

HEALTHY CHICAGO 2025



Neighborhood Assets and Opportunities in Chicago



Neighborhoods matter. Children who live in neighborhoods with quality early childhood education and schools, safe housing, access to healthy food, parks and playgrounds and clean air are more likely to grow into healthy, productive adults than children who don't. The [Child Opportunity Index](#) (COI) measures and maps the presence and quality of resources and conditions that matter for children to develop in a healthy way in the neighborhoods where they live. The Child Opportunity Index (COI) was created in 2014 to measure neighborhood assets, resources and conditions that matter for children's healthy development. In January 2020 COI 2.0, we adapted a new and expanded version of the index for 77 Chicago community areas and 866 census tracts to be able to compare changes in opportunities by neighborhood from 2010 to 2015.

The Child Opportunity Index (COI) 2.0 is an index that combines data from [29 neighborhood-level indicators](#) into a single composite measure that is available for nearly every census tract in Chicago for 2010 and 2015.

The 29 indicators cover three domains: education, health and environment and social and economic. Indicators in the education domain reflect quality and access to early childhood education, quality of elementary and secondary schools and social resources related to educational achievement. The health and environment domain reflects features of healthy environments, such as access to healthy food and green space, and features that are toxic, such as pollution from industry and exposure to extreme heat. The social and economic domain contains nine indicators measuring access to employment and neighborhood social and economic resources. All indicators are measured at the census tract level, which corresponds to the Census Bureau's definition of neighborhoods.

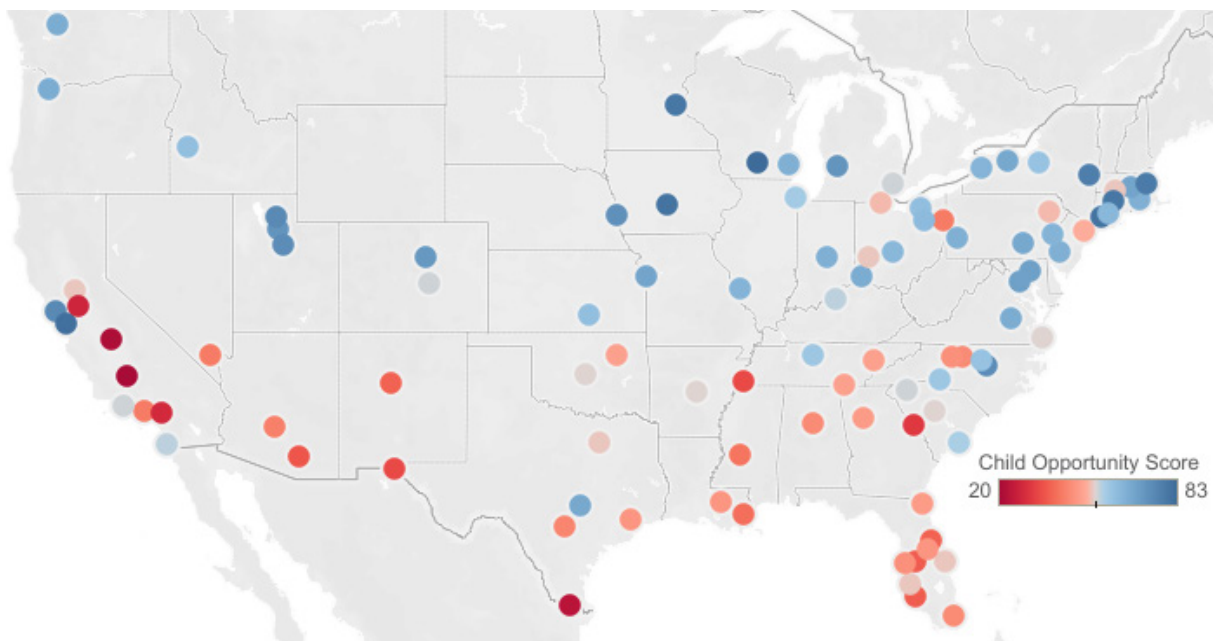
Each indicator is converted to a z-score, a common statistical procedure that puts indicators measured on different scales (e.g., counts, percentages, dollars) onto a common scale that is comparable across indicators, neighborhoods and over time. The weighted average of the indicator z-scores within a domain to obtain a domain average z-score. The weighted average of the averaged domain z-scores create an overall index z-score that combines all indicators into a single measure, the Child Opportunity Index. The weights used in each step are calculated to reflect how strongly a given indicator or domain z-score predicts four different census tract-level outcomes: two indicators of intergenerational economic mobility taken from the Opportunity Atlas¹ and two health indicators taken from the 500 Cities health indicator database.²

Child Opportunity Levels are five categories of neighborhood opportunity ranging from very low- to very high-opportunity. Neighborhoods are ranked and then divided into 5 ordered categories, each containing 20% of the child population and labeled as very low-, low-, moderate-, high- and very high-opportunity neighborhoods. Percentiles are weighted using the total number of children in a given tract, to exactly define the cut points dividing neighborhoods into groups that contain 20% of the child population each.

Child Opportunity Index maps that summarize overall opportunity across all domains by Chicago census tract and changes in opportunity since 2010 are attached.

Plans are underway to update the index and all its components with 2020 data.

COI 2.0 scores for the 100 largest U.S. metro areas



WHERE DOES CHICAGO'S OPPORTUNITY FALL AMONG THE 100 LARGEST U.S. METRO AREAS?



Utilizing the Child Opportunity Index allows CDPH to explore physical and human assets available to children in their neighborhoods. *We examine assets in two primary sub-domains of the Child Opportunity Index: environmental and education and assess changes in assets in each domain over time since 2010 as these domains more clearly exhibit physical and/or human assets that are more directly involved or impact the everyday lives of children present within the physical community environment.* We have included the description and maps for the Social and Economic sub-domain and the maps for the overall COI 2.0 changes over time for completeness.

EDUCATION (see maps attached): Educational assets were measured by the presence of and enrollment in early childhood centers. In 2015, we find very low educational opportunities along the outlying far west side neighborhoods and near south neighborhoods, all primary Black and Latinx majority neighborhoods. While the north-east side of the city saw no significant changes since 2010, educational opportunity decreased significantly on the north-west side neighborhoods. On the southside there were many that experienced improvement and also many others including the south-west side where educational opportunity decreased significantly.

ENVIRONMENTAL (see maps attached): Environmental assets were measured by the presence of supermarkets, green spaces and a safe walking infrastructure as well as the absence of vacant lots. Environmental pollution related measures also assessed presence of toxic waste release site, dump sites, particulate matter and chemical exposure and heat islands. Again, we see these environmental factors appear more concentrated on the far west, south and south-east neighborhoods in 2015. Since 2010, environmental conditions worsened in many north-side neighborhoods likely driven by traffic increases, and increased population density. Many south and south-east side neighborhoods saw a worsening in environmental conditions likely driven by increased industrial investment and expansion of land use for commercial and industrial uses.

¹Chetty, R., Friedman, J. N., Hendren, N., Jones, M. R., & Porter, S. R. (2018). The Opportunity Atlas: Mapping the childhood roots of social mobility. Retrieved from website: <https://ideas.repec.org/p/cen/wpaper/18-42.html>.

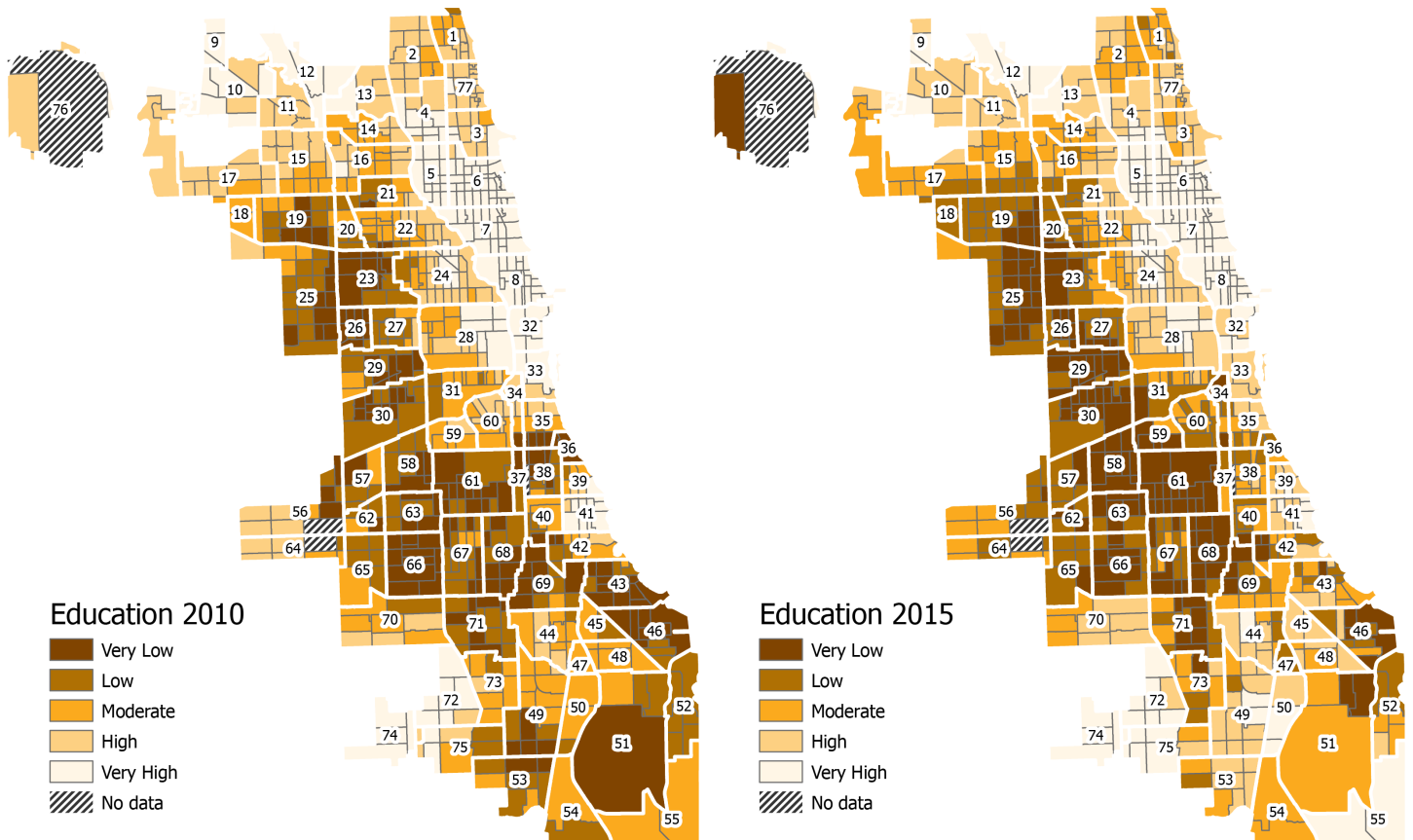
²Centers for Disease Control and Prevention. (2017). 500 Cities Project: Local data for better health. Retrieved from website: <https://www.cdc.gov/500cities/index.html>.



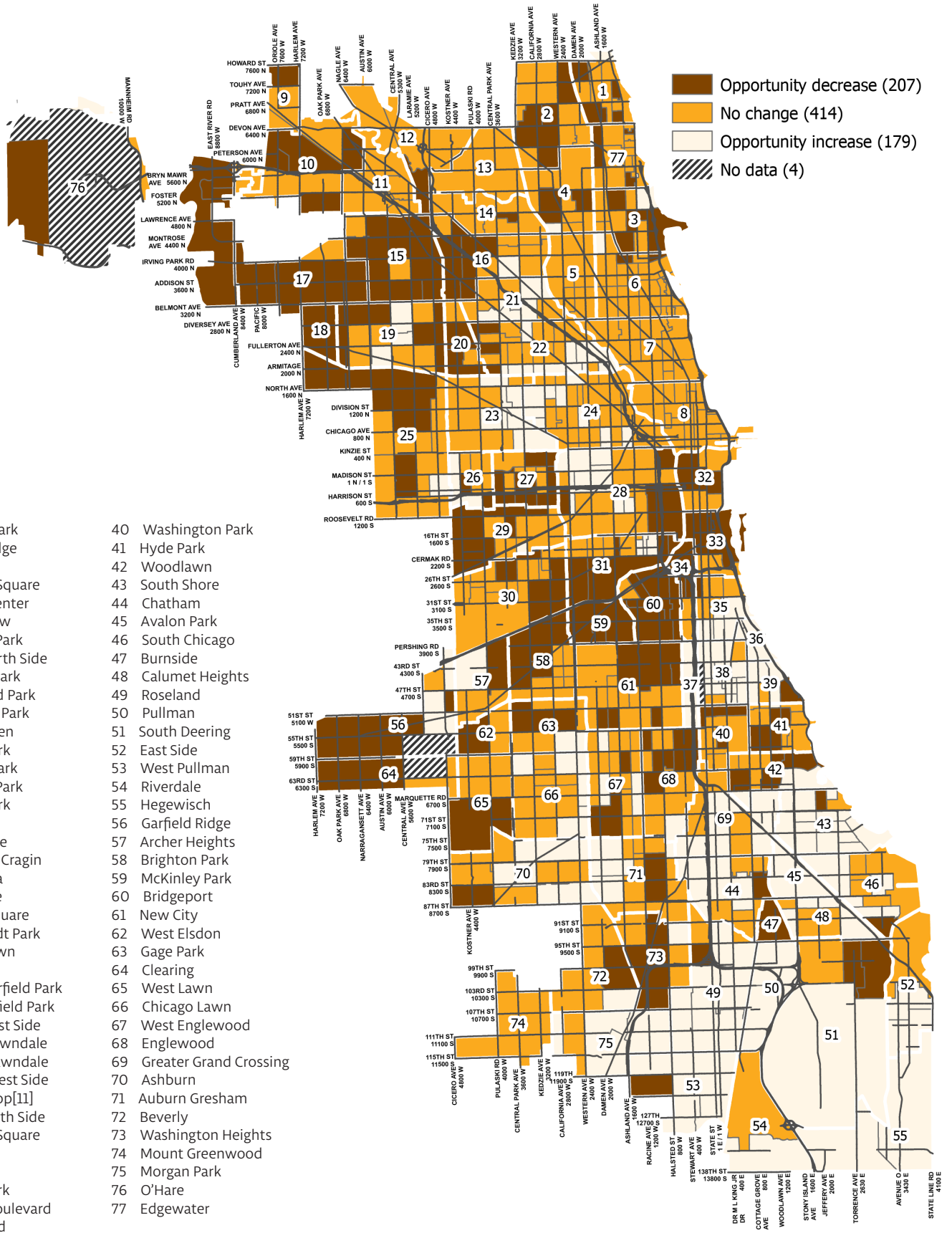
COI 2.0 INDICATORS AND DOMAINS: EDUCATION

Domain	Indicator	Description
Education	<i>Early Childhood Education (ECE) centers</i>	<i>Number of centers within a 5-mile radius</i>
	<i>High quality ECE centers</i>	<i>Number of NAEYC accredited centers within a 5-mile radius</i>
	ECE enrollment	Percent of 3- and 4-year-olds enrolled in nursery school, preschool, or kindergarten
	Third grade reading proficiency	Percent of third graders scoring proficient on standardized reading tests
	Third grade math proficiency	Percent of third graders scoring proficient on standardized math tests
	High school graduation rate	Percent of ninth graders graduating from high school on time
	Advanced Placement (AP) course enrollment	Ration of students enrolled in at least one AP course to the number of 11 th and 12 graders
	College enrollment in nearby institutions	Percent of 18-24 year-olds enrolled in college within a 25-mile radius
	School poverty	Percent of students in elementary school eligible for free or reduced-price lunches, reversed
	<i>Teacher experience</i>	<i>Percent of teachers in their first and second year, reversed</i>
	<i>Adult educational attainment</i>	<i>Percent of adults ages 25 and over with a college degree or higher</i>

COI 2.0 SCORES 2010 & 2015: EDUCATION



COI 2.0 SCORE CHANGE 2010-2015: EDUCATION

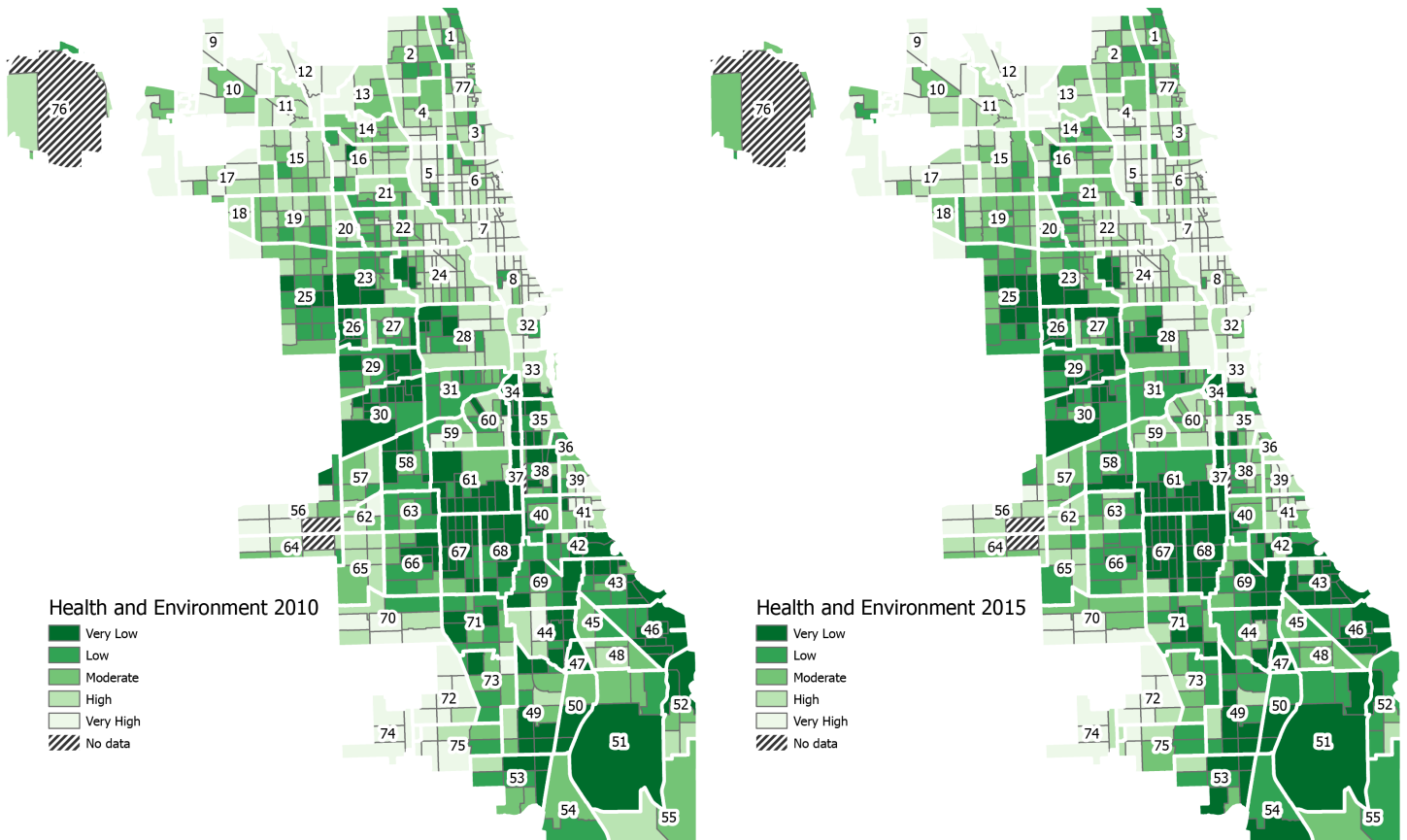


Change indicates any amount of increase or decrease in COI 2.0 level (for example: Very Low to Low) between 2010 and 2015. No Change indicates there was no change in level.

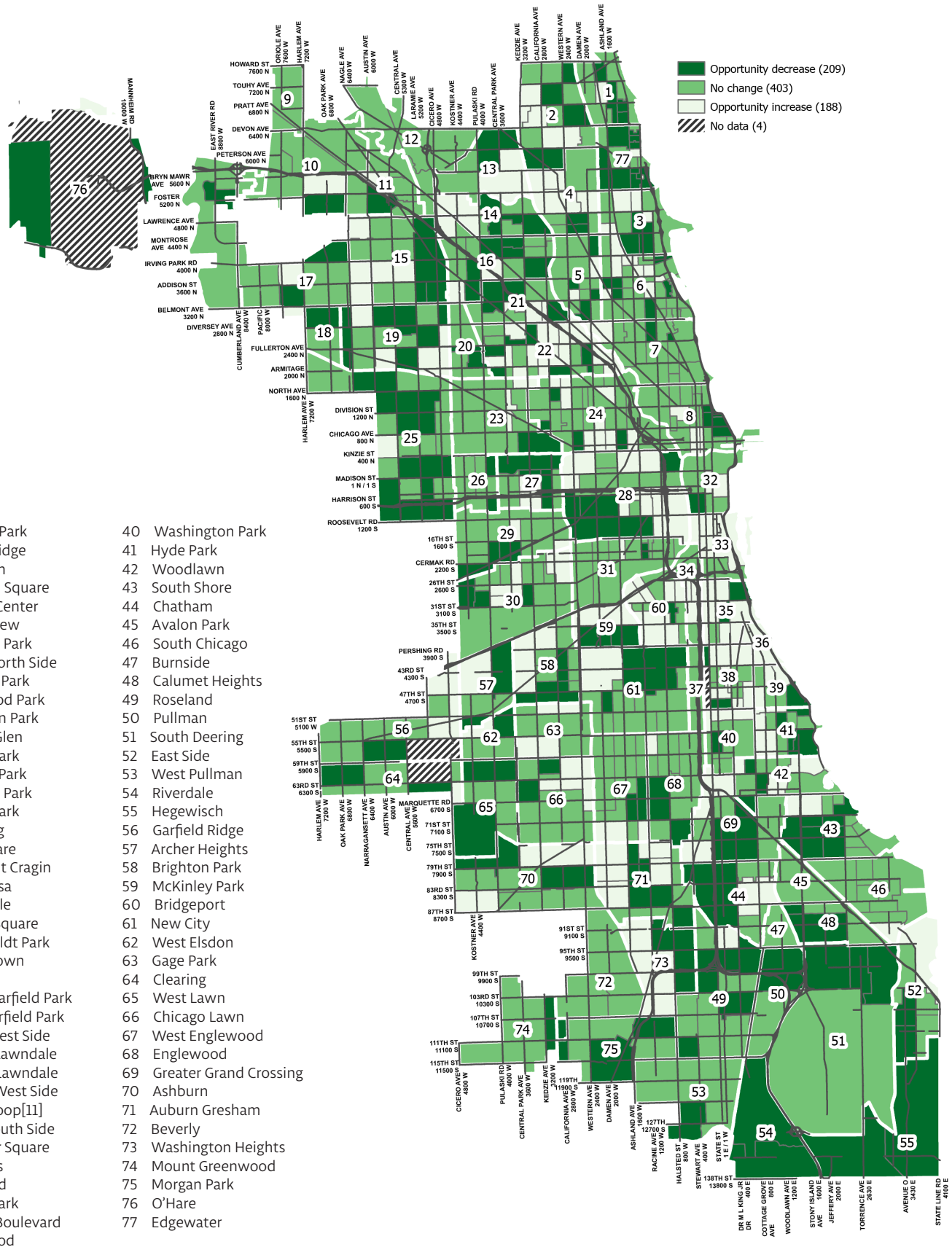
COI 2.0 INDICATORS AND DOMAINS: HEALTH & ENVIRONMENT

Domain	Indicator	Description
Health & Environment	Access to healthy food	Percent of households without a car located further than a half-mile from the nearest supermarket, reversed
	Access to green space	Percent of impenetrable surface areas such as rooftops, roads, or parking lots, reversed
	Walkability	EPA Walkability Index
	Housing vacancy rate	Percent of housing units that are vacant, reversed
	Hazardous waste dump sites	Average number of Superfund sites within a 2-mile radius, reversed
	Industrial pollutants in air, water, or soil	Index of toxic chemicals released by industrial facilities, reversed
	Airborne microparticles	Mean estimated microparticle (PM2.5) concentration, reversed
	Ozone concentration	Mean estimated 8-hour average ozone concentration, reversed
	Extreme heat exposure	Summer days with maximum temperature above 90F, reversed
	Health insurance coverage	Percent of individuals ages 0-64 with health insurance coverage

COI 2.0 SCORES 2010 & 2015: HEALTH & ENVIRONMENT



COI 2.0: HEALTH & ENVIRONMENT SCORE CHANGE 2010-2015



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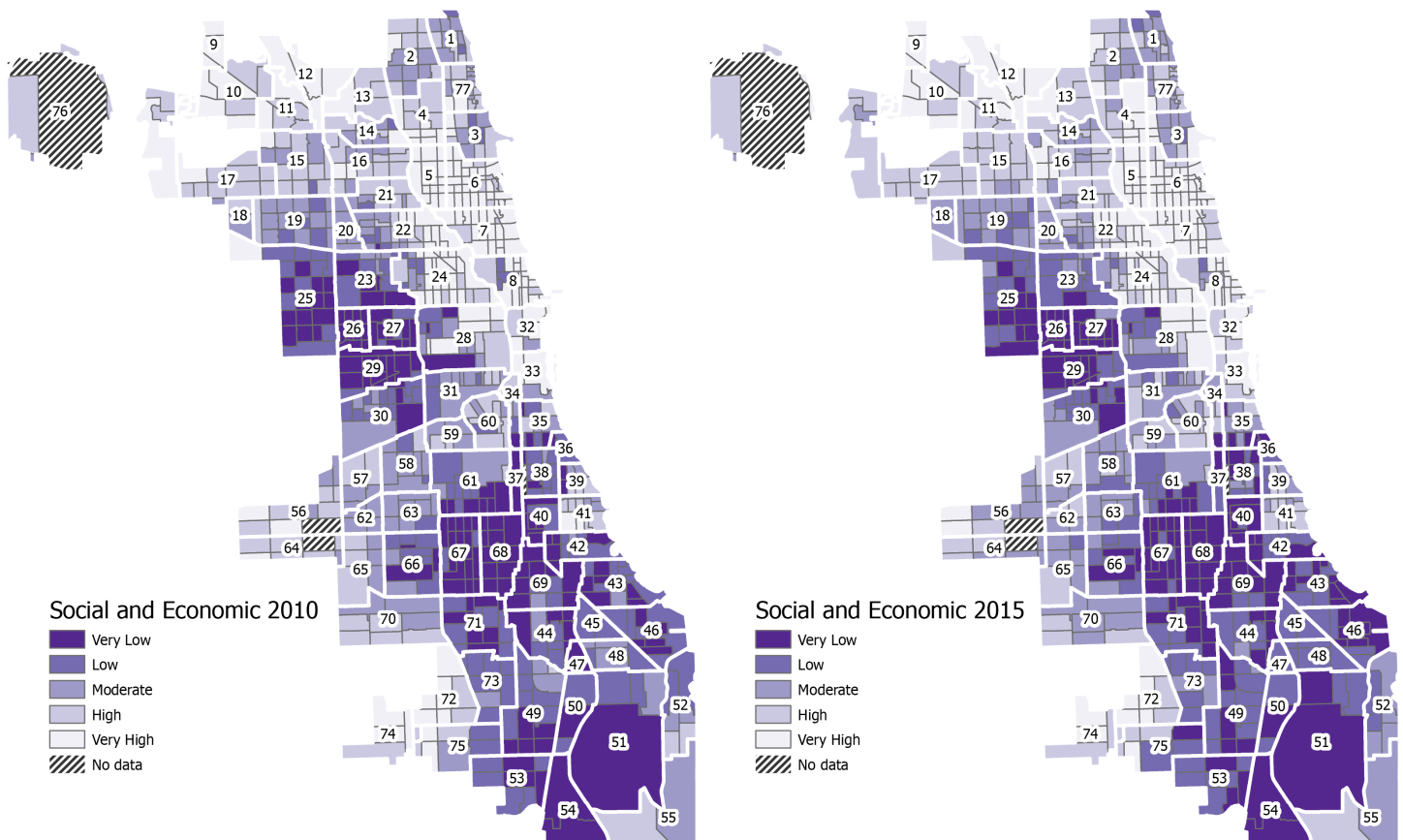
COI 2.0 INDICATORS AND DOMAINS: SOCIAL & ECONOMICAL

Domain	Indicator	Description
Social & Economical	Employment rate	Percent of adults ages 25-54 who are employed
	Commute duration	Percent of workers commuting more than one hour one-way, reversed
	Poverty rate ^a	Percent of individuals living in households with incomes below 100% of the federal poverty threshold, reversed
	Public assistance rate ^a	Percent of households receiving case public assistance of Food Stamps/Supplemental Nutrition Assistance Program, reversed
	<i>Homeownership rate^a</i>	<i>Percent owner-occupied housing units</i>
	High-skill employment ^a	Percent of individuals ages 16 and over employed in management, business, financial, computer, engineering, science, education, legal, community service, healthcare practitioner, health technology, arts and media occupations
	Median household income ^a	Median income of all households
	Single-headed households	Percent of family households that are single-parent headed, reversed

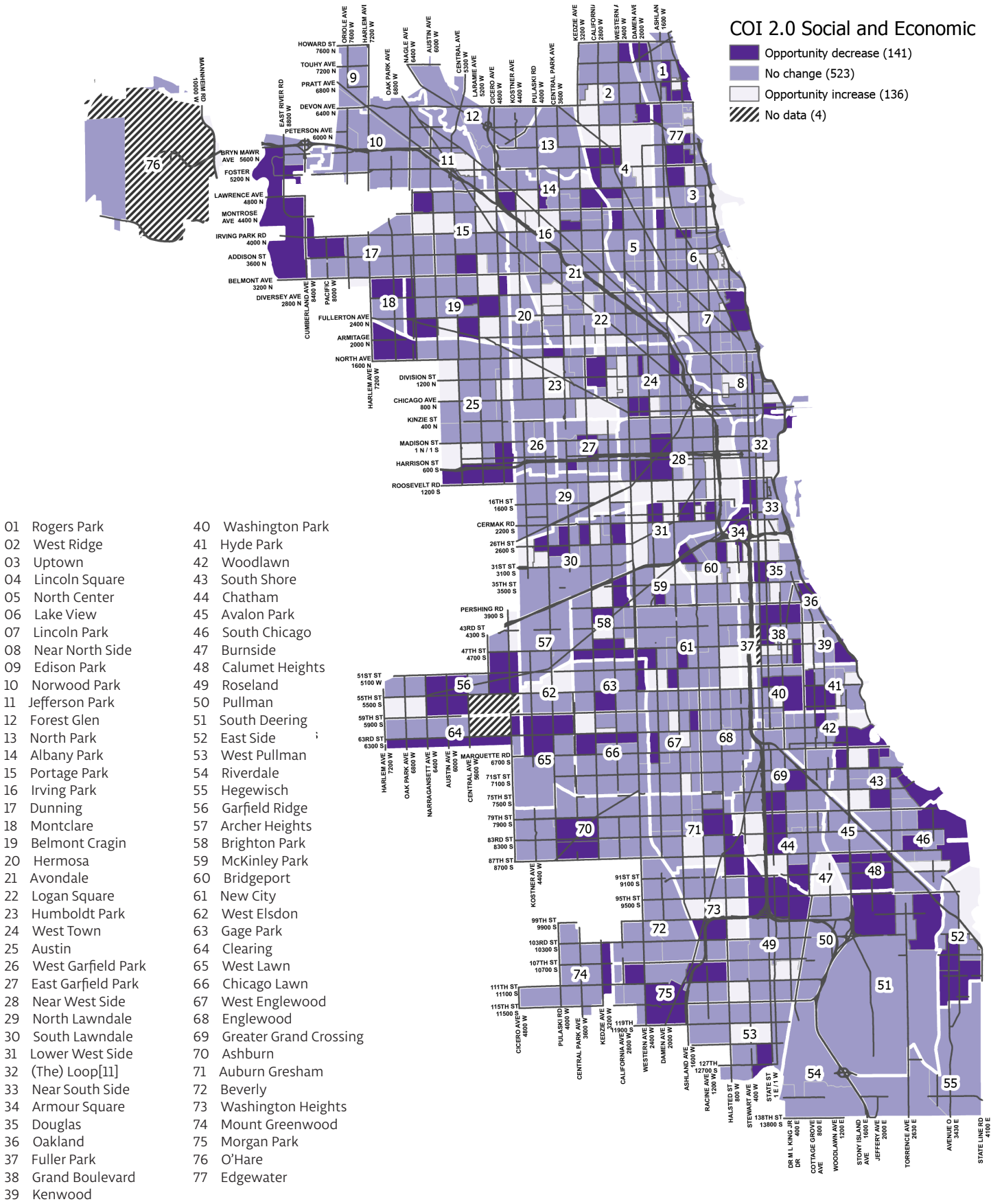
Note: Some indicators (e.g., poverty rate) are reversed (multiplied by -1) when combining them into the index so that higher values for indicators always means more opportunity.

^aThese five indicators are combined into an economic resource index

COI 2.0 SCORES 2010 & 2015: SOCIAL & ECONOMICAL

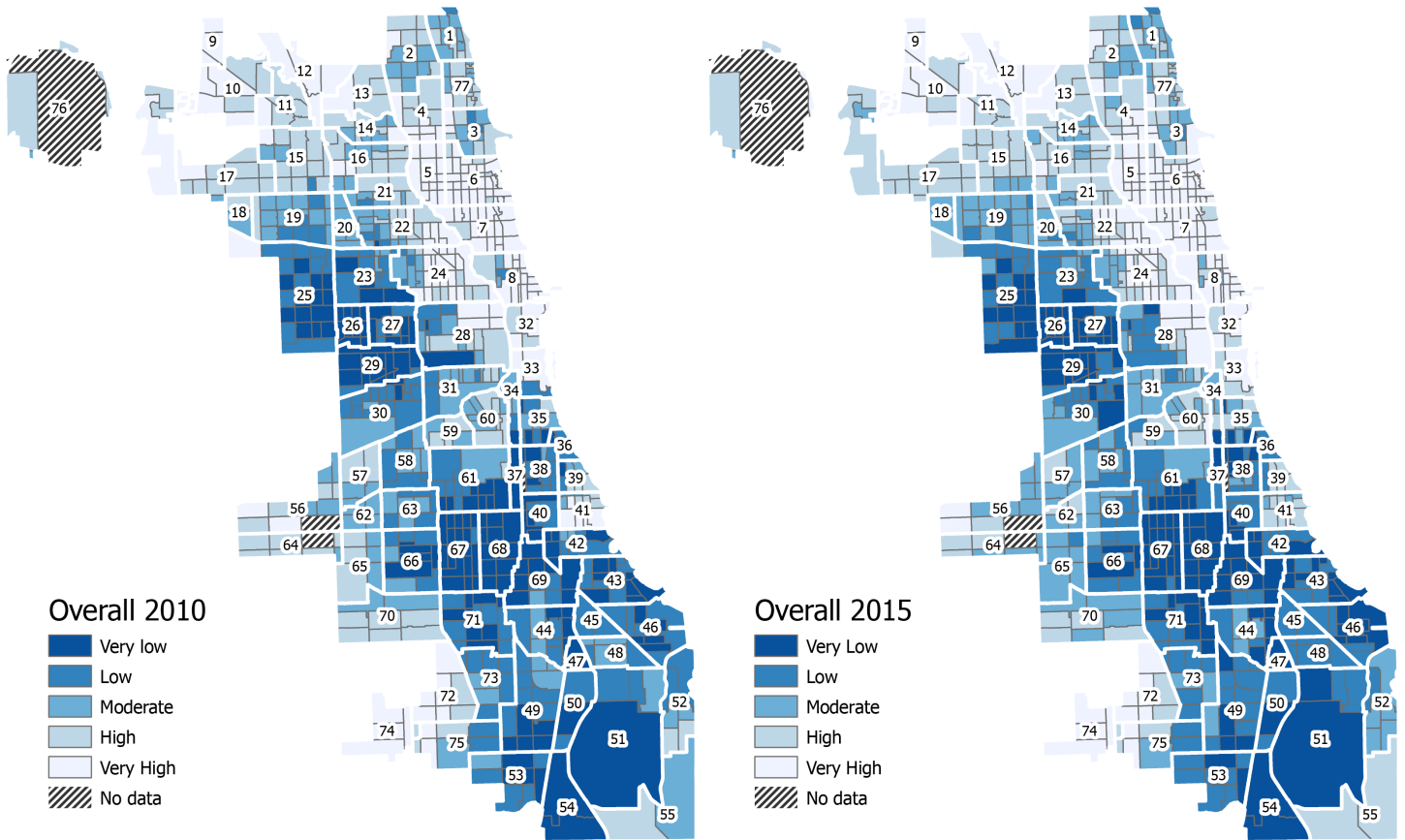


COI 2.0: SOCIAL & ECONOMICAL SCORE CHANGE 2010-2015

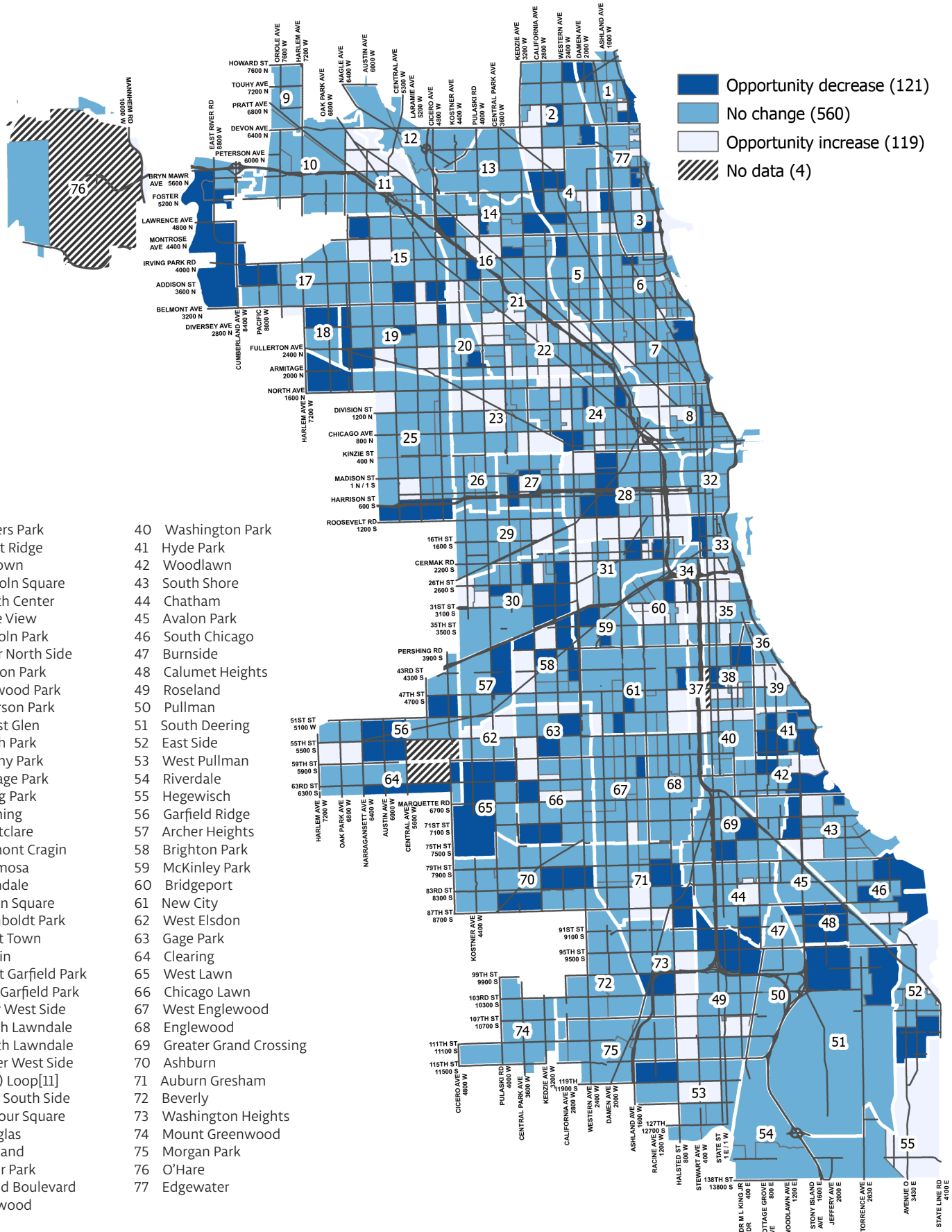


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COI 2.0 SCORES 2010 & 2015: OVERALL



COI 2.0: OVERALL SCORE CHANGE 2010-2015



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