



24th Annual Chicago Infection Control Conference

September 18, 2019

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Mr. Prachand has disclosed that there is no actual or potential conflict of interest in regards to this presentation

The planners, editors, faculty and reviewers of this activity have no relevant financial relationships to disclose. This presentation was created without any commercial support.

Learning Objectives

At the conclusion of this course participants will be able to:

- Describe how Chicago Department of Public Health is exploring the root causes of health disparities among those living in Chicago.
- Identify public health resources to contact for reportable disease conditions, obtain specialized treatments, or engage for antibiotic stewardship assessments through the Chicago Department of Public Health.
- Describe surveillance and response efforts around emerging and re-emerging infections including Legionnaires' disease, measles, and preparedness regarding the Ebola situation in the DRC.
- Identify mechanisms of surveillance for acute responses (such as emerging lung diseases in those with vaping history) and how to report these suspected cases to public health.

To obtain credit you must:

- **Complete an electronic evaluation**
- **After completing the evaluation you can generate your certificate immediately.**

In support of improving patient care, Rush University Medical Center is accredited by the American Nurses Credentialing Center (ANCC), the Accreditation Council for Pharmacy Education (ACPE), and the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing education for the healthcare team.

Rush University Medical Center designates this live activity for a maximum of 6.0 AMA PRA Category 1 Credit(s)[™]. Physicians should claim only credit commensurate with the extent of their participation in the activity.

ANCC Credit Designation – Nurses

The maximum number of hours awarded for this CE activity is 6.0 contact hours.

This activity is being presented without bias and without commercial support.

Rush University is an approved provider for physical therapy (216.000272), occupational therapy, respiratory therapy, social work (159.001203), nutrition, speech-audiology, and psychology by the Illinois Department of Professional Regulation.

Rush University designates this live activity for 6.0 Continuing Education credit(s).



Exploring Root Causes of Health Inequities in Chicago

Nikhil Prachand, MPH

Director of Epidemiology

Chicago Department of Public Health

Chicago Infection Control Conference

September 18, 2019





EXTRA! MARTIAL LAW WAS DECLARED WEDNESDAY NIGHT IN THE DISTRICT WHERE THE RIOTING HAD BEEN THE WORST, AND SINCE THEN THERE HAS BEEN LITTLE TROUBLE EXTRA

Stay Off the Streets,
Let the Law Settle It

THE Chicago Defender

WORLD'S GREATEST WEEKLY

Foolish Talk Is No
Good Now. Stop It.

VOL. XIV NO. 31 SATURDAY CHICAGO, AUGUST 2, 1919 SATURDAY PRICE FIVE CENTS

RIOT SWEEPS CHICAGO

GHASTLY DEEDS OF RACE RIOTERS TOLD

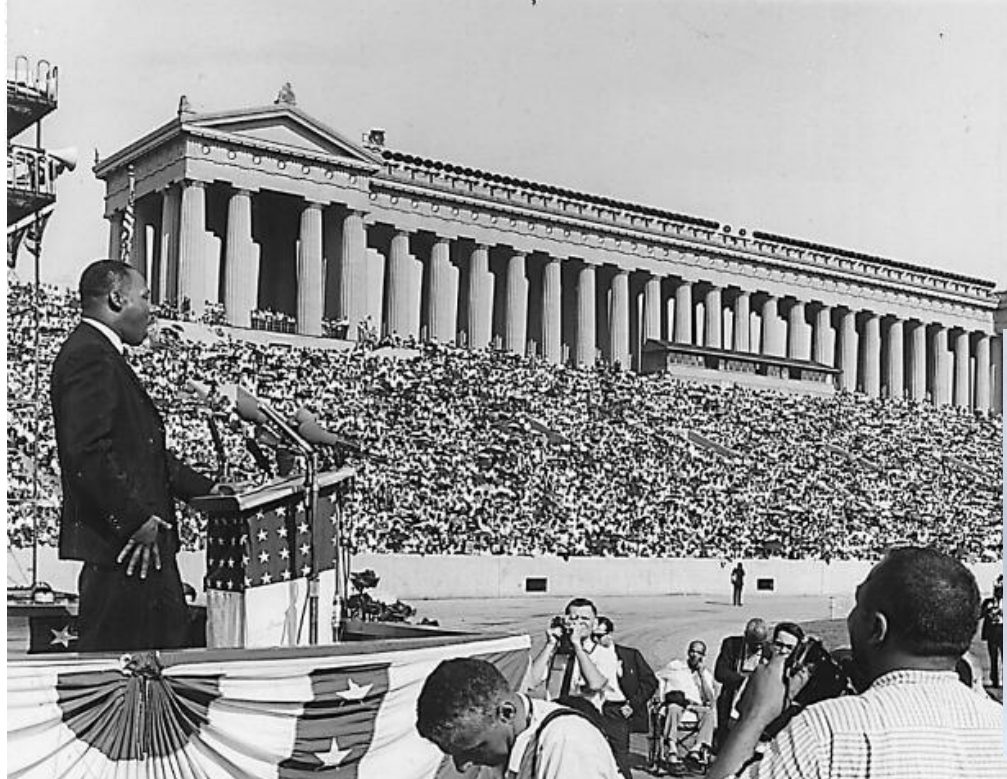
Defender Reporter Faces Death in Attempt to Get Facts of

LIST OF SLAIN IN FOUR DAYS' RIOTING

The complete list of the dead as a result of the four days of rioting in Chicago is given below. The names of those slain are given in full, with their names, and the names of those who were killed in the rioting.

Gun Battles and Fighting in Streets Keep the City in an Uproar

French Give Opinion of Riot 4,000 Troops in Armory-Ready to Patrol City; Scores Are Killed



The rioting was caused by the... (text is partially obscured and difficult to read)

THE BATTLE OF LINCOLN PARK

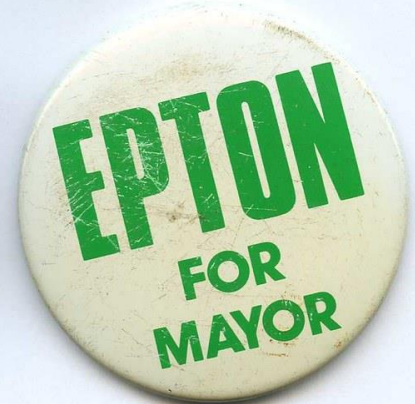
Urban Renewal and Gentrification in Chicago

DANIEL KAY HERTZ

4+1'S = TOMORROWS SLUMS

PRESERVE OUR NEIGHBORHOODS

Victory



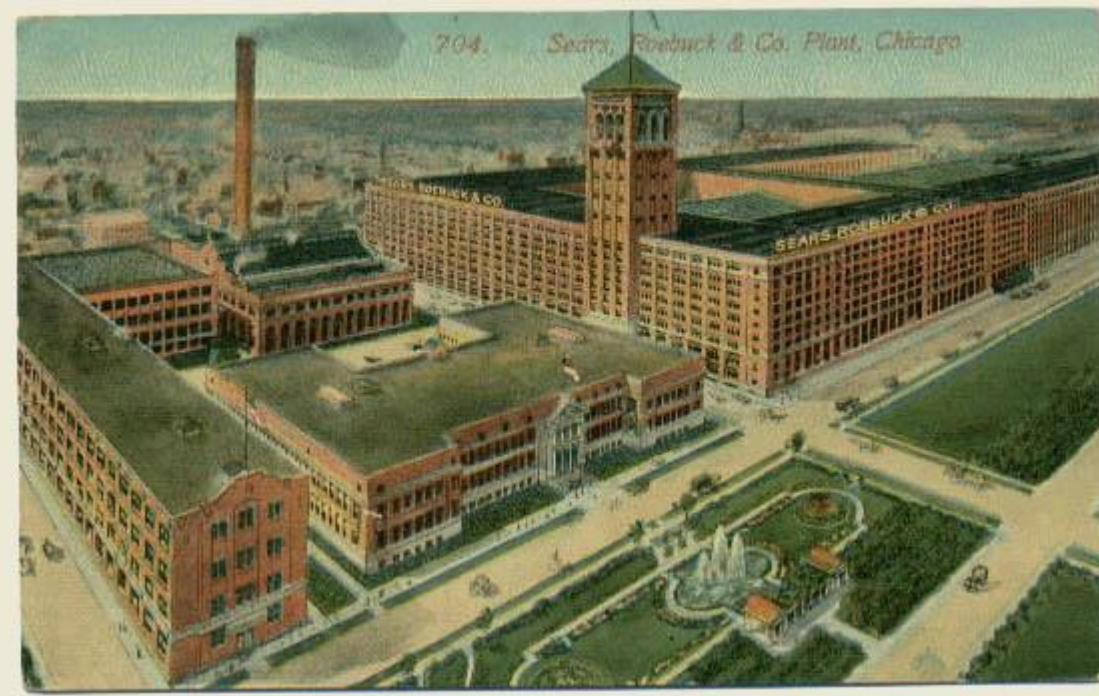
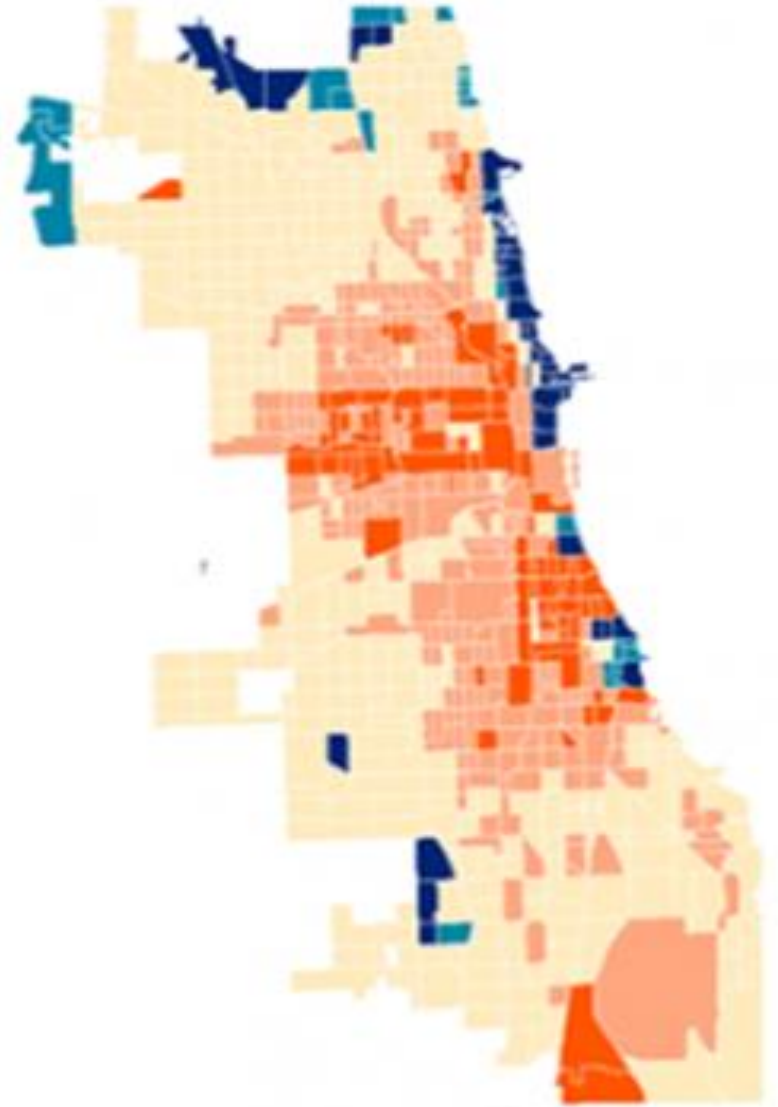
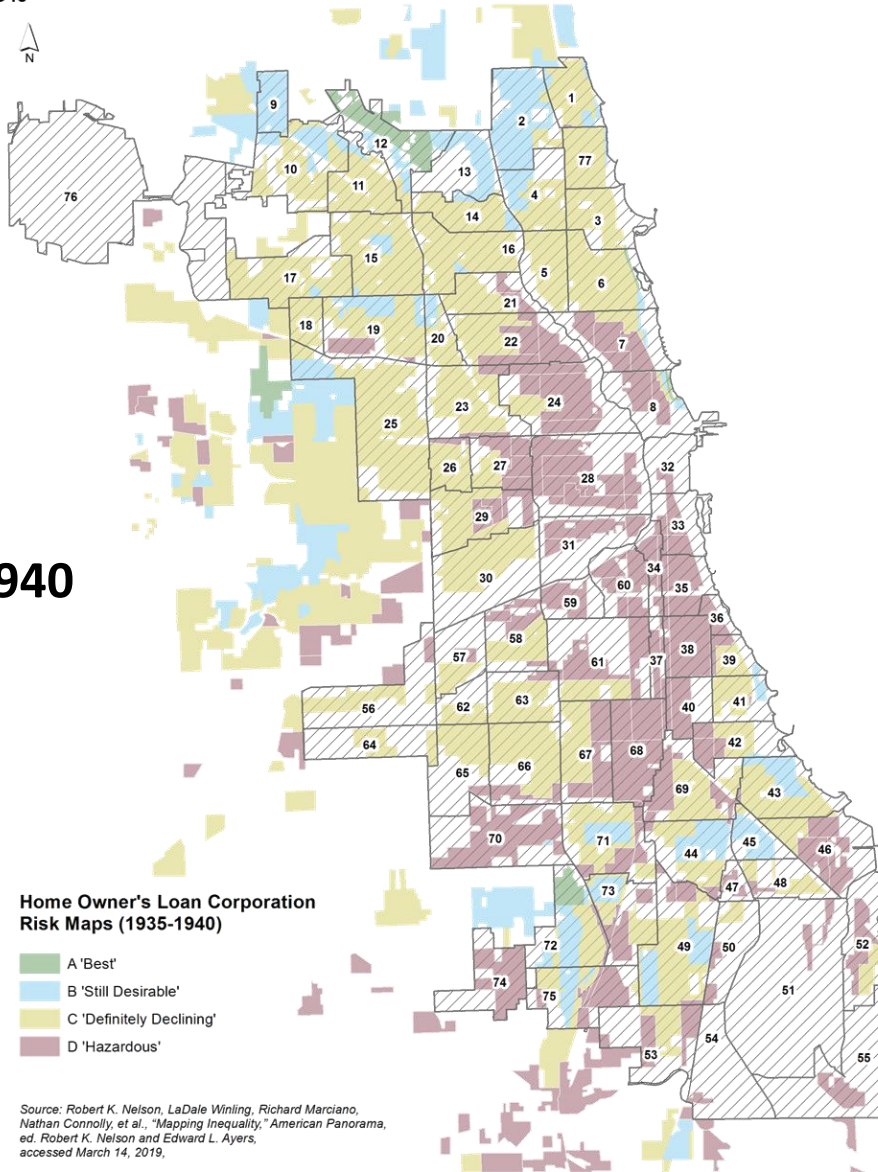


FIGURE ###. HISTORICAL HOME OWNER'S LOAN CORPORATION (HOLC) RISK MAP (E.G., REDLINING), CHICAGO, 1935-1940

1940

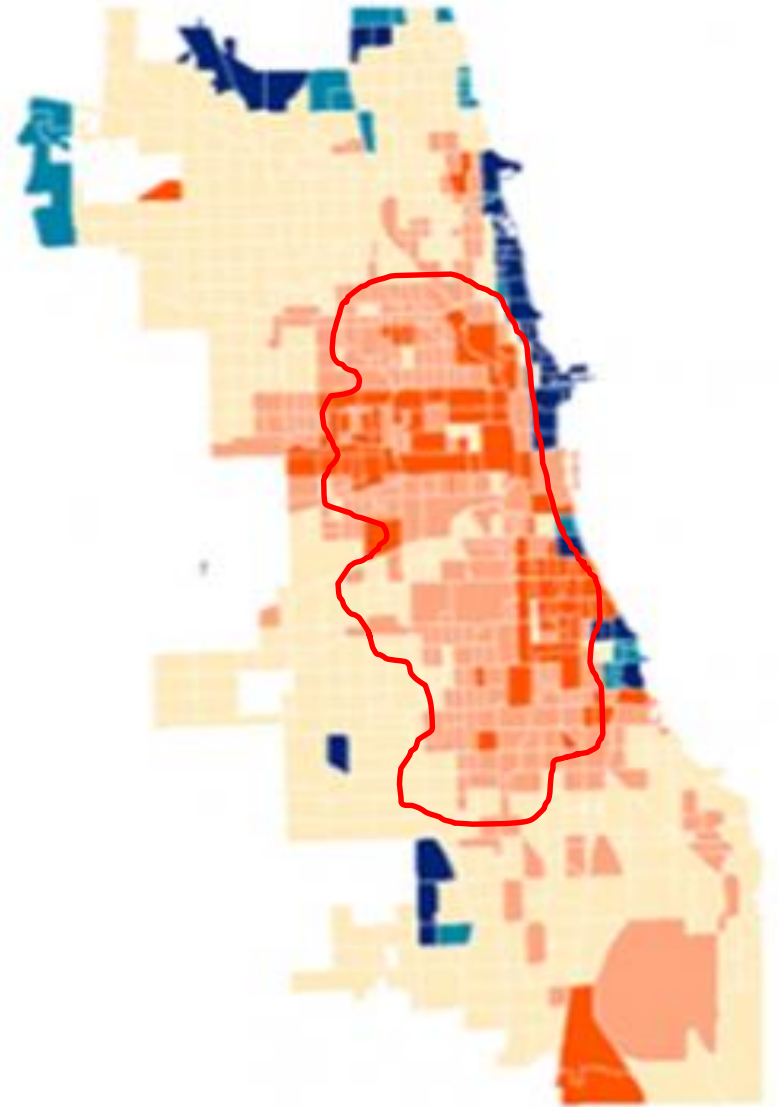
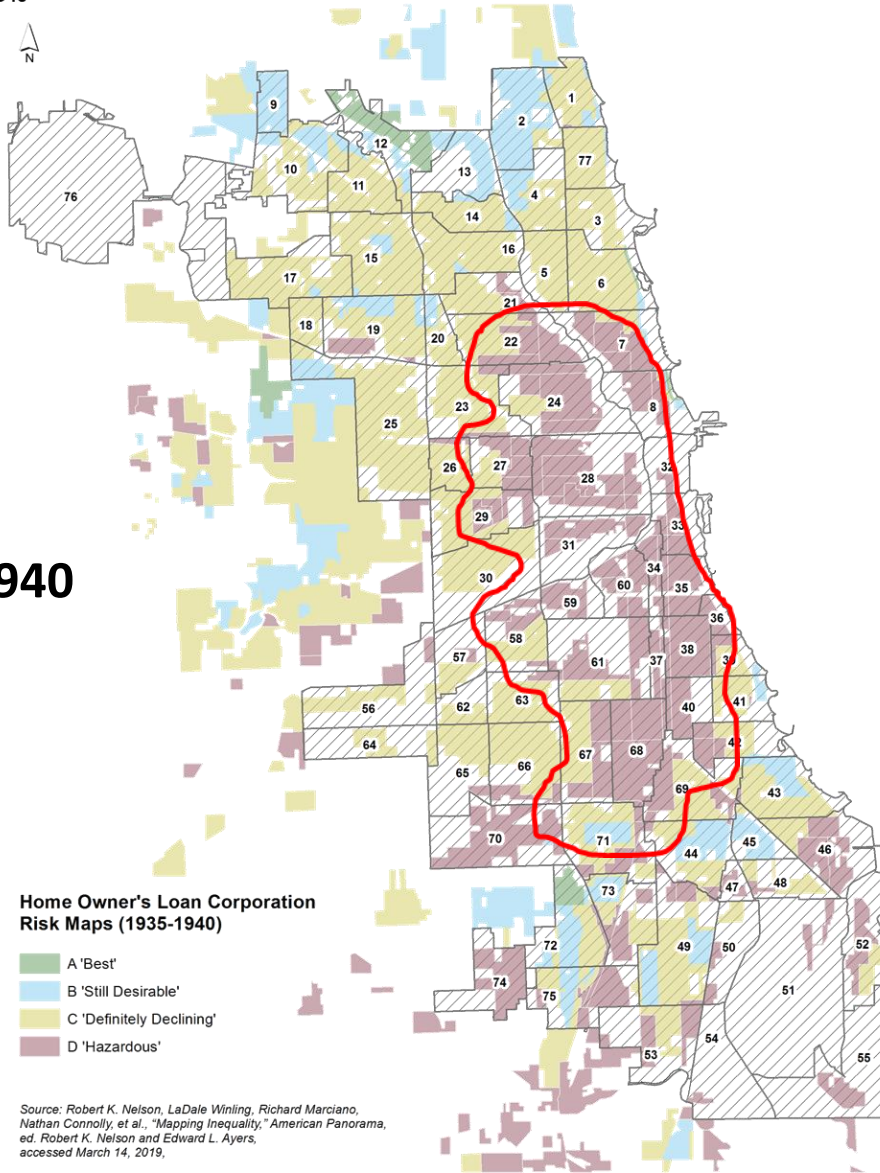


1970

Source: Robert K. Nelson, LaDale Winling, Richard Marciano, Nathan Connolly, et al. "Mapping Inequality," American Panorama, ed. Robert K. Nelson and Edward L. Ayers. Accessed March 14, 2019.

FIGURE ###. HISTORICAL HOME OWNER'S LOAN CORPORATION (HOLC) RISK MAP (E.G., REDLINING), CHICAGO, 1935-1940

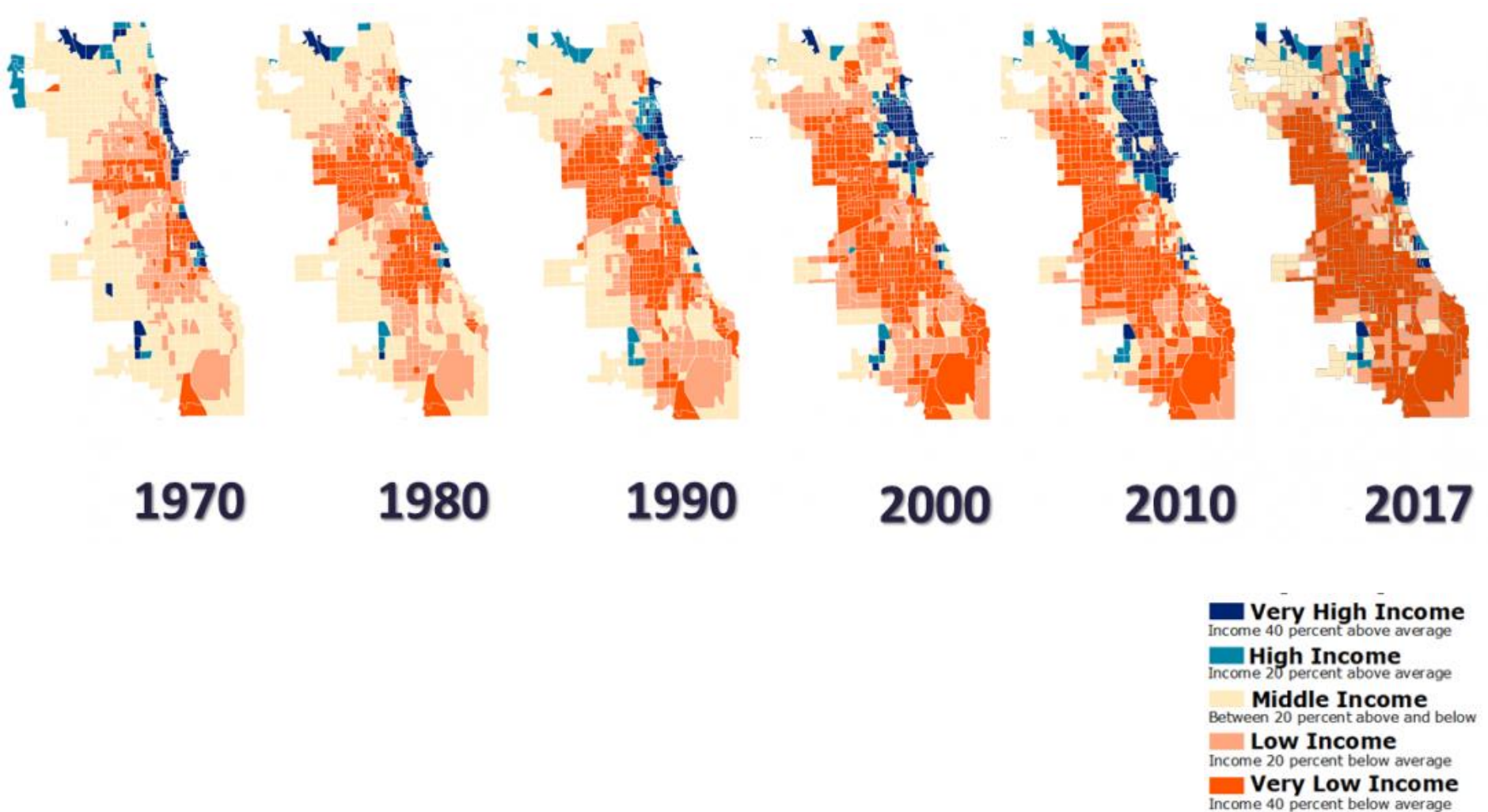
1940



1970

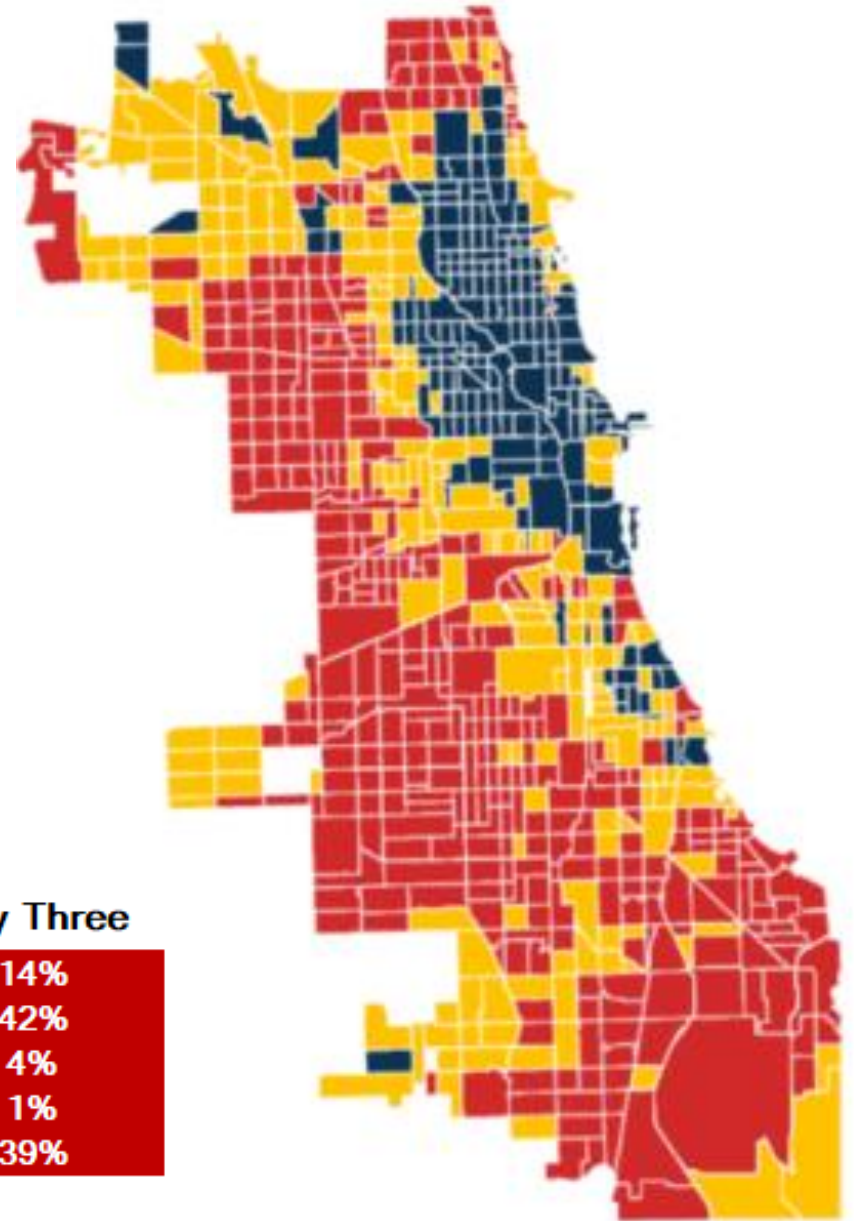
Source: Robert K. Nelson, LaDale Winling, Richard Marciano, Nathan Connolly, et al. "Mapping Inequality," American Panorama, ed. Robert K. Nelson and Edward L. Ayers. Accessed March 14, 2019.

Changes in Wealth and Poverty



Source: Nathalie P. Voorhees Center for Neighborhood and Community Improvement, University of Illinois at Chicago

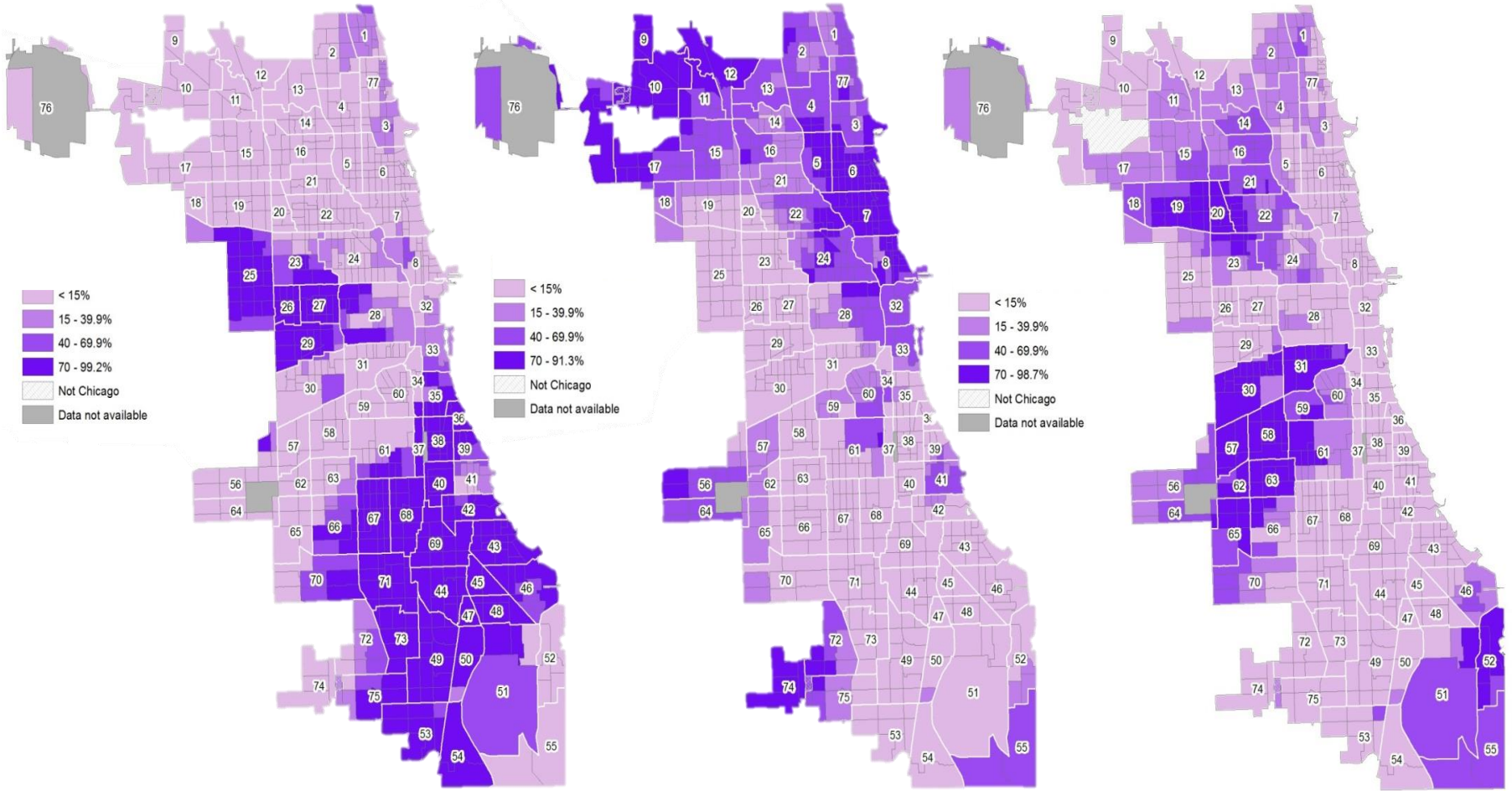
Income x Race (2017)



	City One	City Two	City Three
White	64%	42%	14%
Black or African American	13%	24%	42%
Asian	8%	7%	4%
All Other	3%	2%	1%
Latinx (all races)	13%	25%	39%

Source: The Voorhees Center for Neighborhood and Community Improvement

Racial/ethnic segregation in Chicago



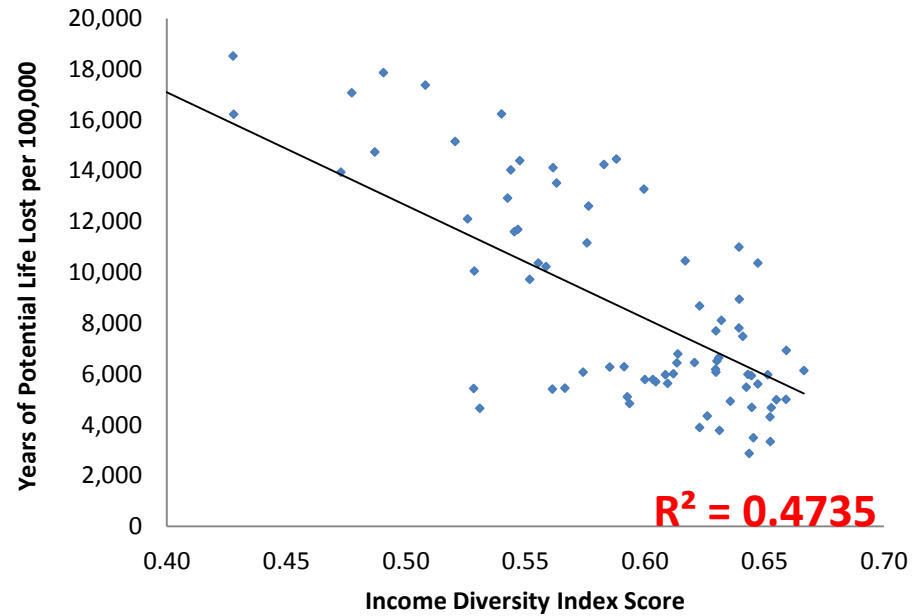
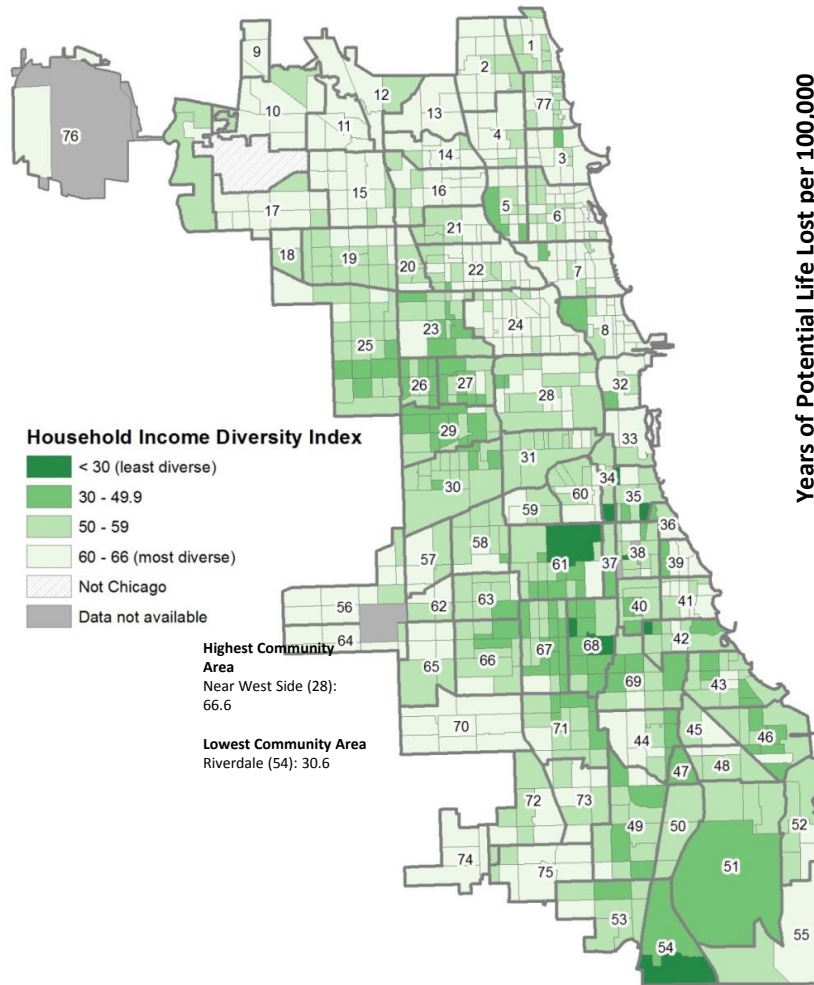
Black, non-Hispanic

White, non-Hispanic

Hispanic

Data Source: CDPH Office of Epidemiology, US Census Bureau

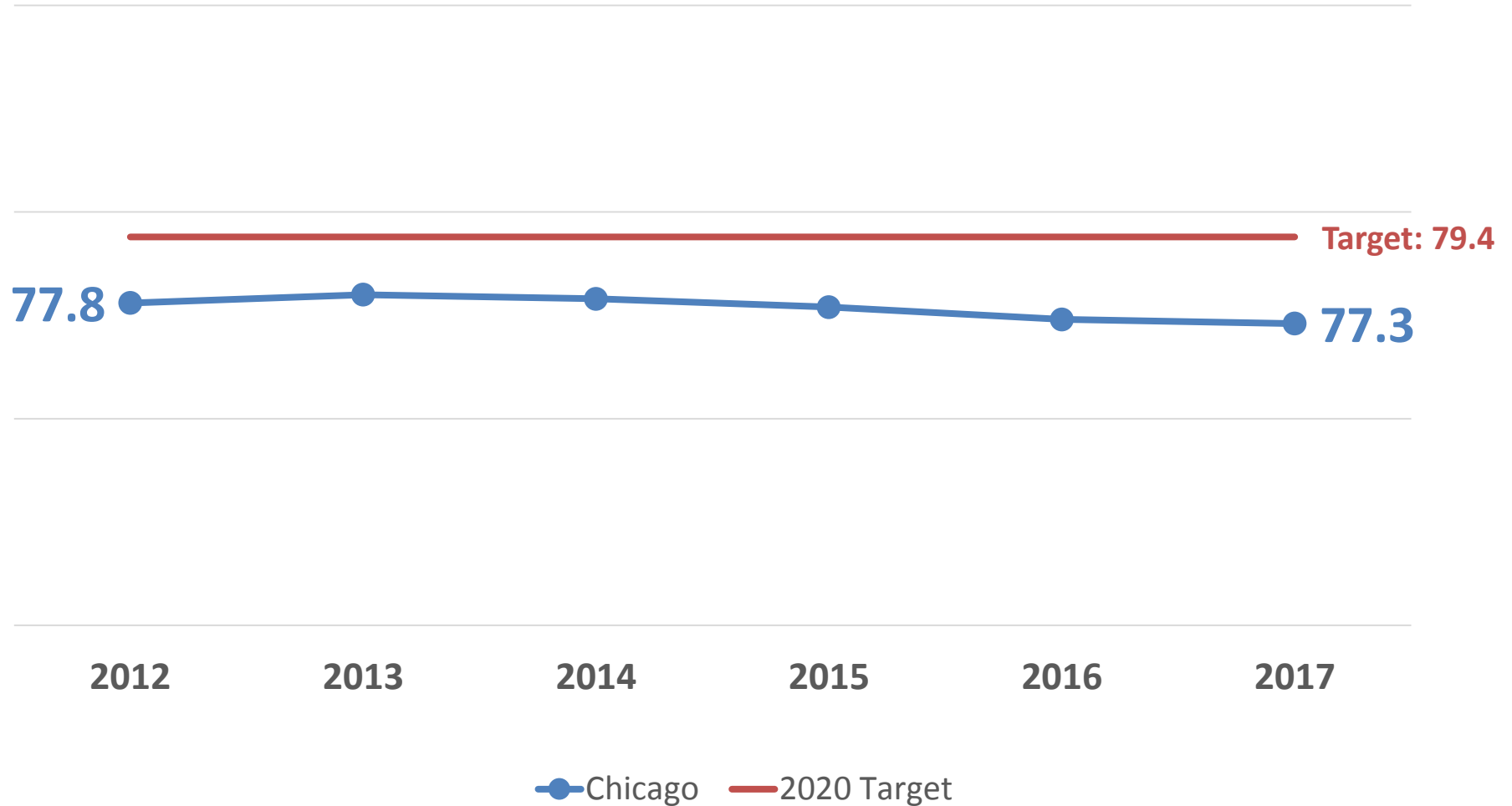
Segregation -> Economic isolation -> Early Death



Communities with more income diversity have less premature mortality.

Life expectancy in Chicago has decreased

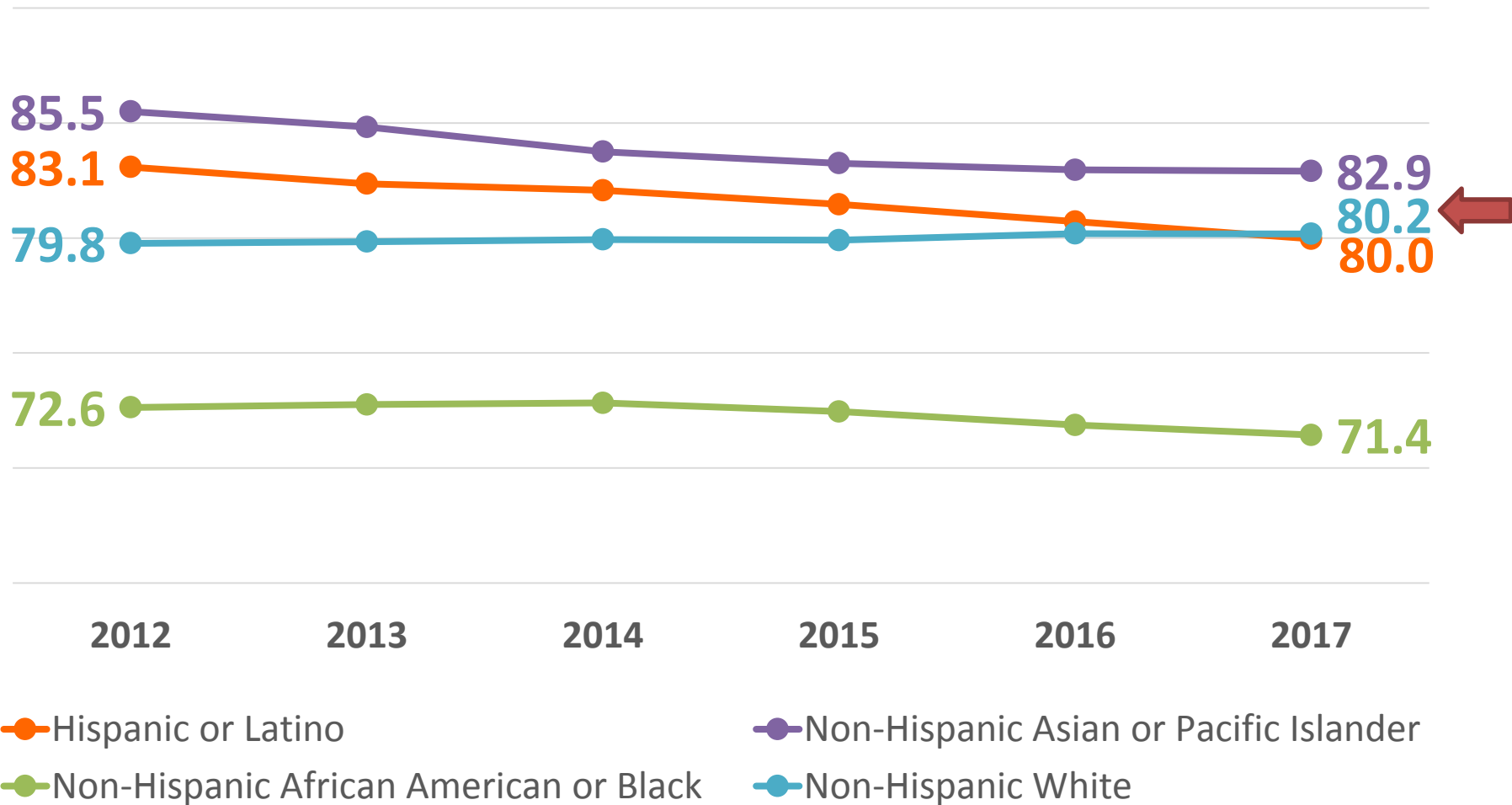
Life expectancy has decreased by 0.5 years since 2012.



Sources: Illinois Department of Public Health, Division of Vital Records, Death Certificate Data Files; US Census Bureau

Life Expectancy by Race-Ethnicity

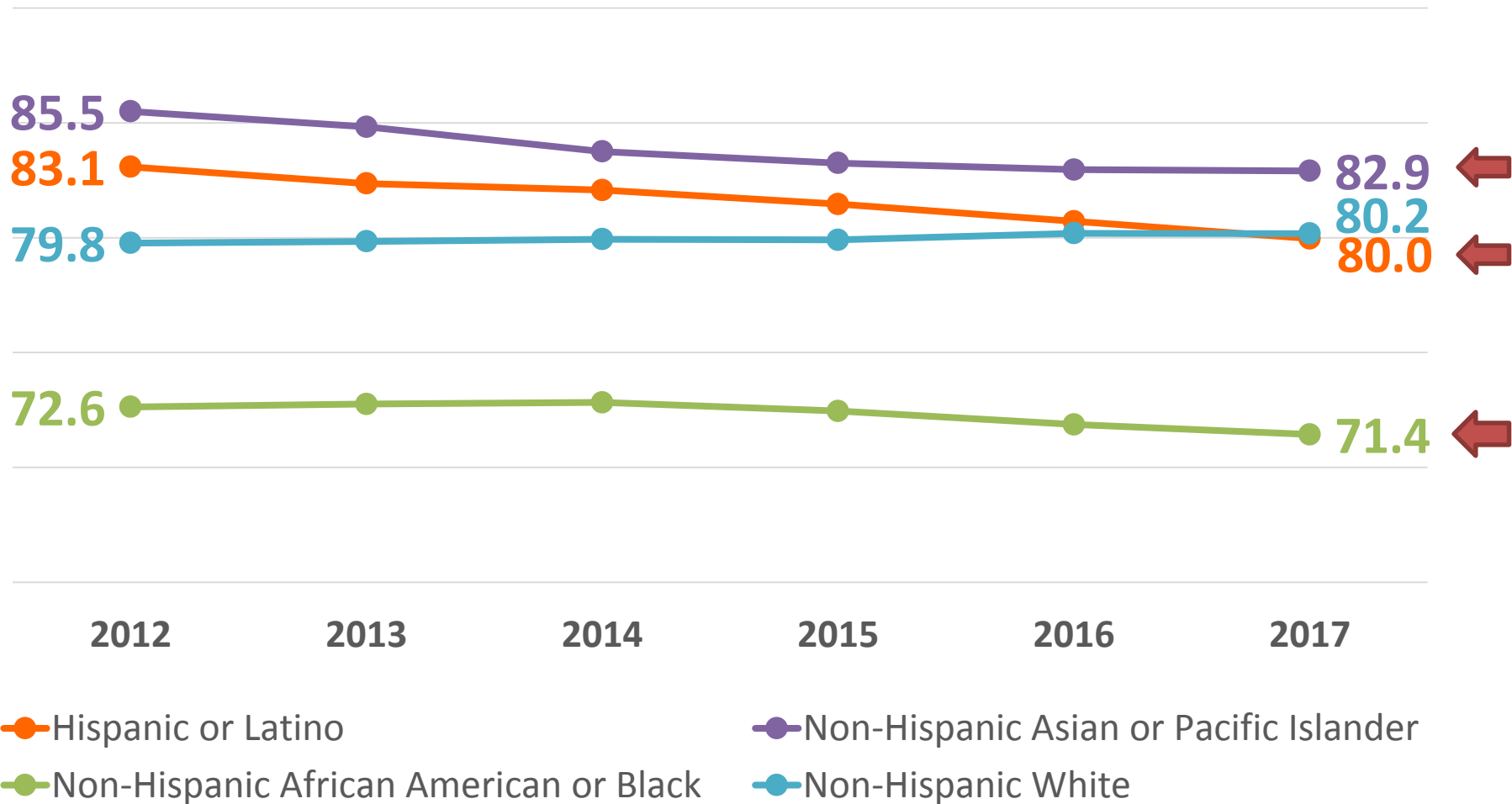
The life expectancy gap between NH Black and NH white has increased 22% to 8.8 years
For the first time, Latino life expectancy is below NH white life expectancy



Sources: Illinois Department of Public Health, Division of Vital Records, Death Certificate Data Files; US Census Bureau

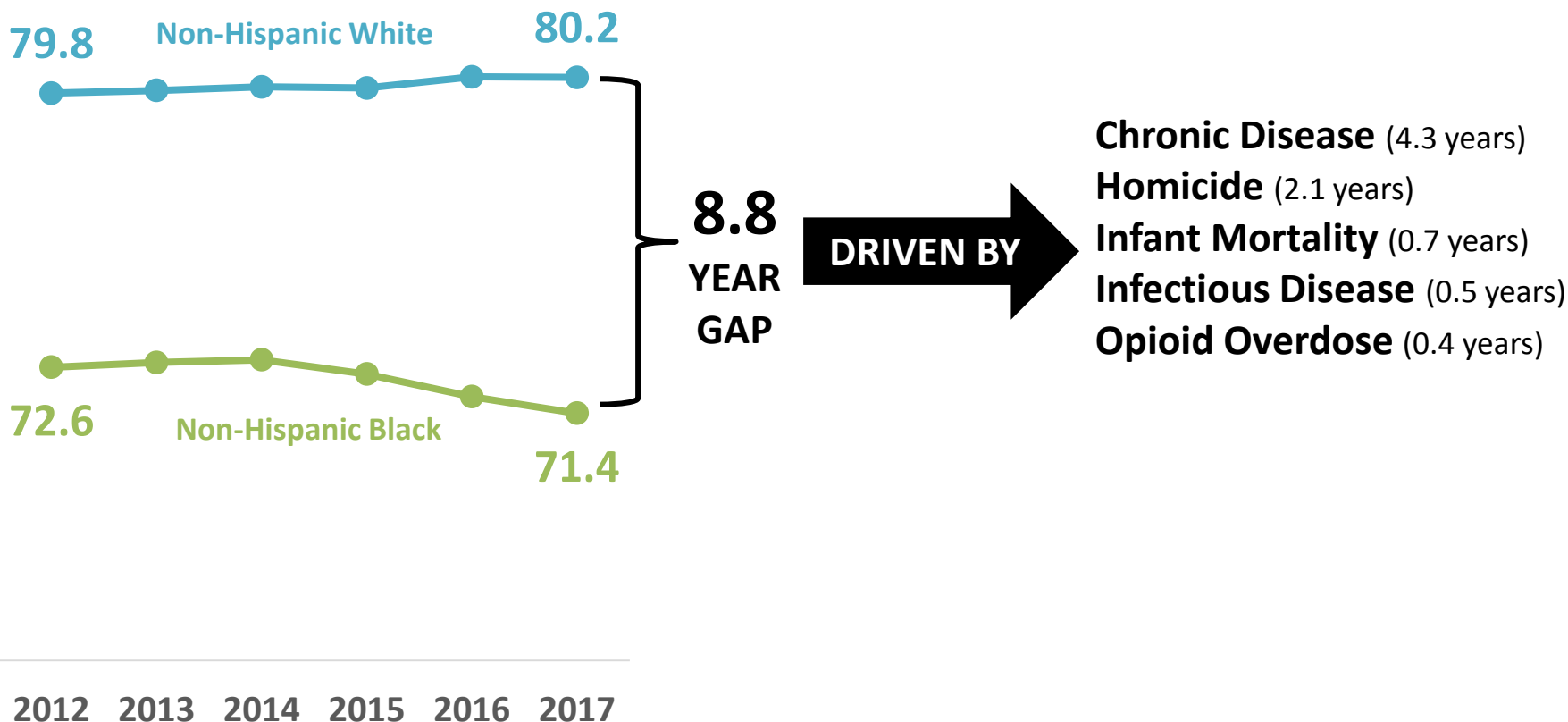
Life Expectancy by Race-Ethnicity

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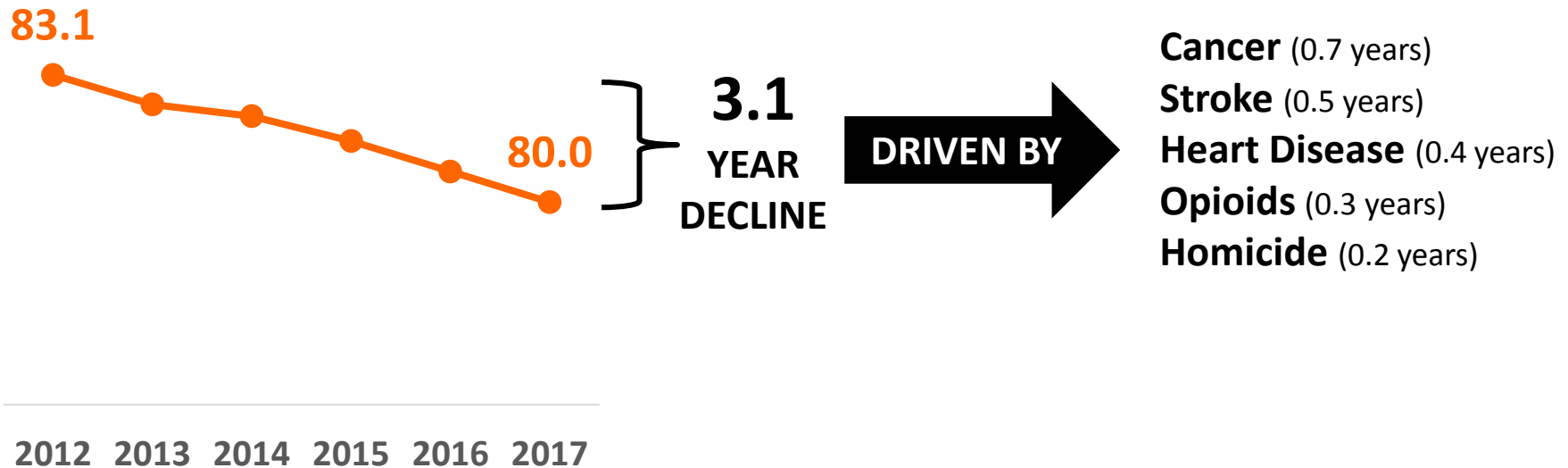
Sources: Illinois Department of Public Health, Division of Vital Records, Death Certificate Data Files; US Census Bureau

What is driving the life expectancy gap between non-Hispanic blacks and whites?



Sources: Illinois Department of Public Health, Division of Vital Records, Death Certificate Data Files; US Census Bureau

What is driving the life expectancy decline among Latinx?



Sources: Illinois Department of Public Health, Division of Vital Records, Death Certificate Data Files; US Census Bureau

What's driving the gap in life expectancy ?

Increasing rates of:

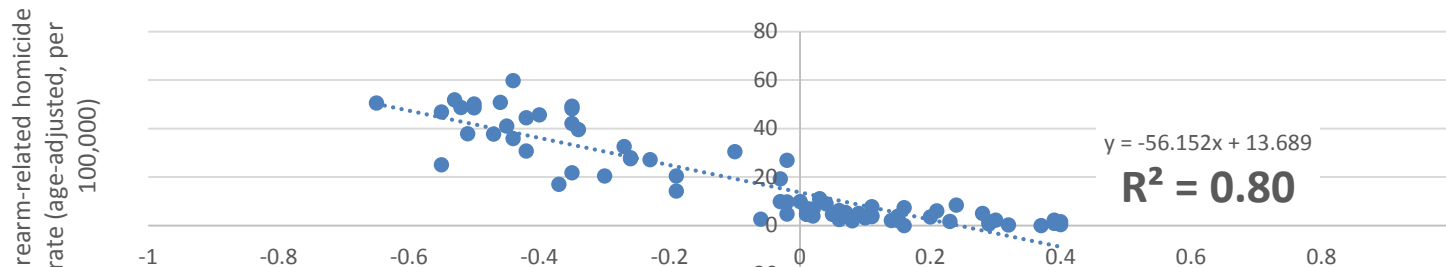
- Adult Obesity
- Gun-related homicide
- Infant mortality
- Opioid overdose

Worsening inequities in:

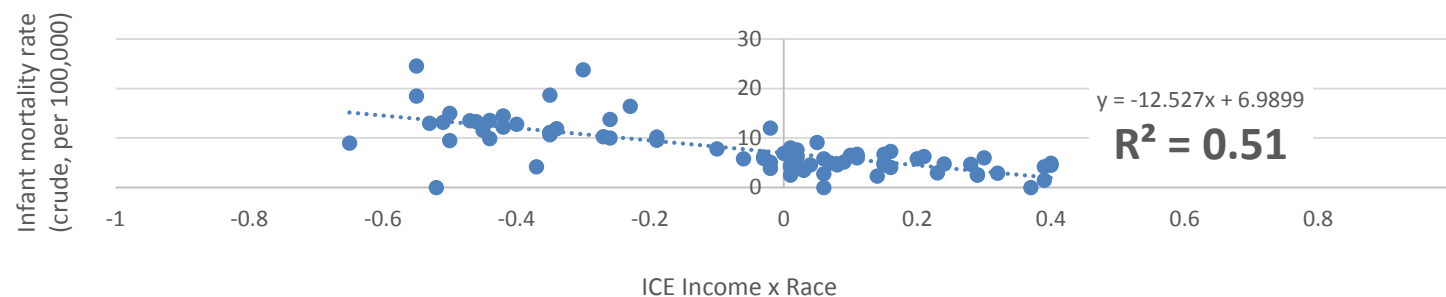
- Cancer
- Heart Disease
- Diabetes
- Stroke
- HIV Mortality

Residential Segregation

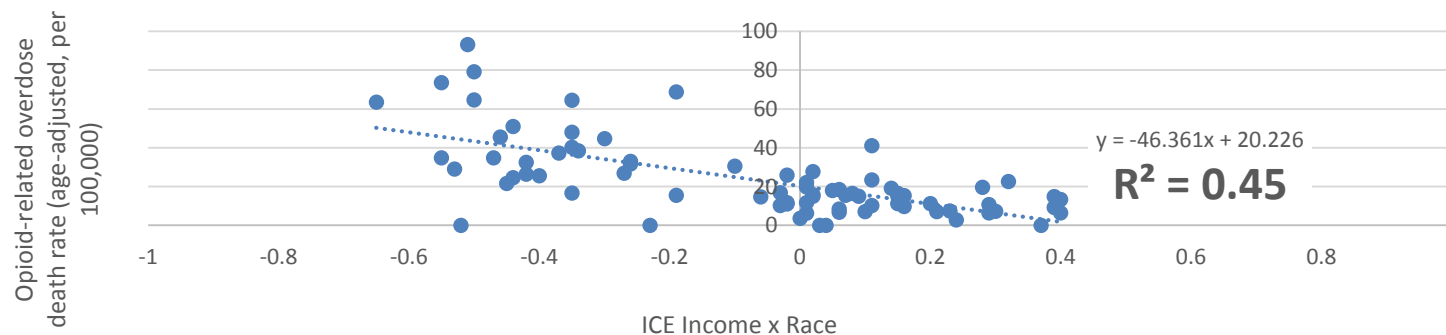
Residential segregation and gun-related homicide



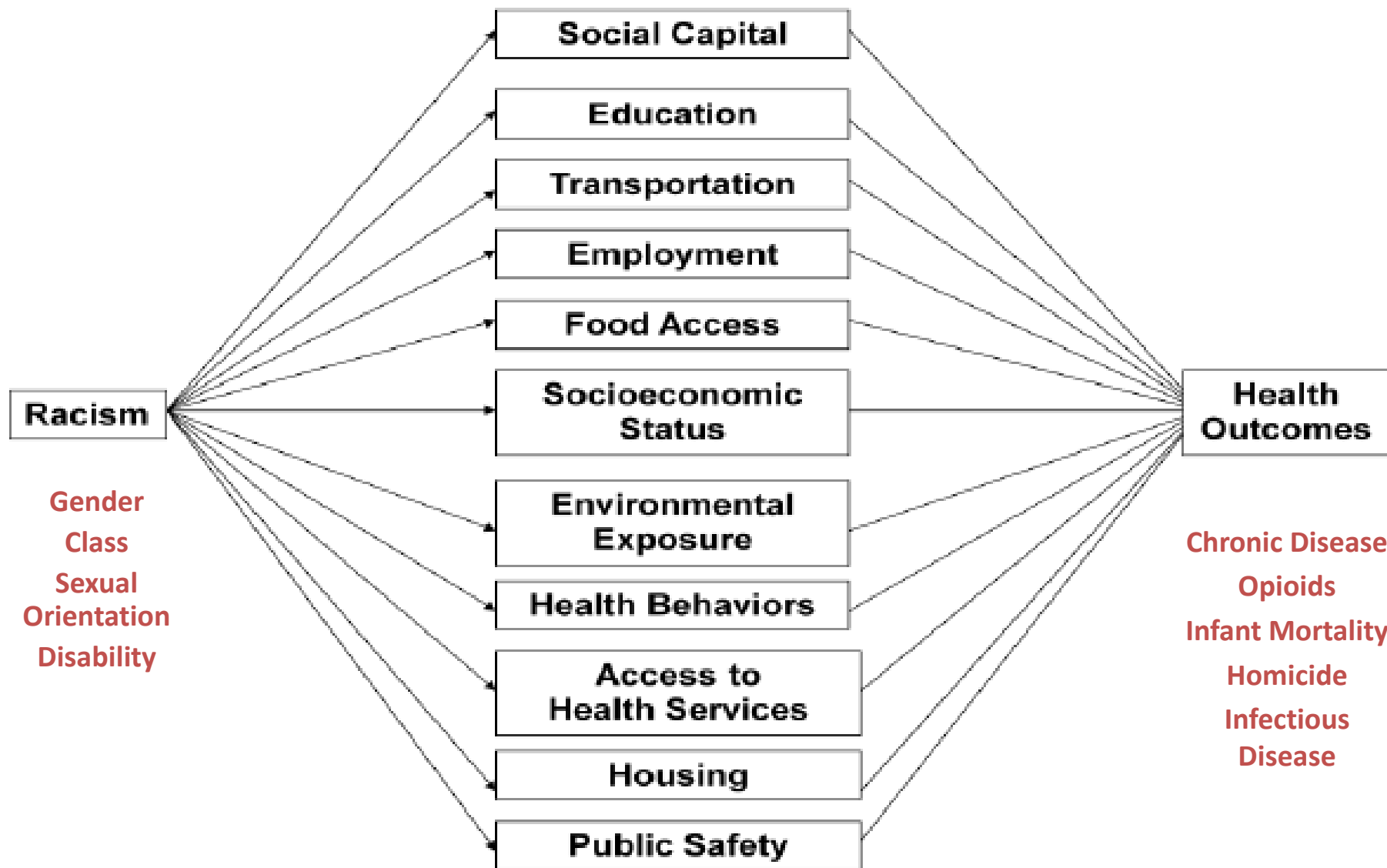
Residential segregation and infant mortality



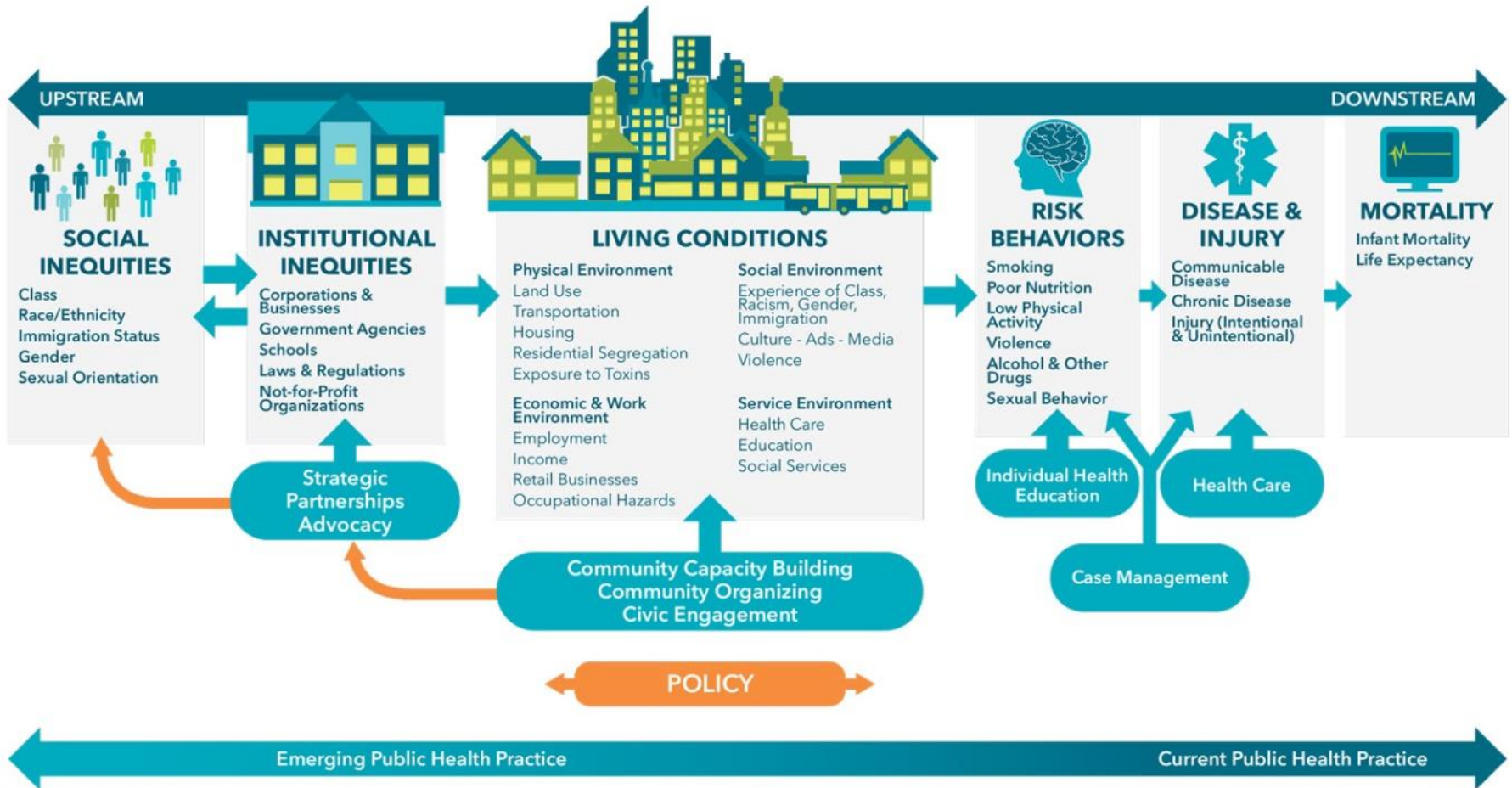
Residential segregation and opioid overdose



Data Source: CDPH Office of Epidemiology, IDPH Vital Statistics Division, US Census Bureau



Healthy Chicago 2025



17-year gap in life expectancy

CAEs with the highest life expectancy:

Edison Park = 83 years

Hyde Park = 83 years

Forest Glen = 83 years

Near North Side = 82 years

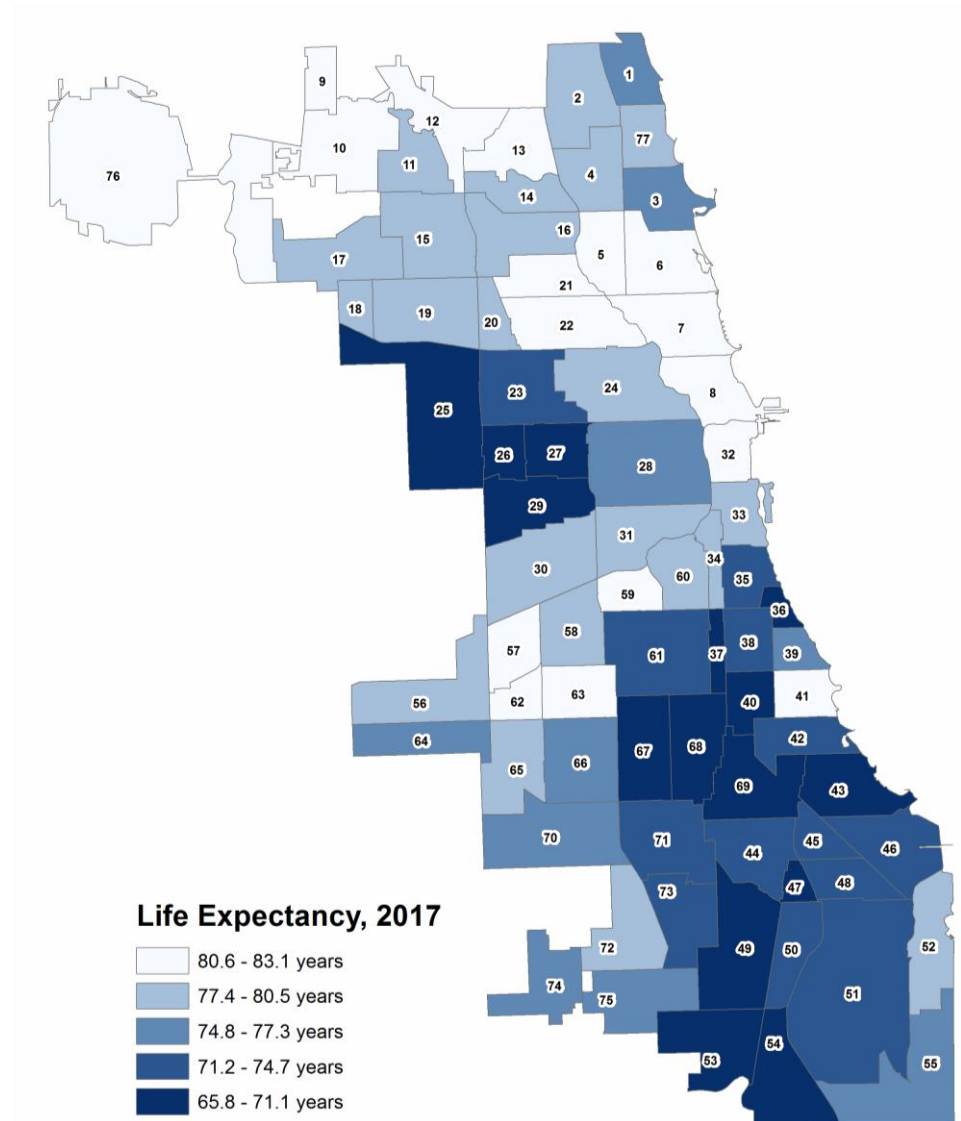
CAEs with the lowest life expectancy:

West Garfield Park = 69 years

North Lawndale = 68 years

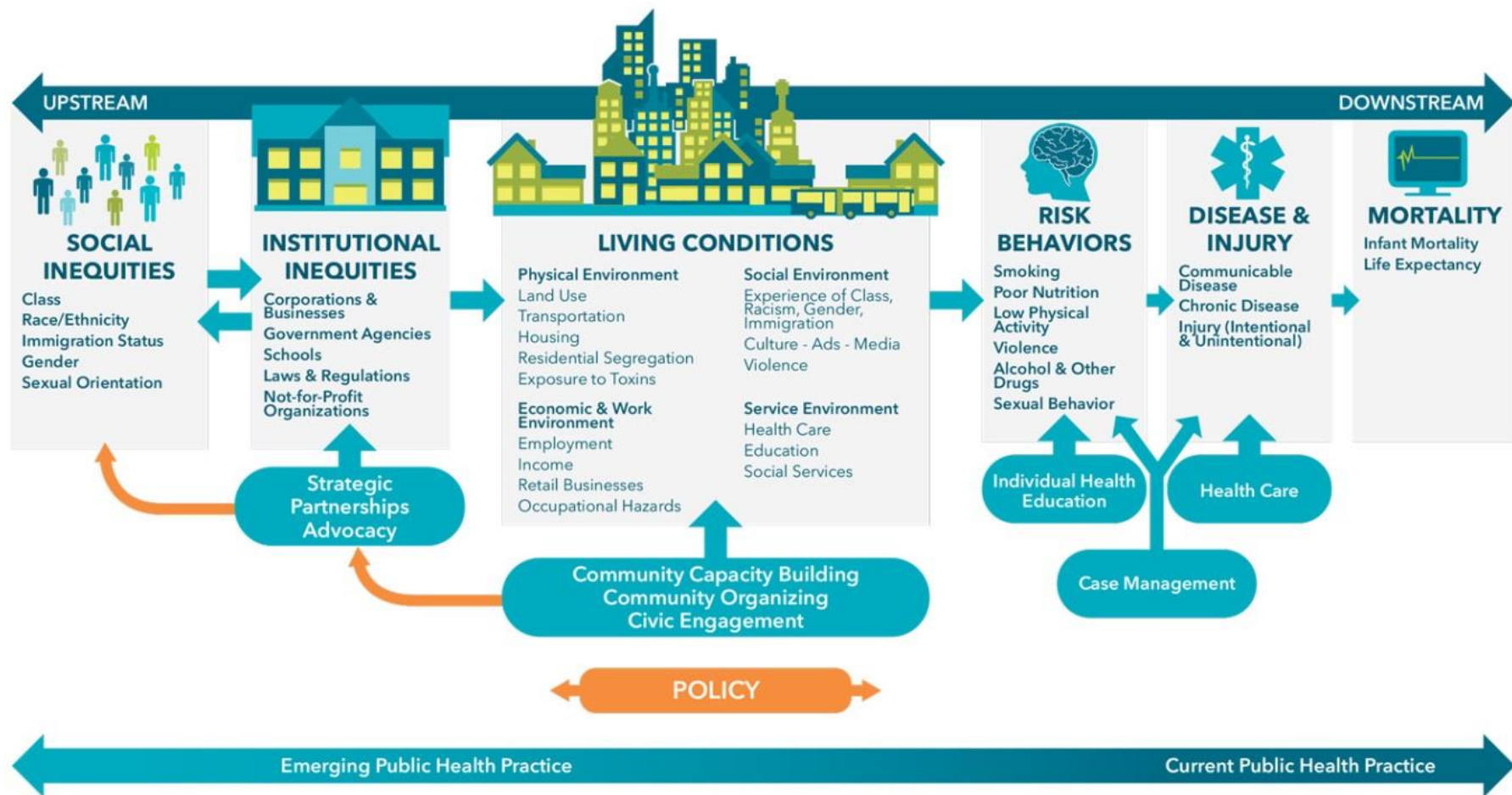
East Garfield Park = 68 years

Fuller Park = 66 years



Sources: Illinois Department of Public Health, Division of Vital Records, Death Certificate Data Files; US Census Bureau

Do our neighborhoods have equitable access to resources, opportunities, and environments that promote optimal health and well-being?



How does the physical environment affect health?

- Our neighborhoods and how they are built/designed provide a foundation for healthy living
- Our everyday environments affect our physical, mental, and social well-being through:
 - Safe public spaces
 - Transportation
 - Housing
 - Exposure to pollution

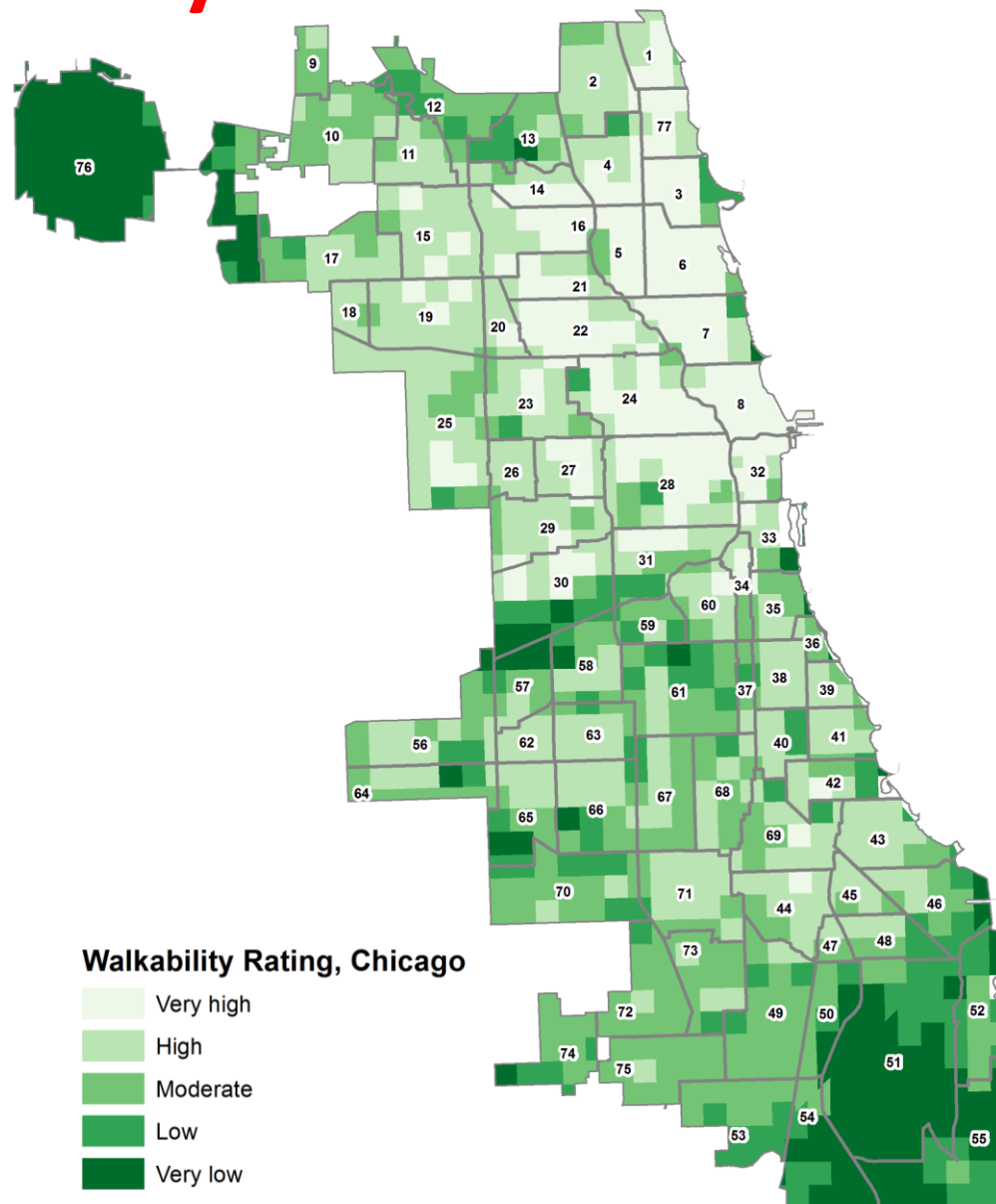
Land Use and Transportation



PHYSICAL ENVIRONMENT

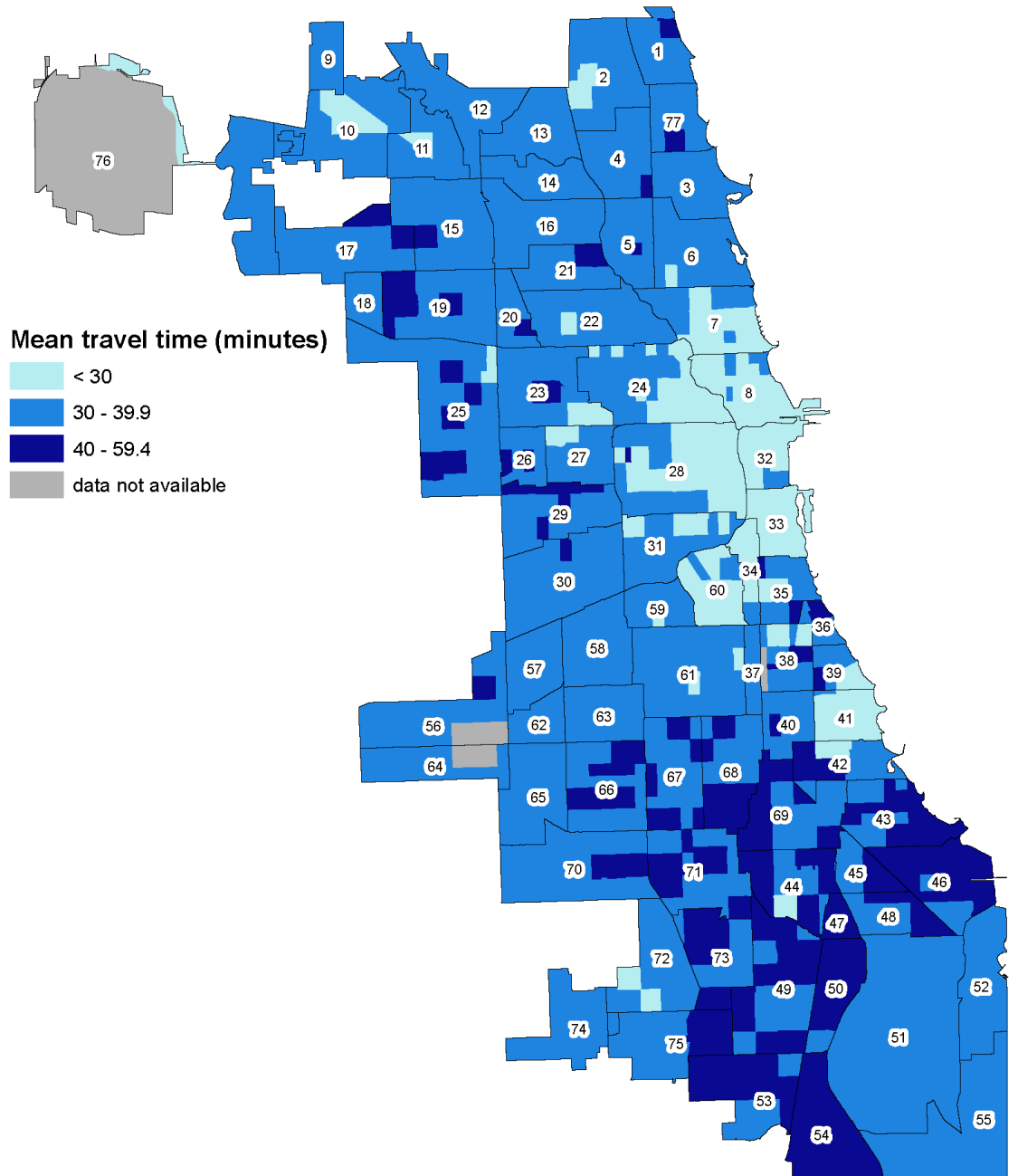
Neighborhood walkability

A trip is “walkable” if it is useful (has a purpose), feels safe, comfortable and interesting.



Source: Chicago Metropolitan Agency for Planning, 2017

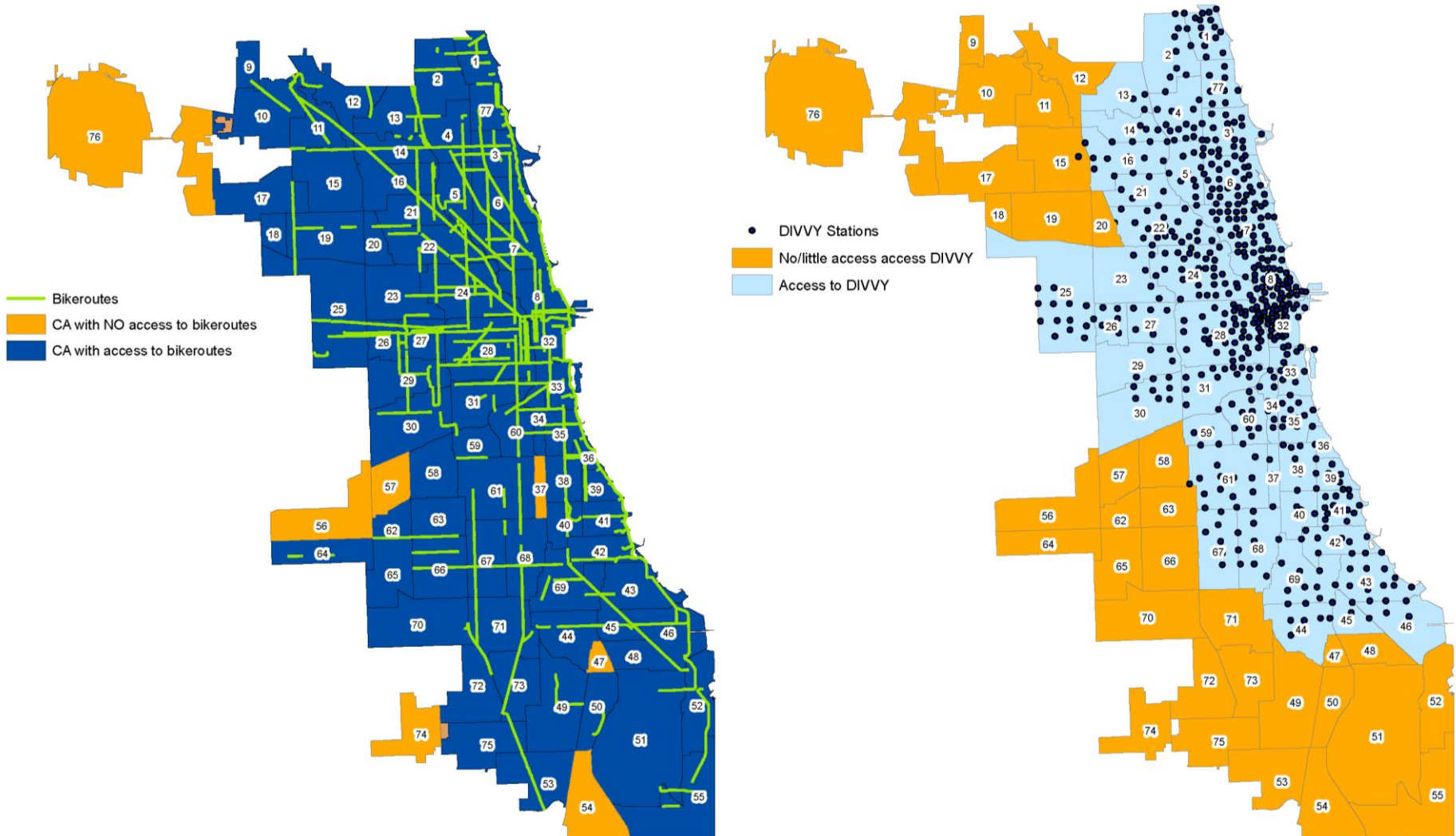
Commuting



Source: US Census, ACS 2013-2017

Bicycling

Access to DIVVY stations and bike routes are not equitably distributed.



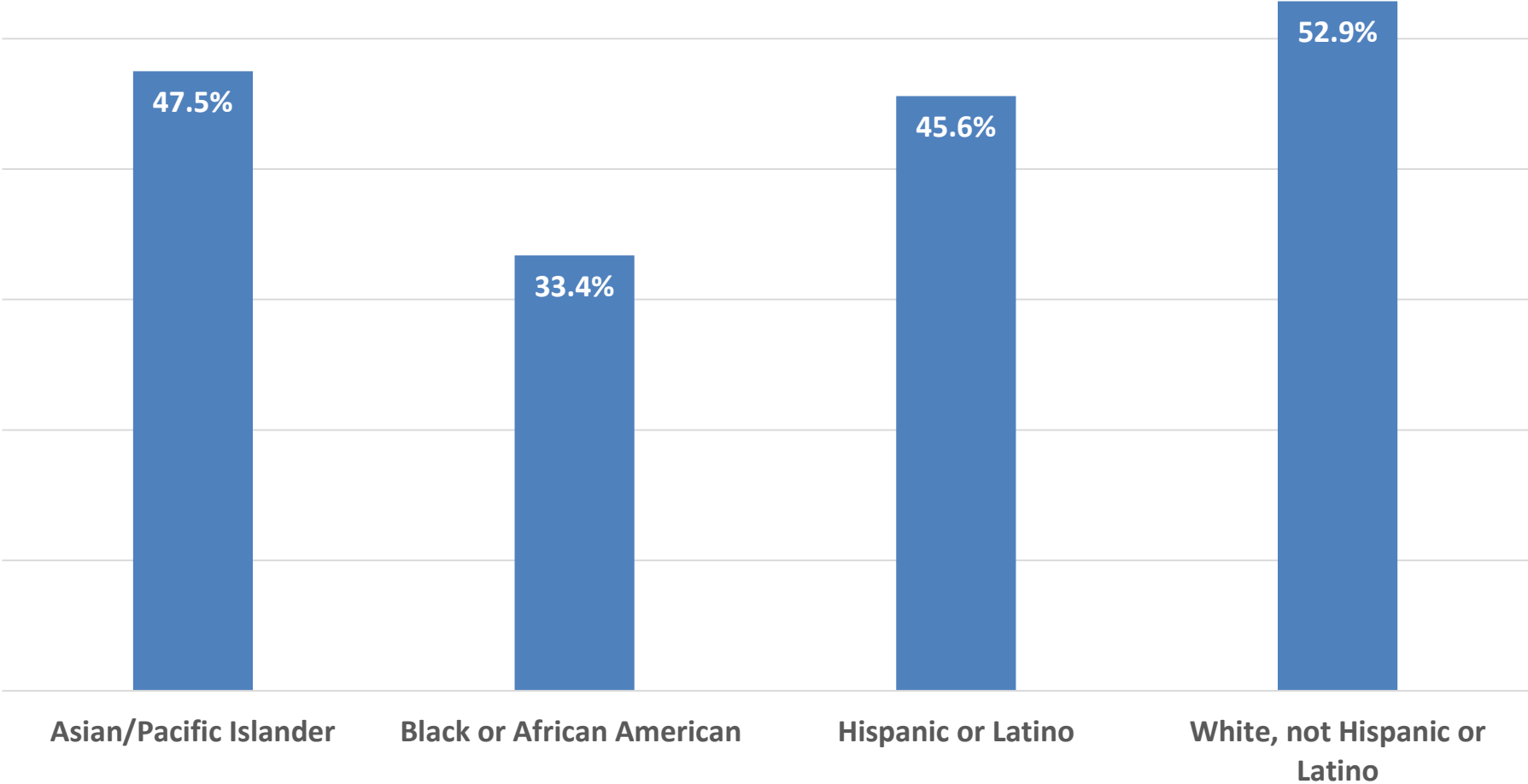
Source: DIVVY, Chicago Department of Transportation

Housing



PHYSICAL ENVIRONMENT

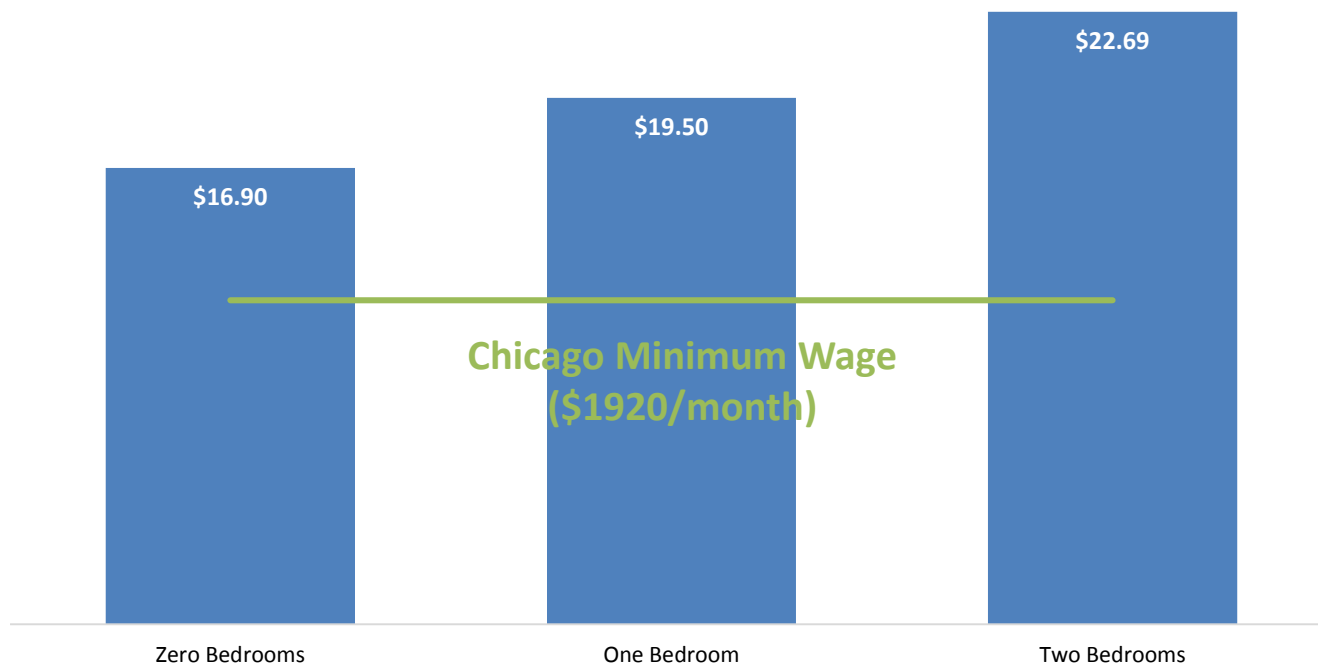
Home ownership is a primary source of wealth



Source: US Census Bureau, American Community Survey

Affordable Housing Gap is Growing

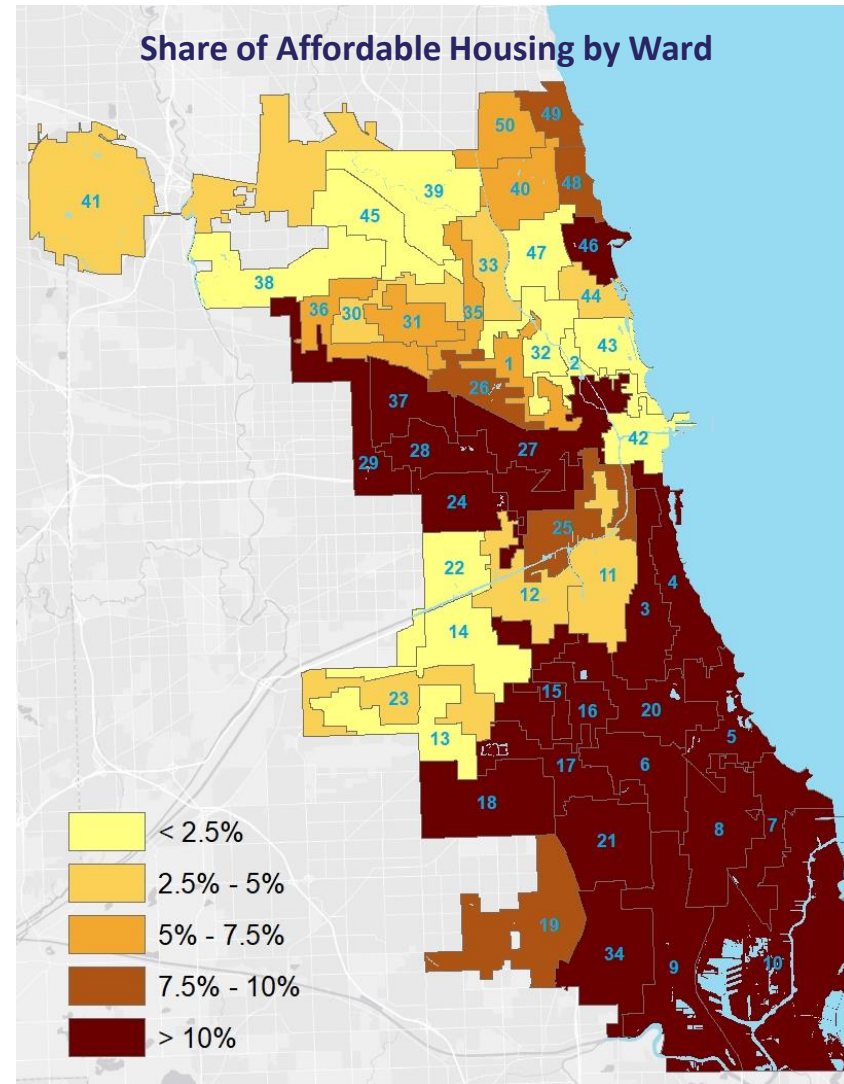
There is a ***persistent widening gap*** in affordable housing in Chicago. There is currently a need for 120,000 additional units of affordable housing.



Sources: Institute for Housing Studies at DePaul University; US Census Bureau , American Community Survey

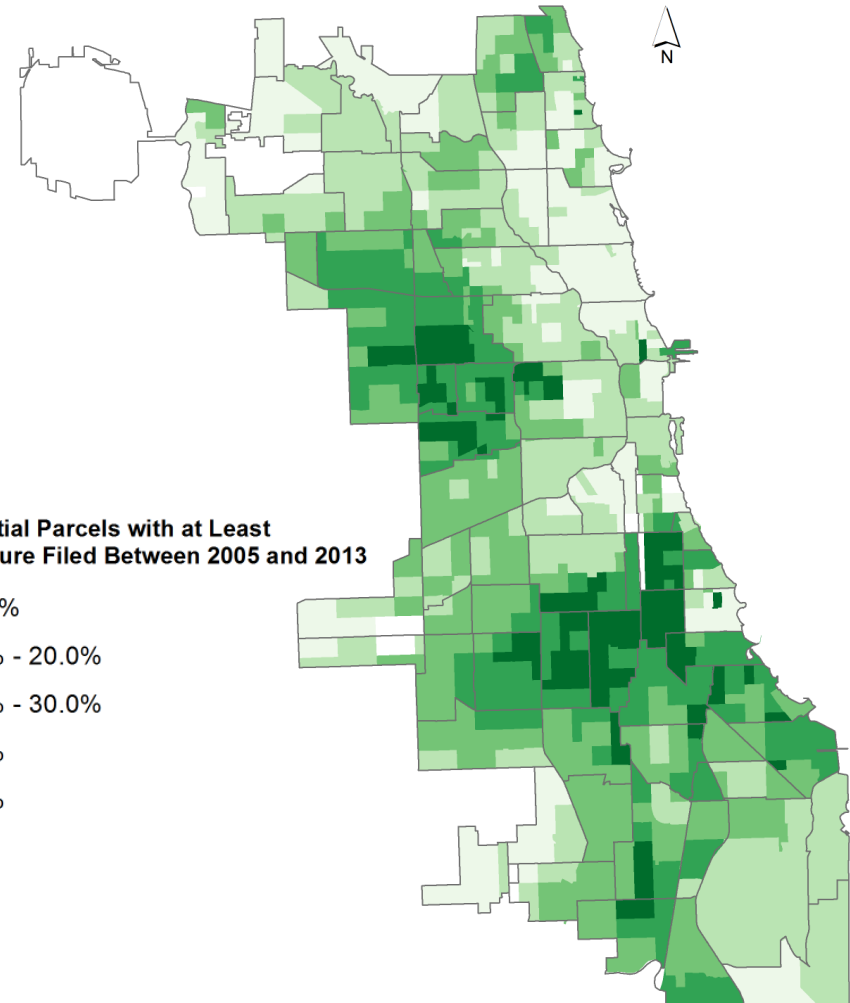
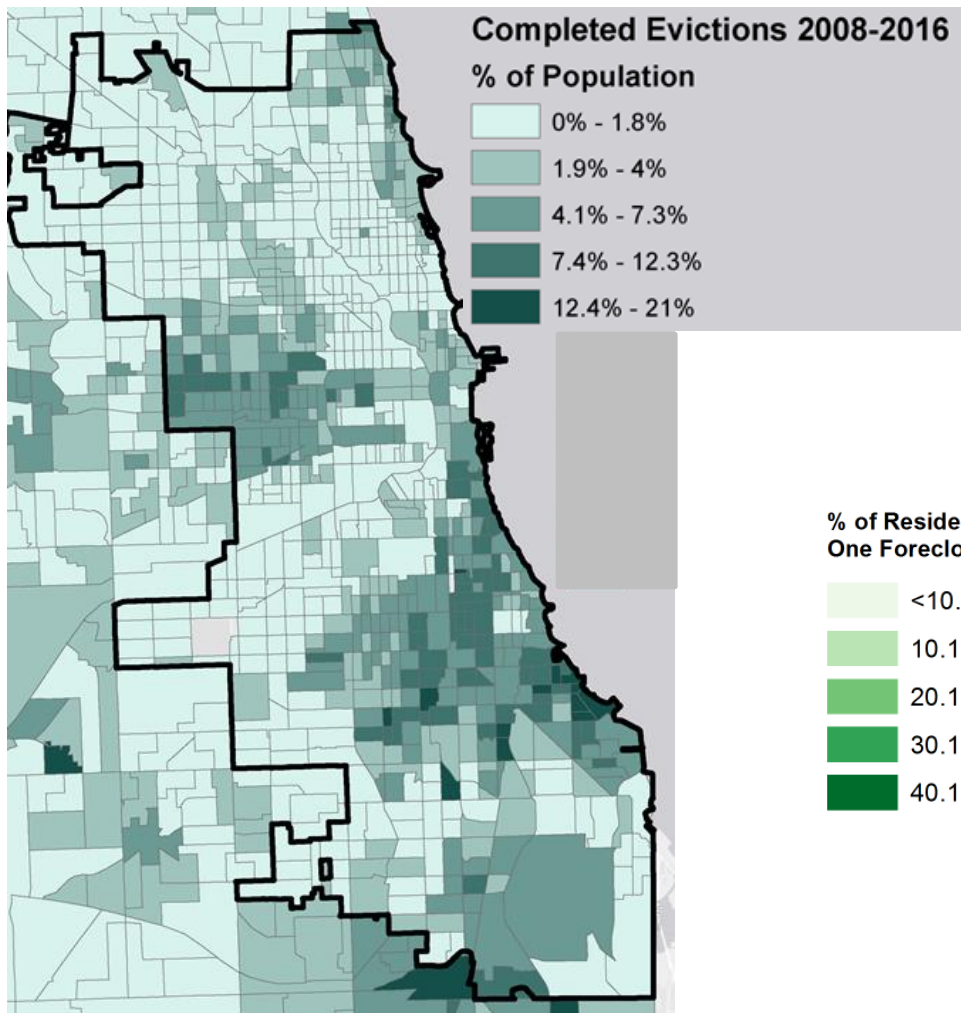
Affordable housing is not available everywhere

This means that those who need affordable housing are restricted to living in only a few neighborhoods in Chicago.



Source: Metropolitan Planning Council, based on third-party analysis

Neighborhoods have been disproportionately impacted by eviction and foreclosure

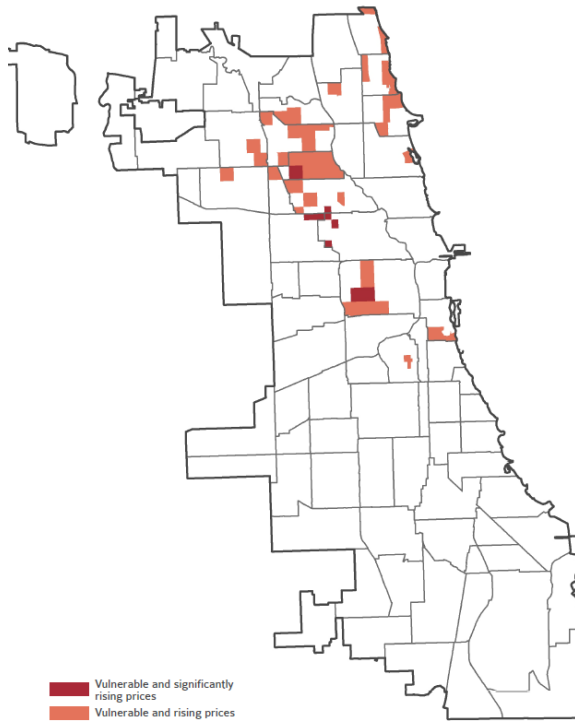


Sources: Metropolitan Planning Council, based on data from Eviction Lab; Institute for Housing Studies at DePaul University

Who's being displaced and why?

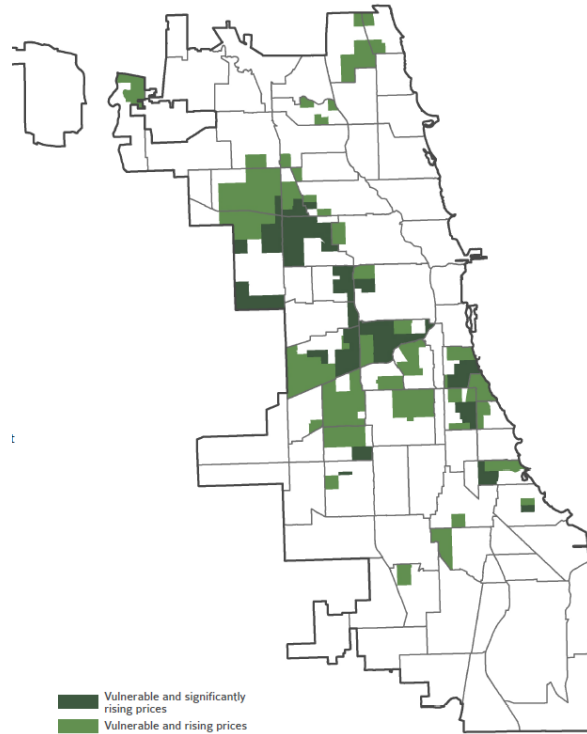
HIGH COST NEIGHBORHOODS

Displacement is well underway



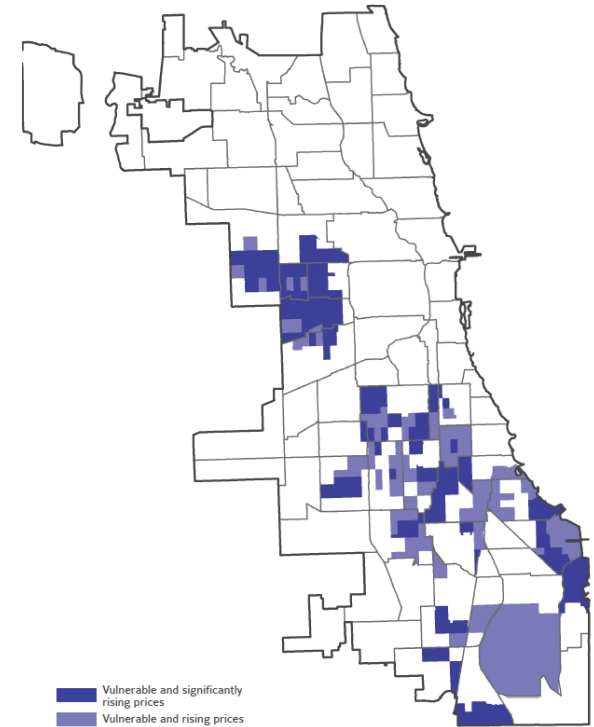
MODERATE COST NEIGHBORHOODS

Highest risk of future displacement



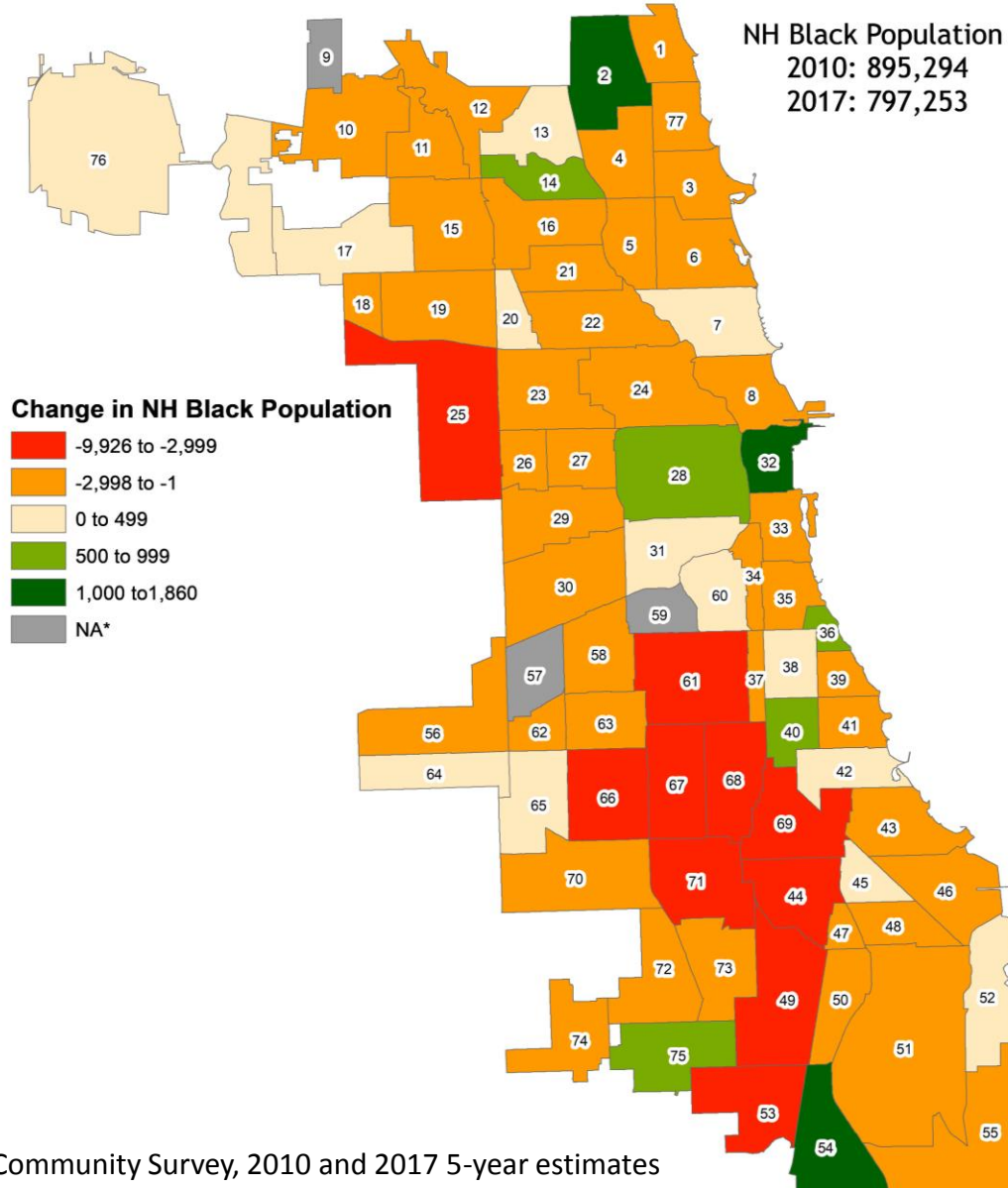
LOW COST NEIGHBORHOODS

Long-term disinvestment, vacancies and population loss



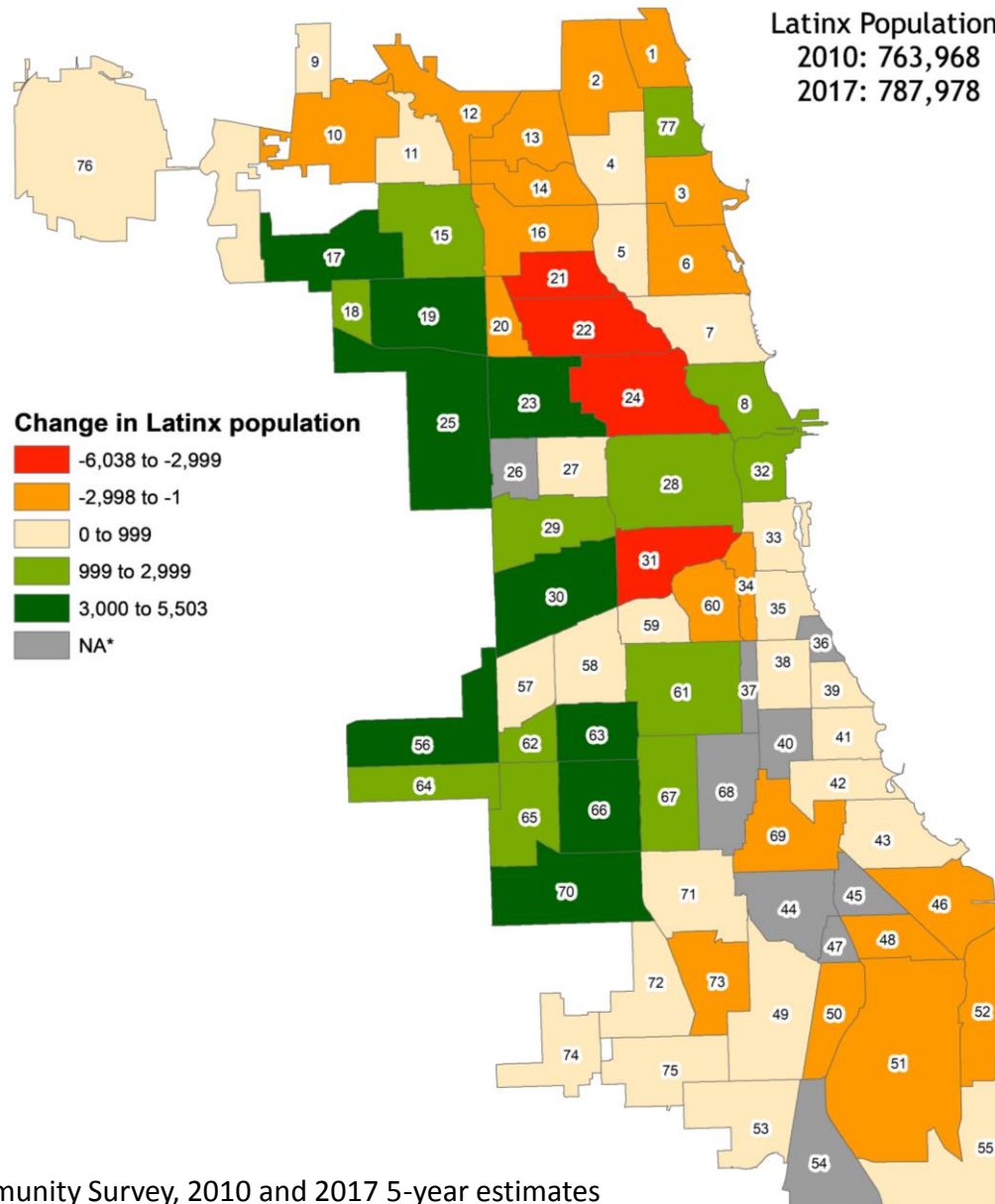
Source: Institute for Housing Studies at DePaul University

Loss of Chicago's black population



Source: US Bureau, American Community Survey, 2010 and 2017 5-year estimates

Latinx population centers are shifting



Source: US Bureau, American Community Survey, 2010 and 2017 5-year estimates

How do the economy and work environment affect health?

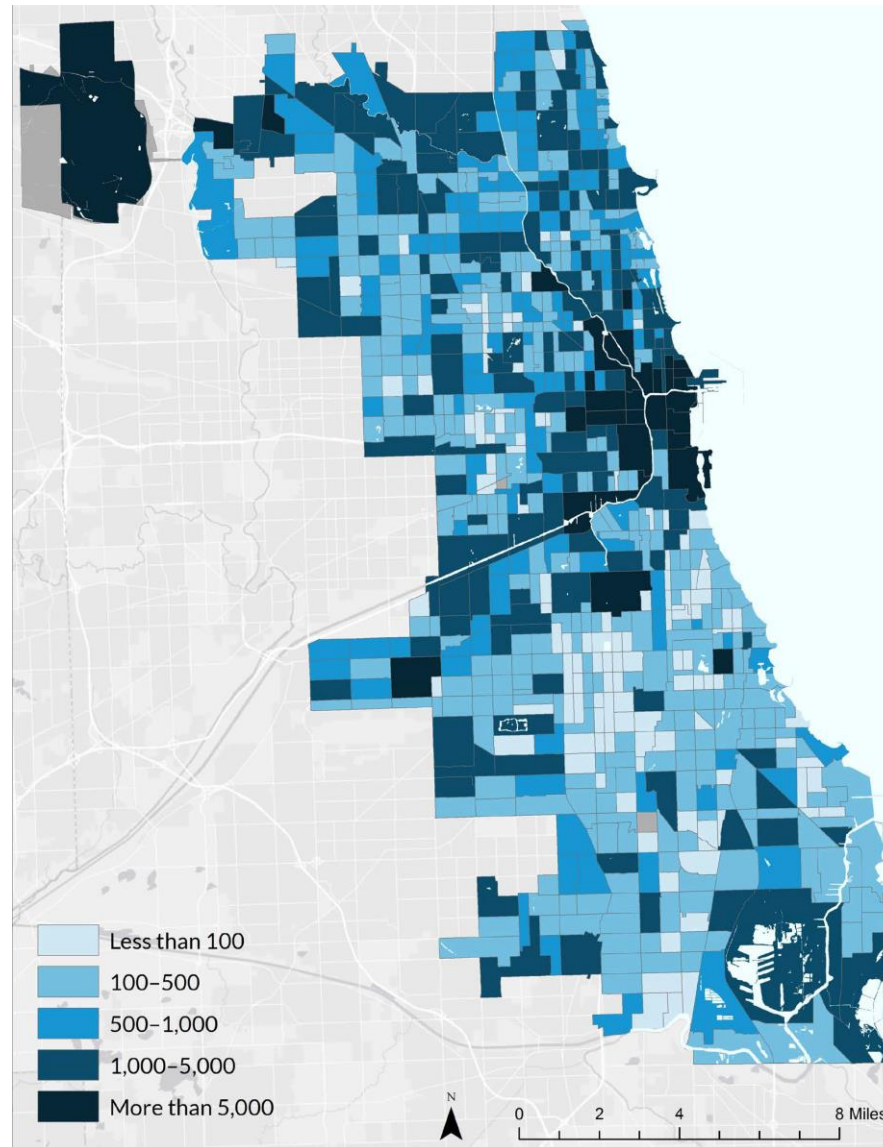
- Financial security makes it easier to obtain resources for healthy living and predicts a number of health outcomes such as **asthma, cardiovascular disease, obesity**.
- We can promote financial security through:
 - Employment
 - Living Wage
 - Paid Leave

Financial Security/Employment



**ECONOMIC & WORK
ENVIRONMENT**

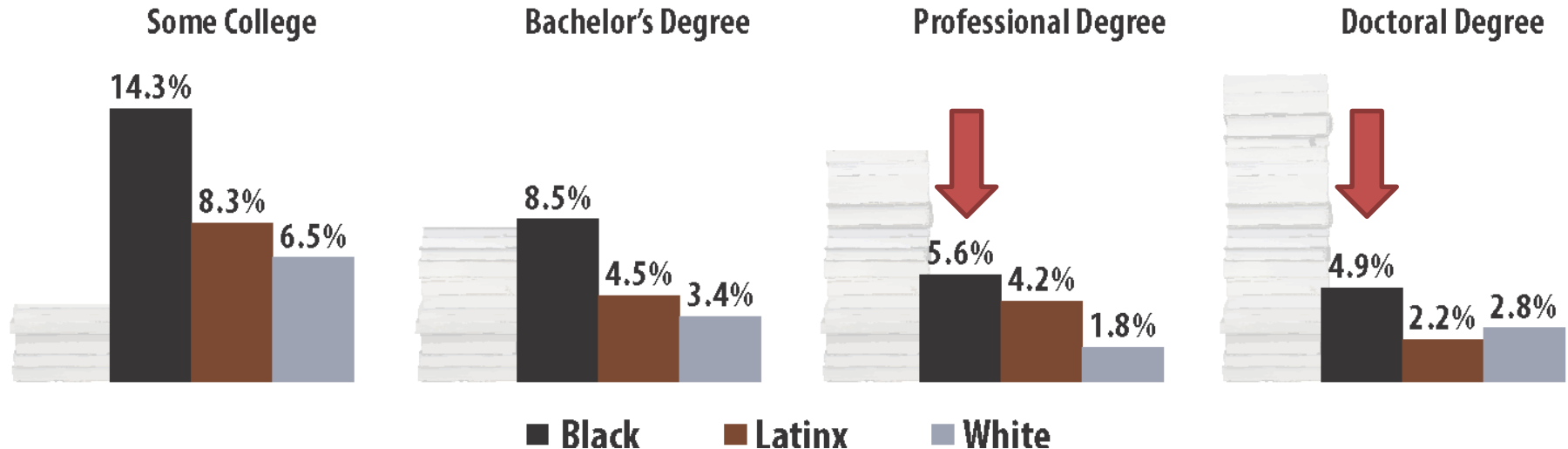
Where are the jobs?



Unemployment

Increased education reduces unemployment for all race-ethnicities but does not reduce disparities in unemployment.

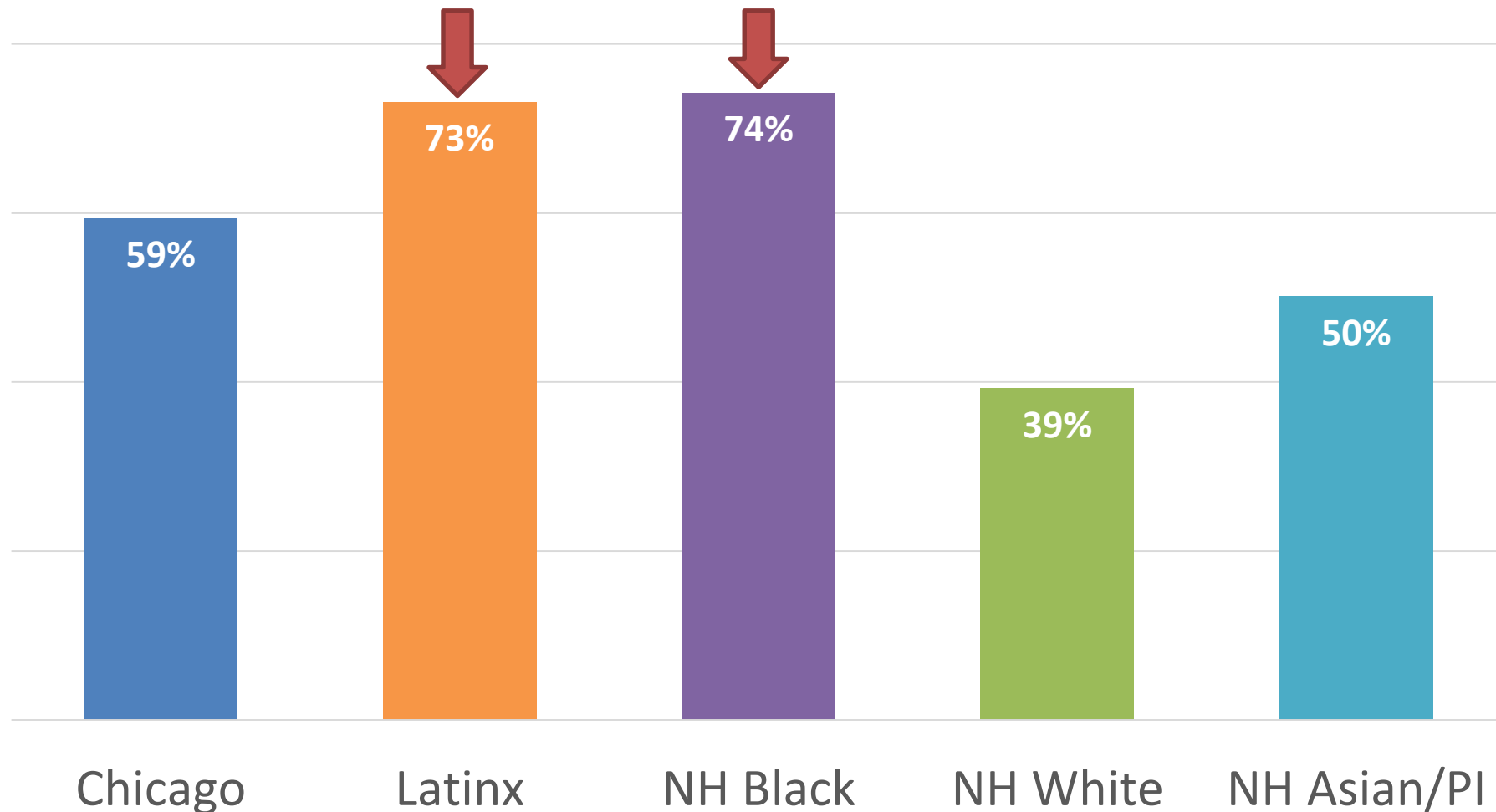
5-YEAR ESTIMATES OF UNEMPLOYMENT RATES IN CHICAGO BY EDUCATION ATTAINMENT AND RACE AND ETHNICITY, 2011 - 2015



Sources: US Census Bureau, American Community Survey, UIC IRRRP

Financial Insecurity

Six in ten Chicago adults report that they are unable to afford an emergency \$400 expense using cash or "cash-equivalent."



Source: Healthy Chicago Survey, Chicago Department of Public Health, 2016

Food Security

- An inability to afford or access food can lead to an inadequate diet.
- Nutrition plays a significant role in causing or preventing illnesses such as cardiovascular disease, some cancers, obesity, type 2 diabetes, and anemia. Inadequate food intake can also adversely affect learning, development, and physical and psychological health.

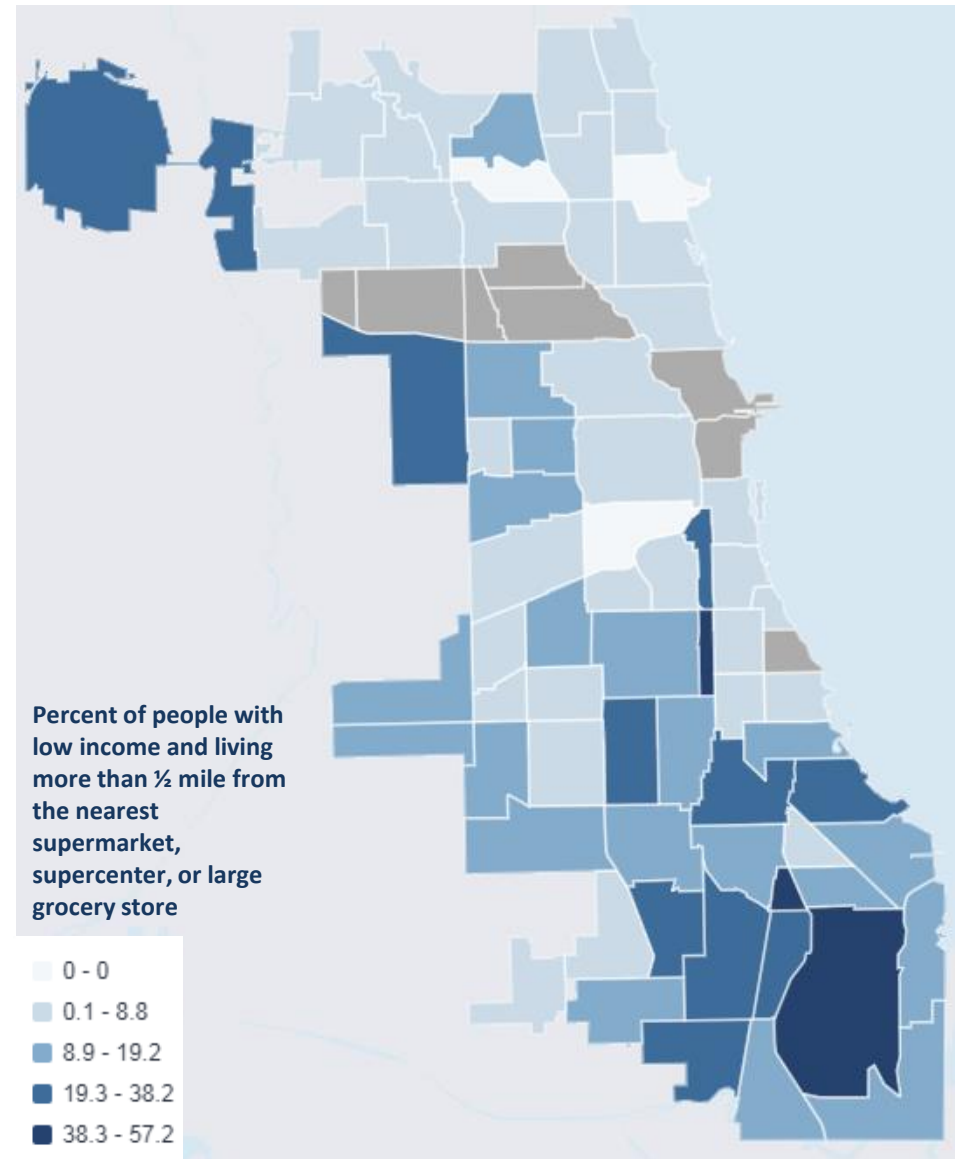


**ECONOMIC & WORK
ENVIRONMENT**

231,963 Chicagoans have limited food access

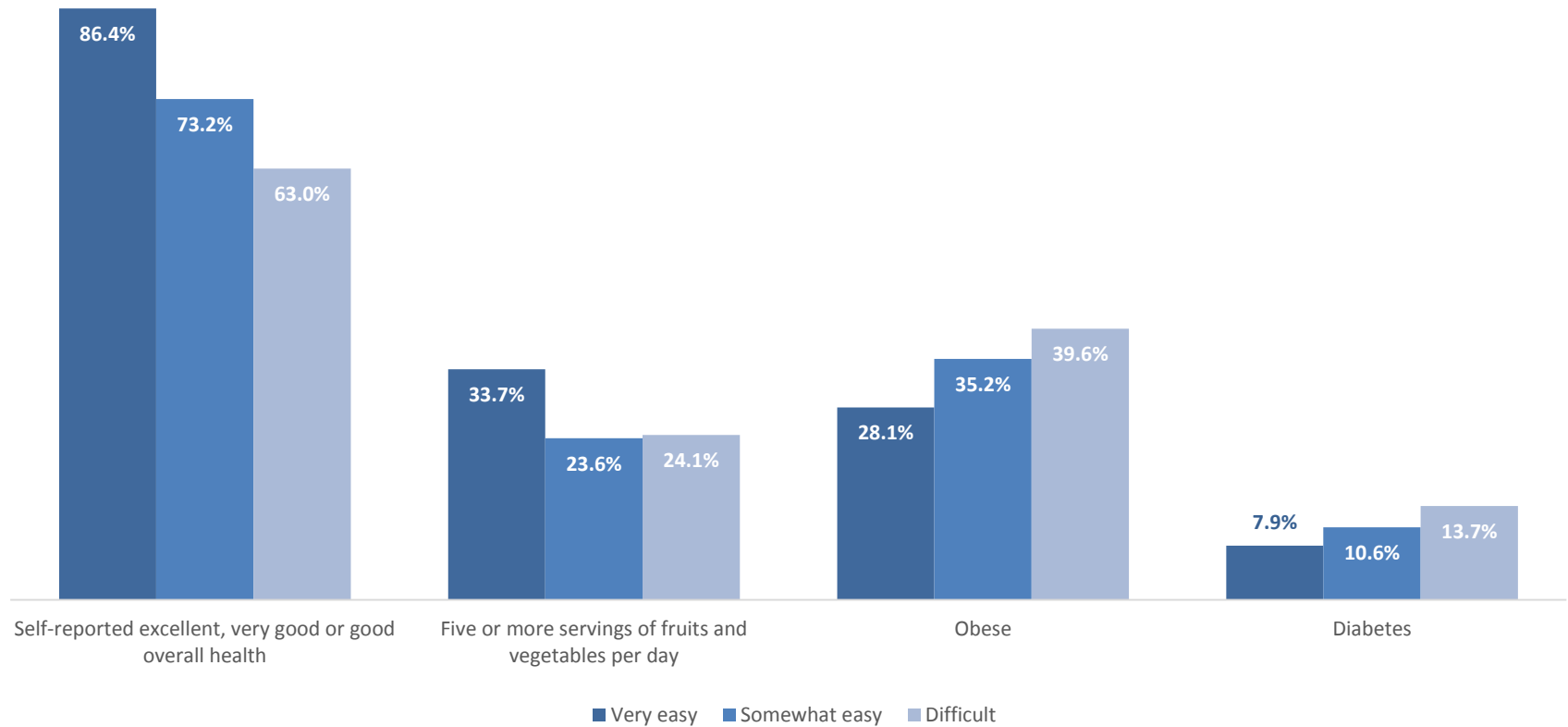
Reasons for difficulty accessing fresh fruits and vegetables

Stores in neighborhood don't sell fresh fruits and vegetables	33.3%
Quality of fresh fruits and vegetables where shop is poor	48.5%
Fresh fruits and vegetables are too expensive	62.4%



Sources: USDA Food Access Research Atlas, 2015; Healthy Chicago Survey, Chicago Department of Public Health 2015-2017

HEALTH BEHAVIORS AND OUTCOMES RELATED TO ACCESS TO FRUITS AND VEGETABLES, CHICAGO, 2015-2017



How does the social environment affect health?

- Strong relationships are important for physical, mental, and social well-being. They increase access to **health-promoting resources** and **resiliency** during hazardous events. The absence of a positive social environment has been linked to **mortality, unhealthy behaviors, and disease**.
 - Computer and internet access
 - Civic engagement
 - Community belonging
 - Experiences of racism and discrimination
- Community safety impacts and is a product of the social environment.

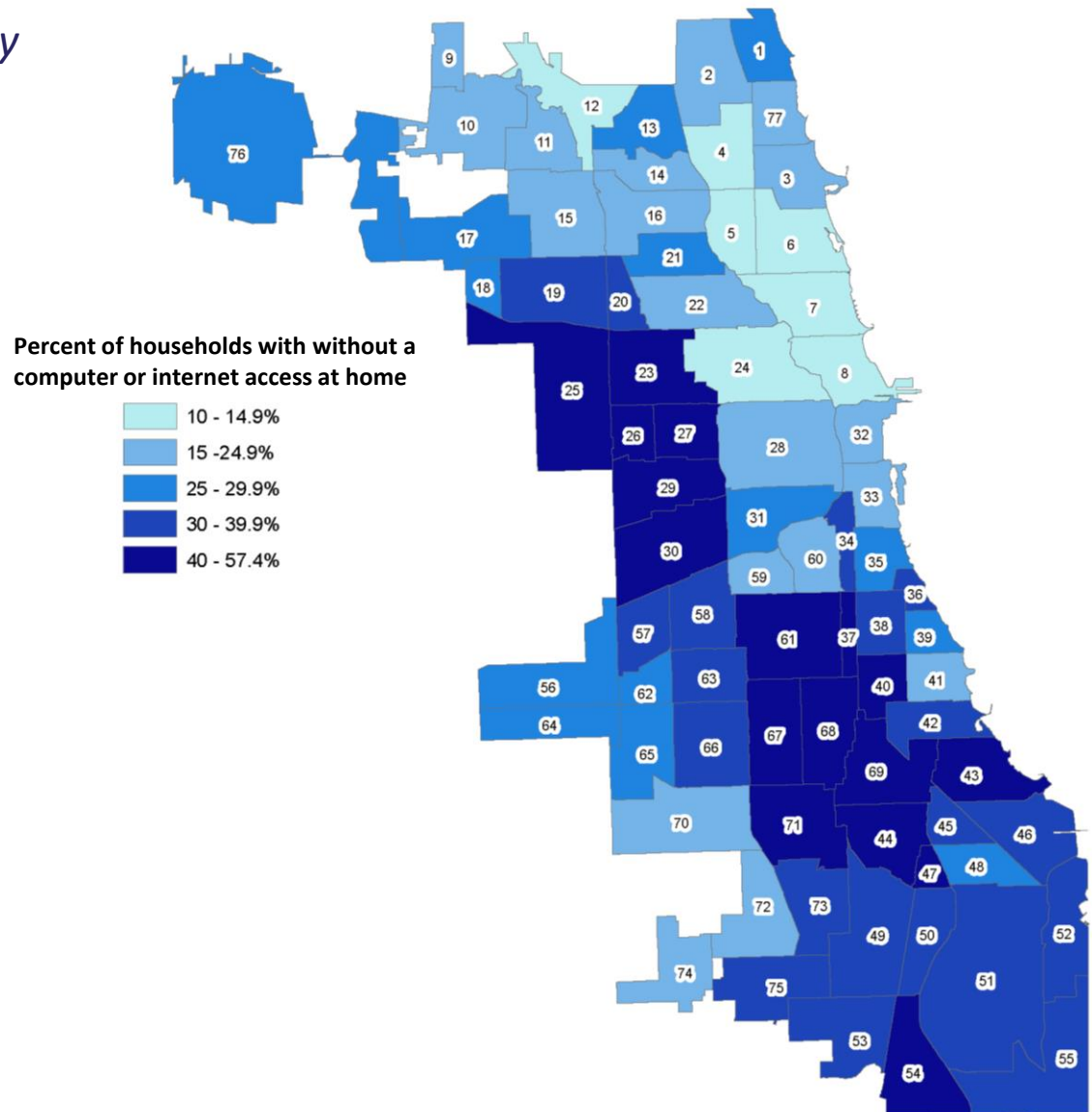
Connectedness



**SOCIAL
ENVIRONMENT**

Computer and Internet Access

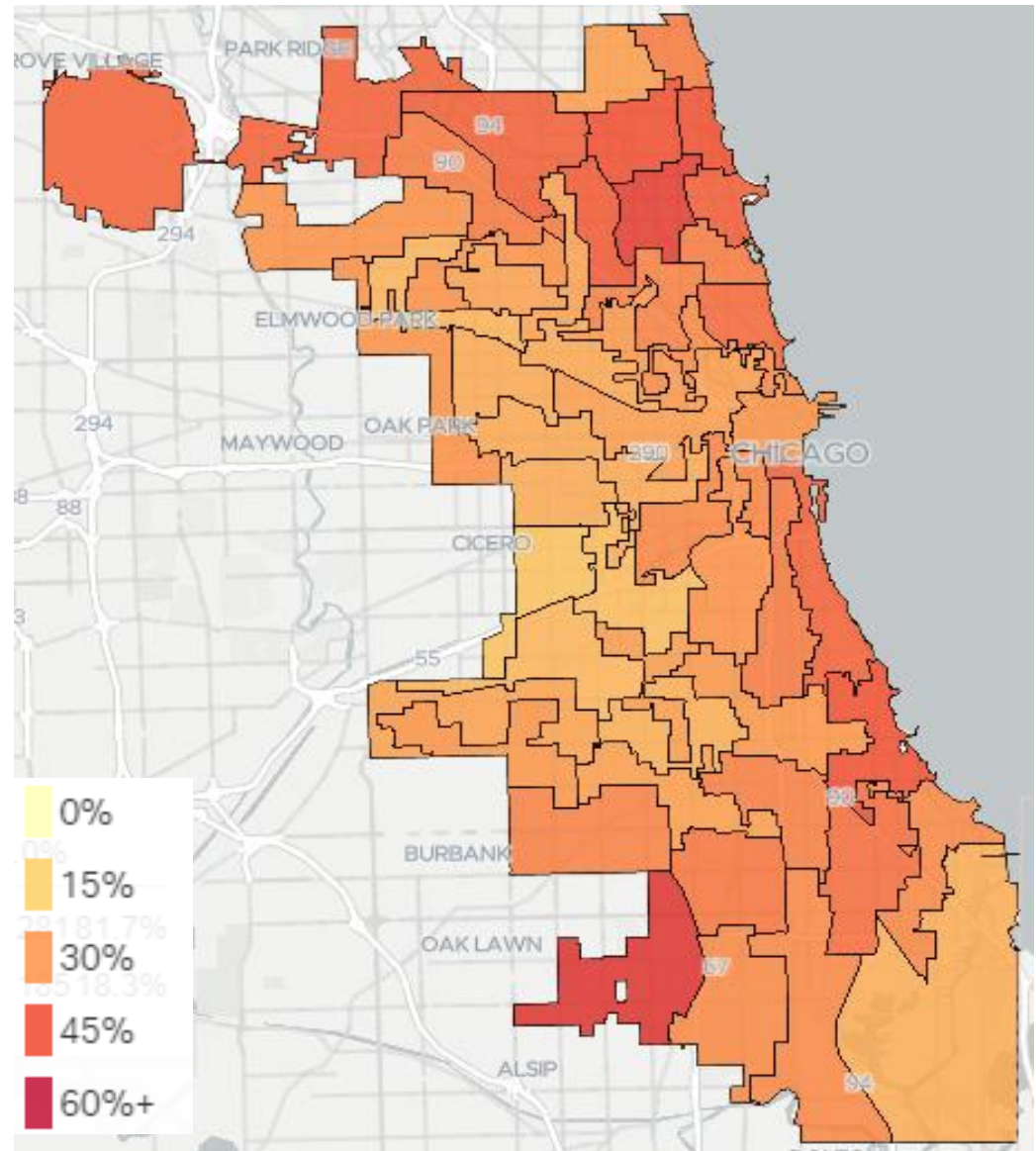
17 west and south side community areas where 40% or more of households lack internet access



Source: US Census Bureau, American Community Survey 2013-17 5-year estimate

Only one in three Chicagoans voted in the last election

Many wards where the rate was half of that

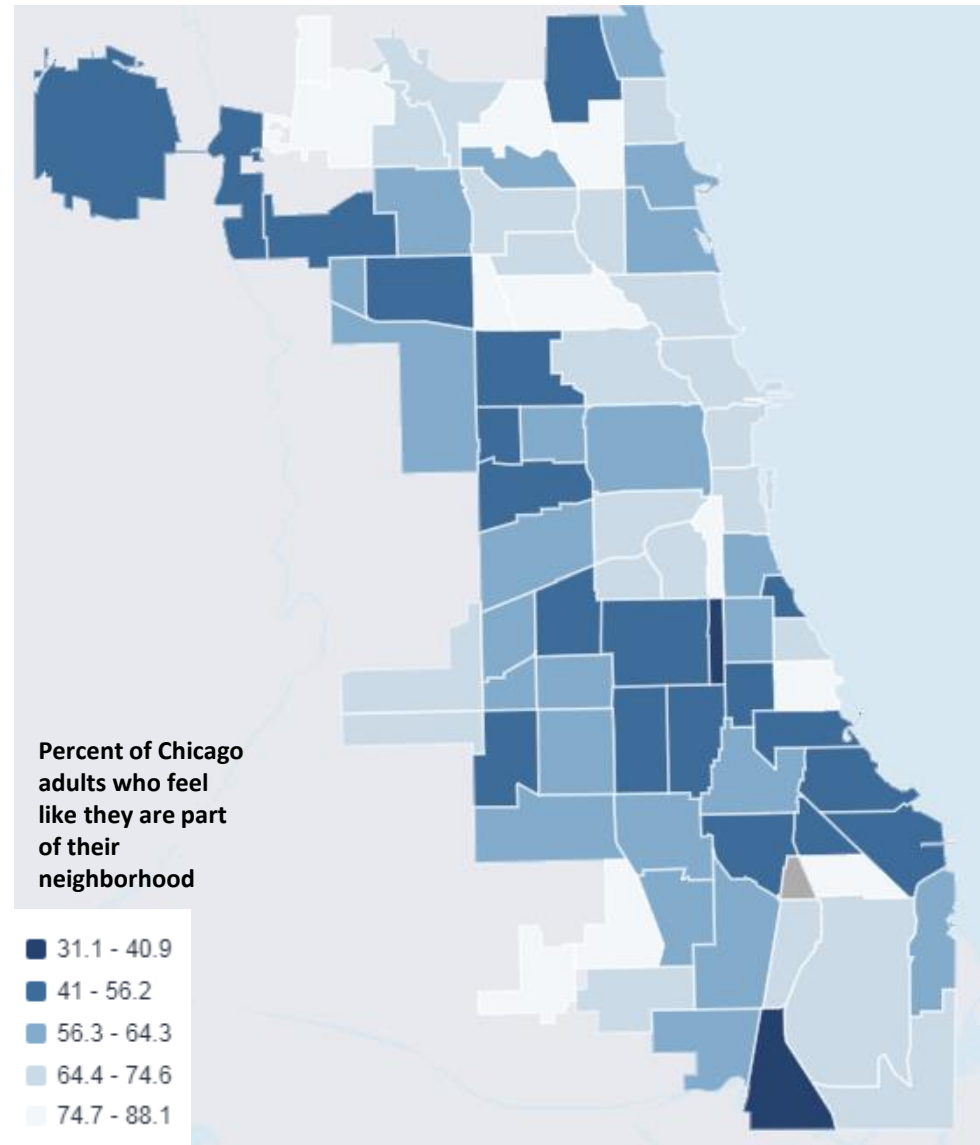


Source: Board of Elections

Community Belonging

More than half (62%) of Chicago adults feel like they are part of their neighborhood.

Many neighborhoods where less than half of the adult residents feel that way



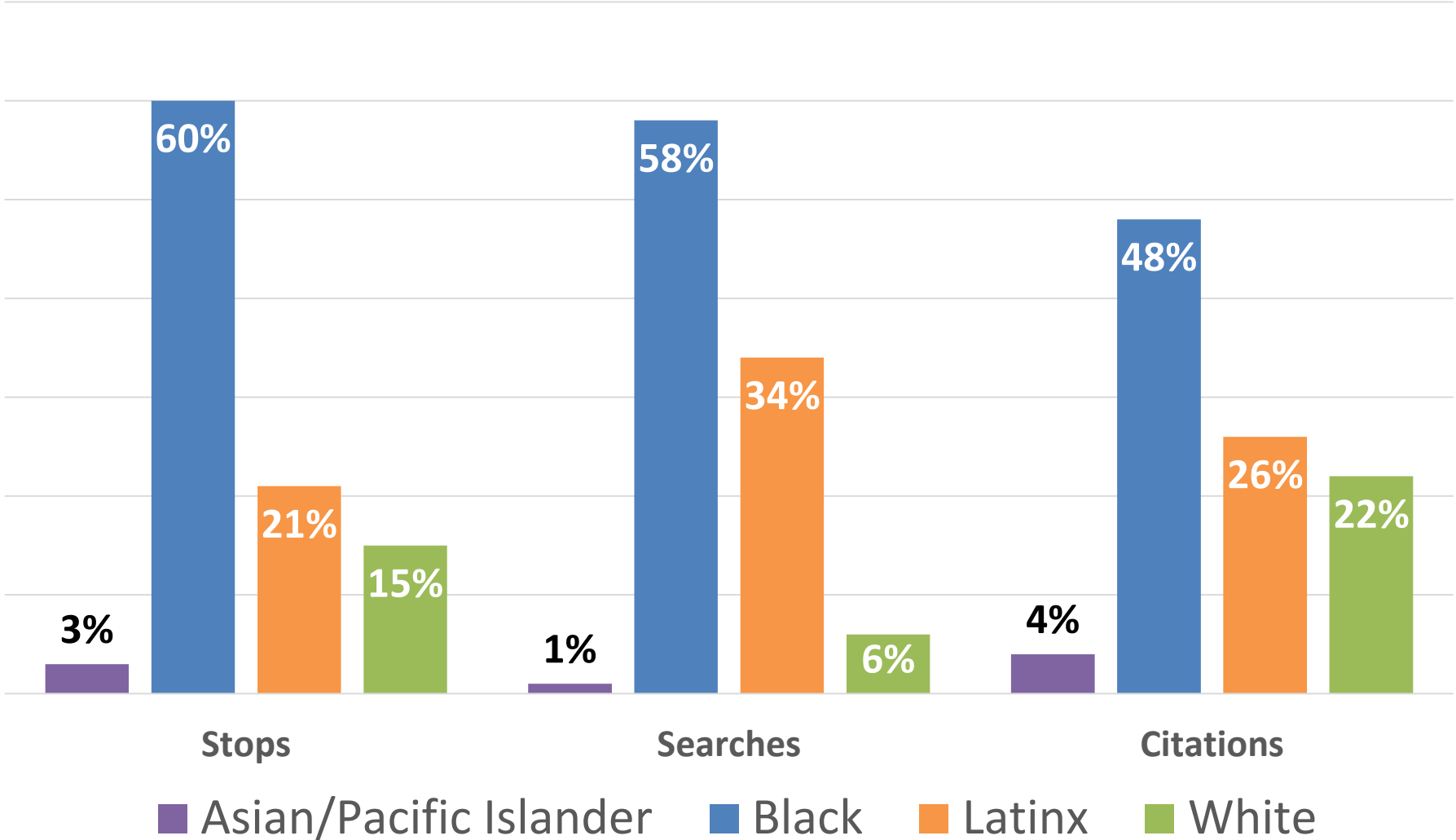
Source: Chicago Department of Public Health, Healthy Chicago Survey, 2015-2017

Experience of Racism



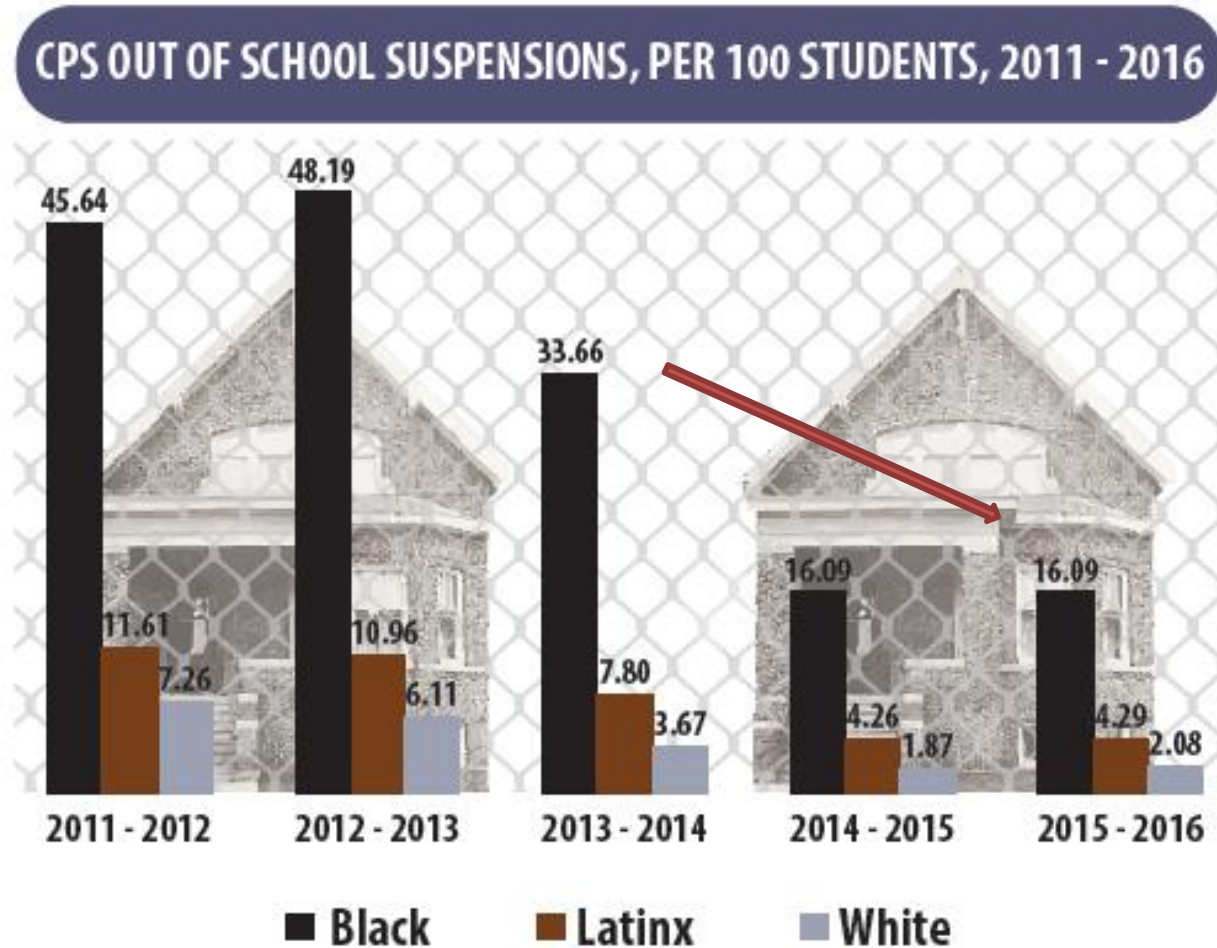
**SOCIAL
ENVIRONMENT**

What happens when the police pull you over?



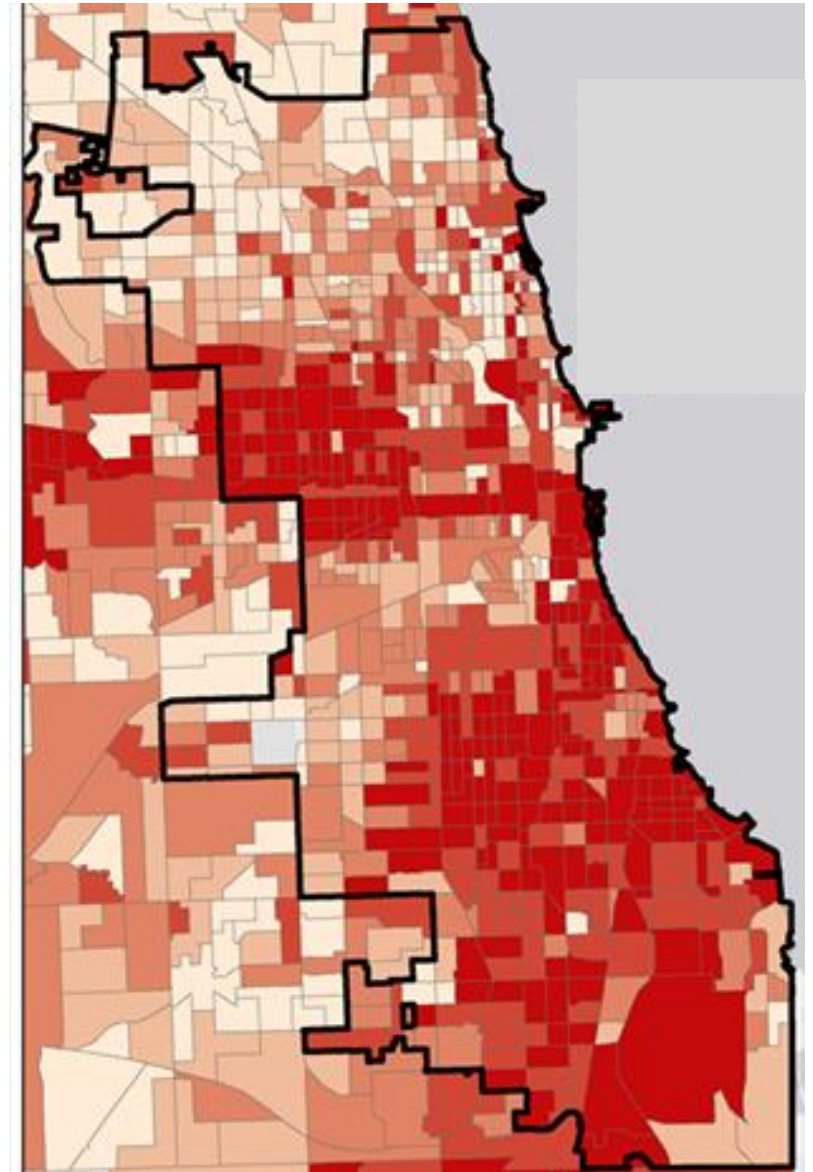
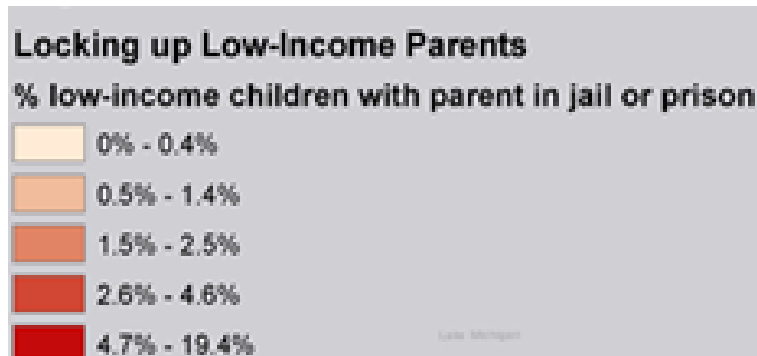
Source: Illinois Traffic Stop database

Racial inequities persist in school discipline despite positive policy changes



Many children have a parent in jail

Many neighborhoods, where between 5% and 20% of children have a parent in jail or prison .



Source: Opportunity Atlas, MPC

Community impact of incarceration

73,000 Illinois residents are incarcerated and another 140,000 on probation and parole.



Source: Illinois Justice Commission, Million dollar block, Cook County Sheriff, 2005-2009

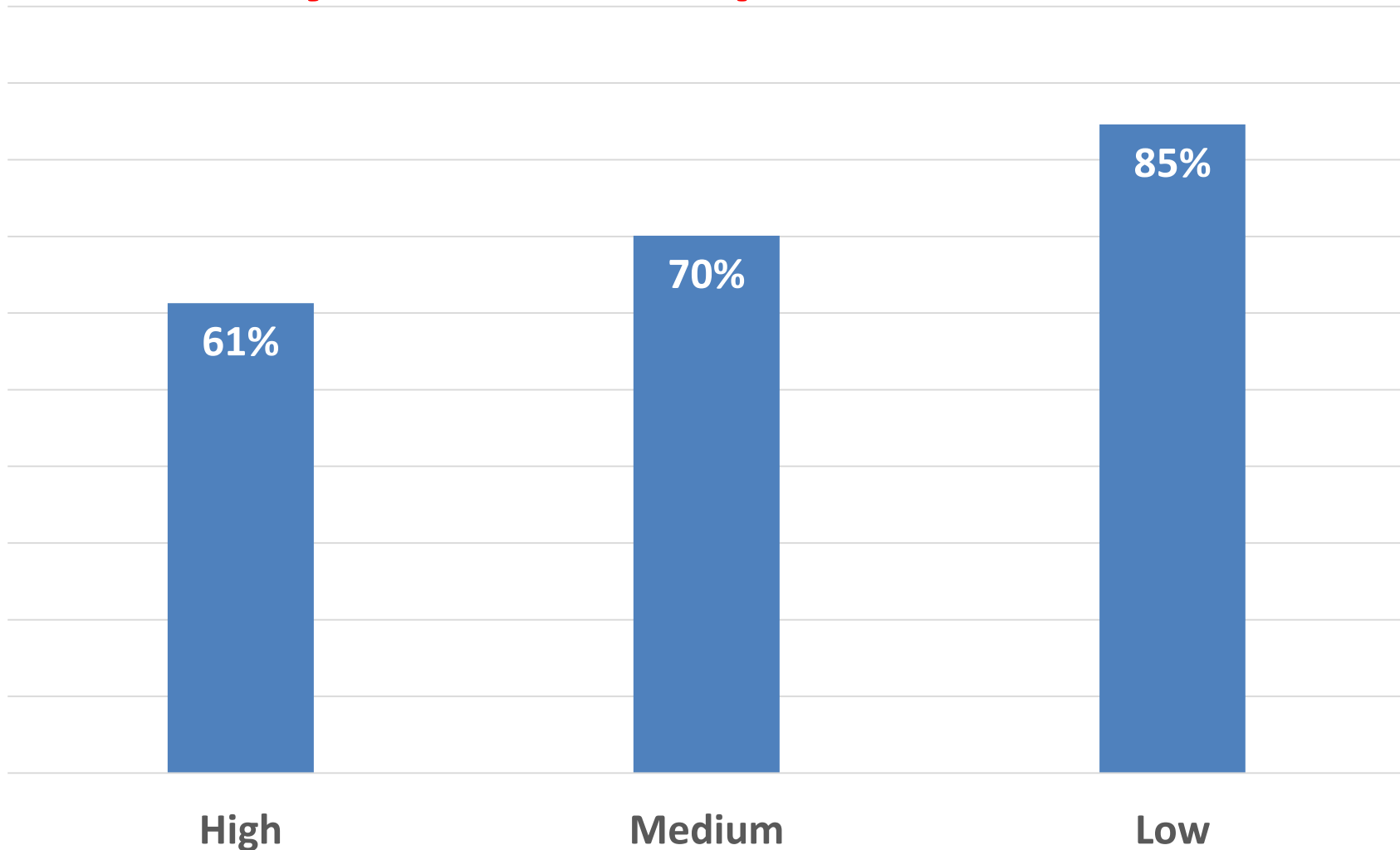
How does the educational environment affect health?

- Educational attainment has lifelong benefits through influencing health knowledge and behaviors, employment and income, and social factors.
 - Preschool Enrollment
 - Access to Enrichment Opportunities
 - Youth Out of School and Work

Education and Enrichment

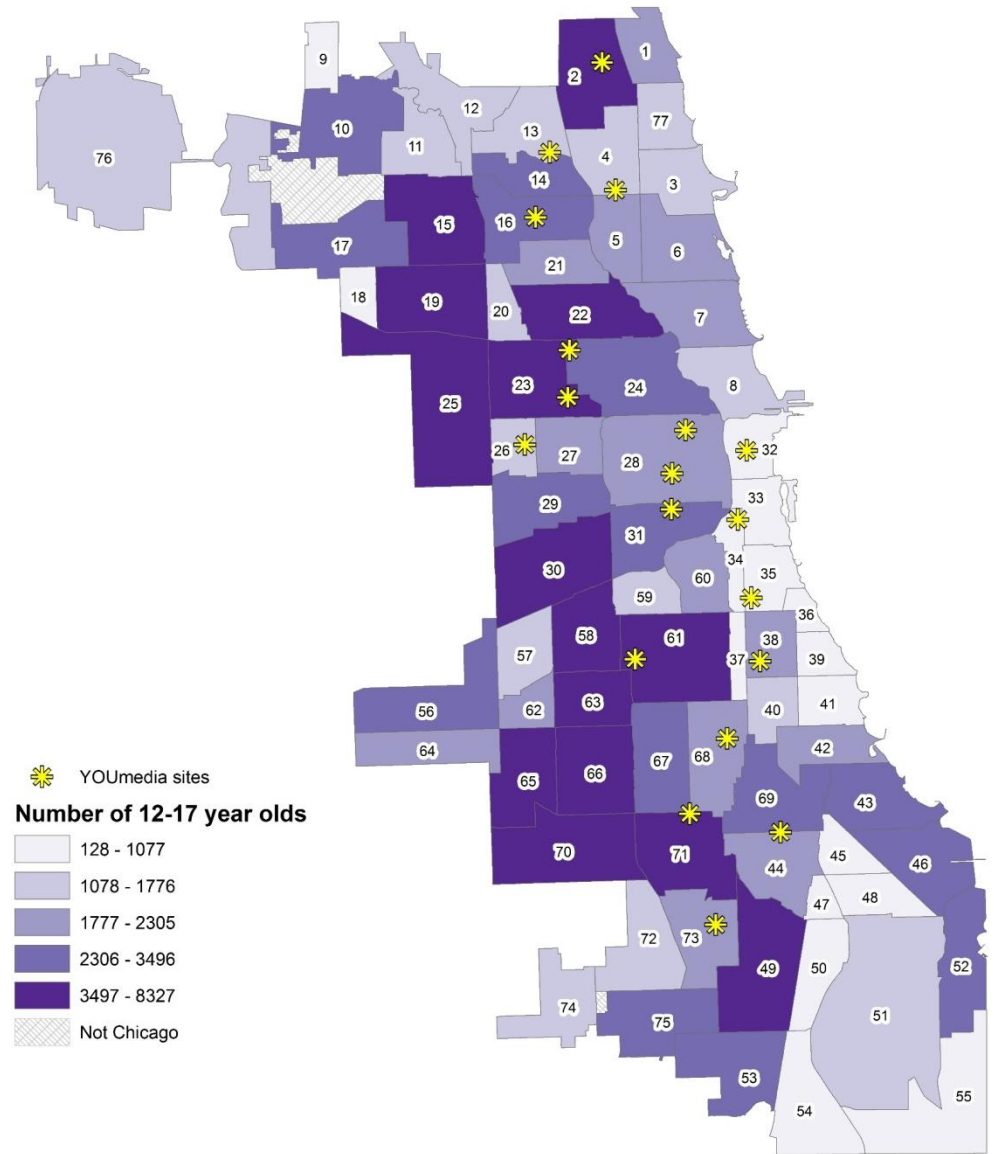


Children living in low economic hardship are more likely to enroll in pre-school



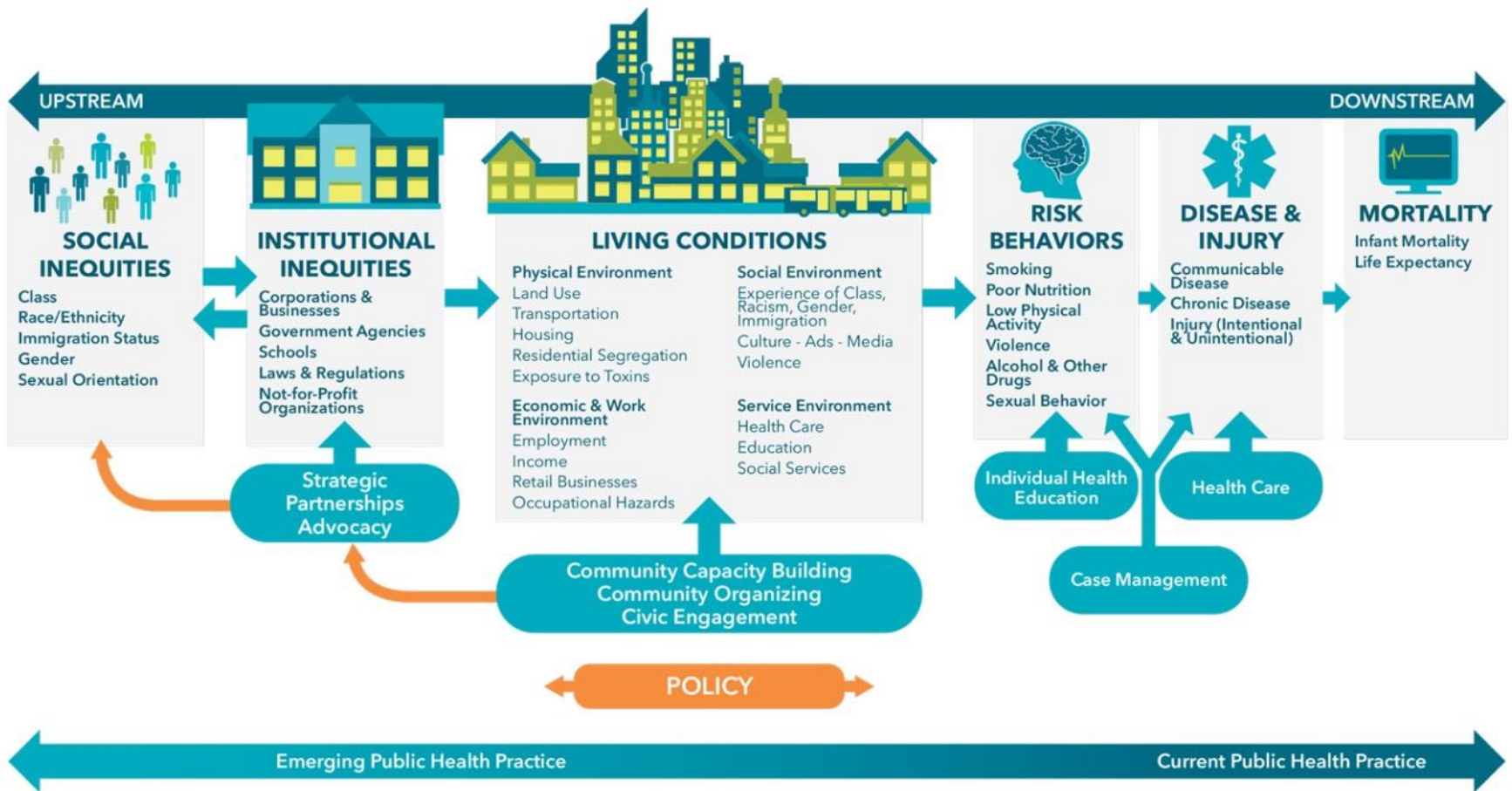
Source: US Census Bureau, American Community Survey

Out of School Time – YOUmedia @ CPL



Sources: US Census Bureau, American Community Survey 2013-17 5-year estimates; Chicago Public Library

What underlying social and institutional inequities may be contributing to gaps in health outcomes?



Social and Institutional Inequities

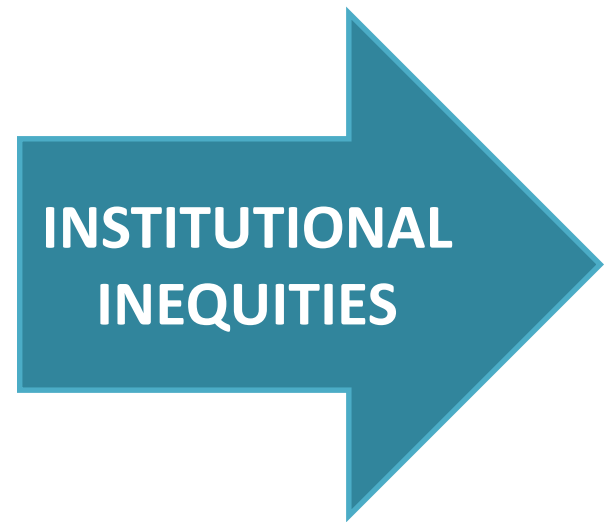
*Health is ultimately shaped by “**the distribution of money, power and resources**” – all of which are political decisions.*

– World Health Organization

“People want a government that’s transparent, responsible, and accountable. They want a city where no one is left out and no one is left behind.”

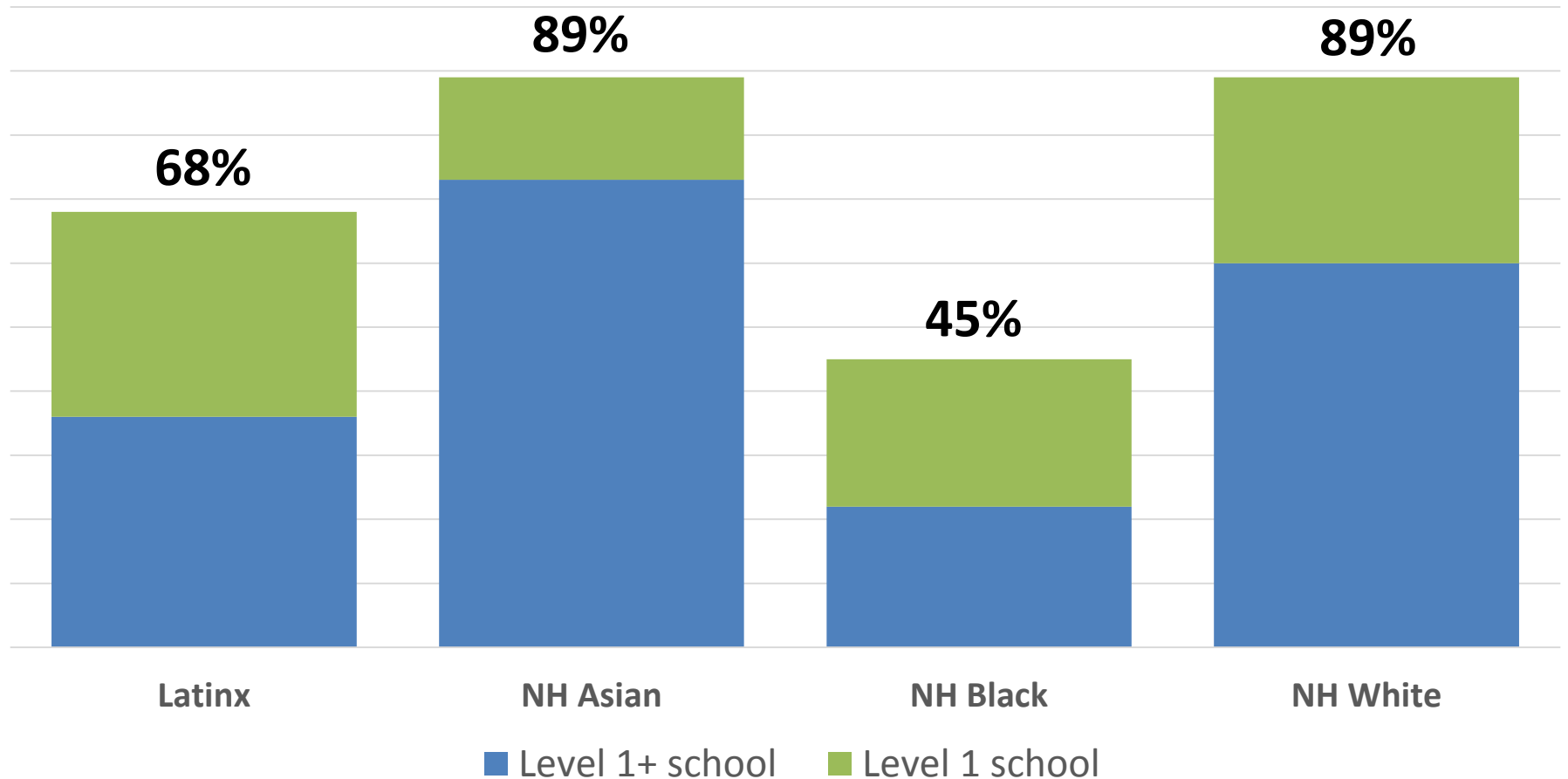
– Mayor Lori E. Lightfoot

School Quality



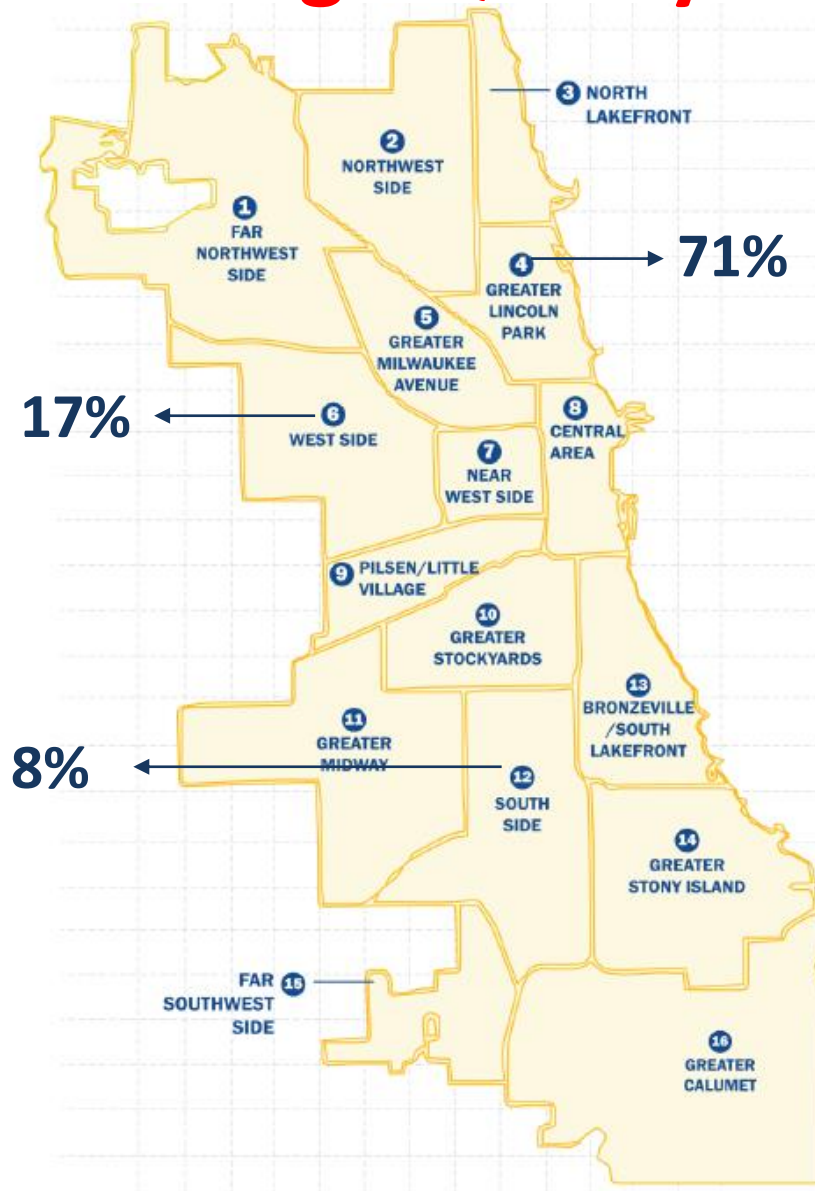
Segregation of High Quality Schools

A lower proportion of African-American students attend level 1 and 1+ schools compared to all other race-ethnicity groups.



Source: Chicago Public Schools

Segregation of High Quality Schools



Source: Chicago Public Schools

Community Development



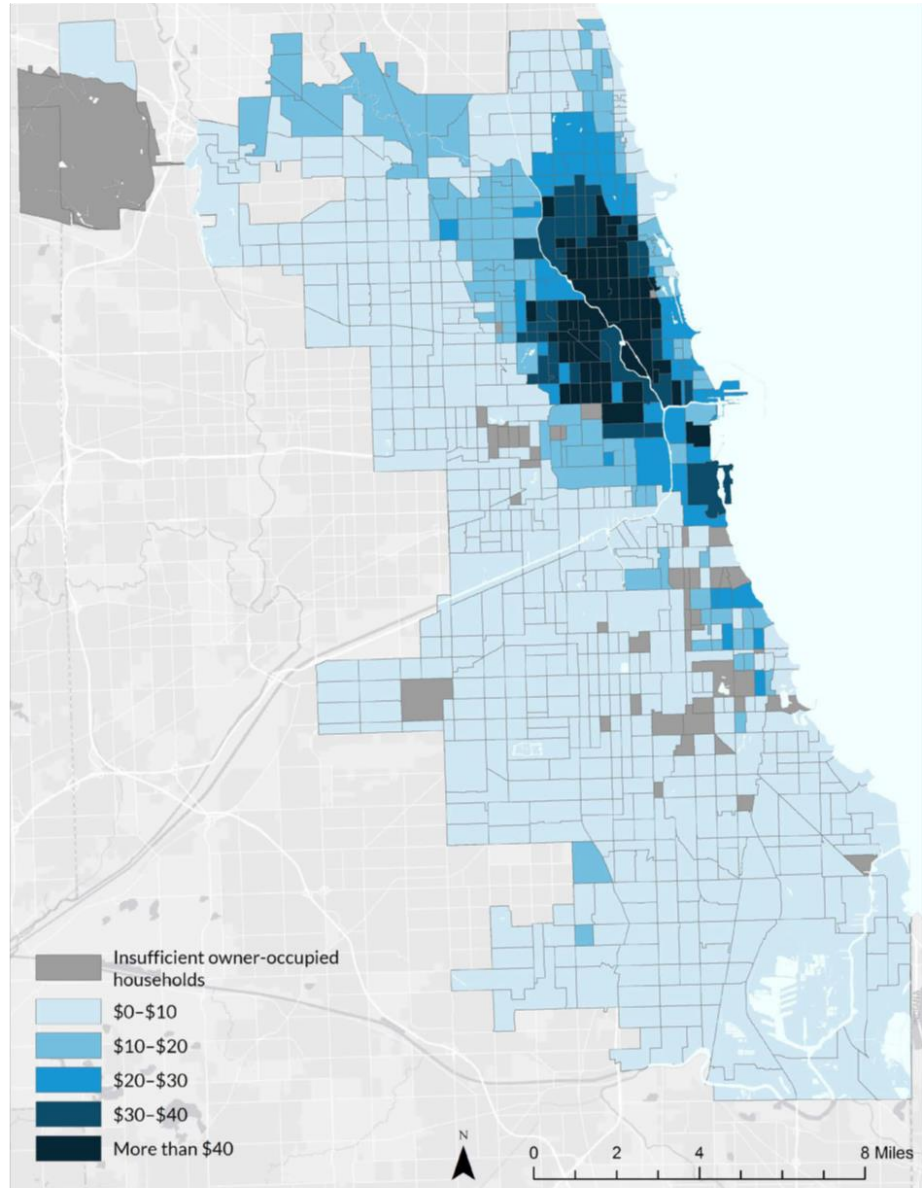
**INSTITUTIONAL
INEQUITIES**

Residential Development

Single family loans to homeowners are by far the largest single source of community investment.

- Legacy of redlining, restrictive covenants, contract sales
- Private investment = 10x mission-driven investment

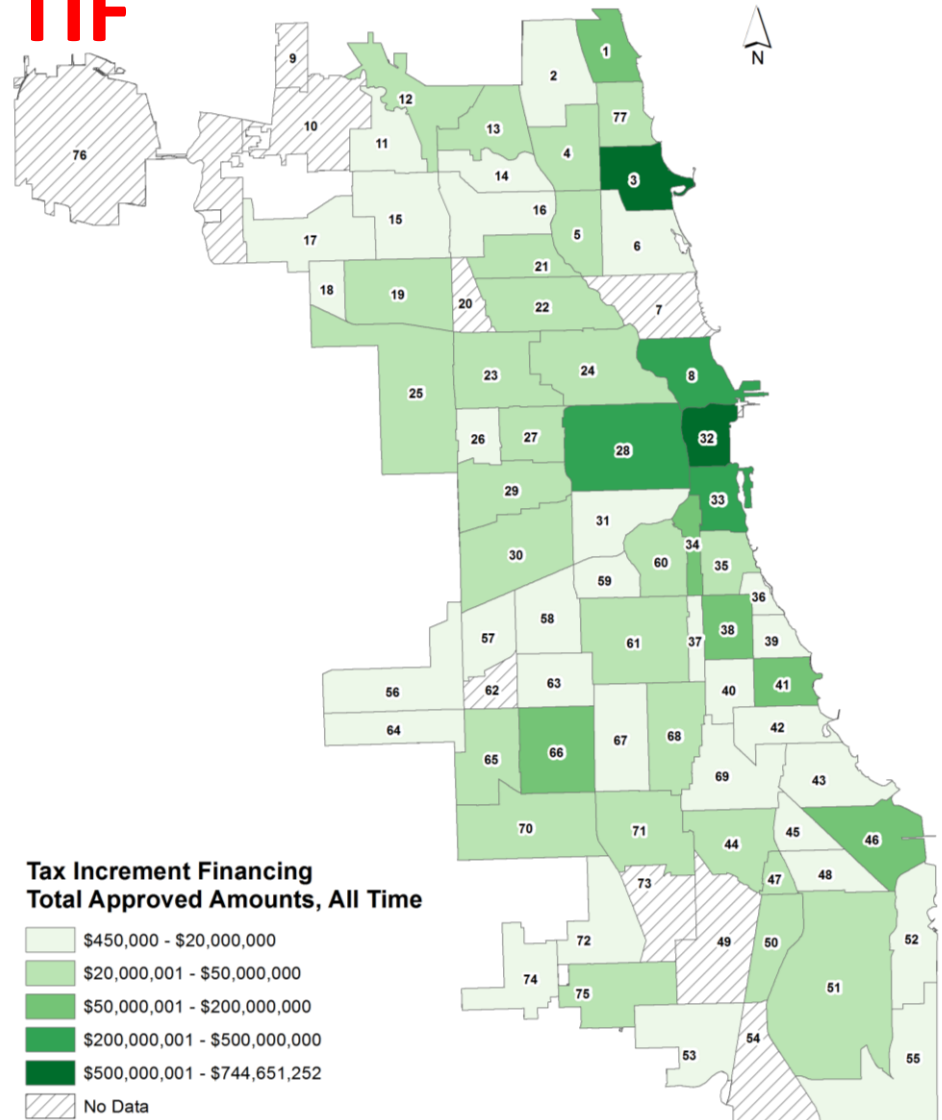
FIGURE X. AVERAGE ANNUAL SINGLE-FAMILY OWNER-OCCUPIED LENDING VOLUME PER OWNER-OCCUPIED HOUSEHOLD, CHICAGO, 2011-2017



Source: Theodos B et al. Neighborhood Disparities in Investment Flows in Chicago. Urban Institute, May 2019.
https://www.urban.org/sites/default/files/publication/100261/neighborhood_disparities_in_investment_flows_in_chicago_1.pdf.

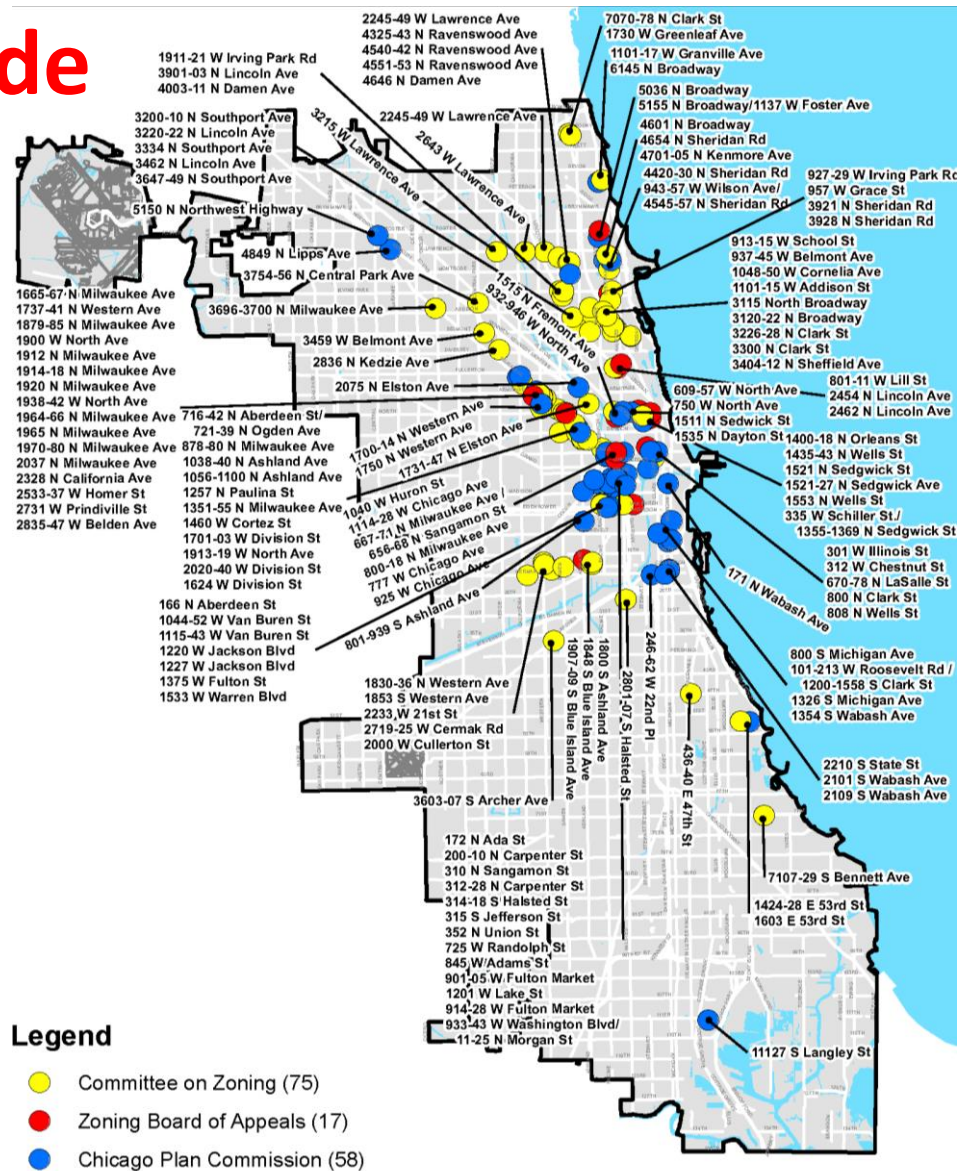
\$3.7 billion spent on community development through TIF

\$3,698,855,637
 Total Approved TIF Amounts
 1986-2018



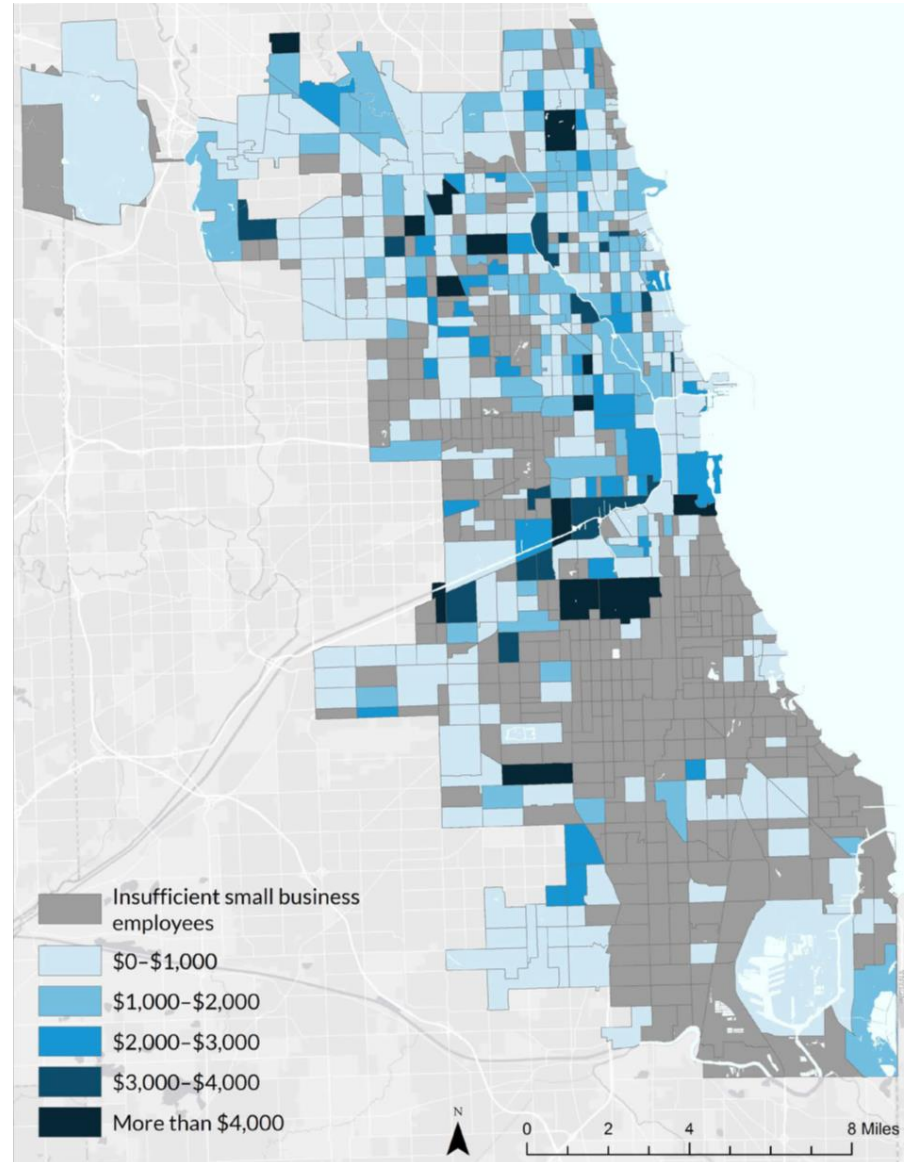
Source: City of Chicago Data Portal

Transit Oriented Development mostly benefits the North side



Source: Chicago Department of Planning & Development

Growing small businesses

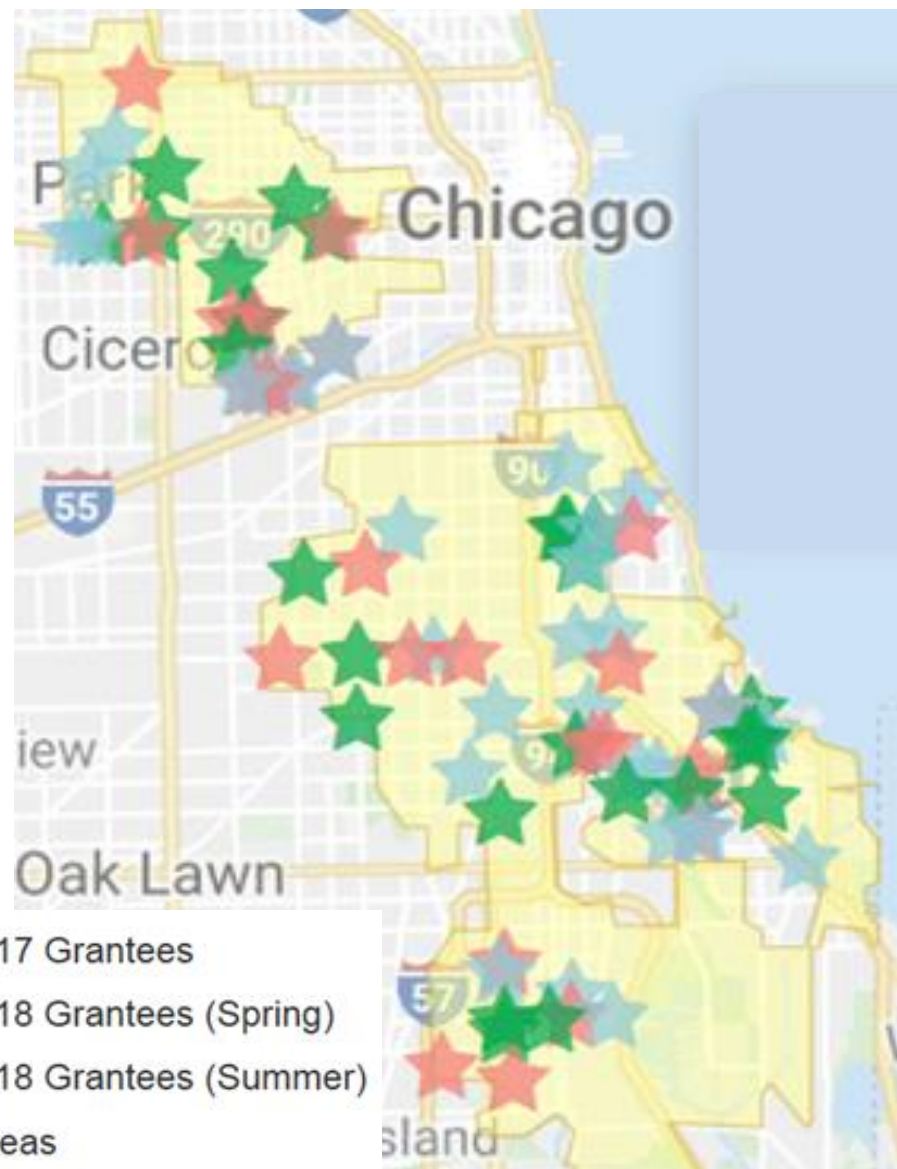


Source: Theodos B et al. Neighborhood Disparities in Investment Flows in Chicago. Urban Institute, May 2019.
https://www.urban.org/sites/default/files/publication/100261/neighborhood_disparities_in_investment_flows_in_chicago_1.pdf.

\$55 million invested into communities of greatest need



- ★ NOF Class of 2017 Grantees
- ★ NOF Class of 2018 Grantees (Spring)
- ★ NOF Class of 2018 Grantees (Summer)
- NOF Eligible Areas



Source: Chicago Department of Planning & Development

What's driving the gap in life expectancy ?

Increasing rates of:

- Adult Obesity
- Gun-related homicide
- Infant mortality
- Opioid overdose

Worsening inequities in:

- Cancer
- Heart Disease
- Diabetes
- Stroke

What's driving the gap in life expectancy ?

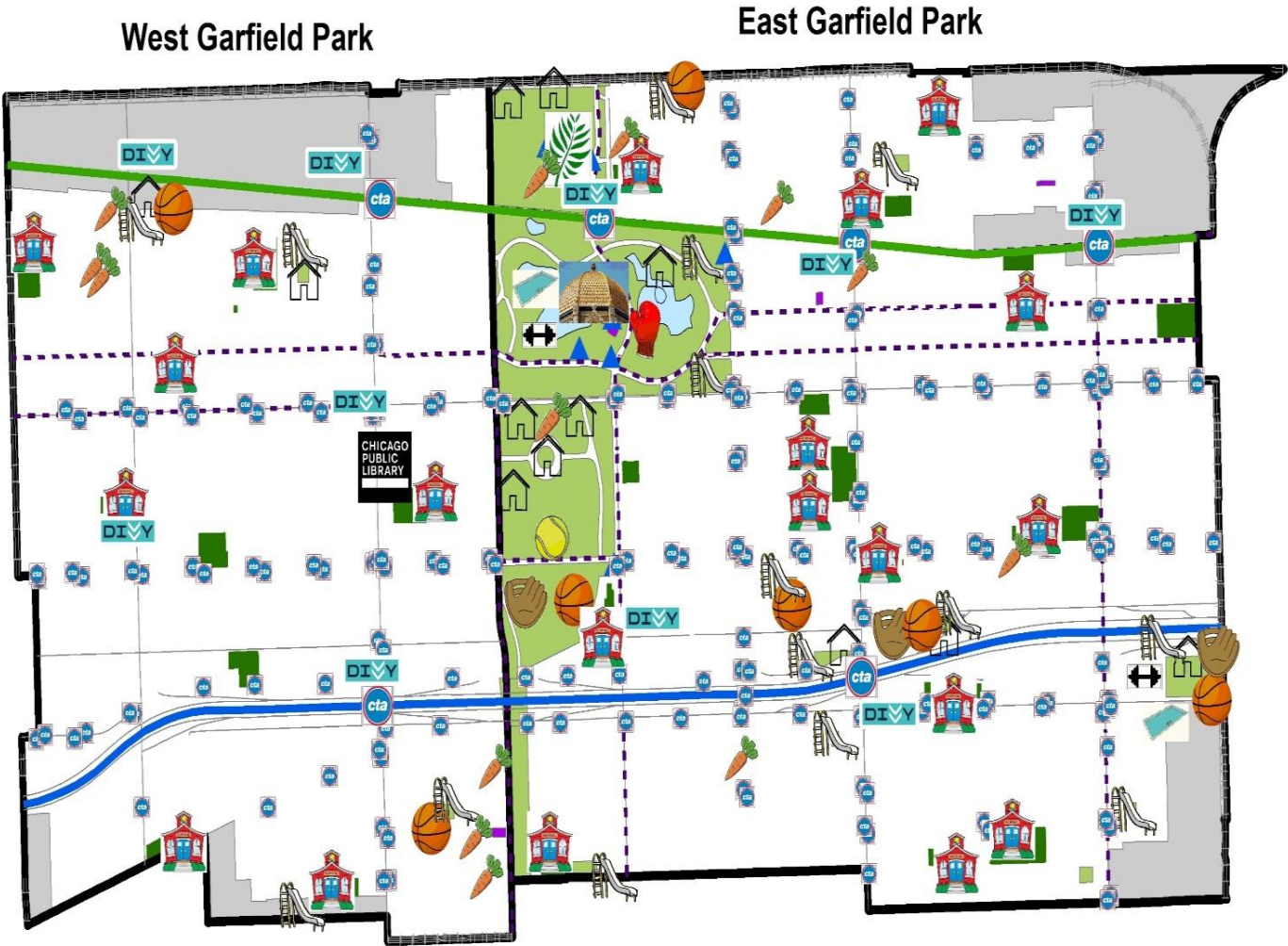
- Economic Opportunity
- Housing
- Food Access
- Education
- Environment
- Social Isolation

- Structural and Institutional Racism

Data only tells part of the story

- Data will never be able to reflect the true experience of the residents of our neighborhoods.
- History, culture and traditions of Chicago have produced ***stories of struggle in the face of oppression*** as well as ***resilience leading to great accomplishments***.
- There are unquantifiable levels of beauty, achievement and pride on every corner in every neighborhood of Chicago

There are assets in every neighborhood



Data Source: CDPH Office of Epidemiology, Chicago Data Portal

Partnership for Healthy Chicago



Healthy Chicago 2025 - Looking Ahead

**Acknowledging historical and current
racism**

+

Identifying the root causes

+

Amplifying community power

+

Building on assets

