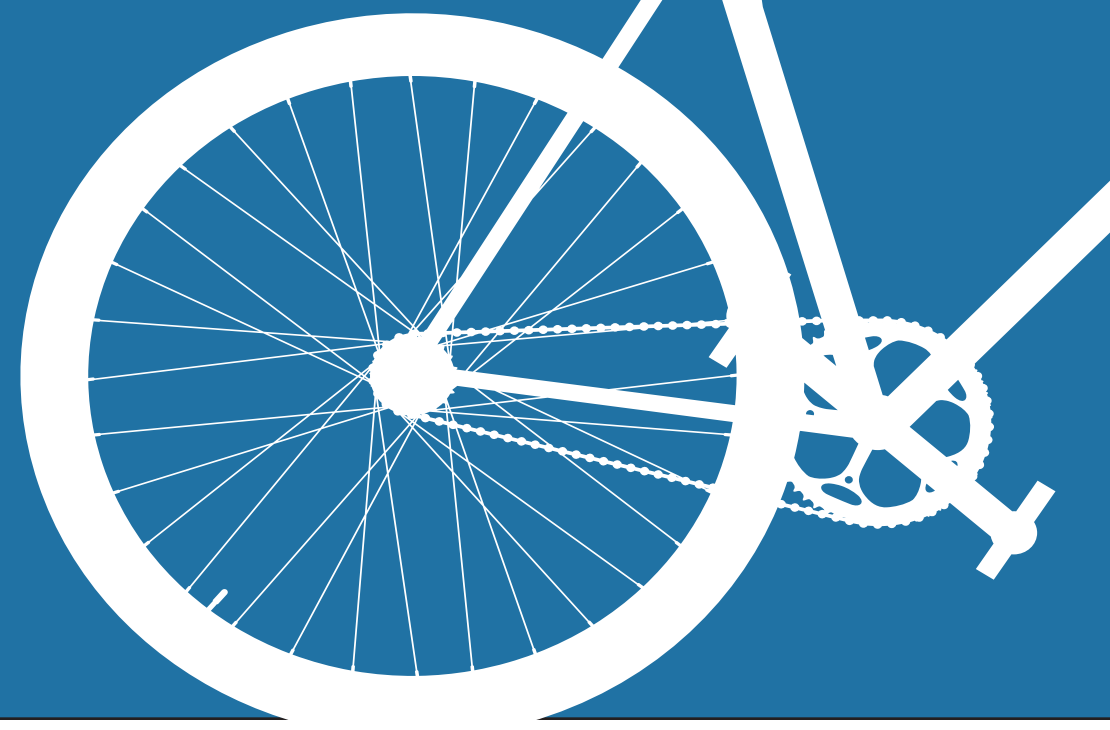


# CENTRAL OKLAHOMA BICYCLE COMPOSITE INDEX

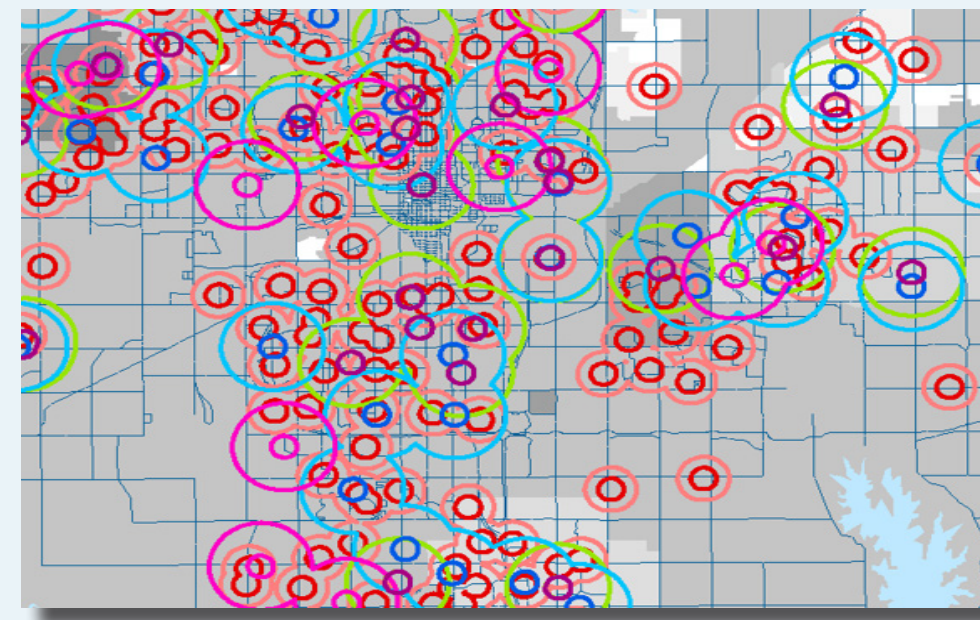
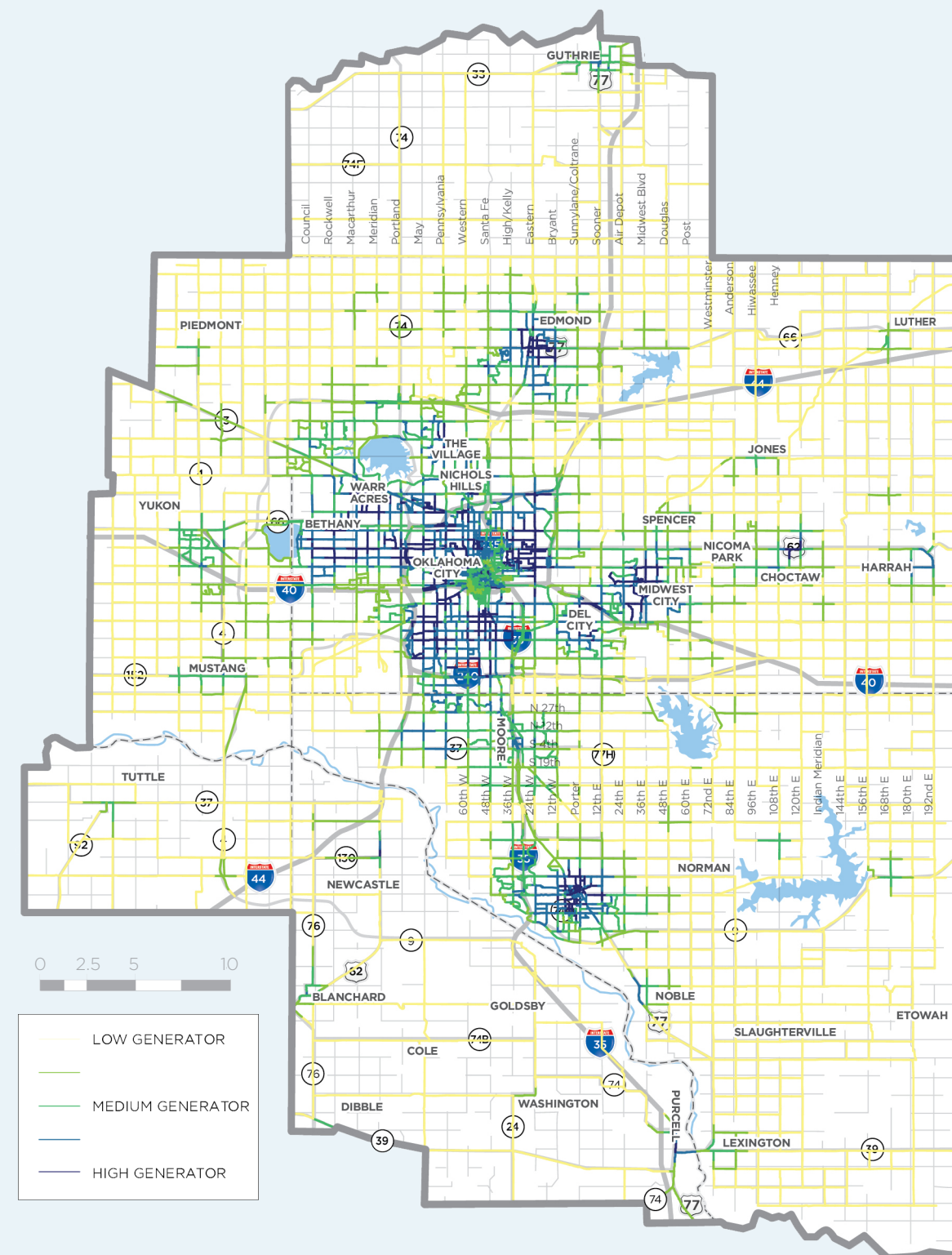


The Association of Central Oklahoma Governments (ACOG) produced the Bicycle Composite Index (BCI) to help city, county, and state planners and officials understand what areas need safe and convenient bicycle facilities, such as bicycle lanes, shared use paths, and trails. The BCI analysis used Geographic Information Systems (GIS) to measure the relationship between where bicyclist activity might be generated and where bicyclists might have difficulty moving about. When combined, this information suggests regional priority areas for investment. The spatial relationship for the various locations that generate and deter bicyclist activity were calculated, the appropriate score was added as a field to each layer, then joined to the road segments that intersect the layer using the spatial join tool.

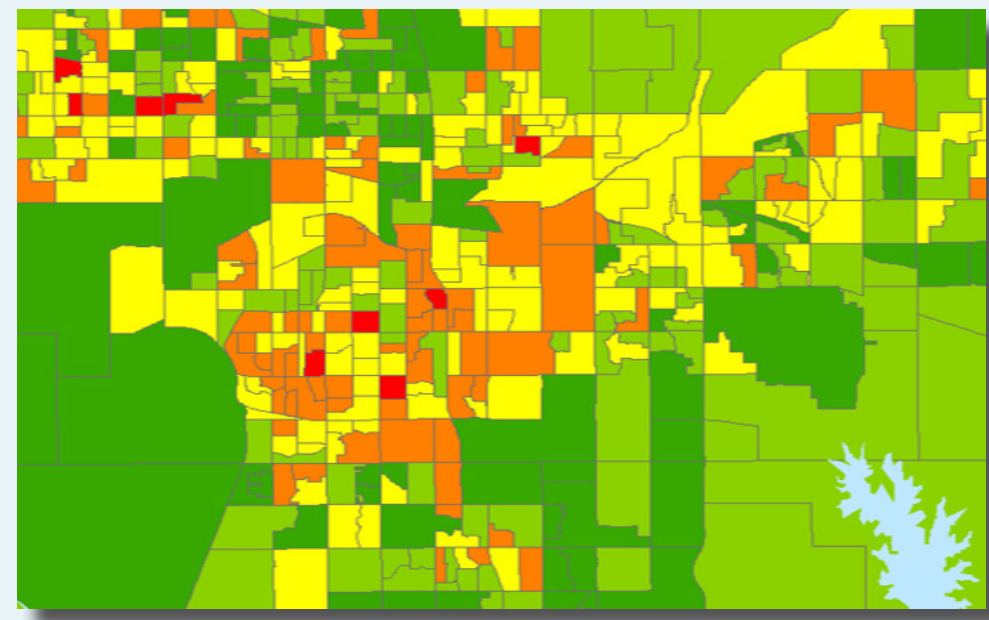
This index was created as part of the Oklahoma City Area Regional Transportation Study (OCARTS) Regional Active Transportation Plan (2021).

## AREAS THAT GENERATE BICYCLIST ACTIVITY

To determine which roads are generators of bicyclist activity, locations such as transit stops, parks, public libraries, schools, universities, bikeable businesses, and communities of concern were all measured and scored based on specific criteria (see tables below).



Data Example: Buffer of Schools, Colleges, & Universities



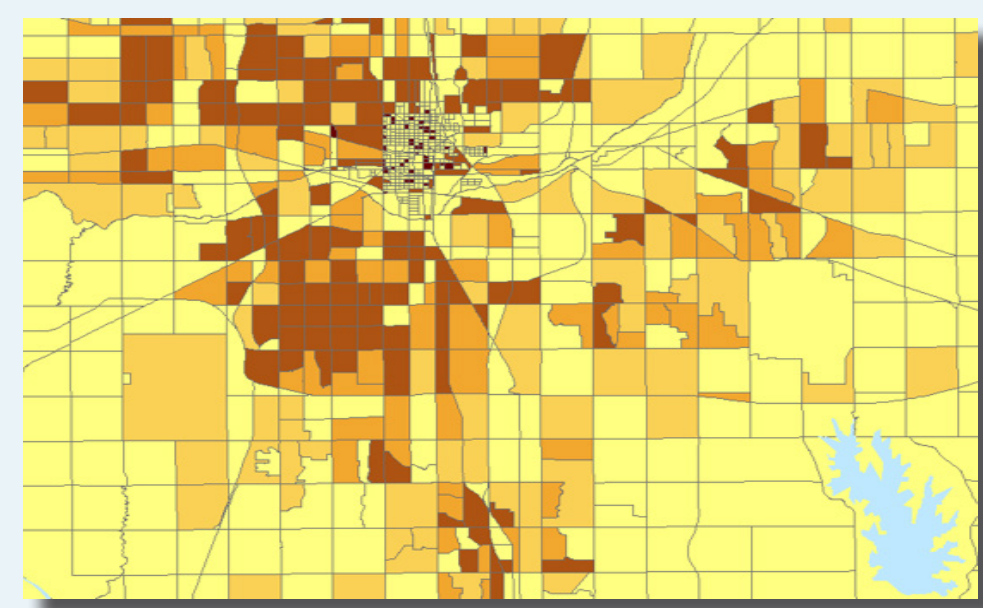
Data Example: Communities of Concern, by Block Group

| BICYCLE GENERATOR     | SPATIAL RELATIONSHIP                            | SCORE |
|-----------------------|---|-------|
| ELEMENTARY SCHOOL     | Area within 1/2 mile of an Elementary School    | 1     |
|                       | Area within 1 mile of an Elementary School      | 0.5   |
|                       | Area within 2 miles of an Elementary School     | 0.25  |
| MIDDLE SCHOOL         | Area within 1/2 mile of a Middle School         | 1     |
|                       | Area within 1 mile of a Middle School           | 0.5   |
|                       | Area within 2 miles of a Middle School          | 0.25  |
| HIGH SCHOOL           | Area within 1/2 mile of a High School           | 1     |
|                       | Area within 1 mile of a High School             | 0.5   |
|                       | Area within 2 miles of a High School            | 0.25  |
| COLLEGE OR UNIVERSITY | Area within 1/2 mile of a College or University | 1     |
|                       | Area within 1 mile of a College or University   | 0.5   |
|                       | Area within 2 miles of a College or University  | 0.25  |

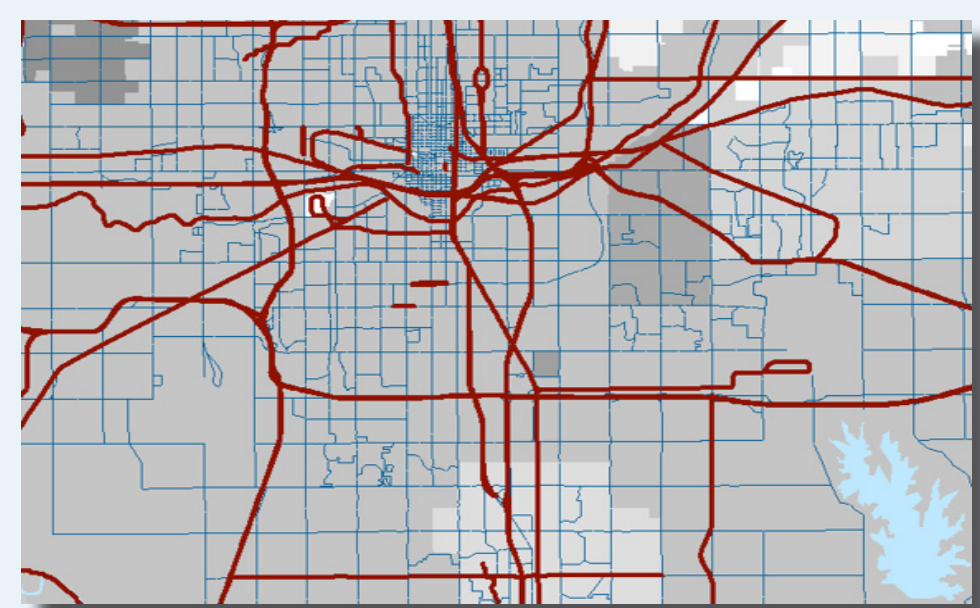
| BICYCLE GENERATOR       | SPATIAL RELATIONSHIP                               | SCORE |
|-------------------------|--|-------|
| TRANSIT STOP            | Area within 1/2 mile of a High-Volume Stop         | 1     |
|                         | Area within 1 mile of a High-Volume Stop           | 0.5   |
|                         | Area within 2 miles of a High-Volume Stop          | 0.25  |
| PARK                    | Area within 1/2 mile of a Park                     | 1     |
|                         | Area within 1 mile of a Park                       | 0.5   |
|                         | Area within 2 miles of a Park                      | 0.25  |
| PUBLIC LIBRARY          | Area within 1/2 mile of a Public Library           | 1     |
|                         | Area within 1 mile of a Public Library             | 0.5   |
|                         | Area within 2 miles of a Public Library            | 0.25  |
| SHARED USE PATH / TRAIL | Area within 1/2 mile of a Shared Use Path or Trail | 1     |
|                         | Area within 1 mile of a Shared Use Path or Trail   | 0.5   |
|                         | Area within 2 miles of a Shared Use Path or Trail  | 0.25  |
| BIKEABLE BUSINESS       | High Density of Bikeable Businesses in TAZ         | 1     |
|                         | Medium Density of Bikeable Businesses in TAZ       | 0.75  |
|                         | Low Density of Bikeable Businesses in TAZ          | 0.5   |
| COMMUNITIES OF CONCERN  | High Density in Block Group                        | 1     |
|                         | Medium-High Density in Block Group                 | 0.75  |
|                         | Medium-Low Density in Block Group                  | 0.5   |
|                         | Low Density in Block Group                         | 0.25  |

## AREAS THAT DETER BICYCLIST ACTIVITY

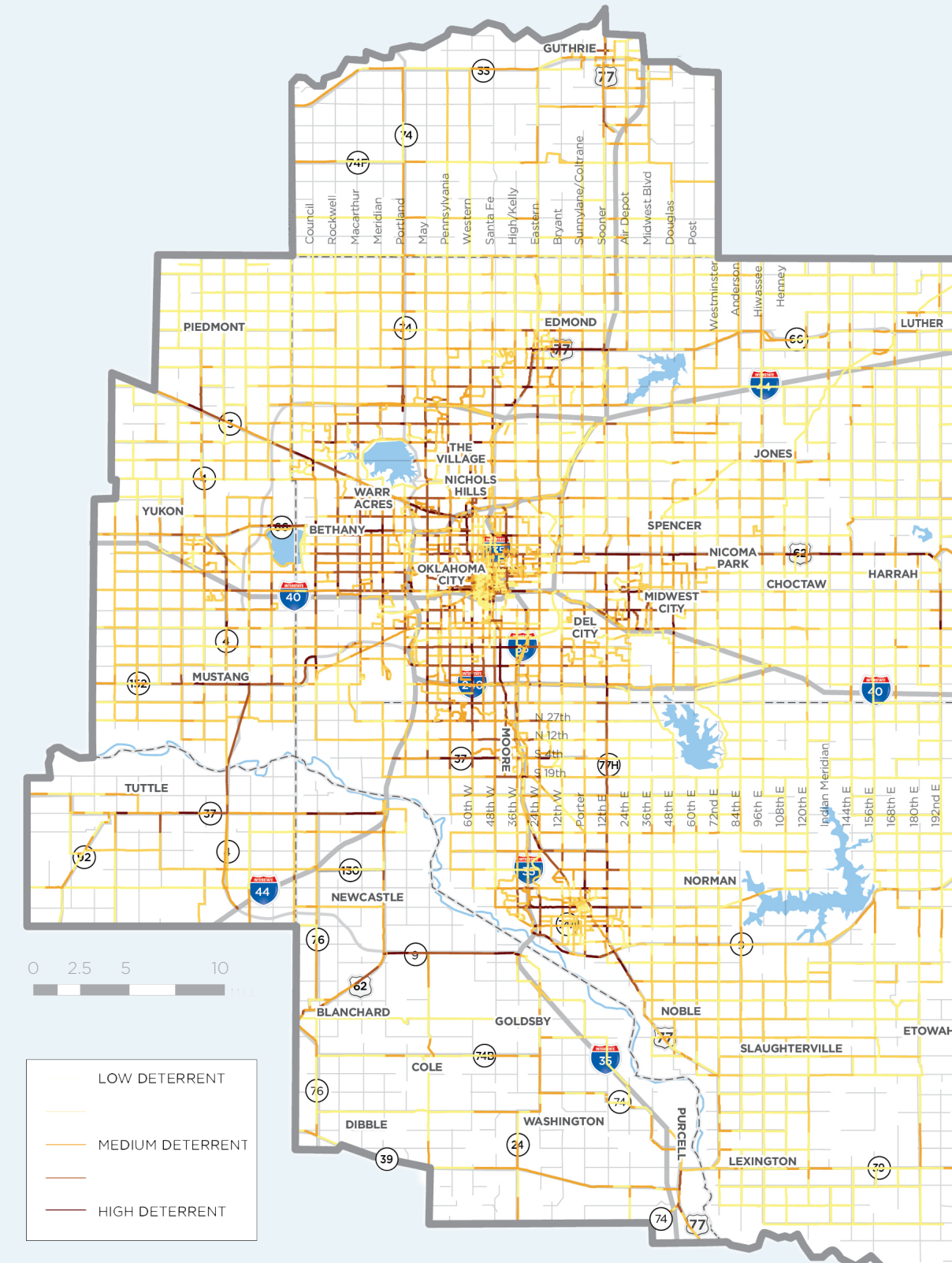
To determine which roads deter bicyclist activity, locations where high levels of bicyclist and pedestrian crashes, large traffic volumes, major physical barriers, more vehicle travel lanes, and areas that lack bicycle facilities were all located then scored based on the criteria below.



Data Example: Bicycle and Pedestrian Crashes by Traffic Analysis Zone (TAZ)



Data Example: Major Barriers

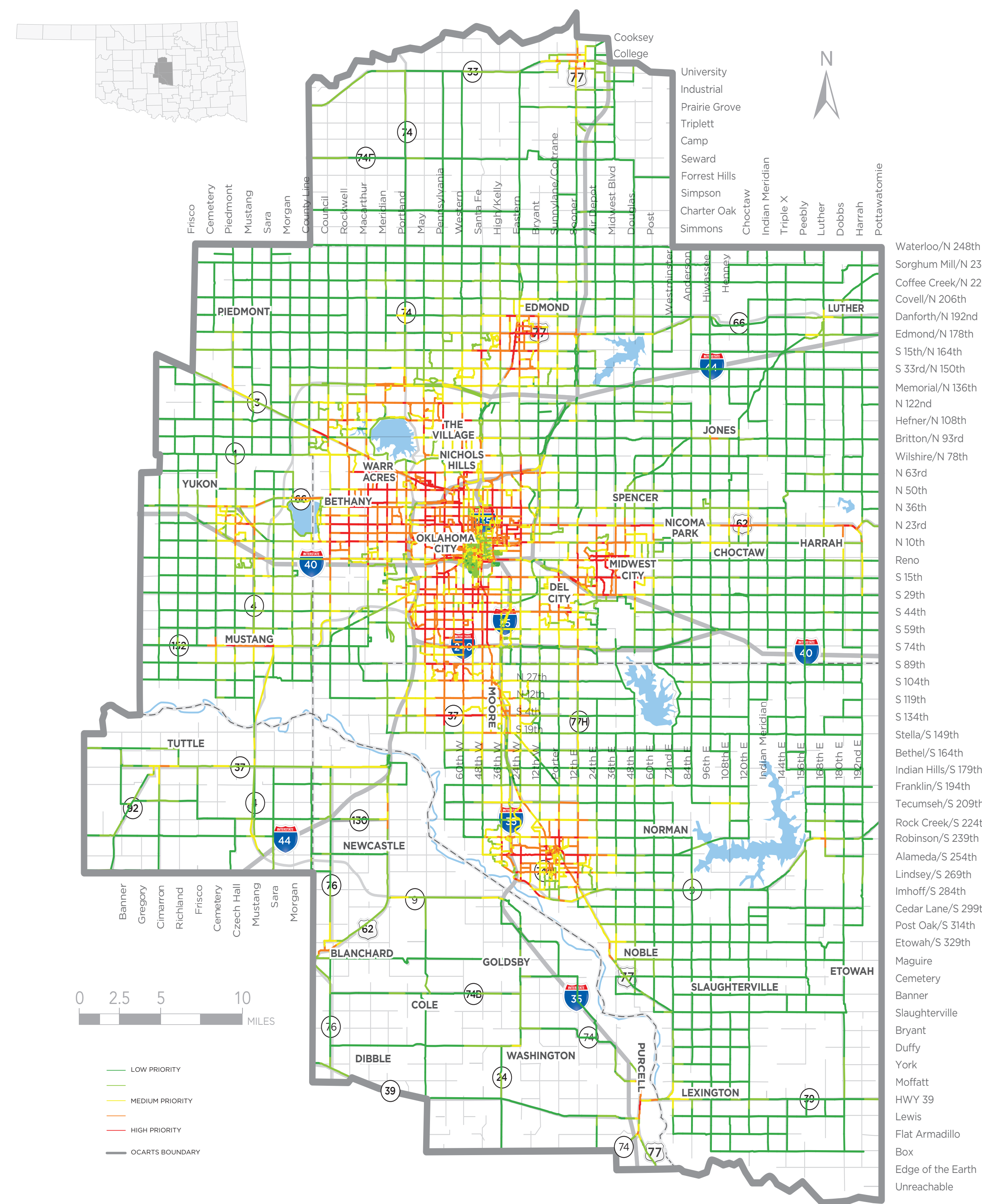


| BICYCLE DETERRENTS | SPATIAL RELATIONSHIP   | SCORE |
|--------------------|--|-------|
| CRASHES            | High Density in TAZ  | 1     |
|                    | Medium-High Density in TAZ   | 0.75  |
|                    | Medium-Low Density in TAZ  | 0.5   |
|                    | Low Density in TAZ   | 0.25  |
| TRAFFIC VOLUME     | Roads with AADT greater than 15,000  | 1     |
|                    | Roads with AADT between 5,000 and 14,999                                     | 0.5   |
|                    | Roads with AADT less than 4,999  | 0     |
|                    | Road intersects with a Major Barrier   | 1     |
| MAJOR BARRIER      | Road does not intersect with a Major Barrier                                 | 0     |
|                    | Road with 5+ Lanes   | 1     |
|                    | Road with 3 or 4 Lanes   | 0.5   |
|                    | Road with 1 or 2 Lanes   | 0     |
| NUMBER OF LANES    | Road with no Bike Facilities within .25 miles                                | 1     |
|                    | Road with Bike Lanes within .25 miles  | 0.5   |
|                    | Road with Buffered/Protected Bike Lanes or Shared Use Paths within .25 miles | 0     |
|                    |  |       |
| BIKE FACILITIES    |  |       |
|                    |  |       |
|                    |  |       |
|                    |  |       |

## DETERMINING THE FINAL BICYCLE COMPOSITE INDEX

To determine the final Bicycle Composite Index, the generator scores and deterrent scores for each road section were joined and averaged together, ensuring they held the same weight.

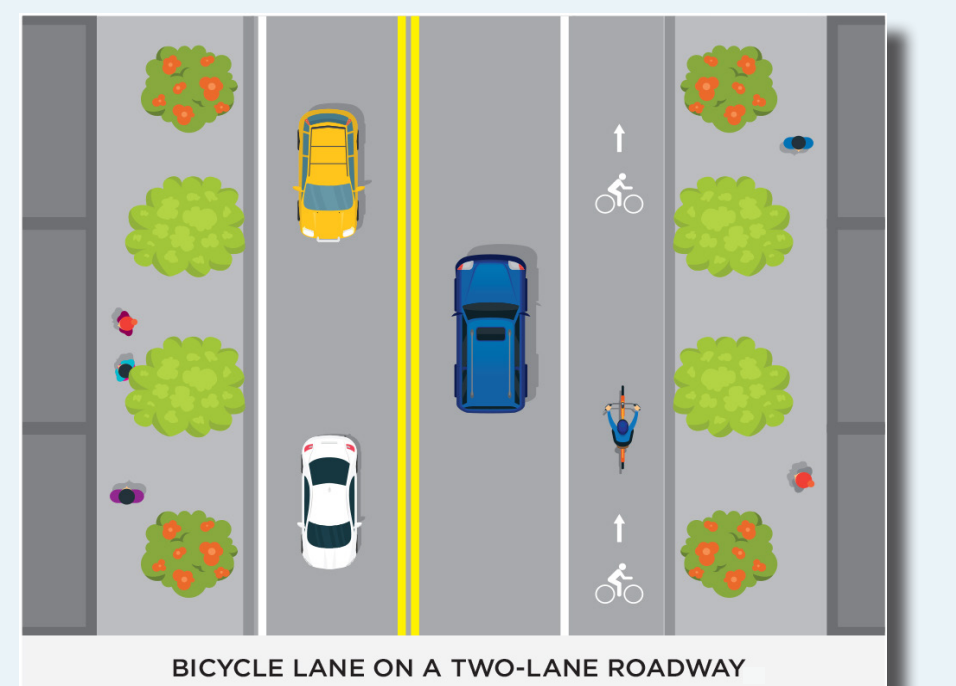
Upon final analysis, areas that have a high need for investment in safe bicycle facilities include South Oklahoma City, West Oklahoma City, Midwest City, Warr Acres, West Edmond, and Central Norman.



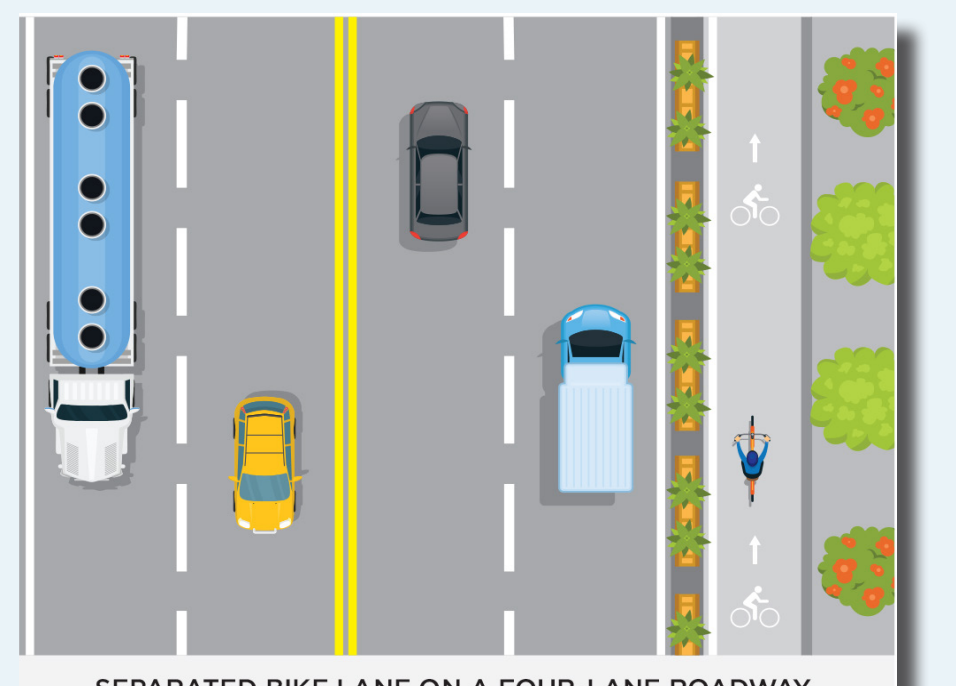
Scan to view ACOG's Bicycle Composite Index, or visit <https://arcg.is/InaqX40>

## PRACTICAL USE

With this analysis, approximately 300 miles of roadway are considered to be high priority for bicycle facilities. This includes much of the dense urbanized area. Bicycle facilities in these areas should be separated from vehicle traffic to promote safe and comfortable use by bicyclists. Facilities like bike lanes, separated bike lanes, and sidepaths are ideal for these high priority areas.



BICYCLE LANE ON A TWO-LANE ROADWAY



SEPARATED BIKE LANE ON A FOUR-LANE ROADWAY



SIDEPATH ADJACENT TO A FOUR-LANE ROADWAY