One-way:

To Improve Denver Neighborhood Traffic

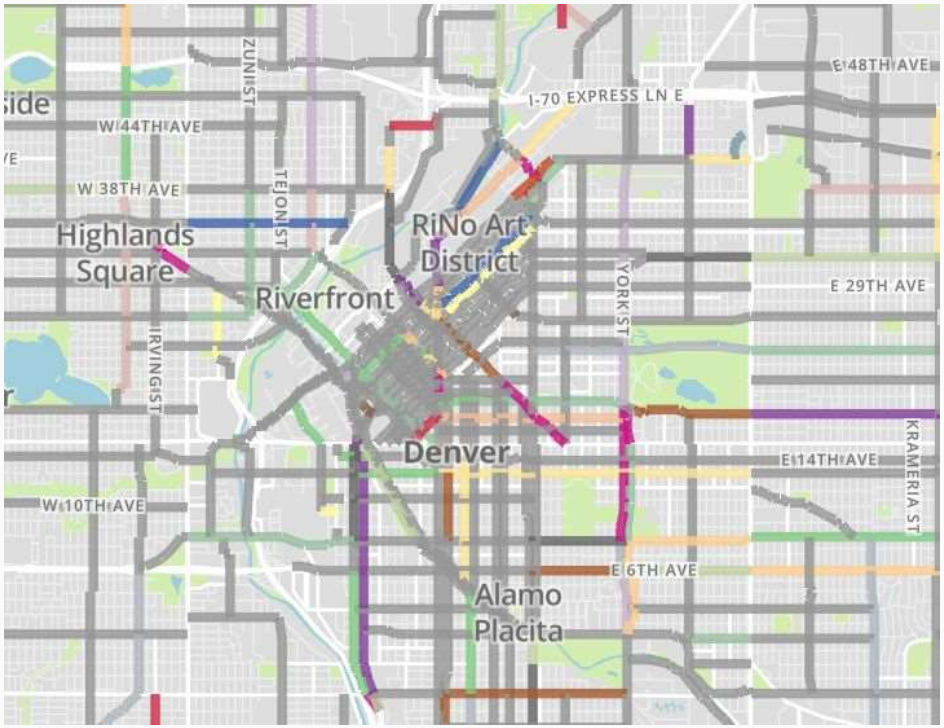
One-way Roads

- Increase Flow
- Decrease Pedestrian Accidents
- Reduce Congestion
- Increase Speed
- Cause Confusion
- Lengthen Trips

Our goal

Validate the claim that one-way streets are less effective for neighborhoods

Dataset



Sourced from Colorado.gov

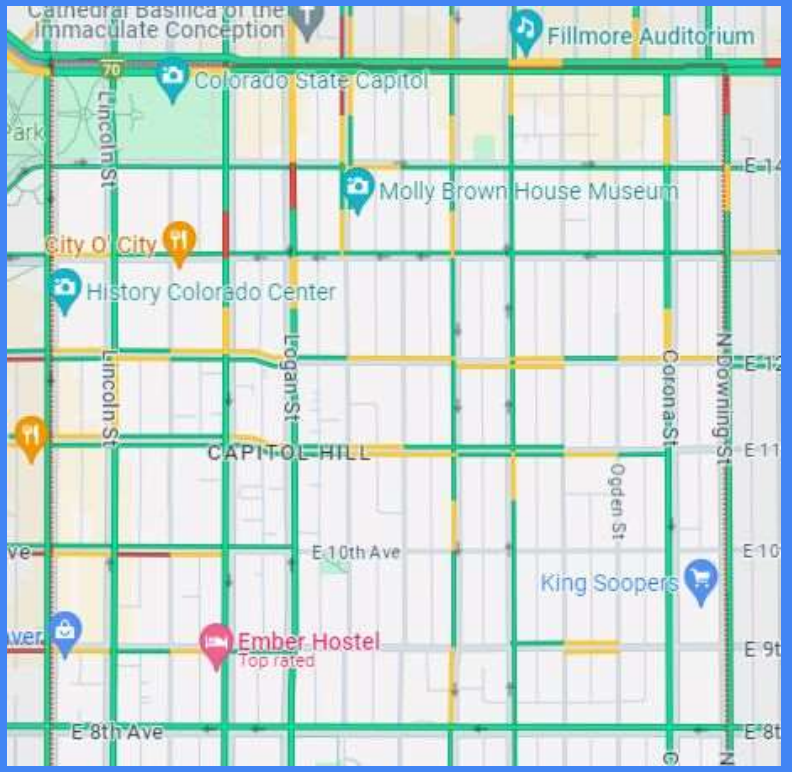
2019, Denver only

Key Features:

- Annual Average Daily Traffic (AADT)
- Number of Lanes
- Lane Width
- Road Segment Length
- Government Classification

Traffic Modeling Tools

Mathematical Algorithms
Linear Programming
Network Flow
Linear Regression



Linear Regression Model

Estimate AADT with

- Segment Length
- Classification
- Road Width

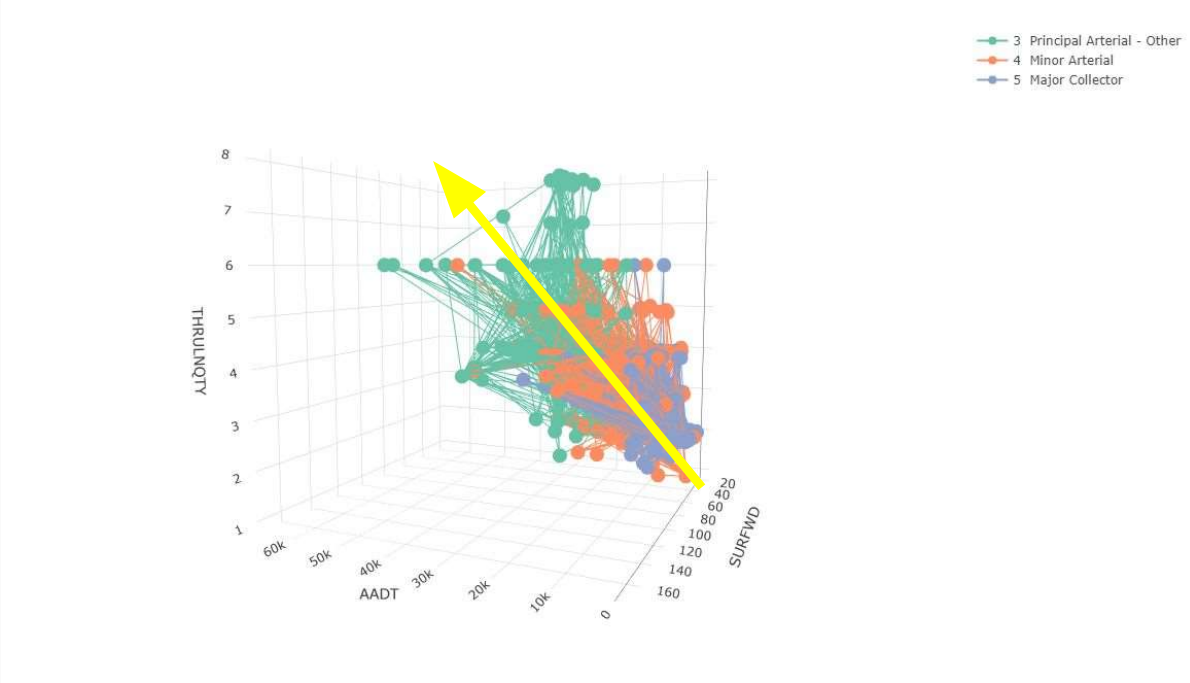
$R^2 = 0.71 = 71\%$

9^{th}, 10^{th}, 12^{th} Avenues

- Predicted current two-way AADT
- Predicted hypothetical one-way AADT

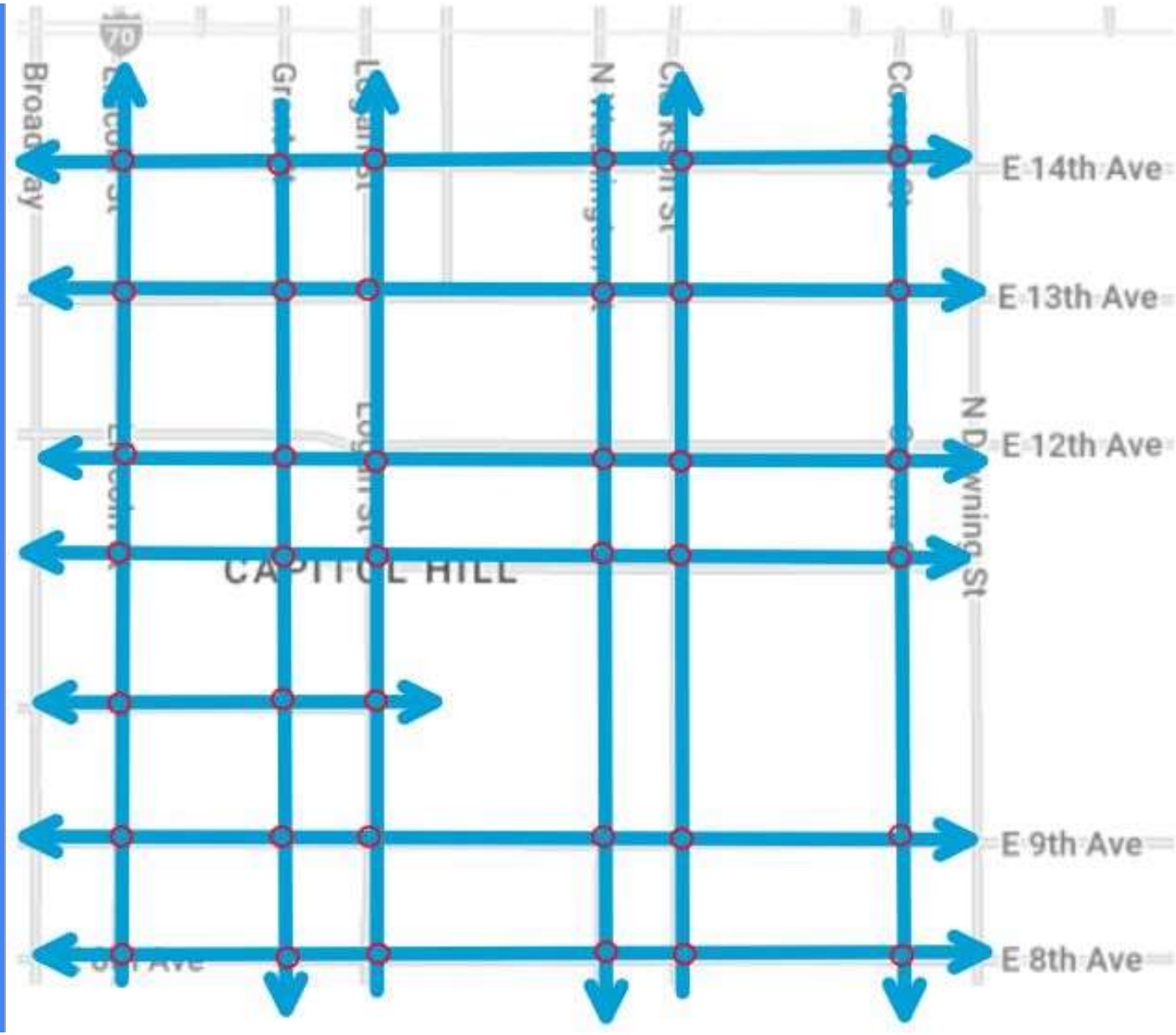
Washington, Clarkson, Corona Streets

- Predicted hypothetical two-way AADT



Network Models

Network Models



Network Models

Current Model

- ~ 65 cars
- 93% time utilization
- 65% road utilization

Two-way Model

- ~ 65 cars
- 79% time utilization
- 64% road utilization

One-way Model

- ~ 55 cars
- 88% time utilization
- 59% road utilization

Policy Proposal

Proposal 1: Continuing traffic research through Vision Zero

- More data needed
- Local to Denver

Proposal 2: Two-way conversions

- Convert Washington, Clarkson and Corona back into two-way streets
- Survey Denverites
- Slow traffic in sensitive areas

Proposal 3: One-way conversions

Thank you

jacob.johns@ucdenver.edu

GitHub Link

Wiki Link