How Does the Bus Lane Metric Tool Work?
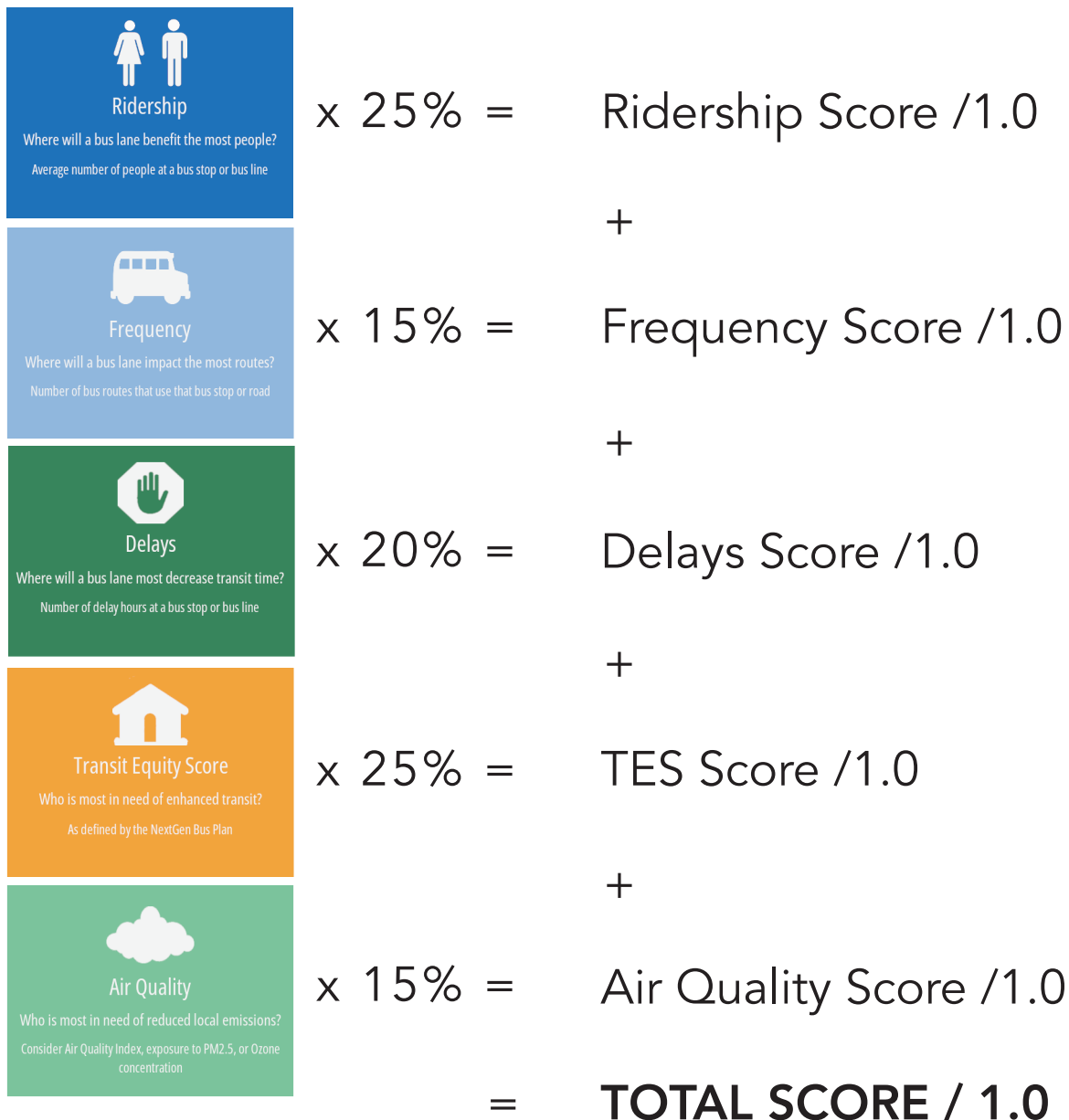## An Example Using Potential Bus Routes in LA

What is the BLMT?

The bus lane metric tool (BLMT) is a standard metric system to prioritize bus lane implementation using ridership, bus frequency, delay time, equity, and air pollution factors. The BLMT would ensure that bus priority lanes (BPLs) not only lead to decreased travel time and emissions, but also equitably benefit marginalized communities, such as those with a low-income or large non-White population.

The Calculations for the BLMT

Each factor should be calculated as a percent relative to a maximum possible value. Then, each score should be multiplied by the weighted value (percentage) for each parameter to determine a final score out of 1.0.
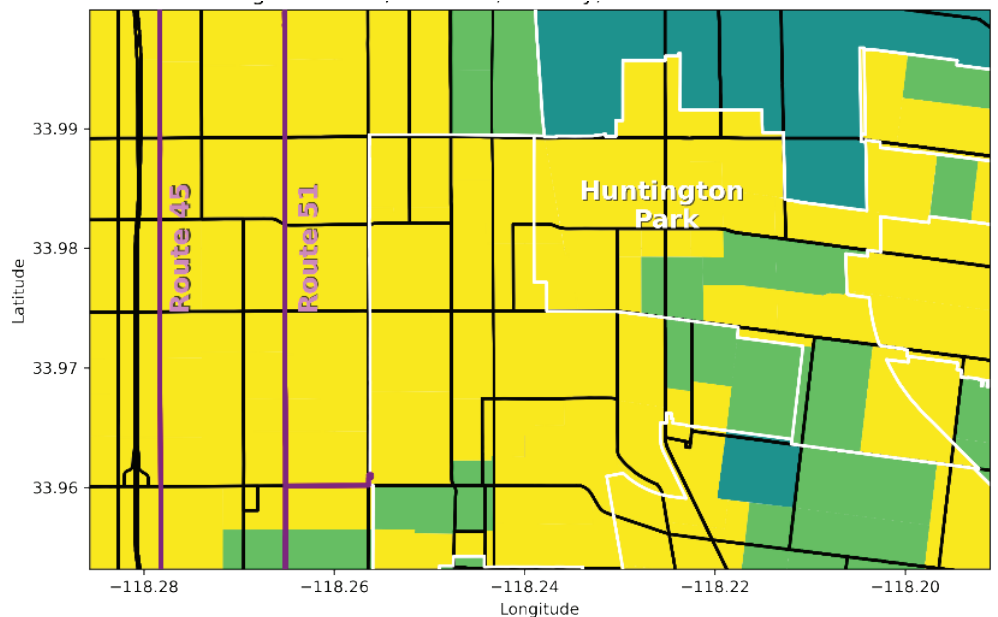
Ridership
Where will a bus lane benefit the most people?
Average number of people at a bus stop or bus line

x 25% =   Ridership Score /1.0

+

Frequency
Where will a bus lane impact the most routes?
Number of bus routes that use that bus stop or road

x 15% =   Frequency Score /1.0

+

Delays
Where will a bus lane most decrease transit time?
Number of delay hours at a bus stop or bus line

x 20% =   Delays Score /1.0

+

Transit Equity Score
Who is most in need of enhanced transit?
As defined by the NextGen Bus Plan

x 25% =   TES Score /1.0

+

Air Quality
Who is most in need of reduced local emissions?
Consider Air Quality Index, exposure to PM2.5, or Ozone concentration

x 15% =   Air Quality Score /1.0

=   **TOTAL SCORE / 1.0**

Final Scores: Broadway vs. Avalon Blvd

|	Ridership	Frequency	Delays	Transit Equity Score (TES)	Air Pollution
Broadway	0.15	0.15	0.10	0.18	0.15
Avalon Blvd	0.14	0.15	0.10	0.14	0.13

As seen in the chart above, Broadway scored higher at 0.73/1.0 compared to 0.66/1.0 for Avalon Blvd. This means that LA Metro should create a BPL on Broadway before Avalon Blvd.

An interesting trend to look at is the pollution and TES scores for the bus routes. Even though both routes are a few blocks apart, Broadway is closer to the freeway, and has a higher air pollution score and TES score. This highlights the importance of considering climate justice as factors for creating BPLs throughout Los Angeles County.

The map to the right shows the factors used to calculate scores for potential BPLs. As you can see from the map, the yellow region shows where BPLs would be ranked higher with the factors used in the BLMT. The proposed BLMT would ensure the equitable implementation of BPLs throughout Los Angeles County.

f. Estimated Bus Lane Metric
Average of Traffic, Pollution, Poverty, and Non-White Population in Percentiles

0-19th 20-39th 40-59th 60-89th 80-100th

Route 45: Broadway   *Route 51: Avalon*
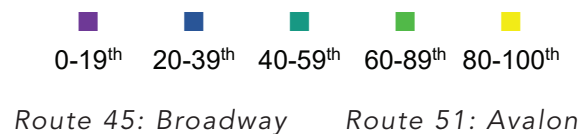
Example: Bus Route Broadway vs. Bus Route Avalon

This example shows the different calculations used along Broadway and Avalon Blvd to establish BPLs. The maps show bus route 45 along Broadway, and bus route 51 along Avalon Blvd with each parameter* from the BLMT. Each parameter (ridership, frequency**, delays**, TES, and air pollution) will have a weighted value to determine a final score out of 1.0 for each bus route.
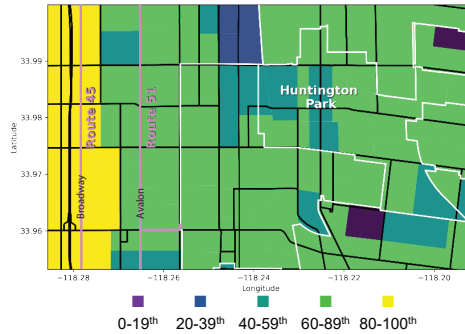

a. Transit Intensity
Average Number of Hourly Trips

Legend: 0-7, 8-15, 16-31, 32-63, 64-127, 127-256
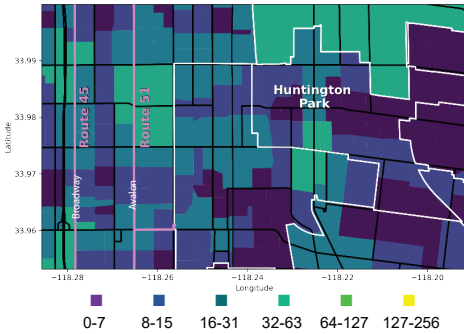
Step 1: Calculate the Ridership for Broadway and Avalon Blvd.

Broadway Score: 0.15/1.0
Avalon Blvd Score: 0.14/1.0

b. Potential for Delays
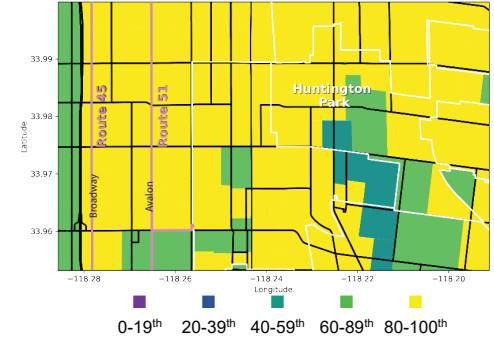*Cal Enviro Screen 3.0 Traffic Percentile*

Legend: 0-19th, 20-39th, 40-59th, 60-89th, 80-100th

Step 2: Calculate the Delay Potential for Broadway and Avalon Blvd.
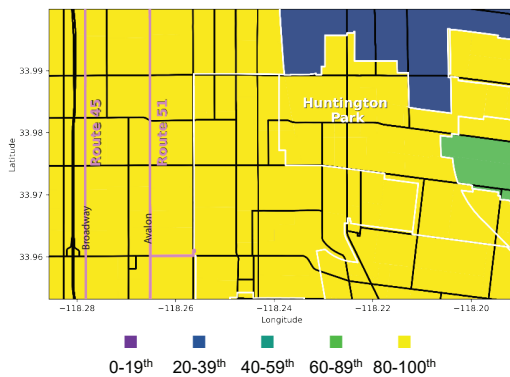
Broadway Score: 0.10/1.0
Avalon Blvd Score: 0.10/1.0

c. Air Pollution
Cal Enviro Screen 3.0 Pollution Percentile

Legend: 0-19th, 20-39th, 40-59th, 60-89th, 80-100th

Step 3: Calculate the Air Pollution for Broadway and Avalon Blvd.

Broadway Score: 0.15/1.0
Avalon Blvd Score: 0.13/1.0

d. Communities of Color
Percent Non-White Population

Legend: 0-19th, 20-39th, 40-59th, 60-89th, 80-100th

e. Low-Income Populations
Cal Enviro Screen 3.0 Poverty Percentile

Legend: 0-19th, 20-39th, 40-59th, 60-89th, 80-100th

Step 4: Calculate the Transit Equity Score for Broadway and Avalon Blvd.

Broadway Score: 0.18/1.0
Avalon Blvd Score: 0.14/1.0
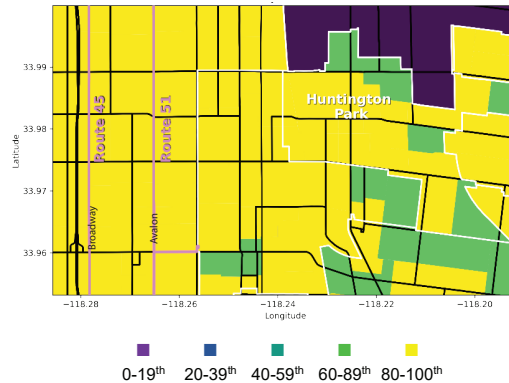
*Due to limited data, a map was not generated for frequency.
**Due to limited data, frequency and delays are given the same value.