Denver is on FIRE

How do we keep that momentum while preserving that which brought it in the first place?
Denver’s Success Is Based On:

- Mobility
- Quality of Life and Access to Amenities
- Jobs
- Employers Competing for Talent
- Desirable Place to Live
Electric

Autonomous

Mobility as a Service

In a city designed for it
Mobility services

By 2018, using electric, autonomous Mobility as a Service (eaMaaS) for transportation could cost the same as owning and operating a car.
Tipping the balance to EVs

EVs will have sizeable cost advantages over gasoline vehicles in delivering mobility services.

### Gasoline vs. Electric Vehicle in 2018:
#### Annual Cost Difference per Service Vehicle

- **Baseline**
- **+$3K**
- **+$2K**
- **+$1K**
- **-$1K**
- **-$2K**
- **-$3K**

**Electric Vehicle**

- **$1,019 annual savings per vehicle**

**Cost Components**:
- **EVSE Cost**
- **EV Capital Cost Premium**
- **Maintenance Cost Savings**
- **Fuel Cost Savings**
- **EV Cost**
- **Gasoline Vehicle Cost**
As mobility services scale, costs will fall. The cost advantage for automated mobility will increase over time.
Peak car ownership

The total number of LDVs could fall as personal vehicle ownership declines.
Why AVs will not be personally owned

$0.60/mile → Cost of a gasoline vehicle today

+ 40% → Cost premium for an individually owned AV ($0.84/mile)

- 45% → Cost savings for single-occupant autonomous mobility service ($0.33/mile)

- 67% → Cost savings for multi-occupant autonomous mobility service ($0.20/mile)

Individually owned AVs will cost almost $8000 more per year than eaMaaS
A boon for public transit

• In the long term:
  – Electric, Autonomous Mobility-as-a-Service can be public transit
  – Public transit is not limited to 50 foot buses and large trains
  – Autonomous vehicles are not limited to small vehicles

eaMaaS does not exclude public transit, it enhances it
Is this going to happen? It already is!

EV + AV + MaaS = eaMaaS

What about the City Designed For It?
Accelerate: Near-term Action

- **Main Hurdles**
  - Cost
  - Entrenched Behavior
  - Unproven

- **Solutions**
  - Short-term Subsidy
  - Fail fast and learn
  - Generate data and lessons learned

This is about greasing the skids
An Example

Conventional approach: Boulder needs 2700 more parking spaces in downtown by 2035

In 5 years, the parking won’t be needed, and neither will the subsidy!
Long-term Strategy

• **Questions that need answers**
  – What happens if parking demand goes down by 50% in the next 10 years?
    • Surface Lots
    • Residential Parking
    • Office Parking
    • Street Parking

  – What is required if 50% of people are arriving to work by means other than SOV

  – What is required if light rail/BRT ridership doubles?

Long-term plans need to accommodate these eventualities

Massive economic implications in addition to land use
What do we do now?

- Set a transformational goal → 20% of SOV drivers using new mobility by 2020?

- Outline the steps required to get there → There is no silver bullet

- Test early and often → Generate data, learn, communicate, repeat
Together, we can accelerate Denver toward the future