Quality of Life
Quality of Life Program

The Quality of Life (QoL) Study is RTD's data-driven evaluation of progress toward meeting the FasTracks Program goals.

Goal 1: Balance Transit Needs with Regional Growth
Goal 2: Increase Transit Mode Share
Goal 3: Improve Transportation Options and Choices
Quality of Life Program Reporting

**Detailed Reports** provide data on all metrics. They have been published for 2006 (baseline), 2010 (re-baseline), and 2015 (early results) data.

**High Level Reports** provide data for a subset of metrics that inform the early impacts of FasTracks investment and changes in the region. Published for non-detailed report years.
FASTRACKS PROGRESS
Since 2015

- Flatiron Flyer
  - Opened January 2016
- University of Colorado A Line
  - Opened April 2016
- B Line
  - Opened July 2016
- R Line
  - Opened February 2017
Flatiron Flyer

• Opened January 3, 2016
• Bus Rapid Transit service between Denver and Boulder
• 15-minute service all day
• 11,000 boardings in 2016
• 11,100 boardings in 2017

Note: Boardings refer to average weekday boardings.
University of Colorado A Line

- Opened April 22, 2016
- Commuter Rail service between Denver and the Airport
- 15-minute service during the day, 30-minute evening service
- 18,300 boardings in 2016
- 21,700 boardings in 2017  
  - 19% increase
- On-time 95% in 2017

Note: Boardings refer to average weekday boardings.
B Line

• Opened July 25, 2016
• Commuter Rail between Denver and Westminster
• 30-minute peak, hourly off-peak
• 1,500 boardings in 2016
• 1,800 boardings in 2017
  • 23% increase
• Reduced transit travel time from 34 minutes to 12 minutes between Downtown Denver and Westminster

Note: Boardings refer to average weekday boardings.
R Line

- Opened February 24, 2017
- Light rail connection from Denver through Aurora to Lone Tree
- 15-minute peak, 30-minute off-peak
- 5,900 boardings in 2017

Note: Boardings refer to average weekday boardings.
Quality of Life Program

Goal 1: Balance Transit Needs with Regional Growth
Why is this important?
How are we doing?

Goal 2: Increase Transit Mode Share
Why is this important?
How are we doing?

Goal 3: Improve Transportation Options and Choices
Why is this important?
How are we doing?
GOAL 1

Balance transit needs with regional growth
WHY IS THIS IMPORTANT?

The Metro Denver region has continued to grow, putting pressure on transportation systems throughout the region.

**Regional Population**
18% increase in population between 2006 and 2016.

**Employment**
Employment grew to 1.73 million jobs with a 2.7% unemployment rate in 2017.

**Housing Starts**
27% increase in the number of homes being built between 2015 and 2017.
Regional population has continued to grow. The Metro Denver region has experienced an 18% increase in population (484,400 people) over 10 years.

Source: US Census
Employment continues following the Great Recession. Metro Denver unemployment was 2.7% in 2017, compared with 4.4% nationwide.

Source: Colorado LMI Gateway
In Metro Denver, housing starts increased 27% between 2015 and 2017. The mix of housing built has shifted from mostly single family to an equal balance of multi and single family homes.

Source: US Census
HOW ARE WE DOING?

RTD continues to increase the transit services provided in the Metro Denver region.

**Miles of Rapid Transit**
The rapid transit network has more than doubled since 2006.

**ADA Service**
Access-a-Ride service has grown by 23% since 2006.

**Transit Service**
Rail service has increased from 3% to 7% of RTD service from 2006 to 2016.

**Sales Tax Revenue**
Retail sales tax revenue grew 35% from 2006 to 2017.

**H+T Cost**
Residents spent 47% of their income on Housing and Transportation in 2015.
The rapid transit network has more than doubled in the past 10 years. It will continue to grow as future FasTracks lines open.

**Source:** RTD FasTracks Website
ADA service increased by 23% between 2006 and 2016. The demand for Access-a-Ride is expected to increase in coming years to serve the aging population.
Bus service consistently accounts for the majority of revenue service hours (72-78%). Average weekday service hours increased by 10% between 2006 and 2017.

Source: RTD Report to NTD
Note: All bars may not add to 100% due to rounding.
The growth and economic recovery occurring in the Metro Denver region is evident in the increase of retail sales tax revenue within the RTD Boundary.

Source: RTD Annual Financial Report
In 2015, people in the Metro Denver region spent an average of 47% of their income on housing and transportation costs. Near transit stations, people spent 39%.

<table>
<thead>
<tr>
<th>Region</th>
<th>Housing</th>
<th>Transportation</th>
<th>Remaining Income</th>
</tr>
</thead>
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<tr>
<td>H+T = 47%</td>
<td>27%</td>
<td>20%</td>
<td>53%</td>
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</table>

<table>
<thead>
<tr>
<th>Near Open Representative Stations</th>
<th>Housing</th>
<th>Transportation</th>
<th>Remaining Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>H+T = 39%</td>
<td>22%</td>
<td>17%</td>
<td>61%</td>
</tr>
</tbody>
</table>

Source: CNT H+T Index
GOAL 2
INCREASE TRANSIT MODE SHARE
WHY IS THIS IMPORTANT?

Denver Metro region residents own more vehicles and are driving more, creating costly congestion.

**Vehicle Miles Traveled**
13.5% increase in vehicle miles traveled between 2006 and 2016.

**Cost of Congestion**
Average annual per capita cost of congestion was $475 in 2016.

**Vehicle Ownership**
Per capita vehicle ownership increased slightly in the region between 2006 and 2016.
In the Metro Denver region, daily vehicle miles traveled (VMT) increased by 13.5% from 2006 to 2016.

Source: Colorado Department of Transportation (CDOT)
Vehicle Miles Traveled per capita has decreased 3.8% from 13.6 in 2006 to 13.1 in 2016. However, there has been a clear upward trend from 2013 to 2016.

Source: Colorado Department of Transportation (CDOT), US Census
COST OF CONGESTION

Annual Per Capita Cost in 2016: $475

Weekday Per Capita Cost in 2016: $1.40

Source: DRCOG Annual Report on Traffic Congestion in the Denver Region

Note: A comparison to prior years is not possible due to significant changes in the methodology between 2015 and 2016. Data for 2017 is not available at this time. An updated report is expected in December 2018.
Per capita vehicle ownership increased slightly in Metro Denver between 2011 and 2016. This trend is similar to what is happening in CO and the US.

Source: US Census
HOW ARE WE DOING?

While transit boardings and commute mode share have decreased, people using RTD feel safe and satisfied.

**Commute Mode Share**
Transit mode share slightly decreased between 2006 and 2016.

**Transit Boardings**
Since 2006, boardings have increased almost 15%, however there has been a 5% decrease since 2014.

**Passenger Demographics**
Transit riders are more educated, wealthier, and older in 2017 than in previous years.

**Safety Perception**
In 2017, transit riders rated the safety of service that RTD provides at 4.26 out of 5.

**Overall Service Rating**
In 2017, satisfaction with services remained consistent with previous surveys at 4.22 out of 5.
Most people in the Metro Denver region drive to work. Travel patterns have not changed much between 2006 and 2016.

Source: US Census
Travel patterns have not changed much between 2006 and 2016. Carpool and transit use decreased. Work at home and walk increased.

Source: US Census
Downtown Denver and Downtown Boulder employees continue to choose a wider variety of modes to get downtown. Transit mode share into both downtowns is higher than the region as a whole.

Source: Downtown Denver Commuter Survey, Downtown Boulder Employee Survey

Note: All charts may not add to 100% due to rounding.
Annual transit boardings increased between 2010 and 2014. However, there has been a slight downward trend in ridership since 2014.
TRANSIT BOARDINGS PER CAPITA

Annual boardings per capita peaked in 2008 at 38.6. However, from 2008 to 2017 boardings per capita decreased by 12%. This is a trend that has been seen in many peer cities.

Source: RTD Report to NTD
In 2017, RTD had 361,800 average weekday boardings. This is 4% higher than 2011, but a slight decrease (0.2%) from 2016. The majority of ridership continues to be served by bus.

Source: RTD RideCheck Plus
Ridership on rapid transit lines has remained relatively steady. E/F/H has the highest ridership and continues to increase. University of Colorado A Line experienced a 20% increase in ridership after the first year.

Source: RTD RideCheck Plus
Average weekday boardings have increased at many stations and Park-n-Rides. Union Station had over 27,000 boardings in 2017, growing 49% since 2011.

- Union Station: 27,000 daily boardings, 49% increase since 2011
- 10th & Osage: 2,100 daily boardings, 30% increase since 2011
- Denver Airport: 7,300 daily boardings, 44% increase after University of Colorado A Line opened in 2016
- Lincoln Station: 3,800 daily boardings, 44% increase since 2011

Source: RTD RideCheck Plus
The share of transit riders with college and postgraduate degrees has increased from 36% in 2005 to 57% in 2017. This may reflect growing rail ridership.

Source: RTD Customer Satisfaction Survey, US Census
More riders indicated a household income above $100,000 in 2017 than prior years. This also mirrors the rise of income in the Metro Denver region.

Source: RTD Customer Satisfaction Survey, US Census
The proportion of riders older than 55 has increased from 19% in 2005 to 34% in 2017. The proportion of 35-54-year-old riders has decreased from 51% in 2005 to 37% in 2017.
Transit riders rate the service that RTD provides as safe. Survey results in 2017 show that passengers gave RTD a 4.26 out of 5 for safety.

Source: RTD Customer Satisfaction Survey

Note: A direct comparison to prior years is not possible due to significant changes in the survey methodology between 2014 and 2017.
Service Rating

Passenger Satisfaction is measured using the RTD Customer Satisfaction Survey, conducted every three years. In 2017, satisfaction with services remained consistent with previous surveys.

Source: RTD Customer Satisfaction Survey
GOAL 3

IMPROVE TRANSPORTATION OPTIONS AND CHOICES
WHY IS THIS IMPORTANT?

Auto travel times to downtown are getting longer and less predictable as congestion increases.

**Auto Travel Time & Variability**

Auto travel times to downtown Denver increased by 30% between 2012 and 2017.

**Transit Travel Time & Variability**

Transit travel times to downtown Denver decreased by 8% between 2012 and 2017.

**Cost of Travel**

In 2017, traveling by transit was 18% less expensive than driving.
Average auto travel times have increased by 30% since 2012. Transit travel times have decreased by 8% in the same time period.
TRAVEL TIME & VARIABILITY

Travel and auto travel times are similar in 5 of the 7 open rapid transit corridors. In 2017, variability added an average of 13% to transit travel times and 60% to auto travel times.

Source: RTD, INRIX, Google Maps
Note 1: Variability is the amount of time that must be budgeted in order to ensure that you will arrive at your destination on time.
Note 2: Table Mesa and Aurora Metro Center Stations were chosen as representative end-of-line stations for the Flatiron Flyer and the R Line.
Cost of Travel

In 2012, traveling by transit was 3% more expensive than driving.

In 2017, traveling by transit was 18% less expensive than driving.

Cost to Drive Downtown in 2017:

$1.23/mile
Includes cost of time, parking, IRS standard mileage rate

Cost to Take Transit Downtown in 2017:

$1.01/mile
Includes cost of time, transit fare

Source: USDOT, IRS, Parkopedia, RTD
HOW ARE WE DOING?

RTD continues to provide a variety of options for people to access transit and connect to their destinations.

**Park-n-Ride Use**
In 2017, 63% of the 31,225 parking spaces were used on an average weekday.

**Travel to Park-n-Rides**
25% of trips to Park-n-Rides were under 2 miles long in 2017.

**Transit Access Mode**
Most people walk to access transit. 71% walk to the bus while 47% walk to the train.

**Destinations Served**
37% of destinations were served by high frequency transit in 2017.
In 2017, 63% of the 31,225 parking spaces were used on an average weekday. RTD has added almost 10,000 parking spaces since 2006.

Source: RTD Park-n-Ride Utilization Report
PARK-N-RIDE USE

In 2017, 57% of the 11,464 parking spaces at Bus-Only Park-n-Rides were used on an average weekday. Key locations with high use:

- US36 & McCaslin (96%)
- Wagon Road (94%)
- Thornton (80%)

Source: RTD Park-n-Ride Utilization Report
In 2017, 67% of the 19,761 parking spaces at Rail Station Park-n-Rides were used on an average weekday. Key locations with high use:

- Colorado Station (98%)
- Nine Mile Station (95%)
- Littleton/Mineral Station (94%)

Source: RTD Park-n-Ride Utilization Report
TRAVEL TO PARK-N-RIDES

Travel to Park-n-Rides

In 2017, 93% of Park-n-Ride users were in-district, while 7% were out-of-district. This is consistent with 2015 trends. The average trip distance was 7.3 miles and the median trip distance was 3.4 miles.

Under 2 Miles
25% of trips were less than two miles long, a potential bike trip.

Under 1 Mile
9% of trips were less than one mile long.

Under 0.5 Mile
2% of trips were less than a half mile long, a potential walk trip.

Source: RTD License Plate Survey
In 2017, most people walked to access transit. 71% of transit users walked to bus stops while 47% walked to rail stations. For people who transferred between bus and train, 72% walked to transit.

Source: RTD Customer Satisfaction Survey
Note: Percentages for each group may not sum to 100% due to rounding. A direct comparison to prior years is not possible due to significant changes in the survey methodology between 2014 and 2017.
The high frequency transit (HFT) service area grew 61%, from 50 to 81 square miles between 2006 and 2017. In 2017, about 37% of regional destinations were served by HFT.
WHAT COMES NEXT?

- State of the System Reporting
  - Move all data online
  - Focus on full system, not just FasTracks
  - Support Transportation Transformation (T2)
REPORT APPENDIX

• Regional Geography
• Representative Stations
• Data Sources
REGIONAL GEOGRAPHY

The Metro Denver region is defined four ways depending on the data source:

- **RTD Service Area**
- **7-County Region** is made up of Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, and Jefferson Counties
- **DRCOG Region** is defined by the Denver Regional Council of Governments
- **Denver & Boulder MSA** is the combination of the Denver-Aurora-Lakewood and Boulder Metropolitan Statistical Areas (MSA)

Note: RTD also serves a part of Weld County but the area served is small and therefore not included in the 7-County Region analysis.
Representative stations were identified to keep the study efficient, as examining every station for every measure is not feasible. These stations represent the varied land uses and character surrounding RTD stations across the region.
DATA SOURCES

Regional Population
Definition: Number of people living in the Metro Denver region (MSA).
Source: US Census Bureau ACS 1 year estimates, Table B01003 Population Total, Denver (Aurora/Lakewood/Broomfield) MSA and Boulder MSA, https://factfinder.census.gov

Regional Employment
Definition: Number of people employed in the Metro Denver region (MSA).
Source: Colorado LMI Gateway, Denver and Boulder MSA, www.colmigateway.com

Housing Starts
Definition: Annual number of new single and multi-family housing starts in the Metro Denver region (MSA).
Source: US Census Bureau, Permits by Metropolitan Area, Denver and Boulder MSA, https://www.census.gov/construction/bps/msamonthly.html

Miles of Rapid Transit
Definition: The total miles of exclusive and controlled-access transit facilities in the RTD service area.
ADA Service

Definition: Annual number of hours of transit service on Access-a-Ride during which fare-paying passengers are carried.


Transit Service

Definition: Total hours operated by in-service transit vehicles on an average weekday. Hours include the sum of total vehicle service hours and train service hours.

Source: NTD, Average weekday total actual revenue hours for demand response, light rail, and motor bus, https://www.transit.dot.gov/ntd

Sales Tax Revenue

Definition: Annual sales tax revenue generated within the RTD service area, adjusted for inflation to allow for meaningful comparison and growth trends between years.


Housing + Transportation Costs

Definition: Average housing and transportation costs as a percent of the regional median income for the Metro Denver region (MSA) and representative stations.

Vehicle Miles Traveled

Definition: Number of vehicle miles traveled on state roads in the Metro Denver region (7-county).


Vehicle Miles Traveled per Capita

Definition: Number of vehicle miles traveled per person on state roads in the Metro Denver region (7-county).


Cost of Congestion

Definition: The percent of freeway and arterial roadway lane miles in the DRCOG boundary that are congested for 3 or more hours on an average weekday in the region and the hours of travel delay per registered vehicle caused by that congestion.

Vehicle Ownership

Definition: The average number of vehicles per capita in the Metro Denver region (MSA).

Source: US Census Bureau ACS 1 year estimates, Table B25046 Aggregate number of vehicles available by tenure and Table B01003 Population Total for the Denver and Boulder MSA, Colorado, and United States, https://factfinder.census.gov

Commute Mode Share

Definition: The percent of commute trips made by transit in the Metro Denver region (MSA), Downtown Denver workforce, and Downtown Boulder workforce.


Transit Boardings

Definition: Number of total system wide annual boardings.

Source: NTD Annual Boardings (Unlinked Passenger Trips), https://www.transit.dot.gov/ntd
Transit Boardings per Capita

Definition: Number of annual boardings divided by the transit service area population from NTD.


Transit Boardings by Service Type

Definition: Number of passenger boardings on fixed-route transit vehicles on an average weekday.

Source: RTD RideCheck Plus

Transit Boardings by Line

Definition: Number of passenger boardings by rail line on an average weekday.

Source: RTD RideCheck Plus

Transit Boardings at Stations

Definition: Number of bus and rail boardings on an average weekday at stations in existing and future rapid transit corridors.

Source: RTD RideCheck Plus
Passenger Demographics

**Definition:** Percentage of riders by various characteristics compared to the characteristics of the Metro Denver region (MSA) population.

**Source:** RTD Customer Satisfaction Survey, [http://www.rtd-denver.com/Reports.shtml](http://www.rtd-denver.com/Reports.shtml); US Census Bureau ACS 1 year estimates Denver and Boulder MSA, [https://factfinder.census.gov](https://factfinder.census.gov)

- Education: Table B15003 Education Attainment
- Income: Table B19001 Annual Household Income
- Age: Table S0101 Age and Sex

Safety Perception

**Definition:** Average overall customer rating of safety perception on RTD services from the Customer Satisfaction Survey.

**Source:** RTD Customer Satisfaction Survey, [http://www.rtd-denver.com/Reports.shtml](http://www.rtd-denver.com/Reports.shtml). A direct comparison to prior years is not possible due to significant changes in the survey methodology between 2014 and 2017.

Service Rating

**Definition:** Average overall customer rating of RTD service from the Customer Satisfaction Survey.

**Source:** RTD Customer Satisfaction Survey, [http://www.rtd-denver.com/Reports.shtml](http://www.rtd-denver.com/Reports.shtml)
Travel Time and Variability

Definition: (Auto) The average travel time during October on roadway corridors to Downtown Denver during the weekday AM peak period and the additional time a traveler in a specific corridor would need to budget to be certain of arriving on time when traveling by automobile. (Transit) The average travel time during the August Runboard on open rapid transit corridors to Downtown Denver during the weekday AM peak period and the additional time a traveler in a specific corridor would need to budget to be certain of arriving on time when traveling by transit.

Source: RTD TriTAP Database; INRIX; Google Maps

Cost of Travel

Definition: Cost of a transit and automobile round trip to Downtown Denver for each open rapid transit corridor.


Park-n-Ride Use

Definition: The number of Park-n-Ride spaces provided within the region, and the average percentage of those occupied on an average weekday.

Source: RTD Park-n-Ride Utilization Report (12 Month Average)
Travel to Park-n-Rides

**Definition:** Origins of Park-n-Ride users based on license plate registration.

**Source:** RTD License Plate Survey

Transit Access Mode

**Definition:** Every three years, RTD conducts a Customer Satisfaction Survey. The survey has been conducted five times (2006, 2008, 2011, 2014, 2017) since FasTracks was approved. The Customer Satisfaction Survey asks transit riders how they arrived at the originating stop of the trip on which they received the survey.

**Source:** RTD Customer Satisfaction Survey, [http://www.rtd-denver.com/Reports.shtml](http://www.rtd-denver.com/Reports.shtml). A direct comparison to prior years is not possible due to significant changes in the survey methodology between 2014 and 2017.

Destinations Served

**Definition:** The percent of high schools, higher education institutions, hospitals, government facilities, libraries, major shopping centers, and entertainment destinations in the Metro Denver region (RTD service area) captured within the high-frequency transit service area. The high-frequency transit area includes rail stations (within ½-mile) and bus stops (within ¼-mile) that are served by a transit route providing four or more trips per hour from 6 a.m. to 6:30 p.m.

**Source:** RTD High Frequency Transit Buffer; InfoGroup Business