

A Long Way To Walk

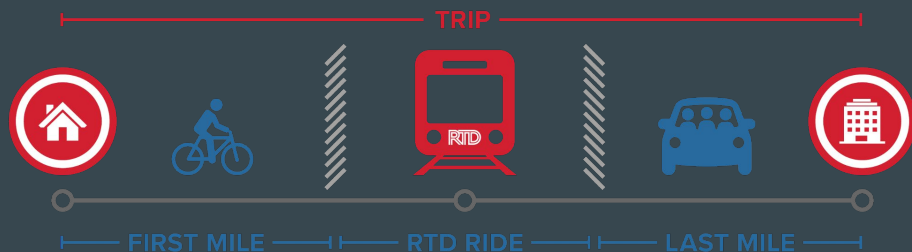


Eliminating Food Deserts with Multimodal Transit

By Matt Edrich

The Opportunity

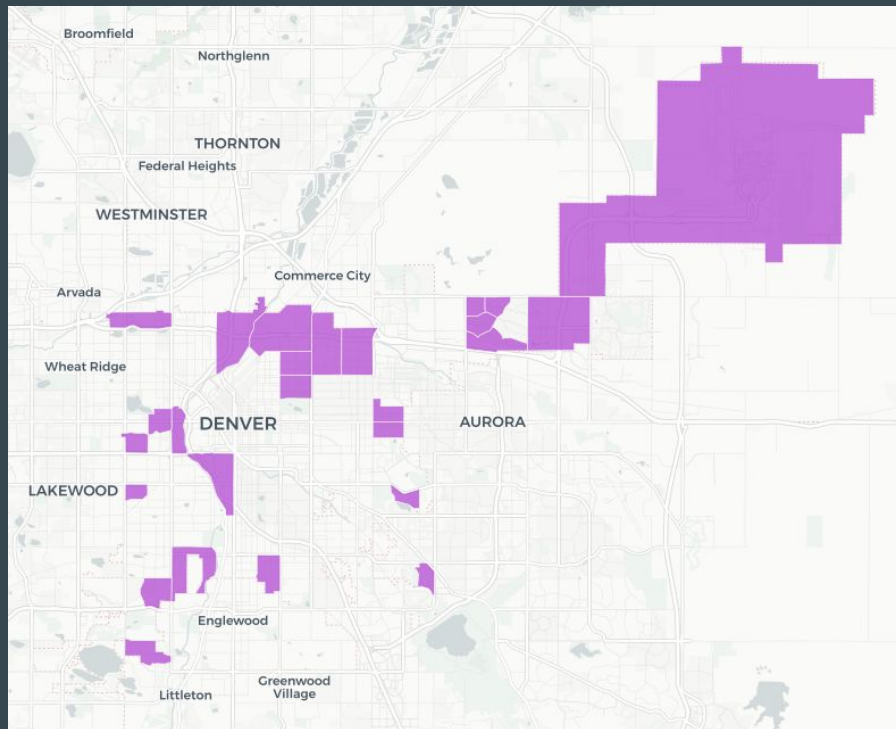
- Denver's Regional Transportation District (RTD) seeks to close first/last mile gaps in the Denver Metro Area
- Many options:
 - Reuse of existing infrastructure
 - Creation of new infrastructure
- Many constraints:
 - Where first?
 - Who first?
 - What access issues take priority?



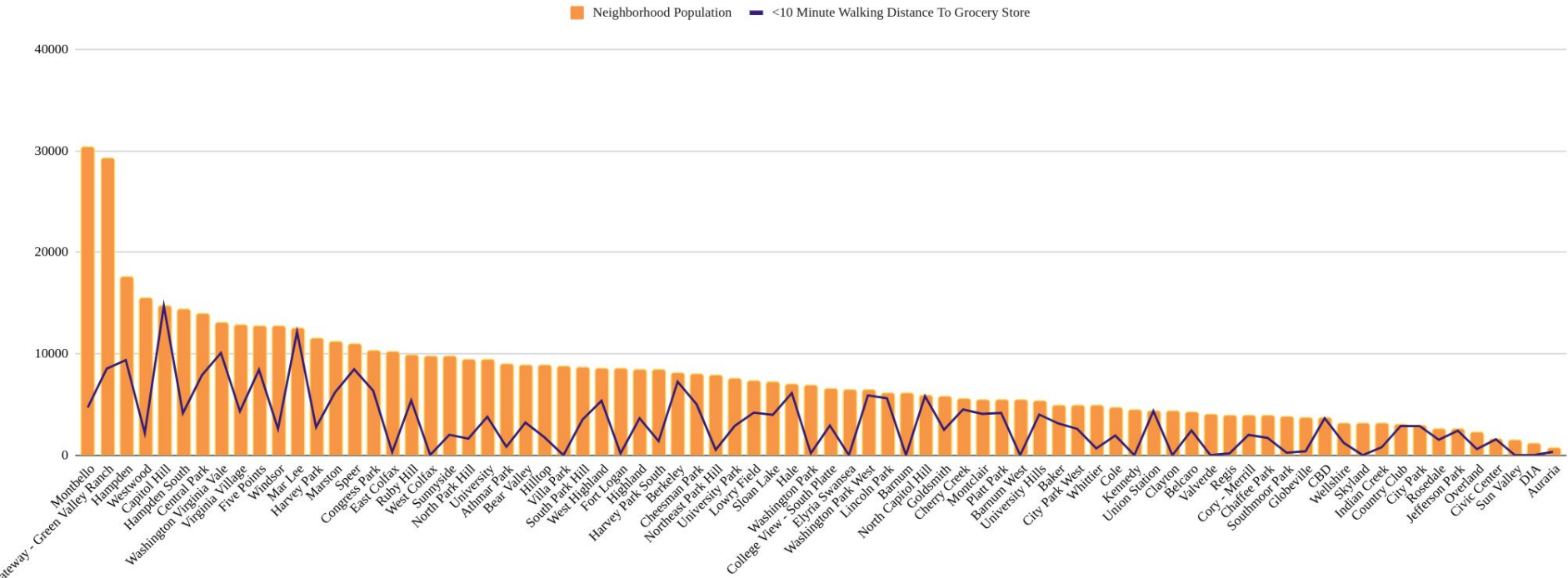
The Impact

- City-wide, 56.51% of residents **do not** live within a 10-minute walking distance of a grocery store
 - “Food Desert” (2020 US Census)
- ~67,000 miles of roadway
- Given the goal of eliminating total food desert area by 50% and utilizing 5% of existing roadways, where are the priority areas and what roads are the prime candidates?

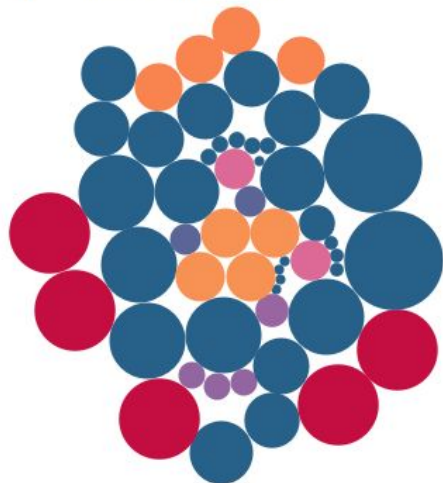
Denver Food Deserts by Census Tract (2013)



Denver Neighborhood Population Within 10 Minute Walking Distance Of Grocery Store



AM Peak Hourly Volume



Thru Lanes (AM)



Route Name (AM)

Thru Lanes (PM)



Route Name (PM)

- ☒ (All)
- ☒ Null
- ☒ 0
- ☒ 0.0
- ☒ 0.4W

Single Lane Width (AM)



Roadway Width (AM)



Single Lane Width (PM)



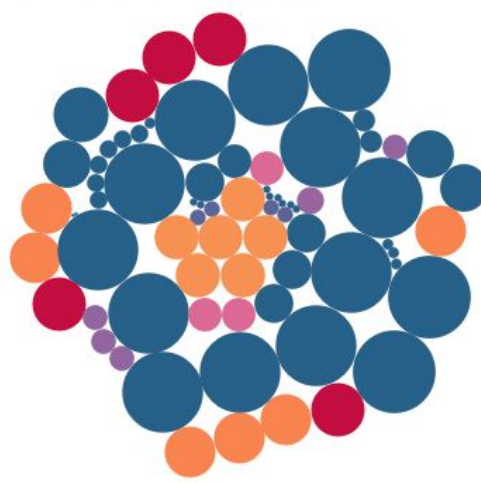
Roadway Width (PM)



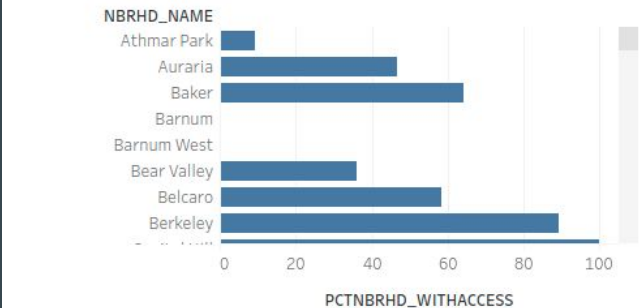
Annual Avg Weekday Traffic



PM Peak Hourly Volume



Food Access by Neighborhood



% w/ Access: 0.0 to 100.0

Neighborhood

- ☐ (All)
- ☐ Null
- ☒ Athmar Park
- ☐ Barnum

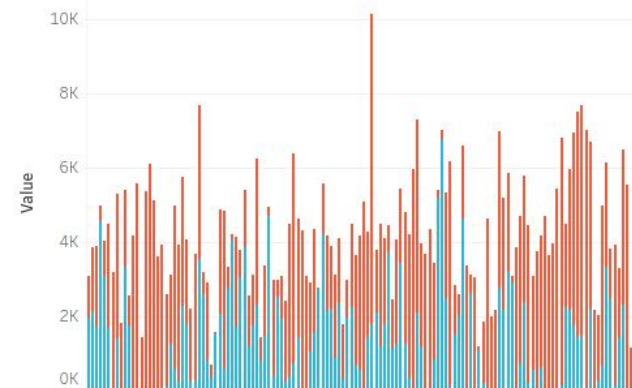
Tract Population (2010)



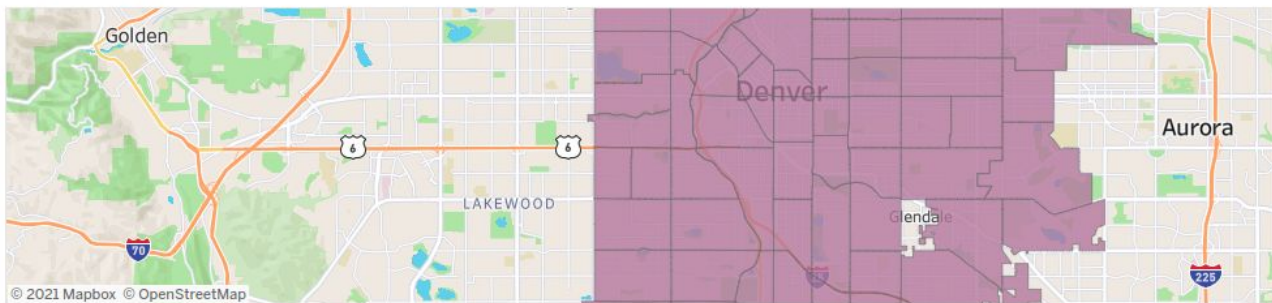
Measure Names

- Pop. Not In 10 Min Walksh...
- Pop. In 10 Min Walkshed

Food Access by Census Tract



Census Map



Neighborhood

- ☒ (All)
- ☒ Athmar Park

Conclusion

By understanding where food access in Denver is impeded and the physical attributes of local roadways, RTD can effectively plan expansions to bikeshare and microtransit networks to reduce the area of food deserts, and secondarily create efficient travel corridors for alternative transport modes.

Solution - A **clustering algorithm** that can identify roadways that...

- Are in food deserts
- Have a max speed limit of 25mph
- Have **either** two lanes in each direction of travel, or wide (≥ 20 feet) singular lanes
- Are paved
- Have an annual average weekday traffic count of less than 2000 **or** AM/PM peak hourly volume < 300

Thank you for your attention. Questions?

Sources

- <https://www.denvergov.org/opendata/dataset/city-and-county-of-denver-food-access-by-neighborhood-2021>
- <https://www.denvergov.org/opendata/dataset/city-and-county-of-denver-traffic-counts>
- <https://www.denvergov.org/opendata/dataset/city-and-county-of-denver-food-access-2020-census-tract>
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- <https://www.rtd-denver.com/projects/first-mile-last-mile-strategy>