Agenda

- 6 Major Mobility Challenges/Trends
- mobilitynext: Addressing global challenges in Metro Denver
1. TNC’s are rapidly displacing other forms of transportation

Sources:
2. Americans love their cars...more now than ever

US Mode Share for Commuters (1970-2016)

- Drive alone
- Carpool
- Transit
- Walk
- Other
- Home

Source: US Census

Katy Freeway (I-10) in Houston (23-26 lanes with access roads)
3. Gasoline prices tend to have little effect on demand for car travel

Price elasticity measures the responsiveness of demand to changes in price. Almost all price elasticities are negative: an increase in price leads to lower demand, and vice versa. Air travel, especially for vacation, tends to be highly elastic: a 10% increase in the price of air travel leads to an even greater (more than 10%) decrease in the amount of air travel. Price changes have greater effects if the changes persist over time, as opposed to being temporary shocks.

Automobile travel in the United States is much less elastic, and its price elasticity has fallen in recent decades. The price elasticity of motor gasoline is currently estimated to be in the range of -0.02 to -0.04 in the short term, meaning it takes a 25% to 50% decrease in the price of gasoline to raise automobile travel 1%. In the mid 1990s, the price elasticity for gasoline was higher, around -0.08, meaning it only took a 12% decrease in the price of gasoline to raise automobile travel by 1%.

Source: U.S. Energy Information Administration, based on Federal Reserve Bank of St. Louis
Note: VMT is vehicle miles traveled. Per capita figures reflect U.S. population age 16 and over. Vehicle miles traveled figures are 12-month rolling averages.
4. Legislation + investment is driving a path to autonomous vehicles

Source: National Conference of State Legislatures (2019)

Source: Accenture 2017
5. The transportation sector generates the largest share of greenhouse gas emissions.

![Total U.S. Greenhouse Gas Emissions by Economic Sector in 2017]

- Transportation: 29%
- Electricity: 28%
- Industry: 22%
- Commercial & Residential: 12%
- Agriculture: 9%

6. North America will grow, carrying a total of 1.4 billion passengers, an additional 527 million passengers by 2037.

Global Passenger Traffic Grows Significantly in all Scenarios

Almost an 80% increase in passengers at DEN by 2045

Source: FAA Terminal Area Forecast: Fiscal Years 2017-2045
The Denver Metro Region is facing major mobility challenges. This is complicated by political gridlock, biases and inertia...
...so, how do we overcome this to make real progress?
mobilitynext is a nonprofit, member funded organization focused on developing the best possible solutions for Metro Denver

**Mission:** To leverage the best and brightest minds, regionally and globally, to accelerate pragmatic solutions to Metro Denver’s growing mobility challenges.

**Benefits:**
- Leverage as an “alternative” input
- Unbiased and without any inertia
- Focused on only Metro mobility
- Alternate funding sources: Grants & Corporate investment
- Focus on action

*In Discussions:* Flour, Kiewit, Co Dealers Assoc, FedEx, SB Energy, Xcel, IBM, & others
Our approach looks at Mobility pragmatically & broadly

**Strategy**
- Evaluate key mobility areas that impact Metro
- Look at Regional, Sub-Region & City Levels
- Develop specific “Focus Areas” to Pilot

**Pilots**
- Only select pilots that have bias for action
- Fund via grants, corporate & city investment
- Test with only 3 outcomes: Yes, Yes but or No

**Deployment (Not in scope)**
- Deploy after fully informed
- Measure and assess with data from above
## Focus Areas (1 of 2)

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<tr>
<th>1. RTD Considerations</th>
<th>2. Arterial Efficiency</th>
<th>3. Workforce Mobility</th>
<th>4. FLM Logistics</th>
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<tbody>
<tr>
<td><strong>Top Issues to Address:</strong></td>
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<td>• Trust, Delays, Cost Overruns, Service Gaps, Communications, &amp; FLM</td>
<td>• Road congestion, safety, emissions, &amp; multimodal optimization (e.g. bus, bike,..)</td>
<td>• Work-live location imbalance across region (Gentrification &amp; diverse work hubs)</td>
<td>• Growing e-commerce freight vs. more walkable/bikable cities</td>
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<td><strong>Approach:</strong></td>
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<td>• Gathered City Issues</td>
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<td>• Leverage leadership of DTI</td>
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<td>• Forming team with Universities &amp; Corporates (Consulting)</td>
<td>• Evaluate new technology/models</td>
<td>• Develop broad team (e.g. GCI)</td>
<td>• Develop team of public &amp; private members</td>
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<td>• Develop Issues &amp; Key Considerations</td>
<td>• Develop pilot process &amp; coverage</td>
<td>• User adoption study</td>
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<td><strong>Initial Thoughts:</strong></td>
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<td>• Review of macro and micro issues facing RTD</td>
<td>• Real-time Response to Actual Traffic, Decentralized &amp; Inherently Scalable, Optimized for Complex Grids, Not Just Corridors, &amp; Multi-modal Optimization</td>
<td>• Prioritize groups with highest immediate needs (e.g. construction)</td>
<td>• Requires changes to policy, building codes, urban planning, &amp; conflicting perceptions</td>
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<td>• Develop Key Considerations that should be considered when “re-imagining” RTD</td>
<td>• Potential for 20-25% reduction in congestion</td>
<td>• Ensure no “build it and they will come” via User Adoption study</td>
<td>• Evaluate lockers, centralized loading, curbside mgt., etc.</td>
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**Focus Areas (2 of 2)**

### 5. Mobility for Developers

**Top Issues to Address:**
- Private developers are moving faster than public agencies
- What technologies should they adopt that will integrate into current and future public mobility services

**Approach:**
- Leverage Pena Station Next as test platform

**Initial Thoughts:**
- Develop comprehensive mobility strategy
- Review and integrate plans with key public agencies, including RTD and DEN

### 6. Electrification Infrastructure

**Top Issues to Address:**
- Need for comprehensive electrification strategy and deployment plan
- Need to create Rate Base approach

**Approach:**
- Leverage collaborative approach with State, CDOT, CO. Dealers, and major regional players (e.g. DEN, CCD, etc.)

**Initial Thoughts:**
- Develop optimized plan based on SB Energy infrastructure locations, need, tariff structure, etc.
- Work with RTD as leader in transit electrification
- Develop plans with private developers & Comm. Fleets
mobilitynext: accelerating mobility innovation
Team

Jim Doyle
Managing Director

Expertise:
• Large-scale projects
• Advanced mobility technology

Experience:
• Panasonic
• IBM
• Nortel
• BS, Syracuse University
• MBA, Indiana University

Personal:
• Wife & two kids
• Lives in DTC

David Levy
Program Director

Expertise:
• Behavioral Economics (User Adoption)
• Environmental Policy

Experience:
• Rocky Mountain Institute
• ALM Media
• Informa
• BA, Emory University
• MA, University of Colorado

Personal:
• Avid runner and backpacker
• Lives in Boulder

Board:
Don Hunt (Chair)
Kelly Brough
Jim Doyle

Example Topic Area Lead:
Jack Buffington

• Supply Chain Leader MillerCoors
• Professor at DU
• Leader of Transportation Institute (DTI)
• Ph.D. in Industry Marketing/Supply Chain Management

Support:
Brownstein Hyatt Farber Schreck