

One-way

To Improve Denver Traffic



They say the universe is expanding.

They say the universe is expanding.
That should help with the traffic.

Steven Wright

Denver Traffic

- 69th worst traffic in the world
 - 52 hours wasted each year per Denverite
 - Over \$2000 wasted each year per Denverite
 - 67 roadway deaths in 2022
- ~ 1 million cars per week
 - ~ 1 million dependent jobs



Colfax in 1972

Traffic 101

- Cars
- Trucks
- Big Rigs
- Busses
- Motorcycles



Mitigation Techniques

- Park and Ride Lots
- Express Bus Service
- Dynamic Merge Control
- Compressed Work Weeks
- Circulator Bus Transit
- Carpooling
- Bike Sharing
- Pedestrian Education
- Bike Lanes
- Adding Tolls
- Active Demand Management
- Bus Rapid Transit
- Special Event Management
- Telecommuting
- Sustainable Pavements
- Superstreets
- Shoulder Upgrades
- Rural Transit
- Reducing Maintenance Disruptions
- Ridesharing Apps
- Ramp Configurations
- Pavement Recycling
- Intersection Turn Lanes
- Innovative Intersections

- Intersection Improvements
- Pedestrian Connections
- Parking Management
- HOV Lanes
- Reducing Left Turns
- Grade Separation
- Flexible Work Hours
- Fare Strategies
- Commuter Rail
- Light Rail
- Demand-Response Transit
- Local Bus Service
- Heavy Rail
- Bottleneck Removal
- Acceleration Lanes
- Variable Speed Limits
- Variable Pricing
- Trucking Lane Restrictions
- Truck Non-use Incentives
- Trip Reduction Options
- Transit Oriented Development
- Traffic Management Centers
- Smart Growth Design
- Access Management

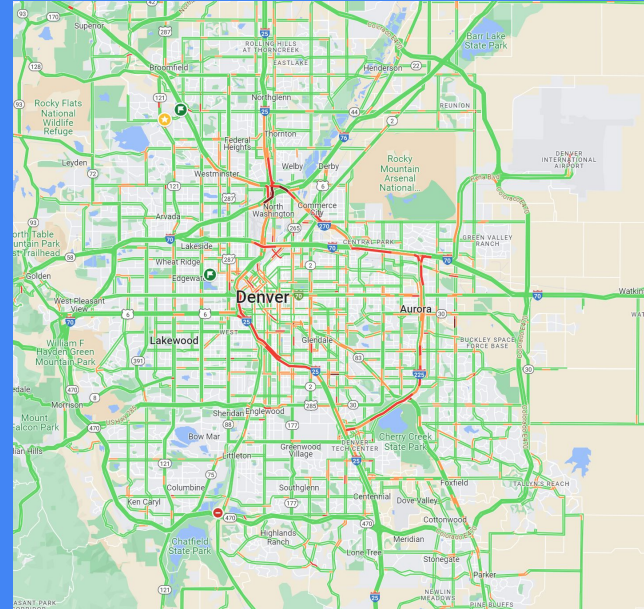
- Traveler Info Systems
- Transportation Management Associations
- Temporary Shoulder Use
- Signal Management
- Roundabouts
- Road weather Management
- Reversible Traffic Lanes
- Redevelopment and Infill
- Ramp Metering
- Queue Warning
- Quadrant Intersections
- Multimodal Transportation Corridors
- Mixed-use Development
- Improving Street Continuity
- Freight Rail Improvements
- Form Based Code
- Electronic Tolls
- Dynamic Truck Restrictions
- Dynamic Rerouting
- Diversified Development Patterns
- Diverging Diamond Interchange
- Continuous Flow Intersections
- Complete Streets
- Compact Development
- Commercial Vehicle Accommodations
- Aggressive Incident Clearance
- Adding New Lanes or Roads

One-way Roads

- Increase Flow
- Decrease Pedestrian Accidents
- Reduce Congestion

How to Model Traffic

Linear Programming
Mathematical Algorithms
Optimization



Our goal

Identify and isolate potential candidates for one-way street conversions

Preliminary results

- Circulation model does well
- Road Selection is proving difficult

Potential Policy Applications

- Construction cost of converting a one-way
- Survey pedestrians on effects
- Allocate funds to study economic downsides
- Implement traffic slowing devices on one-ways
- Propose conversions to city council

Thank you

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Wiki Link:

