



# MOBILITY CHOICE BLUEPRINT

## *Summary*

FEBRUARY 2019



COLORADO  
Department of Transportation



The Mobility Choice Blueprint is a unique planning and funding partnership of the Denver Metro Chamber, DRCOG, CDOT, and RTD

# Technology Is Changing And So Is The Way We Travel

## Mobility **GRIDLOCK**

Here's how our region looks and feels in 2030 if we simply **REACT** to new transportation technologies



In this scenario, the Denver region makes limited or uncoordinated efforts and investments to prepare for emerging mobility systems and technologies. Without a clear, coordinated public sector response, the private sector is left largely alone to implement new services and facilities that continue to develop and be adopted at a rapid pace.



**GRIDLOCK & DISARRAY**



**LIMITED ACCESS**

**ECONOMY: LOSING GROUND**



**ECONOMIC BARRIERS**



**CONGESTION**

**\$50 million  
in Lost Benefits**

If current trends continue, increased traffic congestion and uncoordinated adoption of new technologies could cost the region \$50 million each year of unrealized benefits by 2030, despite gains in economic productivity, safety, and accessibility.

### EQUITY

#### Reduced Access

The number of people who have no ready access to a vehicle (including elderly, low-income, and disabled persons) increases by 18,000 (compared with 2015).



### GRIDLOCK EXPERIENCES

"I am frustrated by my travel options."

"I live far from downtown, and my bus route is not flexible."

### AIR QUALITY



#### Moderate Pollution

Gasoline and diesel powered vehicles are responsible for 33% of the state's greenhouse gas emissions, increasing their annual output of pollutants by 4.5 million metric tons over 2010 levels.

### CONGESTION



#### Travel Delays

50% more hours of vehicle delay (compared with 2015).

### SAFETY



#### Unchanged Crash Rates

50% increase in crashes (compared with 2015).

"My wife and I will walk around the park, but we're nervous about crossing intersections."

Which will be our Mobility Choice?

If we act now, **TOGETHER** we can move toward a mobility future defined by people rather than technology.



# Mobility **BOLD**

Here's how our region looks and feels in 2030 if we take a **PROACTIVE** approach to new transportation technologies

In this scenario, the Denver region maintains community visions and improves mobility for all by pushing boundaries and taking a chance on bold programs that work to break down traditional silos, builds new partnerships, and prioritizes impactful and innovative applications of emerging technologies.

## ECONOMY: OPPORTUNITIES FOR ALL

### \$1.9 Billion in Benefits Gained

The actions recommended by the Mobility Choice Blueprint are expected to decrease time spent traveling, improve safety, allow more efficient freight movement, and compound gains to accessibility and productivity, resulting in an annual benefit to the region in excess of \$1.9 billion annually (in 2018 dollars) compared with Mobility Gridlock.

ECONOMIC OPPORTUNITY

HAPPIER COMMUTE

ACCESSIBILITY FOR ALL

OPTIONS & CHOICE

## EQUITY

### Fewer Barriers

91,000 people who would otherwise face mobility challenges enjoy a range of travel options enabled by coordinated adoption of new mobility technologies.

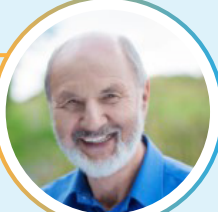


## BOLD EXPERIENCES

Getting around is much more affordable than I thought, and I have the flexibility to live my life."

It's so easy to get around here, and there are so many options."

I feel more connected to my community than ever."



## CONGESTION

### More Free Time

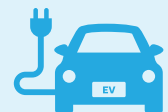
1.5 million fewer hours of vehicle delay per year (compared with Mobility Gridlock).

## SAFETY

### Safer Roads

8,200 fewer crashes per year result in \$550 million saved.

## AIR QUALITY



### Cleaner Air

Electric vehicles emit 41% less carbon per mile than gasoline-powered vehicles in the Denver area. Strategies and programs incentivizing the switch to electric vehicles significantly improve regional air quality.

# Path to 2030

What is unique about this strategy?

Advanced technology is providing new travel options around the Denver region.

To maintain the economic competitiveness and livability of our communities, the region's major multimodal agencies have agreed to develop a Mobility Choice Blueprint — a coordinated strategy for how we enable more accessible and effective transportation mobility choices to enhance the quality of our social, cultural, and economic life now and in the future.

## Our Vision

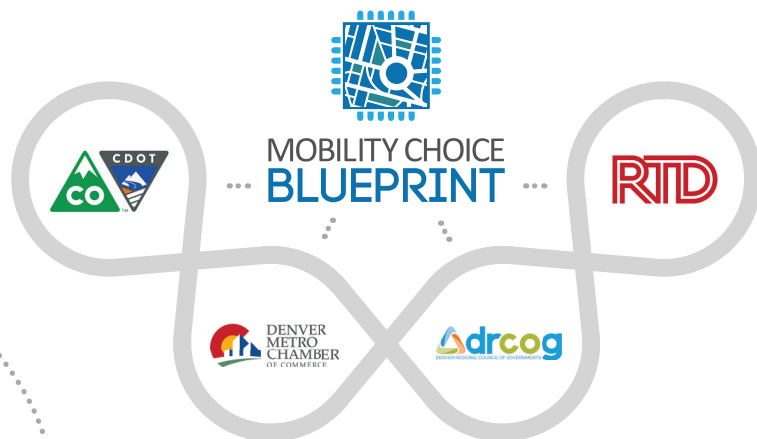
Our metropolitan region employs a full array of flexible technology and services to maximize safety and access to mobility choices connecting people of all ages, incomes, and abilities to jobs, recreation, healthcare, amenities, and other daily activities, enhancing and protecting our quality of life now and in the future.

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## Collaborative

The Blueprint conversation started with the Denver Metro Chamber, Denver Regional Council of Governments, Regional Transportation District, and Colorado Department of Transportation. To build on the collaborative momentum of this effort, **these partners will initiate Tactical Actions** and engage the private sector and county and municipal agencies, along with interested organizations and community groups, and integrate Blueprint Tactical Actions throughout our region.

### ALIGNMENT BETWEEN PUBLIC & PRIVATE AGENCIES



### GREATER DENVER REGION POPULATION



**26%**  
**Population Increase**

**2015: 3.1 MILLION TO**  
**2030: 3.9 MILLION**

2

# Integrated

The Mobility Choice Blueprint process assessed a range of futures based on the complex interactions of technological, institutional, and societal forces. **Global transportation experts, regional leaders, and a broad range of community members worked to understand the region's transportation needs over the long term and map the future of mobility.** The Blueprint reflects a deep understanding of external influences, organizational frameworks, and end-users of the transportation system.

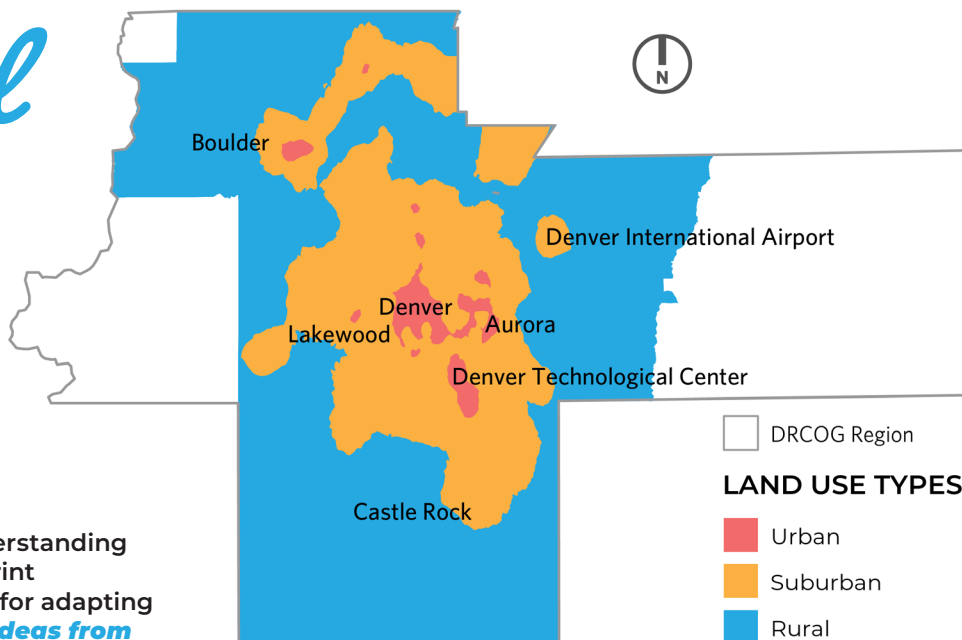


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# Regional

The Denver region is home to more than 3 million people in urban, suburban, and rural areas stretched over 9 counties and more than 5,000 square miles. DRCOG's established Metro Vision Plan articulates a shared regional vision, identifying several overarching themes. Building on this collective understanding of our communities, the Blueprint identifies a cohesive approach for adapting to new mobility technologies. **Ideas from a wide range of stakeholders from across the region resulted in a set of recommended Tactical Actions** consisting of policies, programs, and pilot projects.

AREAS BENEFITING FROM THE BLUEPRINT



# Objectives & Actions



## OBJECTIVE 1

### Regional Collaboration

Close institutional gaps, update legal and regulatory frameworks, and coordinate with private sector technology implementers



## OBJECTIVE 2

### System Optimization

Connect transportation systems and vehicles with smart technologies to improve safety and operations



## OBJECTIVE 3

### Shared Mobility

Integrate new options of vehicle sharing and ride sharing into the existing multimodal transportation system network



## OBJECTIVE 4

### Data Security and Sharing

Analyze travel data from public and private mobility providers to improve transportation system performance while maintaining security and protecting privacy



## OBJECTIVE 5

### Mobility Electrification

Encourage use of electric powertrains in automobiles and transit vehicles



## OBJECTIVE 6

### Driverless Vehicle Preparation

Prepare for autonomous vehicles to provide safe operations and reduced congestion while retaining a sound human experience



## OBJECTIVE 7

### New Transportation Funding

Establish new funding sources to replace traditional sources that are losing effectiveness

CDOT  
DRCOG  
RTD  
CHAMBER  
CITIES,  
COUNTIES

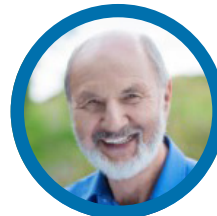
#### INITIATORS

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Signing up for the Mobility as a Service program has changed my life! I love the flexibility and affordability."



The options in our neighborhood mobility hub give my wife and me freedom to travel to the activities we enjoy."



I'm a car geek, so everything about driverless vehicles is intriguing, including the independence they may give me as my physical disability worsens."

## The Mobility Choice Blueprint worked to build broad consensus around numerous Tactical Actions.

These 34 policies, programs, and pilot projects represent a wide range of ideas that build on the groundwork laid by the study's individual participants, as well as best practices emerging across the globe.

TACTICAL ACTIONS	
1.1	Establish a mobility technology advisory committee
1.2	Establish a new public-private entity or entities to pursue mobility technology implementation
1.3	Engage university resources to develop mobility technology research and development
1.4	Make Mobility as a Service available to all
1.5	Develop regional guidelines for drone delivery and drone passenger travel
1.6	Establish a regional smart mobility navigator
2.1	Evaluate technology upgrades and interoperability in projects in DRCOG's Transportation Improvement Program
2.2	Prepare for technology upgrades and interoperability in project development of transportation projects
2.3	Accelerate testing of bicycle/pedestrian detection at crossings
2.4	Implement transit priority on all major bus corridors
2.5	Implement smart traffic signal control technology on all major regional arterial corridors
2.6	Pilot integrated corridor management on ten arterial corridors
2.7	Implement "smart corridor" operations on all regional freeways
2.8	Coordinate traffic management center systems and operations
2.9	Pilot mobility technologies on mountain corridors
2.10	Pilot modular lanes
3.1	Develop a universal mobility app for trip planning and payment
3.2	Adopt a regional compact defining common standards for micromobility services
3.3	Develop incentives to improve ridehailing and ridesharing operations
3.4	Implement curbside management standards
3.5	Pilot neighborhood-scale mobility hubs
3.6	Partner with the private sector to provide transportation in mobility-challenged communities
3.7	Pilot smart parking at Park-n-Rides
4.1	Establish a regional mobility data platform
4.2	Establish data sharing requirements for private sector roadway users
5.1	Incentivize ridehailing and ridesharing providers to use electric vehicles
5.2	Create an electrified mobility development program
5.3	Transition government fleets to electric and other zero-emission vehicles
6.1	Pilot driverless microtransit to increase public exposure to automated vehicle technology
6.2	Minimize zero occupancy and encourage high shared use of driverless automated vehicles
6.3	Support legislative efforts to ensure that automated vehicles operate safely
7.1	Expand DRCOG funding earmark for a mobility technology innovation fund
7.2	Explore the concept of a road usage charge for Colorado
7.3	Support legislative efforts to ensure that driverless automated vehicles generate appropriate funding



The tech company I work for creates solutions for mobility-challenged communities. I feel like I'm really making a difference."



The roadway technology alerts our car of winter conditions, giving us a smoother and more reliable trip to the mountains."





MOBILITY CHOICE  
BLUEPRINT

**VISIT US ONLINE**

[mobilitychoiceblueprintstudy.com](http://mobilitychoiceblueprintstudy.com)

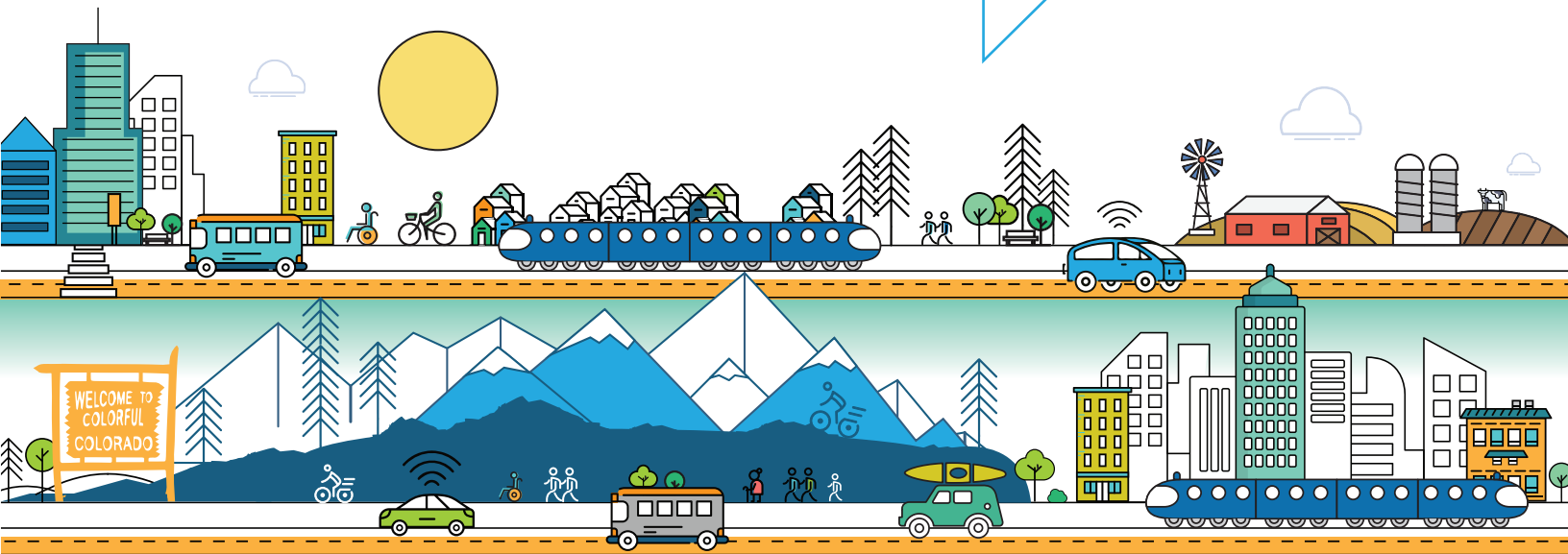


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MobilityChoiceBlueprint

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Local events  
and opportunities  
to participate



## ***Acknowledgements***

### **PROJECT TEAM**

- + CDOT
- + Denver Metro Chamber of Commerce
- + DRCOG
- + Mobility Choice Initiative
- + RTD

### **CONSULTANT SUPPORT**

- + HDR
- + CityFi
- + KPMG