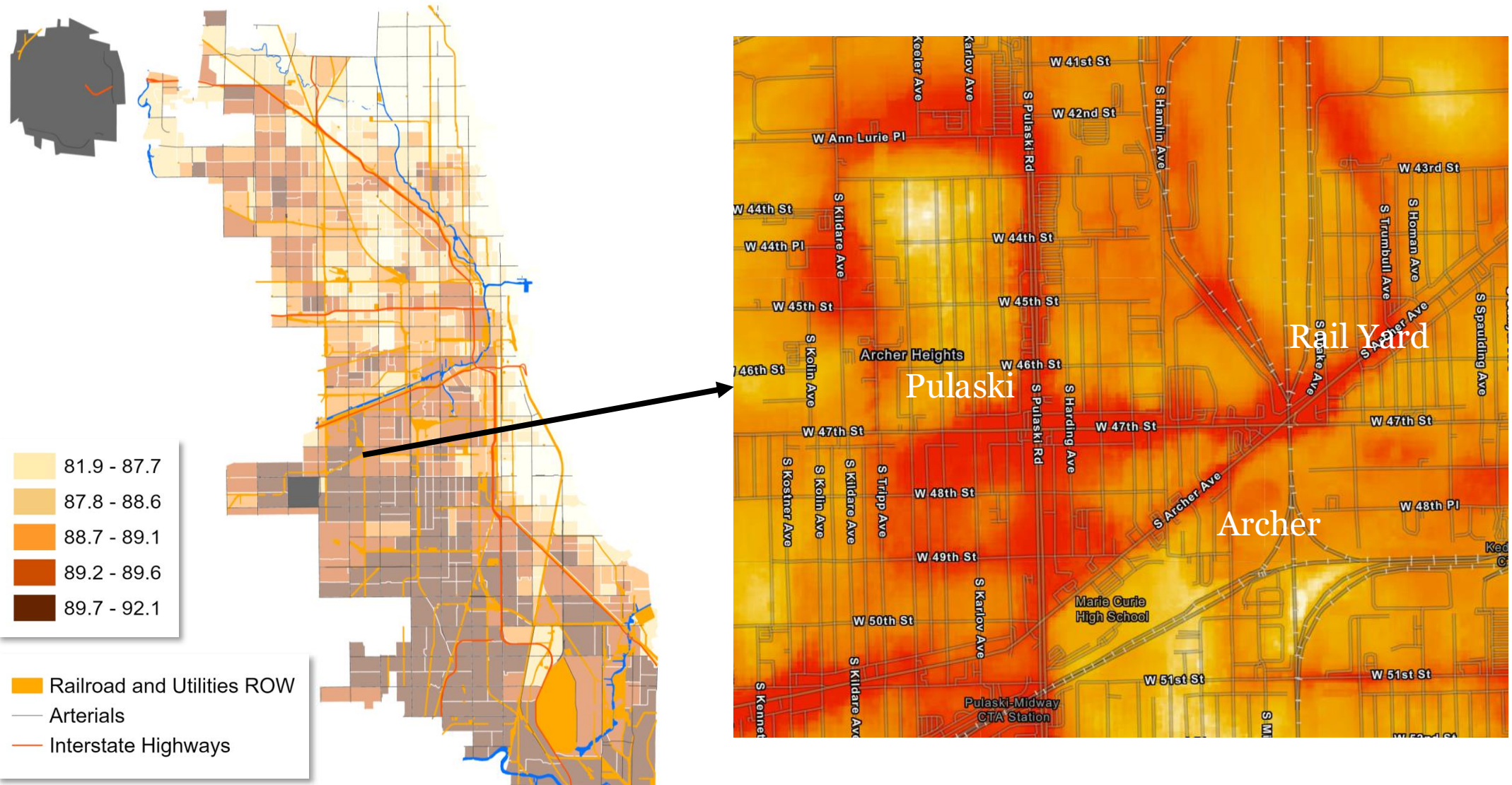


 Manufacturing + PMD Zoning



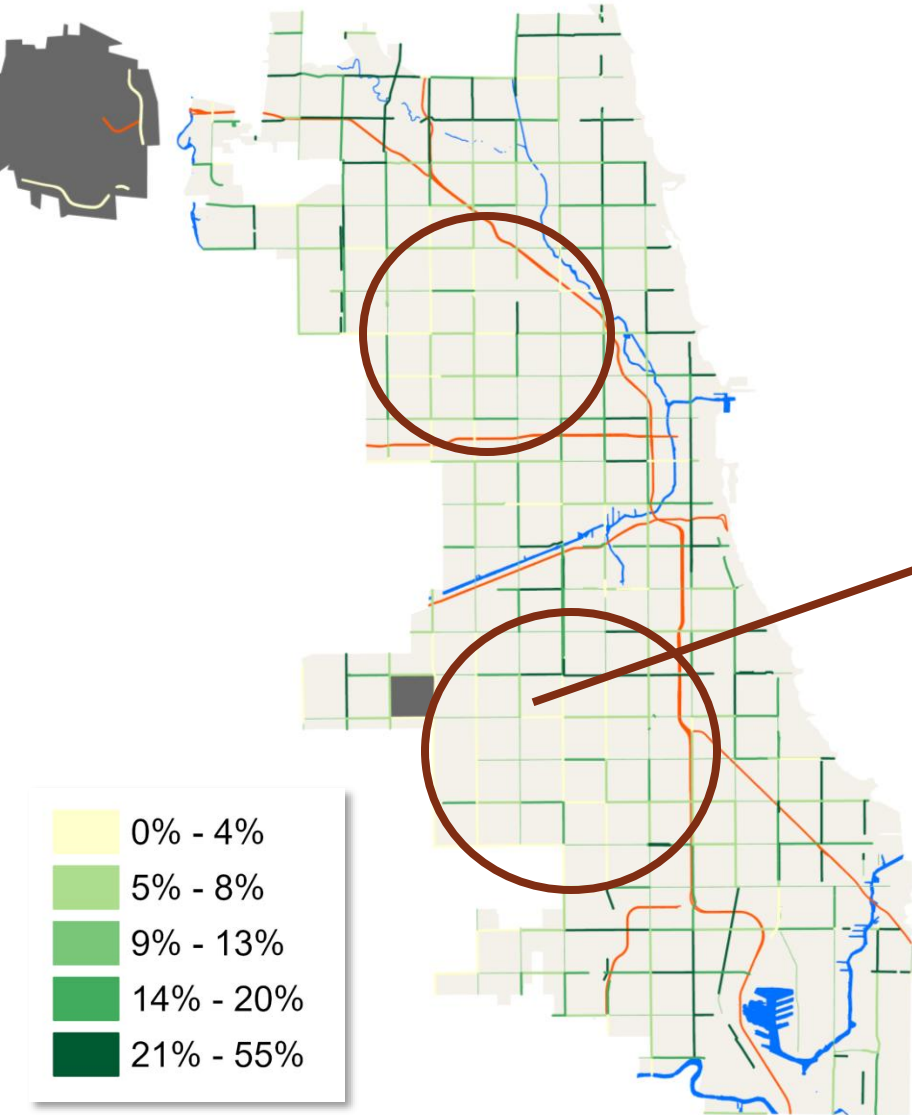
...as well as proximity to heavier types of right-of-ways such as arterials, highways, and railroads

Heat Index (all day average °F) and Heavier Right-of-Ways



Many major arterials, particularly in the southwest and northwest sides, lack tree canopy

% Tree Canopy Along Arterial Streets



Pulaski & 55th Street



Low-density residential areas are also most susceptible to urban flooding

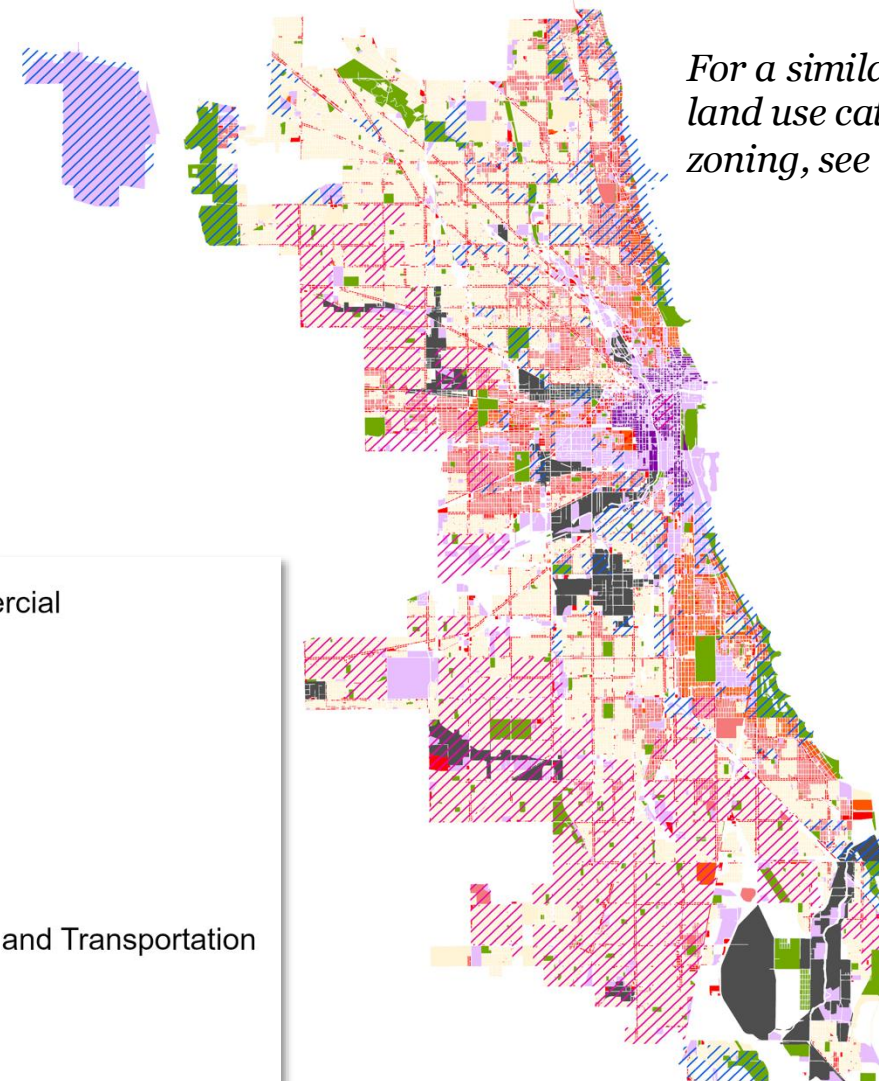
Areas most susceptible to urban flooding are largely zoned for RS Residential (62% of the flood-susceptible areas are zoned RS compared with 41% citywide).

These are primarily on the northwest, southwest, and far south sides of the city. Notable neighborhoods: Austin, Montclare, Chatham, Washington Heights, Morgan Park, Beverly

Parks and Open Space are least susceptible to urban flooding.

Parks and open spaces along Lake Michigan also have the lowest flood susceptibility.

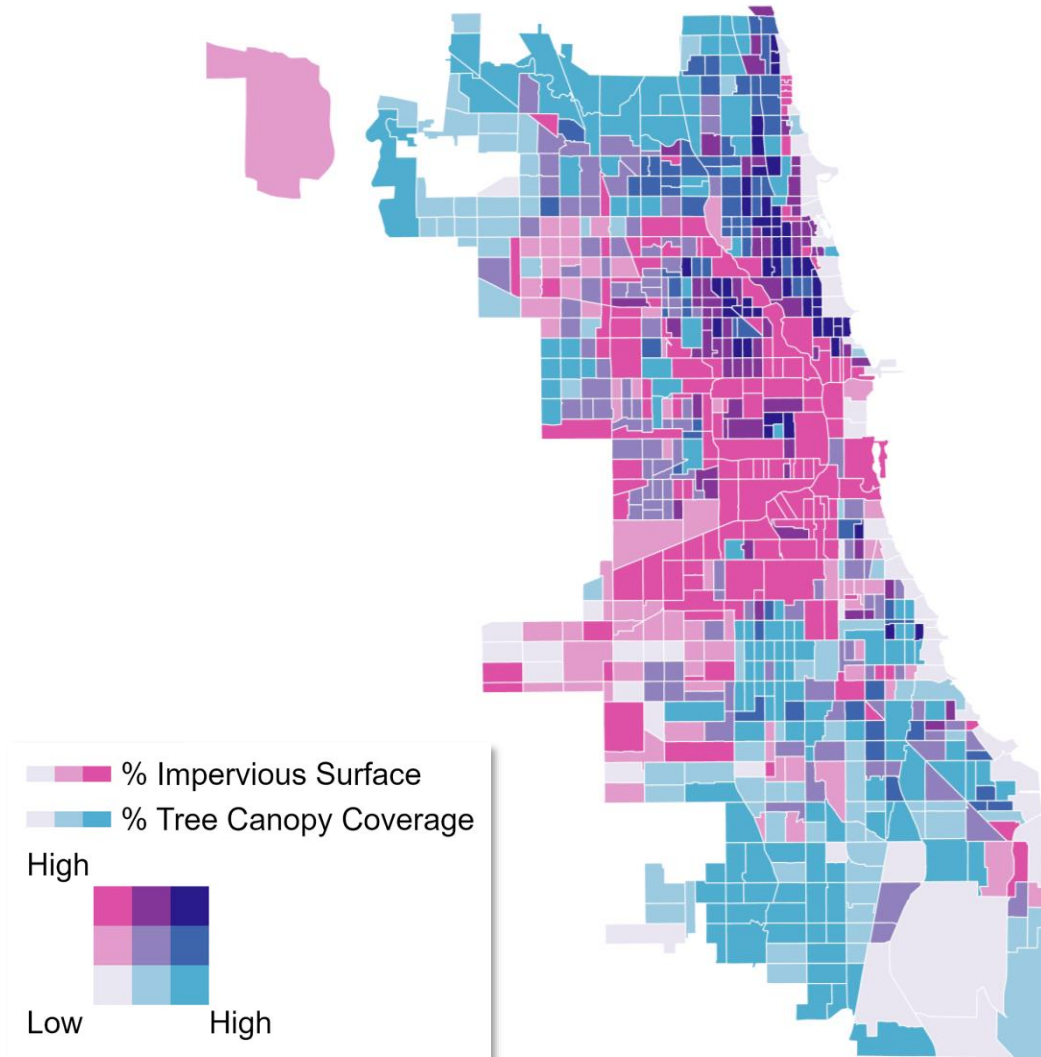
Zoning: Greatest vs Lowest Flood



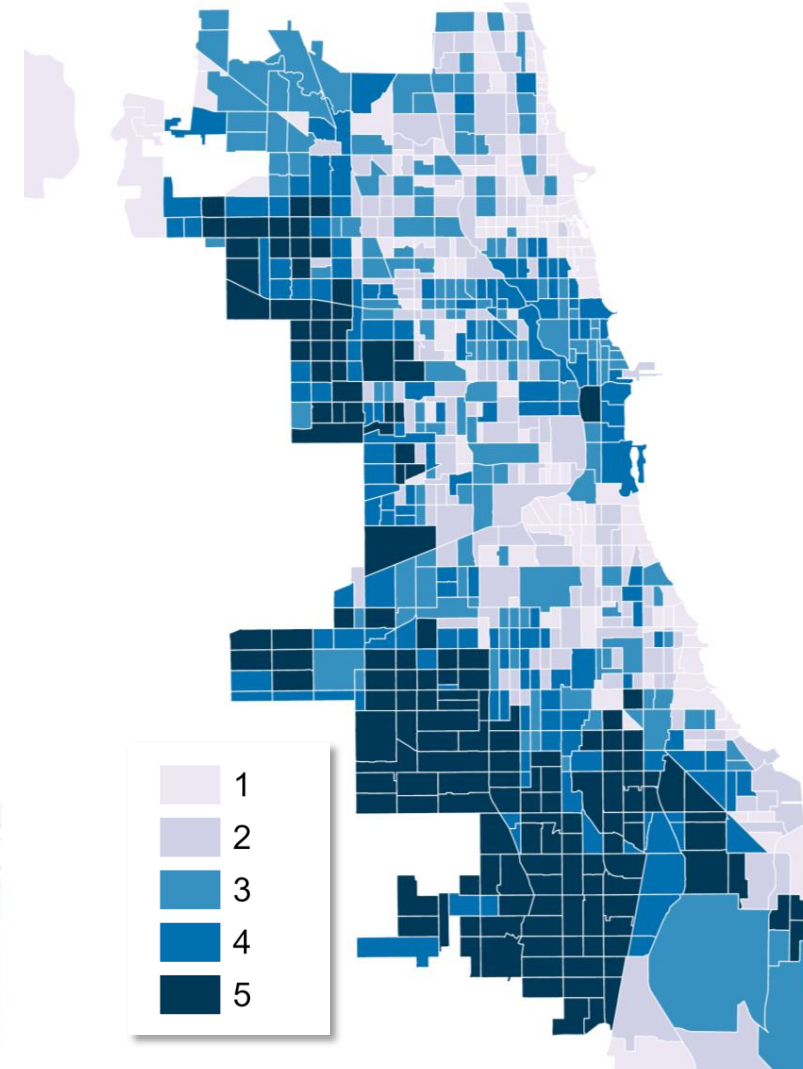
For a similar map that looks at land use categories instead of zoning, see the Appendix.

Protective factors are also not determinant when looking at flooding

Impervious Surface & Tree Cover



Combined flood



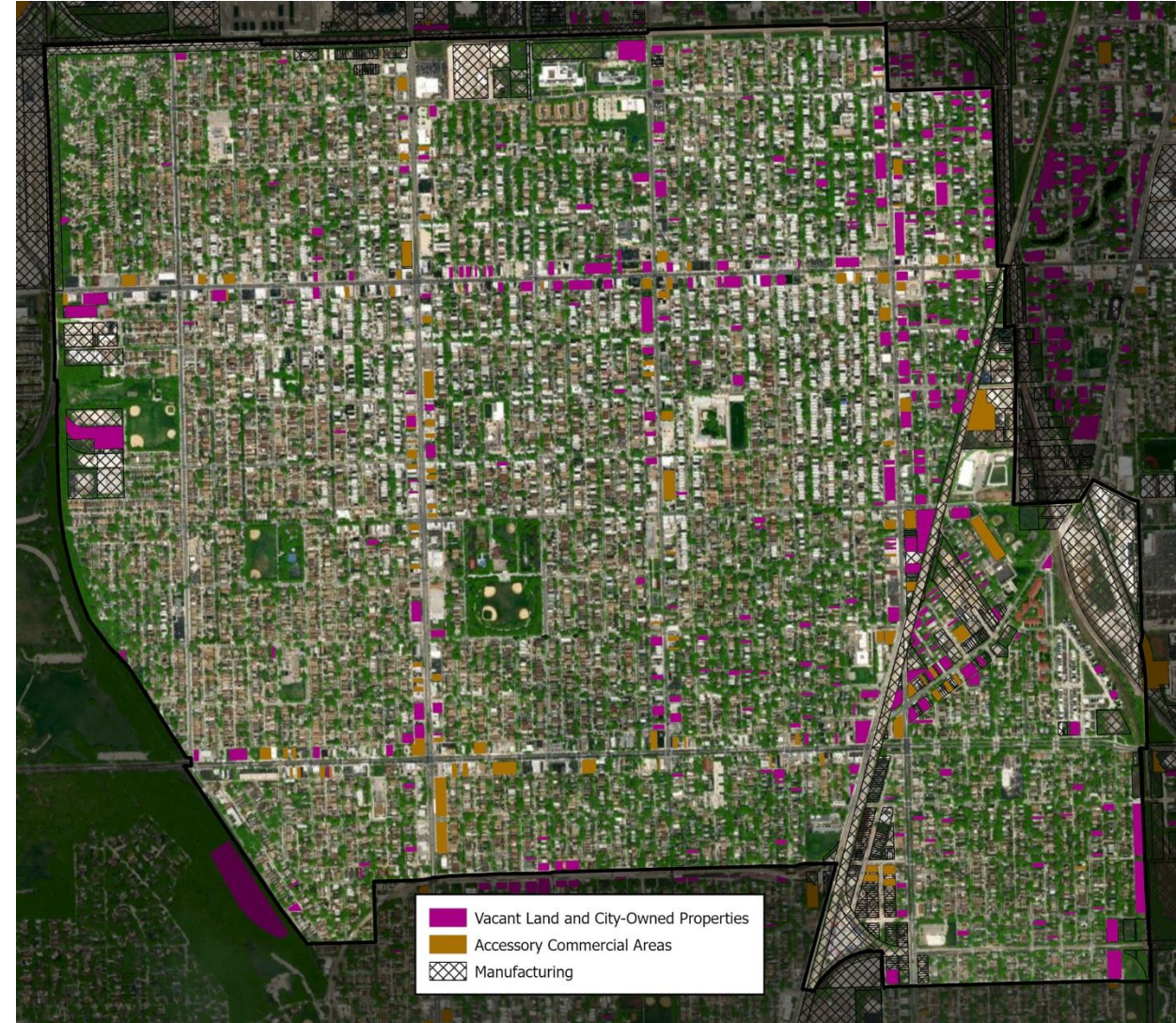
Case study: Combined heat + flood risk in Auburn Gresham requires multiple strategies to address climate challenges

Different neighborhoods face different types and levels of climate challenges, requiring different solutions

Some neighborhoods primarily face urban heat challenges, some urban flooding challenges. Many neighborhoods face both, which requires multipronged mitigation and adaptation strategies.

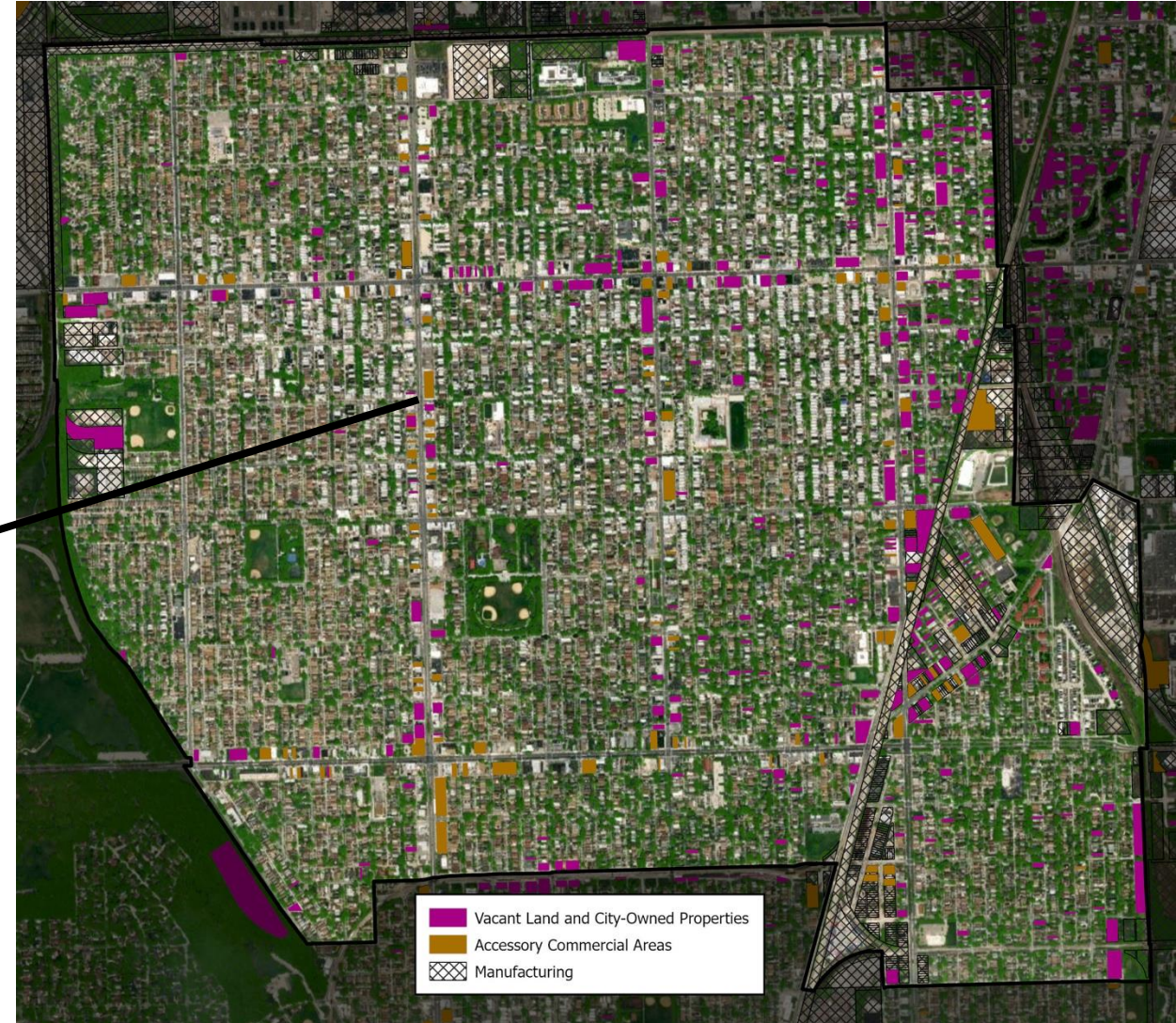
Different neighborhoods have different types and availability of land for implementing mitigation and adaptation strategies

Auburn Gresham, as demonstrated in this case study, has substantial vacant land, City-owned properties, and potential parking lots (i.e. accessory commercial areas) available for GSI. There's also a clear need for more planting and landscaping on Ashland Ave.



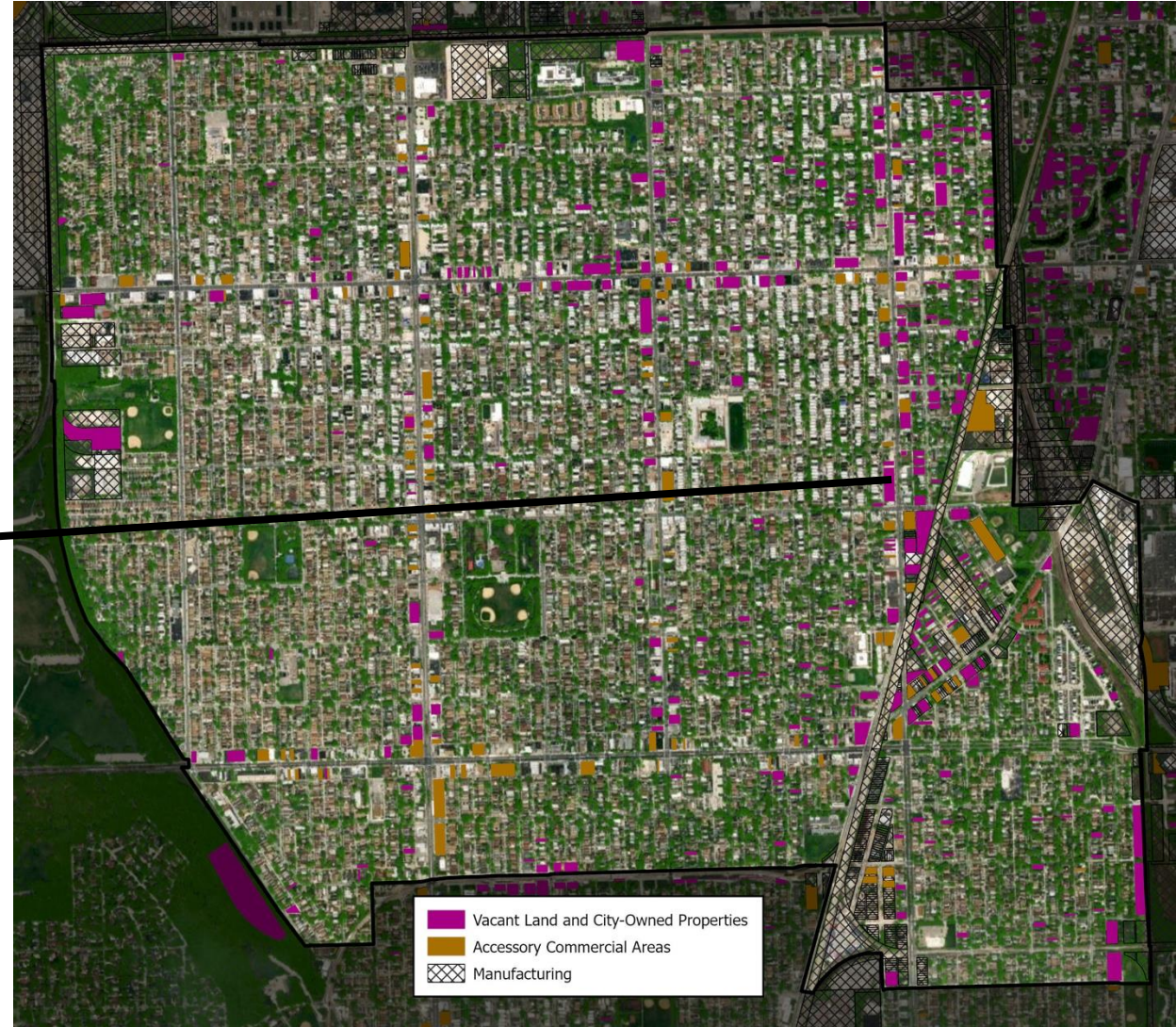
Case study: Combined heat + flood risk in Auburn Gresham requires multiple strategies to address climate challenges

Ashland – Large Surface Parking Lots and Parkways



Case study: Combined heat + flood risk in Auburn Gresham requires multiple strategies to address climate challenges

Halsted - Vacant Land



Ways the zoning code can impact availability of land for green space

1. Parks and Open Space zoning district
 - Designates land for parks, cemeteries, and some other recreational uses
 - e.g. Chicago Park District parks would be zoned Parks and Open Space
2. Bulk & density standards requiring un-built space on lots
 - *Setbacks* set aside part of a lot that can't be built up
 - *Open space requirements* set aside part of a lot as open space for residents
 - These are not necessarily green spaces or permeable surfaces, but they can be
3. The landscape ordinance, which primarily regulates sidewalk or “parkway” trees
 - Sets rules for tree planting and replacement in the parkway & some parking lots

What we learned about existing levers for green space in the zoning code

- **Trees are governed by different entities** in Chicago depending on location—Streets and Sanitation, CDOT, IDOT, Chicago Park District and private property owners all involved
 - For example, **parkway trees** are owned by the city, but property owners are responsible for them (per the Landscape Ordinance, part of the larger zoning ordinance)
- **Setback requirements are complicated & contingent**, making it difficult to reach a wholistic understanding of how setbacks affect land use and green space
 - **Open space requirements** are more straightforward, but range widely across districts
- The **greatest setback and open space requirements are in RS districts**, which also see the most flooding and heat susceptibility

Who's in charge of planting and maintaining Chicago trees?

It depends on the location of the tree.



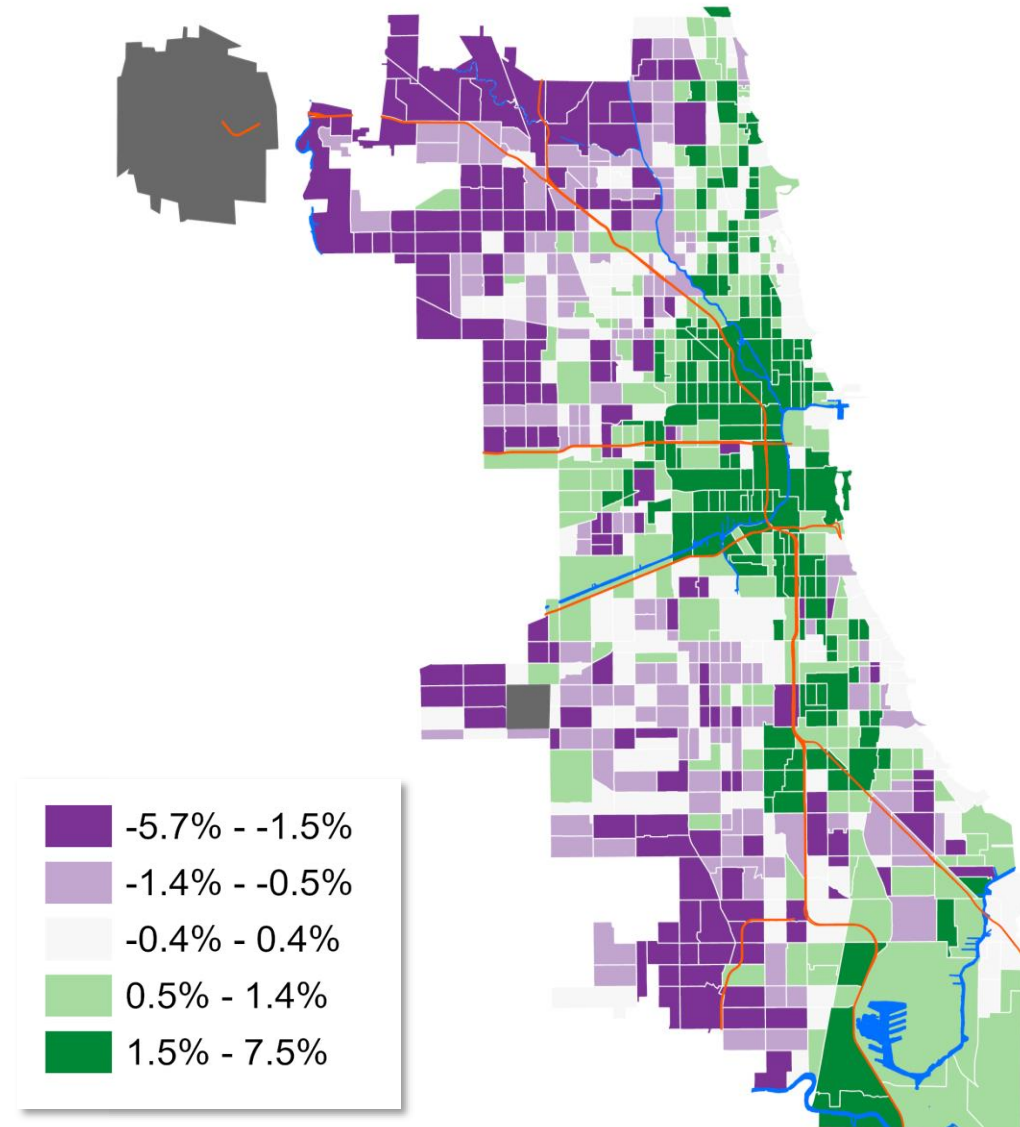
Credit: Victor Hilitski for Block Club Chicago

- Trees in the **parkway** (between the sidewalk and the street) and in/around some parking lots are regulated and owned by the city, but are largely the responsibility of property owners
 - The zoning ordinance sets out rules about these
 - New parkway trees are required to be planted for developments larger than a three-flat; the city trims parkway trees, but property owners maintain and replace them
 - The city also plants new parkway trees through the Dept. of Streets and Sanitation's Bureau of Forestry "Our Roots Chicago" tree-planting initiative
- Trees in **street medians** (usually arterial streets medians or roundabouts) are the responsibility of Chicago Department of Transportation (CDOT) or in some cases, Illinois Department of Transportation (IDOT)
- Trees in **city parks** are the responsibility of Chicago Park District

Relying heavily on 311 calls previously led to an inequitable pattern of tree planting and replacement

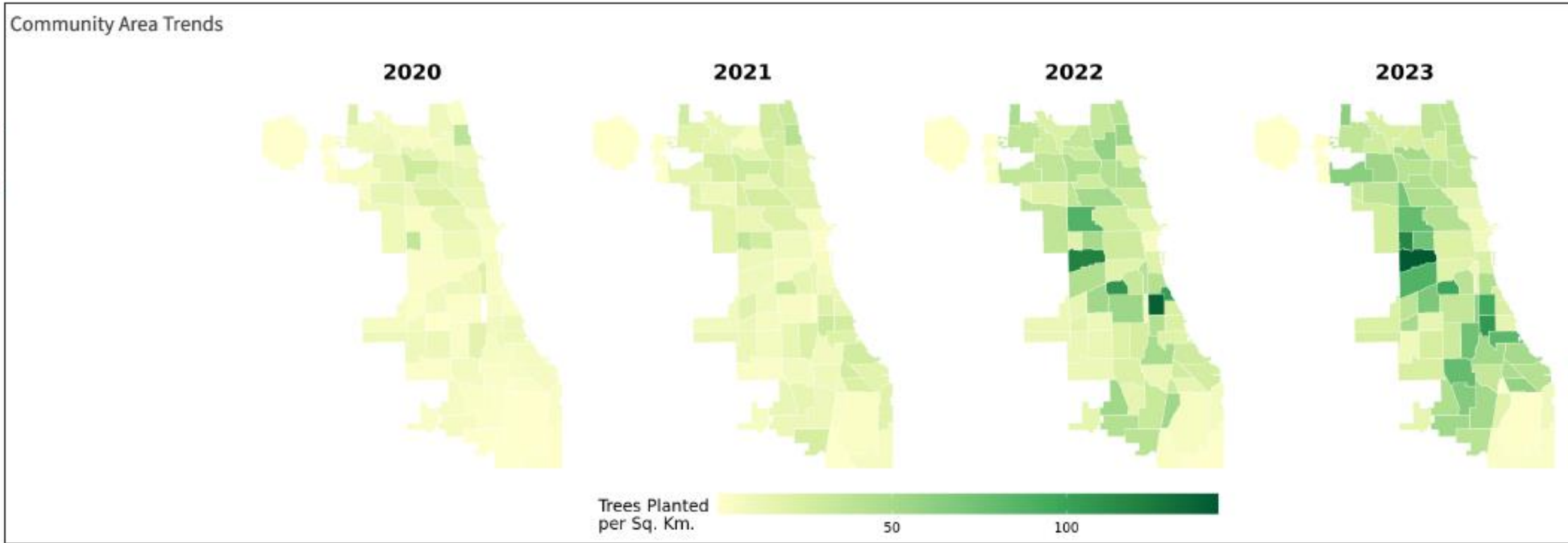
Before the Our Roots Chicago initiative, a city tree planting program, launched in 2022, tree planting requests were prioritized largely through 311 calls. These 311 service requests were not evenly made across all Chicago's neighborhoods, concentrated on the North side.

Tree Canopy Change, 2010 to 2017



Since the Our Roots initiative, there has been greater concerted effort to plant trees in areas that need them the most

Tree plantings since Our Roots initiative



Source: DSS Bureau of forestry, Tree Equity Working Group. 2023 Year-End Report

When is planting a new tree required in the zoning ordinance?

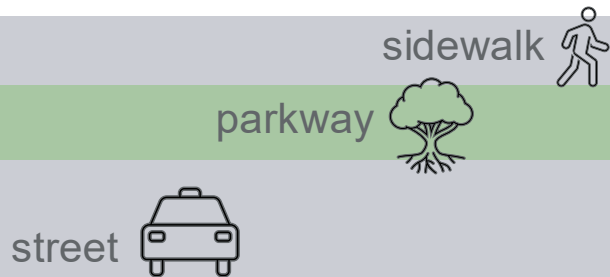
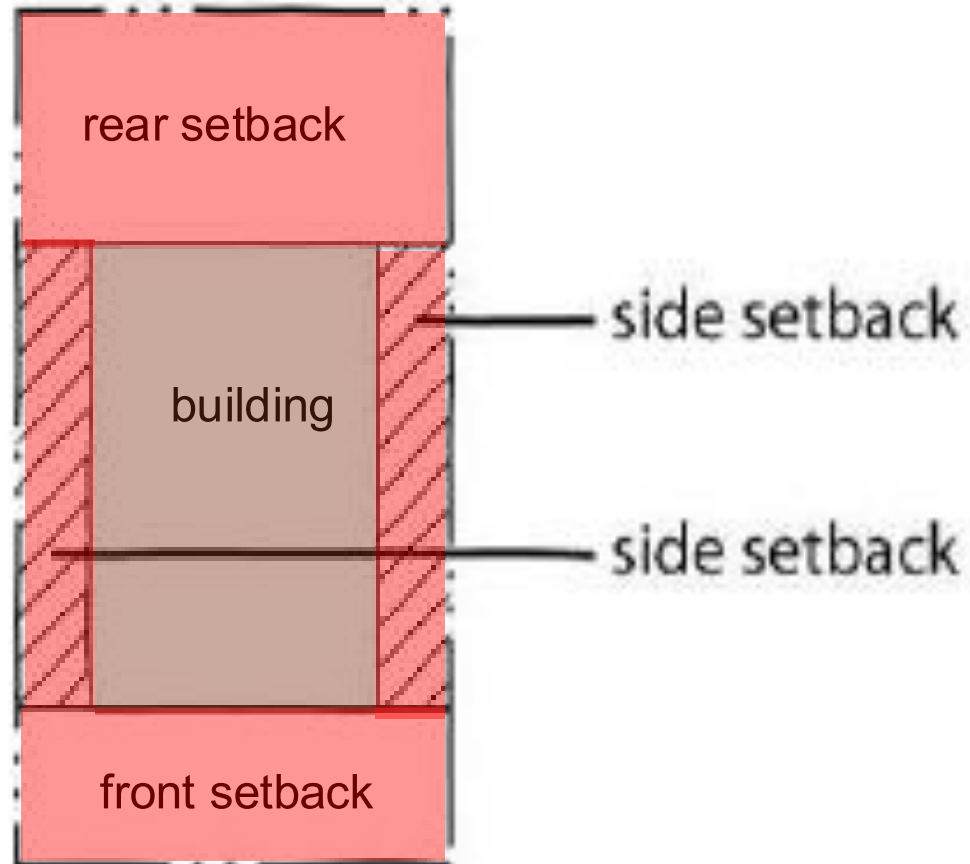
→ The zoning ordinance requires planting new trees in the parkway **for some types of new development and renovation**

1. When new development or renovation occurs (in general) a developer must plant **1 tree in the parkway per 125 feet of street frontage, EXCEPT for low-density residential development** (three-flats and below)
2. Parking lots >1,200 sq feet have additional tree planting requirements on street frontage, and even larger parking lots >3,000 sq ft have tree planting requirements for interior landscaping

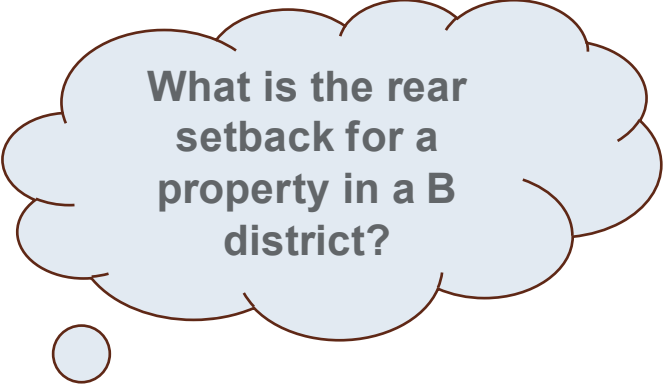
→ The zoning ordinance requires that property owners cover tree replacement

“Any damaged or dead trees, shrubs or ground cover must be promptly replaced”

What is a setback?

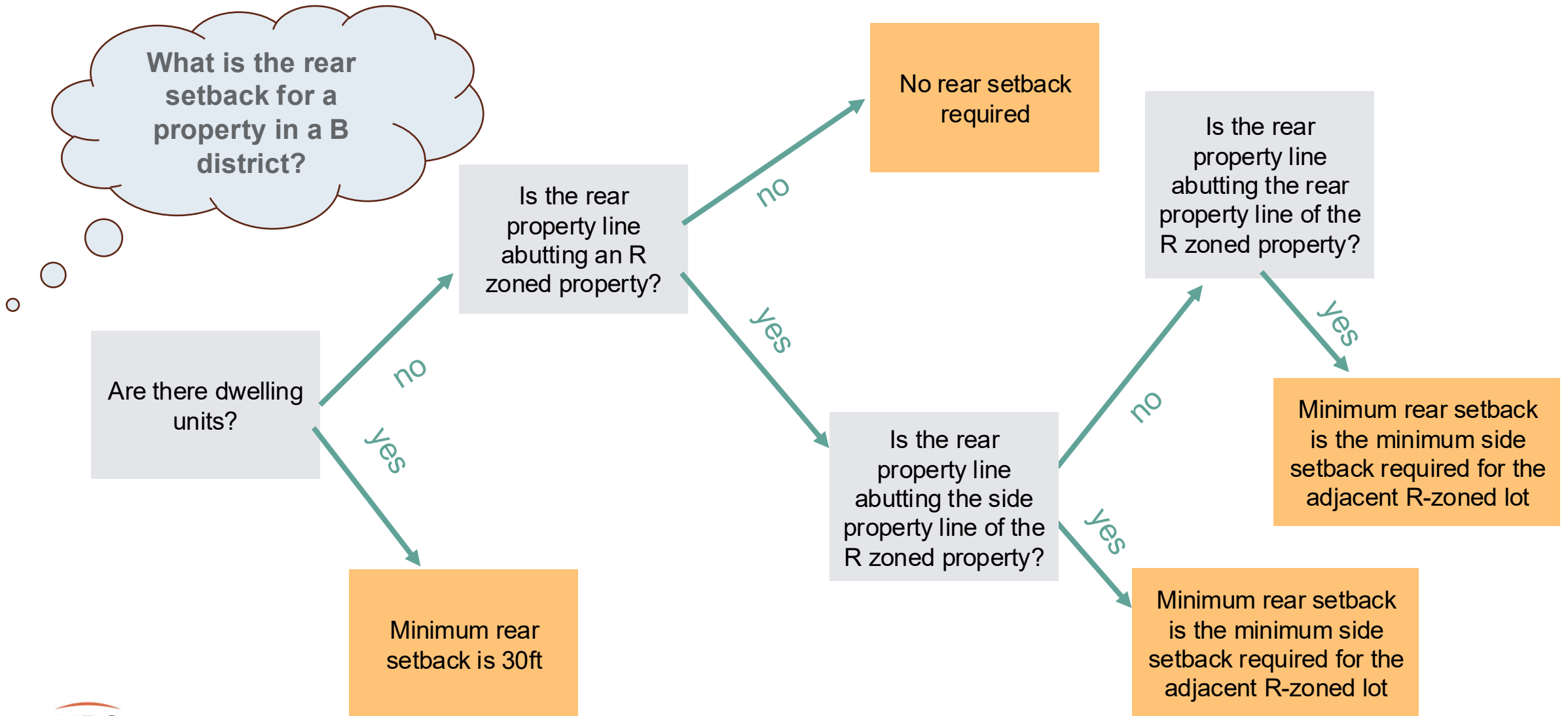


Setbacks can be complicated



**What is the rear
setback for a
property in a B
district?**

Setbacks can be complicated



Setbacks can be complicated: Setbacks in R districts

	Front setback*			Side setback*			Rear setback	
	*Separate front setback requirements apply for townhouses.			*Separate side setback requirements apply for townhouses. These requirements are for principal residential buildings; different side setback requirements may apply for nonresidential buildings.				
	...OR, <i>equal to</i> :			Side setback must be, <i>at minimum....</i>			Rear setback must be <i>at minimum, whichever is less</i> :	
	Distance	% of lot depth	A distance depending on block context	% of lot width (both sides combined)* *Further minimums apply for each individual side – this is the minimum for the two sides combined	Lowest possible minimum, per individual side:	Highest possible minimum, per individual side:	Distance	% of lot depth
RS-1	20ft	16%	“the average front yard depth that exists on the nearest 2 lots on either side of the subject lot, excluding the lot with the least front yard depth”	30%	5ft	n/a	50ft	For detached houses: 28%
RS-2				30%	4ft	n/a		
RS-3				20%	2ft	n/a		
RT-3.5	15ft	12%	“the average front yard depth that exists on the nearest 2 <i>lots</i> on either side of the subject <i>lot</i> ”*	20%	2ft	5ft		For principal buildings other than detached houses: 30%
RT-4				20%	2ft	5ft		
RM-4.5				20%	2ft	5ft		
RM-5				20%	2ft	5ft		
RM-5.5				20%	2ft	5ft		
			Note that on a “primary boulevard,” this is the only way to meet the requirement	20%	0ft	20ft		For buildings with at least 33% accessible dwelling units (&no more than 19 units): 24%
RM-6				20%*	0ft	20ft		
RM-6.5				*Or individual side setbacks of 10% of total building height, whichever is greater; no side setback requirement abutting street or alley, or for buildings cover 50% or less of the lot				

Setbacks can be complicated: Setbacks in R districts

Front setback*				Side setback*			Rear setback			
*Separate front setback requirements apply for townhouses. These requirements are for principal buildings. These requirements may apply for nonresidential buildings.				*Separate side setback requirements apply for townhouses. These requirements are for principal buildings. These requirements may apply for nonresidential buildings.						
Front setback must be equal to whichever is less... ...OR, equal to:				Side setback must be at minimum....			Rear setback must be at minimum, whichever is less:			
Distance	% of lot depth	A distance depending on block context	% of lot width (both sides combined)* *Further minimums apply for each individual side – this is the minimum for the two sides combined	Lowest possible minimum, per individual side:	Highest possible minimum, per individual side:	Distance	% of lot depth			
Front setbacks must be met exactly whereas other setbacks are minimums			“Minimum minimums” and “maximum minimums”							
RS-2	20ft	16%	“the average front yard depth that exists on the nearest 2 lots on either side of the subject lot, excluding the lot with the least front yard depth”	30%	5ft	50ft	For detached houses: 28%			
RS-3				30%	4ft			n/a		
RT-3.5				20%	2ft			n/a		
RT-4	15ft	12%	“the average front yard depth that exists on the nearest 2 lots on either side of the subject lot”*	20%	2ft		5ft	For principal buildings other than detached houses: 30%		
RM-4.5				20%	2ft		5ft			
RM-5				20%	2ft		5ft			
RM-5.5				20%	2ft		5ft			
				20%*	0ft		20ft			
RM-6				20%*	0ft		20ft		For buildings with at least 33% accessible dwelling units (&no more than 19 units): 24%	
RM-6.5										
The surrounding lots sometimes play a role in setting the minimum			*Or individual side setbacks of 10% of total building height, whichever is greater; no side setback requirement abutting street or alley, or for buildings cover 50% or less of the lot							
			*Or individual side setbacks of 10% of total building height, whichever is greater; no side setback requirement abutting street or alley, or for buildings cover 50% or less of the lot							
There are separate setback rules for townhouse developments				at minimum....						

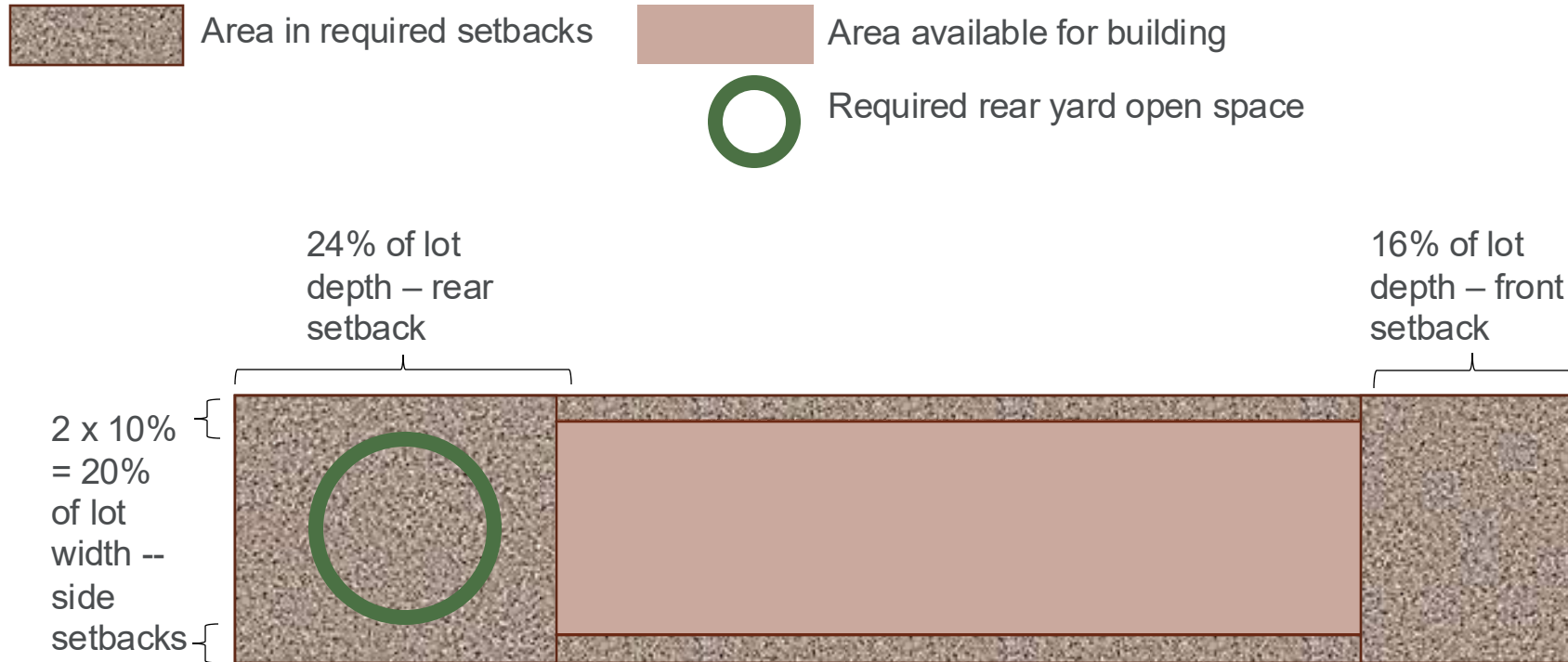
Simplified setbacks: Setbacks in R districts

RESIDENTIAL DISTRICTS						
Front setbacks			Side setbacks		Rear setbacks	
Front setback must be equal to <i>whichever is less...</i>		...OR, equal to:	Side setback must be, <i>at minimum....</i>		Rear setback must be <i>at minimum,</i> <i>whichever is less:</i>	
Distance	% of lot depth		% of lot width (both sides combined)	Minimum per individual side	Distance	% of lot depth
15ft - 20ft	12% – 16%	A distance based on block context	20% – 30%	0ft - 20ft	50ft	24% – 30%

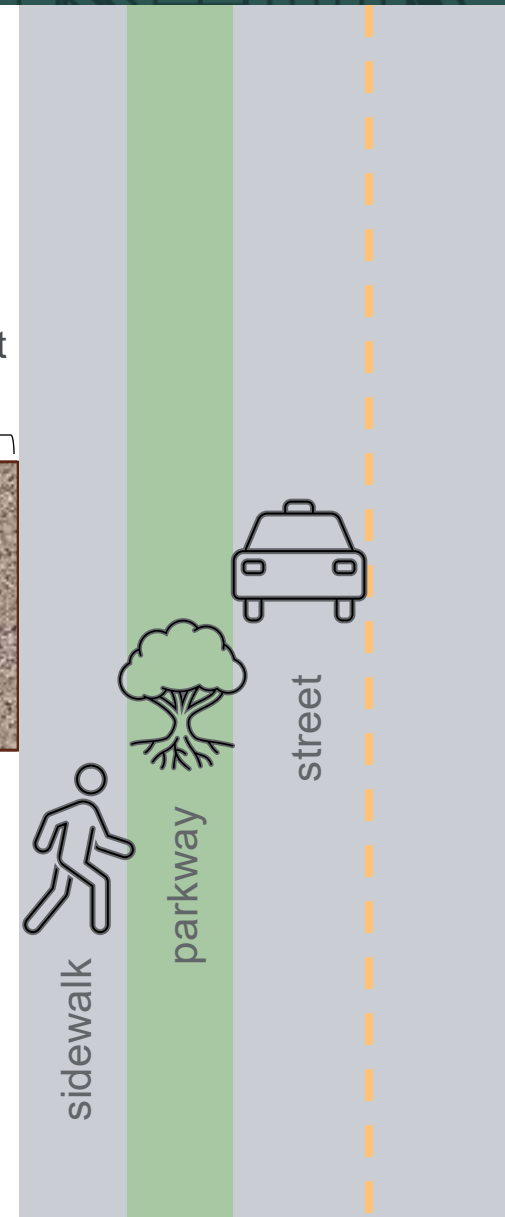
Total setback to lot *depth*: 36% – 46%

Total setback to lot *width*: 20% – 30%

Visualizing setbacks: Example setbacks on a lot zoned RS-3



Typical Chicago lot = 25ft x 125 ft



Simplified setbacks: Setbacks in D districts

DOWNTOWN DISTRICTS					
Front setbacks			Side setbacks	Rear setbacks	
Distance	% of lot depth	...OR, <i>equal to</i> :	Side setbacks are not required.	Distance	% of lot depth
0ft - 15ft	0% - 12%	A distance based on block context	0ft	0 - 50ft	0% / 28% / 30%

Total setback to lot *depth*: 0% – 42%

Total setback to lot *width*: 0%

Simplified setbacks: Setbacks in B/C districts

BUSINESS AND COMMERCIAL DISTRICTS		
Front setbacks	Side setbacks	Rear setbacks
Front setback depends on what's around the property...	Side setback depends on what's around the property...	Rear setback depends on type of use and what's around the property...
Based on R-zoned lot(s) nearby: 0ft / a distance based on block context	Based on R-zoned lot(s) nearby: 0ft / a distance based on block context	Depending on whether there are dwelling units, and based on R-zoned lot(s) nearby: 0ft / 16ft / 30ft / a distance based on block context

Total setback to lot *depth*: 0% – ?%

Total setback to lot *width*: 0% - ?%

Examples: Setbacks in B/C districts

Many pedestrian streets have no front setbacks (& buildings cannot be farther than 5ft from the sidewalk on a pedestrian street)



Simplified setbacks: Setbacks in M districts

MANUFACTURING DISTRICTS		
Front setbacks	Side setbacks	Rear setbacks
Front setback depends on the type of use and what's around the property...	Side setback depends on the type of use and what's around the property...	Rear setback depends on what's around the property...
Based on type of use and R-zoned lot(s) nearby: 0ft / 10ft / a distance based on block context	Based on type of use and R-zoned lot(s) nearby: 0ft / 10ft / a distance based on block context	Based on R-zoned lot(s) nearby: 0ft / 30ft

Total setback to lot *depth*: 0% – ?%

Total setback to lot *width*: 0% - ?%

Simplified setbacks: Setback ranges

District	Total setback to lot <i>depth</i>	Total setback to lot <i>width</i>
R	36% - 46%	20% - 30%
D	0% - 42%	0%
B/C	0% - ?%	0% - ?%
M	0% - ?%	0% - ?%

Setback requirements are complicated & contingent, making it difficult to reach a wholistic understanding of how setbacks affect land use and green space.

What does the zoning code say about open space?

- **Open space requirements apply in R + D districts (“rear yard open space” and “on-site open space”)**
- **Not required to be permeable surface**
 - Must be outdoors and “designed for outdoor living, recreation or landscaping”; may be rooftop space in RM5 + above
 - “When located at ground level, the open space area must be substantially covered with grass, ground cover, shrubs, plants, trees, or usable outdoor open space features, such as walkways or patios.”
 - “All required open space areas must be located and designed to take advantage of sunlight and other climatic advantages of the site.”

How much open space?

REAR YARD AND ON-SITE OPEN SPACE REQUIREMENTS - R and D districts

Minimum rear yard/on-site open space is <i>whichever is greater...</i>		...AND a circle of this diameter must fit within the open space
Square feet per dwelling unit	% of lot area	Diameter in feet
36ft² - 400ft²	5.25% - 6.5%	Varies; for R districts, 10ft – 20ft



	Square feet per dwelling unit
RS-1	400ft ²
RS-2	400ft ²
RS-3	225ft ²
RT-3.5	100ft ²
RT-4	65ft ²
RM-4.5	50ft ²
RM-5	36ft ²
RM-5.5	36 ft ²
RM-6	
RM-6.5	
D districts	

Amount of open space per dwelling unit required by zoning code varies widely –

**from 400 sq ft per unit in RS-1 and RS-2
to 36 sq ft per unit in RM / D districts**

In many cases, the % of lot area in setbacks is likely much larger than the % required to be kept as open space

The takeaway: Open space requirements are more straightforward, but range widely across districts

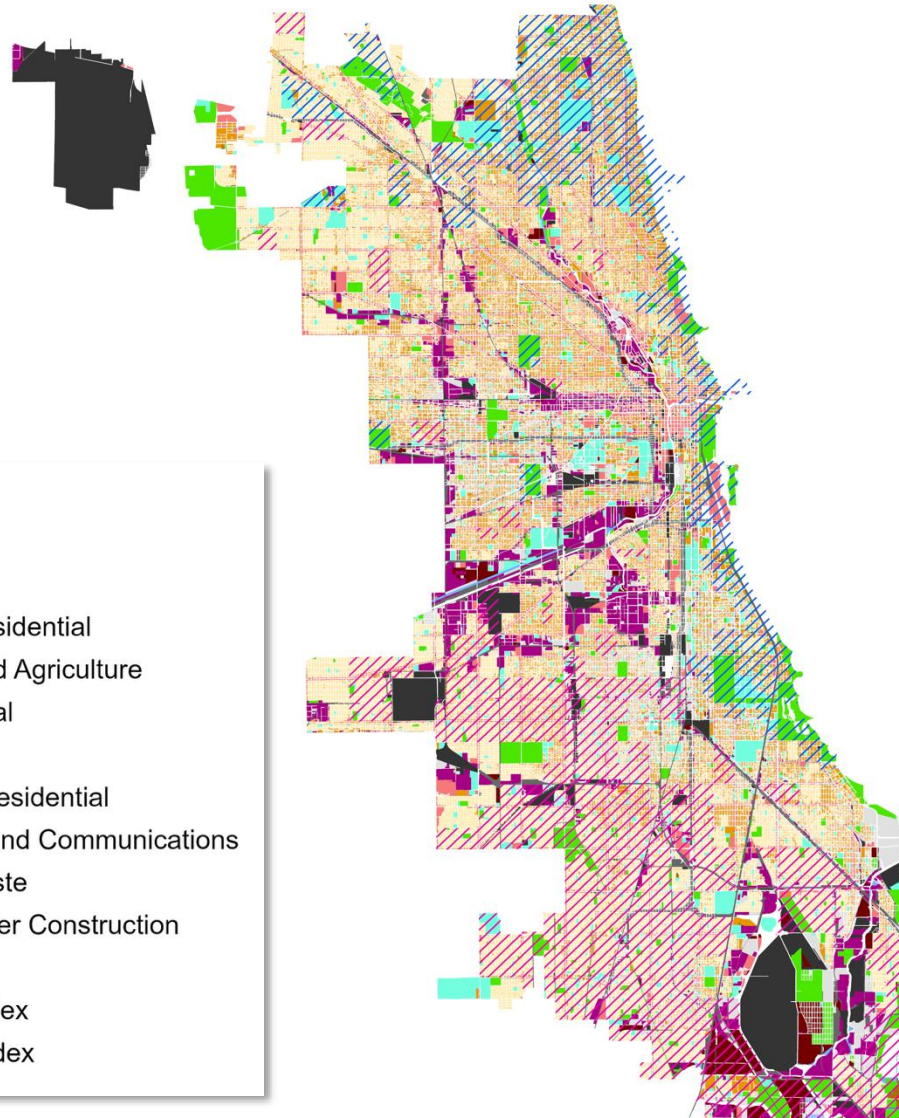


Appendix

Low-density residential areas are most susceptible to urban heat (pt. II)

Land Use: Greatest vs Lowest Heat Index

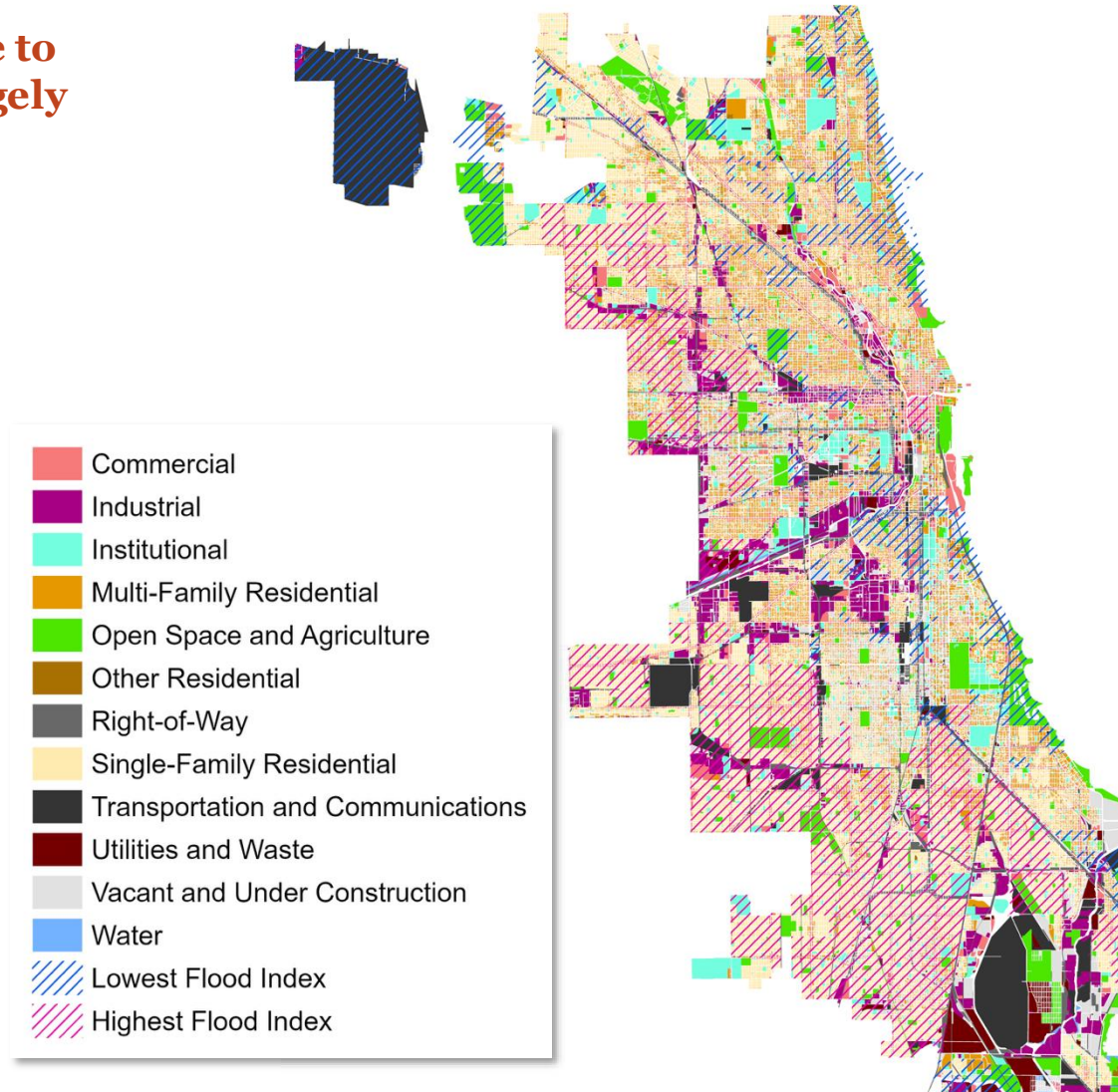
The hottest areas are largely used for single-family residential (52%), according to land use data from CMAP.



Low-density residential areas are also most susceptible to urban flooding (pt. II)

Areas most susceptible to urban flooding are largely used for single-family residential (54%).

Land Use: Greatest vs Lowest Flood



Multiple city ordinances and regulations have a role to play in managing susceptibility to climate change impacts of heat and flood

- **Landscape:** Chicago Landscape Ordinance is part of the zoning ordinance, chapter 17-11
 - Designates landscape requirements primarily for parkway tree planning, vehicular use area screening, and internal landscaping for vehicular uses
- **Stormwater:** Stormwater Management Ordinance is part of the Municipal code, chapter 11-18
 - Goal is to minimize the negative stormwater impacts of new development and redevelopment; requires a stormwater management plan for every “regulated development”
- **Buildings:** 2022 Chicago Energy Transformation Code, part of the review from the Department of Buildings
 - Requires new buildings to be constructed in alignment with stronger energy efficiency and electrification standards, based on 2021 International Energy Conservation Code