

City Index Methodology

October 2024

To promote understanding of city outcomes and racial disparities from multiple indicators, we calculate one summary measure of all indicators: a composite index. Due to more limited data at city level we do not publish issue averages as indexes. The composite index is calculated separately for outcomes and racial disparity. Note: this summary measure of indicators is distinct from the Index of Disparity measure we use to determine racial disparity for a single indicator.

City Composite Index Methodology:

We include all the indicators in the disparity and outcome composite indexes. See the list of issues and indicators at the end of this document. First, we calculate disparity and outcome z-scores¹ for each indicator and cap them at |3.5| to lessen the impact of outliers. A positive z-score indicates a higher than average value, while a negative z-score indicates a lower than average value. For example, 7.4% of Pasadena residents are uninsured. Pasadena's uninsured outcome z-score is -0.19, reflecting that Pasadena residents are slightly less likely to have health insurance than the California city average (6.7%).

For education data, there is one extra step because this data is collected at school district not city level. To address that mismatch, we have created a method to aggregate school district data to city level. Districts with 30% or more of their area within a city or that cover 30% or more of a city's area are assigned to that city. As a result, a district can be assigned to more than one city and a city can have more than one district. We then weight the assigned districts' data by district enrollment to calculate the city level indicator data. For example, looking at high school graduation we first calculate the percentage of students each district represents out of enrollment in all districts assigned to a city. Then we multiply each districts' graduation rate by that percentage. Finally, we add up these weighted graduation rates to get the city's graduation rate.

City A: High School Graduation Rate

	Enrollment #	Enrollment %	Graduation Rate %	Weighted Graduation Rate %
District 1	350	22.6	89	20.1
District 2	1,200	77.4	95	73.5
City	1,550	100	n/a	93.6

Next, we calculate z-scores for the average indicator disparity and outcome values within each issue at city level. After this we suppress the z-scores for cities with few indicator disparity and outcome values within each issue. Each issue has its own indicator threshold as shown in the table below.

Issue	Minimum Indicator Threshold
Crime & Justice	1

¹ A z-score is a standardized number that tells you how far away a given data point is from the mean [or average].
[Source](#)

Democracy	1
Economic Opportunity	2
Education	2
Health	1
Healthy Built Environment	2
Housing	3

Whether the minimum or maximum total rate is the best outcome will impact outcome z-scores. We account for that in our indicator outcome z-score calculations. The way we do that is by multiplying indicator outcome z-scores by -1 where the *minimum* total rate is the best outcome, so that they are consistent with the indicators where the *maximum* total rate is the best outcome. The adjusted indicator outcome z-scores are then used in all index calculations.

We then cap the remaining z-scores at $|2|$ to lessen the impact of issue outliers. These capped z-scores are the issue average disparity and outcome scores.

We include all issue scores in the composite index on RACE COUNTS. We do this by taking the average of issue outcome and disparity scores. See example of the Oakland city Composite Outcome Index below.

Oakland city: Composite Outcome Index

Issue	Issue Average Score	Composite Index (Avg)
Crime & Justice	.41	-.12
Democracy	-.59	
Economic Opportunity	.45	
Education	-.55	
Health Care Access	-.02	
Healthy Built Environment	-.23	
Housing	-.08	

Note: This composite outcome index z-score of $-.12$ ranks 279th best among all 496 California cities with data.

We suppress the composite z-scores for cities with fewer than 4 issue average disparity and outcome scores or with fewer than 13 indicator disparity or outcome scores. Then, we cap the remaining composite z-scores at $|1|$. These capped z-scores are the composite index disparity and outcome scores. Finally, we rank these composite disparity and outcome scores, which become the city disparity and outcome ranks you see on RACE COUNTS.

City Indicator Methodology

Crime & Justice

Use of Force

Incarceration

Officer-Initiated Stops

Democracy

Diversity of Elected Officials

Census Participation

Economic Opportunity

Employment

Per Capita Income

Employment as Officials and Managers

Internet Access

Education

High School Graduation

3rd Grade English Proficiency

3rd Grade Math Proficiency

Suspensions

Teacher & Staff Diversity

Chronic Absenteeism

Health Care Access

Health Insurance

Healthy Built Environment

Drinking Water Contaminants

Proximity to Hazards

Toxic Releases from Facilities

Lack of Greenspace

Housing

Subprime Mortgages

Denied Mortgages

Housing Quality

Housing Cost-Burdened Renters

Housing Cost-Burdened Owners

Foreclosure Rate

Evictions

Overcrowded Housing

Homeownership