Agenda Overview

• Process Update
• Overview of Revised Goals
• Transportation Trends
• Small Group Breakout
• Questions and Comments
• Next Steps
• Meeting Close
1. Process Update
1. Process Update

CITY AND COUNTY OF DENVER

Blueprint Denver Update
planning process

SUMMER 2016
PHASE 1: KICK-OFF

FALL 2016 - WINTER 2017
PHASE 2: ANALYSIS AND VISION SETTING

SPRING 2017 - FALL 2017
PHASE 3: RECOMMENDATIONS, DRAFT MAPS AND DRAFT TEXT

WINTER 2018
PHASE 4: DOCUMENTATION AND ADOPTION

iterative feedback loop

iterative feedback loop
Blueprint Denver Update
planning process

Key Outreach:
- Task Force Meetings 3, 4 & 5
- Pop-Up Events w/ Plan Van
- Focus Groups
- Visioning Workshops
- Online Survey 3
- Think Tank Meetings

Major Deliverables:
- Community Profile
- 2002 Blueprint Denver Diagnostic
- Industrial Lands Study
- Vision, Values and Guiding Principles
- Growth Scenarios and Evaluation

1. Process Update
2. Process Update

- Supplemental Vision Questionnaire and Outreach to Under-Represented Groups
2. Overview of Revised Goals
Goals

1. Serve all Denver residents with a diverse range of affordable housing options and quality employment opportunities.
Goals

2. Ensure that all Denver residents have safe, convenient and affordable access to basic services and a variety of amenities.
3. Support the growth of employment centers that promote work and educational opportunities for all residents.
Goals

4. Maintain and enhance the overall character of well-established neighborhoods.
5. Focus higher intensity growth in walkable mixed-use centers and along transit corridors.
Goals

6. Foster great urban design and inviting places that thoughtfully integrate streets, public spaces and private property.
Goals

7. Promote enduring and compatible design that responds to an evolving community while embracing historic assets and cultural heritage.
Goals

8. Develop high-quality mobility options that prioritize moving people by walking, biking, and transit and connect people to their daily needs.
Goals

9. Guide growth in a way that protects and enhances our environment and natural resources.
Goals

10. Promote healthy lifestyle options for all residents.
2. Overview of Revised Goals
3. Transportation Trends
Overview

- Current conditions
- Mode shift: case studies
- Modal tradeoffs
- Funding & financing
- Demographic & technological trends
- Trendlab+ polling exercise
Denver Environmental/Mode Shift Targets

**Reduce GHG emissions by 80 percent below the level of 2005 by the year 2050 (80 by 50)**

**Denver 2015 Climate Action Plan**

**Provide mobility options (transit, carpooling, biking, walking) that reduce commuting travel in Denver done in single-occupant vehicles to no more than 60% of all trips.**

**Denver 2020 Sustainability Goals**
2000-2014/15 Denver Trends

Denver Region (all trips)

2002-2014 Change
- VMT per capita: ↓ 2%
- Transit ridership per capita: ↑ 5%

City of Denver Resident Commute Mode Share

<table>
<thead>
<tr>
<th>Mode</th>
<th>2000</th>
<th>2015</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive Alone</td>
<td>68%</td>
<td>74%</td>
<td>↑ 5 pts</td>
</tr>
<tr>
<td>Carpool</td>
<td>14%</td>
<td>7%</td>
<td>↓ 7 pts</td>
</tr>
<tr>
<td>Transit</td>
<td>8%</td>
<td>6%</td>
<td>↓ 2 pts</td>
</tr>
<tr>
<td>Walk</td>
<td>4%</td>
<td>4%</td>
<td>0 pts</td>
</tr>
<tr>
<td>Bike</td>
<td>1%</td>
<td>2%</td>
<td>↑ 1 pts</td>
</tr>
<tr>
<td>Telecommute</td>
<td>4%</td>
<td>6%</td>
<td>↑ 2 pts</td>
</tr>
<tr>
<td>Other</td>
<td>1%</td>
<td>1%</td>
<td>0 pts</td>
</tr>
</tbody>
</table>

Source: DRCOG, American Community Survey, National Transit Database

Source: 2000 U.S. Census, 2015 American Community Survey (1-year estimates)
## Inducing Mode Shift to Transit: Peer Cities

### 2000-2015 Change in Transit Commute Mode Share

<table>
<thead>
<tr>
<th>City</th>
<th>Change in Mode Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Washington DC</td>
<td>5%</td>
</tr>
<tr>
<td>Oakland</td>
<td>3%</td>
</tr>
<tr>
<td>Seattle</td>
<td>3%</td>
</tr>
<tr>
<td>San Francisco</td>
<td>2%</td>
</tr>
<tr>
<td>Boston</td>
<td>2%</td>
</tr>
<tr>
<td>Tucson</td>
<td>1%</td>
</tr>
<tr>
<td>Charlotte</td>
<td>1%</td>
</tr>
<tr>
<td>Salt Lake City</td>
<td>1%</td>
</tr>
<tr>
<td>Denver</td>
<td>-2%</td>
</tr>
</tbody>
</table>
Inducing Mode Shift to Transit: Seattle Case Study

- Multiple rail services added since 2000
  - Commuter rail, light rail, & streetcar
- RapidRide - 6 new intracity BRT corridors
- Bus passes
  - State Commute Trip Reduction Program
  - ORCA card (smart cards)
  - Discounted passes for low-income
- Sound Transit ridership up 7-fold since 2000
### Inducing Mode Shift to Bicycling: Peer Cities

#### 2000-2015 Change in Bicycle Commute Mode Share

<table>
<thead>
<tr>
<th>City</th>
<th>Change in Bicycle Commute Mode Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portland</td>
<td>4.6%</td>
</tr>
<tr>
<td>Washington DC</td>
<td>2.8%</td>
</tr>
<tr>
<td>Minneapolis</td>
<td>2.4%</td>
</tr>
<tr>
<td>San Francisco</td>
<td>2.0%</td>
</tr>
<tr>
<td>Oakland</td>
<td>1.9%</td>
</tr>
<tr>
<td>Seattle</td>
<td>1.9%</td>
</tr>
<tr>
<td>New Orleans</td>
<td>1.8%</td>
</tr>
<tr>
<td>Salt Lake City</td>
<td>1.3%</td>
</tr>
<tr>
<td>Denver</td>
<td>1.2%</td>
</tr>
</tbody>
</table>

3. Transportation Trends
Inducing Mode Shift to Bicycling: Case Study

Portland, OR
• 130 miles new bikeways since 2000
  – 77 miles of neighborhood greenways
  – 17 miles of protected bike lanes
• Design innovations
  – 27 bike boxes
  – 19 intersections with bike signals
• 6,500 publicly-installed bike racks in public ROW
  – 134 bike corrals
• 100+ schools served by SRTS programs
• Robust monitoring program

Minneapolis, MN
• 144 miles new bikeways since 1997
  – 19 miles of bike boulevards
  – 35 miles of off-street bikeways
• Most bike lanes per sq. mile in U.S
• Robust snow removal program for all bikeways

Denver
• 100 miles of new bikeways since 2008
  – Building momentum on protected bike lanes
Inducing Mode Shift to Walking: Peer Cities

2000-2015 Change in Walk Commute Mode Share

- Seattle: 2.2%
- Boston: 2.0%
- Atlanta: 1.1%
- Washington DC: 1.1%
- San Francisco: 1.0%
- Portland: 0.6%
- Oakland: 0.5%
- Salt Lake City: 0.4%
- Denver: -0.4%

3. Transportation Trends
Inducing Mode Shift to Walking: Boston Case Study

- Vision Zero early adopter
- Complete Streets planning in mid 2000’s
- New pedestrian network along greenways in Downtown & East Boston
- Significant downtown population growth
Modal Tradeoffs

“We are going to have a fair bit of traffic. Actually that’s a good thing. When all the cars disappear and all the traffic disappears that’s a sign our city isn't driving.”

– Former Seattle Mayor Mike McGinn (2012)

“The changes may make traffic 15 percent worse instead of just 5 percent worse each year, but the situation is already becoming untenable.”


3. Transportation Trends
Modal Tradeoffs
Los Angeles Layered Network Planning

Mobility Plan 2035
An Element of the General Plan

Layered Network Concept

Los Angeles Department of City Planning

Approved by City Planning Commission: June 22, 2016
City Plan Case No. CPF 13-0921-GPA-SPCA-HGC
Adopted by City Council: September 7, 2016
Council File No. 15-0719
## Modal Tradeoffs

### Montgomery County, MD Performance Measures

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Network</th>
<th>Function/Quality</th>
<th>Usage</th>
<th>Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concentrate Development</td>
<td>Expand Street Network</td>
<td>Improve Efficiency/Capacity</td>
<td>Increase Carpool</td>
<td>Improve Safety</td>
</tr>
<tr>
<td>Encourage Transit-Oriented Development Opportunities</td>
<td>Viable Alternative to Driving Alone</td>
<td>Maximize Person Throughput</td>
<td>Increase Transit Use</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Improve Connectivity and Access</td>
<td></td>
<td>Increase Non-Auto Mode Share</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Implement Bus Rapid Transit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide Mixed Uses</td>
<td>Safe, Direct, and Convenient</td>
<td>Comfortable Facilities</td>
<td>Increase Non-Auto Mode Share</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Improve Connectivity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Variety of Skill Levels</td>
<td>Comfortable Facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Improve Access for People with Disabilities</td>
<td>Increase Non-Auto Mode Share</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 3. Transportation Trends
## Modal Tradeoffs

Montgomery County, MD Performance Measures

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Network</th>
<th>Function/Quality</th>
<th>Usage</th>
<th>Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Car Icon] Varied Auto Performance Standards by Area</td>
<td>None</td>
<td>Congested Speeds</td>
<td>Counts</td>
<td>Non-Auto Driver Mode Share</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Travel Time Index</td>
<td>Non-Auto Driver Mode Share</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Highway Capacity Manual Level of Service</td>
<td>Vehicle Miles Traveled</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Critical Lane Volume</td>
<td></td>
<td></td>
</tr>
<tr>
<td>![Train Icon] None</td>
<td>Coverage</td>
<td>Peak Headway</td>
<td>Ridership</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>All-Day Headways</td>
<td>Non-Auto Driver Mode Share</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Span of Service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>![Bike Icon] Facility Inventory</td>
<td></td>
<td></td>
<td>Counts</td>
<td>Non-Auto Driver Mode Share</td>
</tr>
</tbody>
</table>
Modal Tradeoffs
Montgomery County, MD Performance Measures

ACCESSIBILITY
- Jobs Accessible within 45 minutes by Mode
- Person Trips Accessible within 45 minutes by Mode
- Jobs Accessible by Travel Time by Mode
- Person Trips Accessible by Travel Time by Mode
- Person Trip Duration by Mode
- Access to Transit by Mode

01

TRAVELER EXPERIENCE
- Frequency of Service
- Span of Service
- Reliability
- Bicyclist Comfort
- Pedestrian Comfort

02

INTERSECTION PERFORMANCE
- Person Delay

03

ACTIVITY
- Raw Person Trips by Mode
- Person Trips Per Capita by Mode
- Vehicle Miles of Travel per Person Trip
- Vehicle Hours of Travel per Person Trip
- Person Trips per Collision

04

3. Transportation Trends
Modal Tradeoffs
Sacramento, California Level of Service Policy

The City shall implement a flexible, context-sensitive Level of Service (LOS) standard… The City will strive to operate the roadway network at LOS D or better for vehicles… with the following exceptions described below…

- Central City – LOS F allowed
- Priority Investment Areas – LOS F allowed
- [Other] LOS E/LOS F Roadways

-City of Sacramento 2035 General Plan Mobility Element, March 2015
Modal Tradeoffs
Davis, California Geometric Policy

In each direction, Davis streets shall have no more than two through automobile lanes plus a single left-hand turning lane, even if this requirement reduces level of service. Additional turning lanes may be added for safety or design considerations.

-City of Davis General Plan Transportation Element, December 2013
Funding & Financing

• **Existing local sources:**
  – Capital Improvement Program appropriation
  – Better Denver Bond Program (renewed by voters in 2016)
  – 2.5 mil property tax for infrastructure repair (passed by voters in 2007)
  – FasTracks (0.6 cents regional sales tax passed in 2004)
  – Limited funding for multimodal projects

• **Denver Strategic Transportation Plan (2008)**
  – Explore options for transportation finance (including PPPs)
  – Leverage non-City funding
Federal & State Funding

- Gas tax
- Other Opportunities
  - FASTER
  - Federal grants
  - Partnerships with other agencies (RTD, DRCOG, CDOT, etc.)
- Not a reliable long-term source

3. Transportation Trends

Notes: 2015 numbers not included because the shortfall was less than $500 million; the trust fund can not legally incur negative balances. Source: Congressional Budget Office
Models for Local Funding

- Property tax (Seattle, SF Bay Area)
- Gas tax (Portland, Las Vegas, Chicago)
- Sales tax (Seattle, L.A., Phoenix, Atlanta, Columbus)
- Motor vehicle excise tax (Seattle, Boston)
- Income tax (Indianapolis)
- VMT charge (pilot programs - OR, CA, CO)
- Utility fee (Austin, Provo, Eugene)
- User charge
- Bond measures
Demographic & Technological Trends

3. Transportation Trends
Vehicle Miles Traveled
Travel Trends Past

Fact #347: November 22, 2004
The Relationship of VMT and GDP
The nation’s highway vehicle miles of travel (VMT) and the U.S. gross domestic product (GDP) reflect strikingly similar patterns, indicating the strong relationship between the nation’s economy and its travel. The graph shows how closely the two data series track each other over the past four decades (Reproduced from http://www1.eere.energy.gov/vehiclesandfuels/facts/2004/fcvt_fotw347.html).
Vehicle Miles Traveled
Decoupling VMT and GDP

3. Transportation Trends
VMT per capita
DRCOG Region

Annual VMT per Capita

2002
2006
2014
Why the decrease?

“It’s the pre-Great Recession macro-economy, stupid ….
and a few other things ”

James Carville (kinda)
Why the decrease?  
Labor Force Participation

Figure 3: Male, Female, and Total Labor Force Participation Rates, 1948 – 2013

Why the decrease?

Income

Figure 4: VMT per Capita and Median Household Income, 1970 – 2012

Source: Highway Administration Office of Highway Policy Information; U.S. Census Bureau.
Why the decrease?
Fuel Prices

GASOLINE PRICES VS VEHICLE MILES TRAVELED

• When gas prices fell sharply in 2014, U.S. motorists upped their driving and set a new mileage record.

SOURCES: Energy Information Administration; Federal Highway Administration

3. Transportation Trends
Why the decrease?

E-Commerce

Breaking the Big Boxes

For perspective, here’s how Amazon’s growth compares to two of their big box competitors - Sears and Best Buy.

<table>
<thead>
<tr>
<th>Year</th>
<th>Amazon</th>
<th>Best Buy</th>
<th>Sears</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>8.49</td>
<td>27.43</td>
<td>19.70</td>
</tr>
<tr>
<td>2006</td>
<td>10.71</td>
<td>30.84</td>
<td>49.12</td>
</tr>
<tr>
<td>2007</td>
<td>14.84</td>
<td>35.93</td>
<td>53.01</td>
</tr>
<tr>
<td>2008</td>
<td>19.17</td>
<td>40.02</td>
<td>50.70</td>
</tr>
<tr>
<td>2009</td>
<td>24.51</td>
<td>45.02</td>
<td>46.77</td>
</tr>
<tr>
<td>2010</td>
<td>34.2</td>
<td>49.69</td>
<td>43.36</td>
</tr>
<tr>
<td>2011</td>
<td>48.08</td>
<td>49.74</td>
<td>42.66</td>
</tr>
<tr>
<td>2012</td>
<td>61.09</td>
<td>50.70</td>
<td>41.56</td>
</tr>
<tr>
<td>2013</td>
<td>74.45</td>
<td>41.72</td>
<td>39.85</td>
</tr>
<tr>
<td>2014</td>
<td>88.99</td>
<td>40.61</td>
<td>36.18</td>
</tr>
</tbody>
</table>
Why the decrease?
Millennials & Boomers
Why the decrease?

Licensing

Figure 6: Index of Driver Licensure Rates by Age Cohort (Base Year = 1979), 1970–2010

*Note: Licensure rates are the number of licensed drivers per capita, averaged over the preceding five years. The index pegs at 100% in 1979 to 100% and reports percentage changes. For example, if the licensure rate for a cohort were 60% in 1979 and the 2002 value of the index would be 110%.

Source: U.S. Department of Transportation, Federal Highway Administration, Highway Statistics.
Why the decrease?
Telecommuting

Increase in Workers at Home in the 100 Largest Metropolitan Areas, 2000 to 2014
Why the decrease?
Transportation Network Companies (TNC’s)

Uber’s Gross Bookings

All of 2014

1st Half of 2015

$0 $1 $2 $3 $4

in billions
Why the decrease?

Next Generation Vehicles

3. Transportation Trends
Why the decrease?

Other Trends

• Resurgence in preferences for urban living and aging in place
• Increases in preference for transit use, bicycling and walking
• Rapid proliferation and adoption of new communication technologies
TrendLab+
Factors influencing travel

3. Transportation Trends
3. Transportation Trends

Effects of Demographic, Economic, and Technology Trends on US Vehicle Miles Travelled

Select A Scenario or Create Your Own

- Economic Recovery, Low Fuel Prices, Driverless Cars

VMT per capita will be 10% to 20% above its 2004 peak, suggesting increased transportation investments to keep pace with population growth.

2004: 13,200 VMT per capita
2014: 12,200 VMT per capita
2040: 15,350

Published Forecasts
- 17,100 VMT per capita
  - U.S. DOT
- 16,300 VMT per capita
  - Transportation Financing Commission
- 13,400 VMT per capita
  - U.S. Energy Administration
- 12,200 VMT per capita
  - Public Interest Research Group: High
- 8,200 VMT per capita
  - Public Interest Research Group: Low

*By submitting your forecast, you are providing Fehr & Peers your permission to use the forecast anonymously in a poll summary and in all future presentation(s).*
Polling Slides

• 16 trends to poll
• 1 slides each (16 total)
  – Question for each trend
  – Results for each trend
Labor Force Participation
Between now and 2040 do you think the percent of the population participating in the labor force in Denver will...
Driving Age Population
Between now and 2040 do you think the percent of the population in Denver 16 years and older with a drivers license will... 

1. Go up 5%
2. Stay the same 27%
3. Go down 68%
Vehicle Ownership

Between now and 2040 do you think the average number of vehicles per household in Denver will . . .

1. Go up
2. Stay the same
3. Go down

14%
86%
Licensing Regulations

Between now and 2040 do you think licensing regulations restricting teen driving in Denver will... 

1. Go up 50%
2. Stay the same 50%
3. Go down

3. Transportation Trends
Fuel Cost per Mile

Between now and 2040 do you think the average fuel cost per mile in Denver will . . . 

1. Go up 57%
2. Stay the same 14%
3. Go down 29%
Congestion & Time Use
Between now and 2040 do you think congestion in Denver will . . .

1. Go up 77%
2. Stay the same 14%
3. Go down 9%
Non-Auto Mode Options
Between now and 2040 do you think non-driving travel options in Denver will . . .

1. Go up
2. Stay the same
3. Go down

77%
14%
9%
GDP, Real Income Growth
Between now and 2040 do you think inflation adjusted median income in Denver will . . .

1. Go up 50%
2. Stay the same 36%
3. Go down 14%
Suburban Migration
Between now and 2040 do you think the preference for suburban living among Denverites will . . .

1. Go up 14%
2. Stay the same 43%
3. Go down 43%
Household Formation
Between now and 2040 do you think traditional household formation (younger generations get jobs, buy homes, start families,) in Denver will . . .

1. Go up 18%
2. Stay the same 18%
3. Go down 64%
Goods & Services Delivery
Between now and 2040 do you think internet shopping & same day delivery in Denver will . . .

1. Go up 100%
2. Stay the same
3. Go down
Telecommuting
Between now and 2040 do you think the degree to which Denverites work remotely will . . .

1. Go up  71%
2. Stay the same  29%
3. Go down
Social Networking

Between now and 2040 do you think the degree to which virtual forums substitute face-to-face social encounters and entertainment among Denverites will...

1. Go up - 38%
2. Stay the same - 48%
3. Go down - 14%
Shared Mobility Services

Between now and 2040 do you think the degree to which shared mobility services (bike and car sharing, TNCs, microtransit) are available in Denver will...

1. Go up 86%
2. Stay the same 14%
3. Go down
Autonomous Cars

Between now and 2040 do you think the percentage of semi-autonomous cars (requires a driver) in Denver will . . .

1. Go up 76%
2. Stay the same 19%
3. Go down 5%
Driverless Vehicles

Between now and 2040 do you think the percentage of fully autonomous vehicles (no driver required) in Denver will . . . .

1. Go up 86%
2. Stay the same 14%
3. Go down
4. Small Group Breakout
5. Questions and Comments
6. Next Steps
Late 2016/Early 2017 Outreach

• Vision and Values Online Commenting

• Supplemental Vision Questionnaire and Outreach to Under-Represented Groups
Upcoming Task Force Meetings

- Task Force Meeting #7
  - March 23 – Scenario Evaluation and Place Types Intro
- Task Force Meeting #8
  - April 27
- Community Meetings
  - April 2017
7. Meeting Close