March 2016

Prepared by the City of Boulder
Transportation Division

The Transportation Report on Progress

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Transportation Division
HIGHLIGHTS OF BOULDER'S TRANSPORTATION HISTORY

1858 First gold seekers arrive in Boulder Valley
1859 Boulder Town City Company established to develop lots and stake out roads
1865 A locally financed road is started up Boulder Canyon, to Black Hawk and Ward and includes two toll gates
1879 Silver is discovered in Caribou. Boulder Canyon road is extended to Nederland through the canyon with 33 bridges
Introduction

The City of Boulder’s 2016 Transportation Report on Progress describes what the city’s transportation programs and projects have accomplished since the report was last published in 2012. However, it is also about the future, outlining the status of ongoing work and assessing how best to accomplish Boulder’s vision for a multimodal transportation system. This report is for anyone, including members of the City Council, the city Transportation Advisory Board and those who want to know what Boulder is doing to achieve the community’s transportation vision and support the city’s Climate Commitment and overall sustainability and resiliency goals.

Putting Policy Into Action

The Transportation Report on Progress measures the implementation of the 2014 Transportation Master Plan (TMP). This report reflects the 2014 TMP update’s emphasis on setting goals, collecting data and tracking progress. Each of the update’s five focus areas and nine measurable objectives is briefly outlined in this report, along with the city’s actions and results to date. The report includes data the city has collected to measure its progress and illustrates how the city refines activities to respond to the needs of the community and the world around us.

First adopted in 1989, the TMP is Boulder’s long-range blueprint for travel and mobility. The 1996 TMP established the basis for the current policy direction, including establishing the pedestrian as the primary mode and calling for the completion of a balanced, multimodal transportation system for more person travel. The City Council accepted the 2014 update to the TMP following a two-year process that included partnerships with community and agency stakeholders and input from the Transportation Advisory Board (TAB) and Planning Board. The TMP fits within the Boulder Valley Comprehensive Plan, and the 2014 update’s Implementation Action Plan reflects an increased emphasis on collaboration and integration across the city organization and with community partners.

Measuring Progress

The city collects and analyzes multiple sources of data to track progress toward the 2014 TMP update’s goals and objectives. Travel surveys of city residents and Boulder Valley employees are repeated at regular intervals, and the results are supplemented with vehicle counts, bicycle counts, transit ridership statistics, travel time studies and census data to create a robust picture of travel in the city. Initial findings from these results guide next steps and prioritizing projects, programs and investment strategies for 2016 and beyond to continue progress toward achieving the vision and goals of the TMP.

Navigating this Report:

The Transportation Report on Progress contains the following sections:

Progress in the Five Focus Areas

- This section provides data and program information that illustrate how the city is concentrating on the 2014 TMP update’s five interrelated and mutually reinforcing focus areas to move the community toward its transportation and climate action goals.

Progress Toward Nine Measurable Objectives

- This section describes the city’s progress so far in achieving each of the TMP update’s nine measurable objectives and outlines the next steps.

Progress Toward the Future

- This section summarizes the Transportation Report on Progress findings and suggests areas of concentration and improvement for the coming years.

The report contains links to additional information located on city and partner web pages. Readers of a printed version of the report are encouraged to visit www.BoulderColorado.gov/Transportation for a hyperlinked version.

1871 Boulder’s first Street Commissioner is appointed and given the authority to demand two days labor from each able bodied man

1871 Wooden sidewalks built on Pearl by individual businesses called a “Woeful state of mantraps”

1873 Two railroads come to town from Erie and Golden, with city or county contributions

1877 University of Colorado opens
“Create and maintain a safe and efficient transportation system meeting the sustainability goals of the community to accommodate increased person trips by providing travel choices and reducing the share of single occupant auto trips.”
Ensuring that the current transportation system is safe and well maintained for everyone remains a top city priority that impacts all the Transportation Master Plan’s focus areas.

Boulder strives to keep its streets, sidewalks and paths safe for all forms of transportation. For example, the Safe Streets program uses local partnerships, signage, enforcement and community outreach to help ensure that all participants in the community’s transportation system—pedestrians, bicyclists and drivers—practice safe travel behavior and adhere to city safety ordinances.

Proactive updates and ongoing maintenance also make roads safer and mean less costly repairs for everyone. Currently, nearly 80 percent of the street system is in good condition or better. That’s thanks to two voter-approved ballot measures in 2013 that provide the city $1.6 million annually from additional sales tax revenues for transportation maintenance and operations.

Pavement Management Program

The city’s priorities for transportation funding are the safety and preservation of the entire transportation system, including maintaining all streets in good and safe condition. With new funding approved by the voters, the city has established a pavement management program (PMP) for Boulder’s 305-mile street system, inspecting and rating all streets on a three-year interval to evaluate existing conditions and guide pavement repairs in future years.

Transportation’s PMP includes a database of the city’s streets with their Overall Condition Index (OCI) ratings on a scale from 1 to 100. The city’s goal is to maintain an average OCI rating of 75 to 80 for all streets in Boulder, which is consistent with other communities in the Denver metro area.

One goal of a PMP is to identify the optimal level of funding, timing and renewal strategies that will keep the roadway network at or above a “Good” OCI rating. This allows timely and less expensive treatments to defer costly reconstruction of streets. Streets repaired when they are in a good condition will cost less over their lifetime than streets that are allowed to deteriorate to a poor condition, saving millions of dollars.

Streets maintained in good condition perform better, are less expensive to maintain and will last longer. This is illustrated on the pavement performance curve.
Boulder’s street system is classified by road type with local streets comprising 71 percent, collector streets comprising 12 percent and arterial streets comprising 17 percent of the city’s street system. Currently roughly half of the city’s streets have an OCI rating in Very Good and Excellent ranges. Nearly 80 percent of the street system is rated “Good” or better.

Previous funding levels were not adequate to maintain acceptable street pavement conditions, but the 2011 Capital Improvement Bond provided $12.5 million for street resurfacing and reconstruction, allowing for acceleration of street pavement maintenance. Boulder voters also approved two ballot measures in November 2013, which provide additional sales tax revenues for transportation maintenance and operations through 2029. This provides the approximately $1.6 million annually for street pavement maintenance needed to meet the goals of the city’s PMP. Approximately 35 miles of streets were resurfaced with asphalt and 22 miles received a chip seal surface treatment from 2012-2014 due to these new funds, increases of 60 and a 100 percent from the previous period.

The PMP also provides community benefits including:

- Installation of curb access ramps that meet Americans with Disabilities Act (ADA) guidelines
- Coordination of PMP with the sidewalk program and curb and gutter improvements
- Greater interdepartmental coordination with water and sanitary sewer and street drainage projects
- Greater external coordination, such as with Xcel Energy as they conduct gas line replacements

The sales tax ballot initiatives also provide $800,000 per year to address operational and/or functional deficiencies with existing multimodal facilities.

Examples of these types of projects include:

- Replacements of multi-use path bridges and/or retaining walls
- Changes to entrance/exit approaches on older underpasses to improve sightlines
- Railroad crossing replacements

**Improved Maintenance and Snow Response**

Ice and snow removal is a key aspect of operating a safe multimodal system and is also receiving additional resources with the new funding. A comprehensive review has been conducted and has identified best practices and additional efficiencies. These include enhanced reporting of snow removal activities to the public, route optimization and adjustments to staffing that will provide a more consistent and proactive snow response.
Boulder’s commitment to its transportation vision is on display in the Diagonal Highway Transportation Improvements project. Currently scheduled to be completed in fall 2016, the $9.97 million project rebuilds a key portion of a major route into and out of Boulder and creates an improved gateway for the city. More importantly, it improves safety and traffic flow, completes the street by adding multimodal improvements, enhances regional travel connections, and shows innovative approaches to funding infrastructure projects by combining Boulder’s tax dollars with state and federal money.

“The Diagonal” is a major regional link that connects Boulder to Gunbarrel, Niwot, Longmont and communities beyond, and ends at 28th Street, a major north-south road within Boulder. Each day, a total of 26,800 vehicles use this section of roadway, as do many Regional Transportation District bus routes and the new FLEX regional bus that connects Boulder with Longmont, Loveland and Fort Collins. Major employers such as IBM and Celestial Seasonings are located in the Diagonal Highway corridor.

Work on the project began in August 2015 and spans the stretch of the highway between 28th Street and Independence Road. Crews are reconstructing the deteriorated pavement, adding a new multi-use path for pedestrians, new off-street bicycle lanes called cycle tracks, transit stop improvements and medians, and planting more than 300 trees. Public art, landscaping and rain gardens, which catch and filter rainwater to naturally remove pollutants, are being installed.

The project shows Boulder’s commitment to infrastructure maintenance, while improving access, connections and the travel experience for drivers, pedestrians, cyclists and transit riders.

Funding for the project comes from the City of Boulder, the U.S. Federal Highway Administration and the Colorado Department of Transportation’s Responsible Acceleration of Maintenance and Partnerships (RAMP) program. Boulder won a $4.86 million grant from CDOT through the program.
Progress in the Five Focus Areas

The 2014 TMP update identifies five focus areas that will move the community toward its transportation and climate action goals:

- Complete Streets
- Regional Travel
- Transportation Demand Management
- Funding
- Integrate with Sustainability Initiatives

The City of Boulder focuses its programs, partnerships and outreach efforts to address these areas and to make progress on the performance objectives discussed later in this report.

1894 Boulder Creek floods destroy bridges in town
1898 Chautauqua opens
1899 The electric Boulder Street Railway opens to carry visitors to Chautauqua with 12 cars and 5 cent fares
1906 Flagstaff Road is completed. Twenty-six residents drive autos in town and three bridges across Boulder Creek are rebuilt to accommodate them
1906 Bike racks are installed downtown
**Complete Streets**

The concept of Complete Streets means planning, designing, building, operating and maintaining a transportation system for all users, including pedestrians, bicyclists, transit riders and vehicle drivers. The 2014 TMP update identifies key Complete Streets goals and strategies, including the continued planning for corridors, creation of pedestrian and bicycle innovations, and the development of a Renewed Vision for Transit. These goals also reflect the city's ongoing top priorities for safety and operating and maintaining the current transportation system, which emphasizes pavement maintenance and road repair.

**Progress Snapshot**

**Planning and Constructing Complete Streets**

The Broadway (Euclid to 18th St.) Transportation Improvements project was completed in 2012 and provides safer and more efficient access to the University of Colorado-Boulder (CU), improves regional transit connections, and helps cut motor vehicle travel times along Broadway. This complex, $7.4 million project built a new underpass, a separated bikeway and major transit stop improvements. CU, Boulder Valley School District, the Colorado Department of Transportation (CDOT), the Regional Transportation District (RTD), Boulder County and the City of Boulder provided funds for the project.

The ongoing visioning process for the East Arapahoe Transportation Plan includes potential multimodal improvements such as biking and walking enhancements, regional Bus Rapid Transit (BRT), expanded local bus service, and possible lane modifications to promote efficient travel. The plan includes an enhanced public outreach process including a community study committee and aims to address existing and future transportation needs, improve safety for people using all modes, and support the existing and future land uses in the corridor.

A new underpass that is part of the Broadway (Euclid to 18th St.) Transportation Improvement project.

The East Arapahoe project extends from Folsom Street east to 75th Street.
Putting People First

The 2014 TMP update continues to recognize the pedestrian as the primary mode and takes a “people first” approach to transportation, which is fundamental to achieving complete streets. Balancing the needs of all modes of transportation, the city develops strategies to encourage people to walk and bicycle and use all modes safely, including:

- Publishing the Safe Streets Boulder Report, which analyzes citywide crash data and identifies opportunities to improve safety for people using all modes of travel.
- Working to provide safe pedestrian crossings every 1/8 mile on major streets such as the bus pullouts and flashing pedestrian crossings on 28th Street.
- Installing an additional two flashing and 13 signed and marked crosswalks throughout Boulder.
- Partnering with Boulder County to open a Bus-then-Bike shelter at the Downtown Transit Center. Part of the Boulder County Bus-Bike Program, this covered, safe and secure bike parking facility helps complete the first and final mile for transit users. More than 700 people have access cards for this shelter with about 60 bikes parked inside the shelter at the last count.

In 1990, there were 15,100 daily bus riders in Boulder. In 2014, an average of 33,000 people boarded the bus each day.

A Renewed Vision for Transit

A key component of the 2014 TMP update, the Renewed Vision for Transit guides local, regional and interregional transit system enhancements in Boulder through collaborative partnerships with RTD, Boulder County, CU, CDOT, Transfort, Via Mobility Services and other partners.

More than 20 percent of all trips by Boulder residents are by foot, and 10.6 percent of residents make work trips by bicycle, a rate 19 times the national average.

Source: 2009-2013 3-Year American Community Survey.

### Historical Notes

- **1908**
  - Denver and Interurban train starts service to Boulder, Louisville, Superior, Marshall and Eldorado Springs. Eighteen trains a day arrive in Boulder

- **1908**
  - Frederick Law Olmstead, Jr. studies Boulder and stresses the paving of streets for health and safety. He recommends 80-foot-wide streets, 20-foot-wide alleys and 300-foot blocks as ideal

- **1916**
  - City Council orders first speed limit signs installed

- **1917**
  - Pearl Street is paved
Finding Innovative Solutions

The City of Boulder and the community work together to find solutions to the biggest challenges confronting pedestrians, bicyclists, transit users and drivers.

In 2012, the city launched the Living Lab program with the goal of improving safety and access for people using all modes of travel and testing different techniques for building complete streets. Phase I projects tested treatments such as protected bike lanes and back-in angled parking. Phase II includes the Folsom corridor pilot project, installed in 2015 to test treatments within a corridor and later modified to improve traffic flow.

The Living Lab program continues to produce technical data and community feedback to guide corridor studies, future multimodal street projects, bicycle facility planning and a street design guide. Outcomes include improved ways to design barrier protected bike lanes and the adoption of buffered bike lanes for future use.

The city has also learned the importance of early, proactive and robust engagement with residents, commuters and businesses; more readily available and understandable data; the need to refine projects based on community feedback; and the importance of understanding the broader context and timing of initiatives.

On Oct. 10, 2015, Boulder celebrated 21 years of the city’s flagship Community Transit Network route, the HOP! The community celebrated with a week-long HOP 21st Birthday Campaign that included free rides, station parties, discounts to local businesses and commemorative HOP T-shirts.
Since 2011, Boulder B-cycle has grown from 12 stations and 85 bikes to 39 stations and 275 bikes, making it one of the most widely available bike sharing systems per capita in the United States. System usage has also increased, with 86,000 trips projected to be taken in 2015 (up from 18,698 in 2011) and 18,500 passes projected to be purchased (up from 7,500 in 2011).

Other Key Projects:
Other examples of city Complete Streets projects and partnerships include:

- 28th Street Improvements
- Baseline Road Underpass Project
- Diagonal Highway Reconstruction 28th to 30th
- Boulder Walks
- Pavement Management
- Safe Routes to School
- Street Bridge Reconstruction and Multimodal Improvements - completed 2014
- Pearl Parkway Multiway Boulevard - completed 2014, part of Boulder Junction project discussed on page 17 of this document
- Goose Creek Bridge on Junction Place - completed 2014

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1922
City Manager Scott Mitchell proposes streets should be paved. Boulder residents resist having to pay for luxuries like streets, sewers and water systems. Mapleton Hill residents charge he wants to "pave over the city" and get a temporary injunction on paving.

1923
Public Service Company takes over management of Boulder Street Railway

1931
Public Service Company purchases a fleet of four Mack buses and the last streetcar is retired on June 1

1940
First traffic signal is installed at Broadway and Arapahoe. It is turned off due to gas rationing during the war and turned back on in February 1945

1946
340 parking meters are installed in downtown
Regional Travel

New jobs in Boulder and residential growth throughout the region increase demand on the regional transportation system. Boulder continues to work with regional partners to improve travel options and the person-carrying capacity of all the major corridors connecting Boulder to surrounding communities. These partnerships seek solutions that improve regional travel for everyone, including people who use autos and transit.

Progress Snapshot

Partnering with RTD, CDOT and U.S. 36 communities

The partner communities along U.S. 36 have collaborated on planning and funding corridor improvements since the mid-1990s. Now the largest construction project in the state, current U.S. 36 improvements include roadway reconstruction, a new express lane for high-occupancy vehicles and drivers who pay tolls, and an adjacent bikeway. As part of RTD’s 2004 voter-approved FasTracks plan, the new Flatiron Flyer service opened in January 2016 as RTD’s first bus rapid transit (BRT) service. The Flatiron Flyer operates between downtown Denver and Boulder using the new U.S. 36 Express Lanes, reducing rush hour travel times from downtown Boulder to downtown Denver to an estimated 45 minutes.

While the Flatiron Flyer includes real time transit displays at BRT stations along the corridor, RTD recently opened its transit travel time data to smartphone app developers, and real time transit data is now available through third-party apps. Real time data was the top transit priority in the 2014 TMP.

Other Key Projects:

Other examples of city regional travel projects and partnerships include:

- 36 Commuting Solutions
- FLEX interregional bus service from Fort Collins to Boulder

“The City of Boulder’s annual traffic study found that approximately 49,000 vehicles enter Boulder during the morning rush, which is from 6 to 10 a.m. That is an increase of 2 percent compared to 48,000 vehicles in 2014, but it remains below the peak year of 2004, when about 51,000 vehicles entered the city during the morning rush. The 2015 traffic study also found that about 20,000 vehicles leave the city each day during the morning rush hour.”

Source: City of Boulder annual Boulder Valley Count Program

RTD’s new transit vehicles provide high quality commuter comfort and uniquely identify the new Flatiron Flyer BRT service.

New interregional FLEX express service began January 2016, connecting the communities of Boulder and Fort Collins and the University of Colorado and Colorado State University.
The city's most effective TDM tool is RTD's EcoPass, a discounted annual transit pass purchased by employers for their workers and by neighborhoods for their residents. Revenues from parking meters and garages buy EcoPasses for more than 6,600 downtown employees, which encourages employees to use other modes and creates more parking for visitors and customers.

The changes in travel behavior associated with EcoPass produce significant reductions in vehicle trips and an estimated 40 percent reduction in greenhouse gas emissions. In 2015, more than 70,000 people who live, work or study in Boulder have access to EcoPasses.

The average time it takes to cross Boulder during rush hour is 15 minutes, which has remained relatively steady over the past 25 years, according to ongoing city research. While population, employment and traffic have increased over the life of the study, the city has been able to maintain travel times in the six corridors with intersection improvements and traffic signal coordination.

Other Key Projects:
Other examples of TDM projects and partnerships include:

- Boulder Transportation Connections
- Travel Diary App
- Boulder Junction TDM
- Regional EcoPass Feasibility Study

1964 Boulder hires first full time traffic engineer who is given authority to install stop signs and traffic signals without a City Council hearing and approval

1964 On the second try, voters approve a better defined sales tax for capital expenditures

1967 Toll stations close as U.S. 36 pays off its bonds 13 years ahead of schedule

1967 One cent sales tax passes with 0.6 cents dedicated to transportation and 0.4 cents dedicated to open space

1969 The Regional Transportation District is created

1964

Transportation Demand Management

The 2014 TMP update calls for transportation demand management (TDM) solutions that offer people travel choices while improving the efficiency of the transportation system. This means finding ways to better use the existing system at a time when adding roadway capacity faces funding, physical and environmental constraints.

Progress Snapshot

Making Transit an Easier Choice

Other Key Projects:
Other examples of TDM projects and partnerships include:

- Boulder Transportation Connections
- Travel Diary App
- Boulder Junction TDM
- Regional EcoPass Feasibility Study

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1969 The Regional Transportation District is created

2015 Boulder EcoPasses by Program Type

- Business Program
- Neighborhood Program
- College Pass Program
- CU Faculty and Staff
- Downtown Program

- Total Passes 74,762

- College Pass Program 32,945
- Business Program 16,205
- CU Faculty and Staff 7,914
- Downtown Program 6,613
- Neighborhood Program 11,922
The 2014 TMP update provides a policy framework for the city’s transportation budget, which supports a balanced, sustainable and multimodal transportation system. Recent additional funding has allowed the city to restore operation and maintenance activities and increase capital investment. However, funding remains below 2001 levels when adjusted for inflation.

**Progress Snapshot**

**Using Current Funding Wisely**

In 2015, the revised transportation budget was $32.7 million and included $7.7 million in capital improvement projects, supported by $6.6 million of outside funds. A variety of revenue sources contributed to 2015 funding:

- Federal Funding: $5.15 million
- State Highway Users Tax: $2.47 million
- Development Excise Tax: $1.42 million
- Local Sales Tax: $24.18 million
- Other: $2.76 million

Given the volatility of sales tax revenue and the limited duration of this funding relative to the continuing need, the city continues to explore options for sustainable, long-term transportation funding strategies.

**Percent of City Transportation spending by Mode**

(Includes Federal Funds 2001 to 2014)

- Roadway
- Pedestrian
- Bike
- Transit
- TDM

Crews at work on the Foothills Parkway Operational Improvements project. The $750,000 road construction project added a southbound lane from the Diagonal Highway on-ramp through Valmont Road, which reduces congestion and improves safety. The project was started and completed in 2015 and was jointly funded by the federal government, CDOT and the City of Boulder.

**Historical Notes**

- **1970** City Transportation Division is formed. Boulder has 155 miles of roads, of which 13 miles were still unpaved.
- **1970** The Central Area General Improvement District (CAGID) forms to provide parking and related improvements in downtown.
- **1971** City Manager Ted Tedesco asks Council to appoint a Citizens’ Advisory Committee on Public Transportation.
- **1972** Voters turn down bond proposal for transportation improvements including a quarter of the spending for bikes.
- **1973** A half-cent sales tax is approved to fund RTD, though it fails in Boulder and Douglas counties.
- **1974** RTD takes over the Boulder bus system from Public Service Company.
Adapting to Declining Purchasing Power

From 2002 to 2013, the city’s transportation funding declined 14 percent in actual dollars. The decline in 2002 and 2003 was due to the high tech slump and increasing regional retail competition. Revenues began to recover in 2007 and 2008, but then dropped again with the economic downturn. When adjusted for inflation, the decrease in spending power is even greater, with an estimated 25 percent decline in purchasing power between 2002 and 2011. With an improved economy and the 2013 sales tax increase, revenues and the city’s transportation budget have increased, but demand for materials resulting from the 2013 floods and the pace of new development in the region have increased construction costs. The Colorado Construction Cost index reflects the materials used in transportation projects and shows a 50 percent decline in real purchasing power in 2014 compared to 2002.

Aligning Priorities and Funding

To ensure that transportation spending aligns with community values, the city tracks expenditures by mode, identifying how maintenance and operations activities and capital improvements are divided. Since 2001, 44 percent of Boulder’s total transportation spending has been applied to maintaining the existing roadway system, and the remaining funds have been applied to finish less complete components of the transportation system, including bicycle, pedestrian, transit and TDM activities. About two-thirds of the total amount has supported maintenance and operations of the existing system, including subsidies to transit services, and one-quarter has gone to enhancements to the system. Roadways account for 56 percent of the money spent on operations and maintenance, receiving nearly $140 million over that time.

In the last round of federal funding provided through the Denver Regional Council of Governments (DRCOG), Boulder received approximately $11.5 million for city projects:

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broadway Reconstruction from Violet Avenue to U.S. 36</td>
<td>$6.225 million</td>
</tr>
<tr>
<td>Boulder Slough Path: 30th Street to 3100 Pearl Parkway</td>
<td>$0.480 million</td>
</tr>
<tr>
<td>30th Street/Colorado Avenue Bike/Pedestrian Underpass</td>
<td>$4.75 million</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>$11.455 million</strong></td>
</tr>
</tbody>
</table>

CPI - Annualized Consumer Price Index for Denver-Boulder-Greeley area, data provided by the Bureau of Labor Statistics (BLS)

C3I - Colorado Construction Index - tracks construction cost in the state
Integrate with Sustainability Initiatives

Added as part of the 2014 TMP update, this focus area emphasizes citywide integration under Boulder’s Sustainability Framework to build resiliency and long-term community health.

Progress Snapshot

Responding to the Climate Challenge

In 2013, the City Council gave staff guidance to begin drafting a new city climate action goal, the “Climate Commitment,” based on an 80 percent emissions reduction below 2005 levels by 2050. A final review and approval of this goal will take place in later 2016 following an extensive community engagement process. Currently, ground transportation accounts for 21 percent of GHG emissions in Boulder, and the strategies outlined in the 2014 TMP update would reduce transportation GHG by about 16 percent. Meeting the community’s climate goals will likely require future TDM actions, land use changes and the transition to clean vehicles for both transit and private users.

Balancing Transportation and Land Use

The connection between land use planning and transportation is integral to developing a balanced multimodal transportation system. Boulder’s growth boundary has kept Boulder a compact city and allowed infrastructure dollars to be spent in support of person travel. However, Boulder’s growth limits have also increased housing costs and regional commuting trips, as an estimated 50,000 local jobs are held by nonresident commuters. The TMP emphasizes working with the community, city land use, housing and transportation planning teams to create integrated plans for areas of the community facing change, such as Boulder Junction, North Boulder, East Boulder and Gunbarrel. In 2016, these teams will focus on the Boulder Valley Comprehensive Plan update, which is an opportunity to incorporate new policies and goals from the 2014 TMP update, as well as to inform future updates.

Other Key Projects:

Other examples of city projects and partnerships include:

- Access Management and Parking Strategy
- The Boulder Civic Area
- Boulder Valley Comprehensive Plan
- North Boulder Mobility Hub

1989

- Creation of GO Boulder. Creation of Downtown Bus Pass by downtown businesses

1989

- First Greenways Plan is adopted. Adoption of first Transportation Master Plan, which calls for a 15 percent reduction of single occupant vehicle use

1990

- First city travel diary travel survey

1991

- New federal transportation legislation (ISTEA) provides supportive national policy

1991

- CU students vote by a margin of 4 to 1 to increase student fees to turn their student ID’s into unlimited-use bus passes
Boulder’s commitment to addressing all five focus areas and the Renewed Vision for Transit is exemplified by Boulder Junction, a regional transit hub that opened in August 2015.

Located in the geographic center of the city at Pearl and 30th streets, Boulder Junction, previously known as the Transit Village, is a 160-acre pedestrian friendly, transit-oriented development. The project’s centerpiece is RTD’s 45,655-square-foot underground transit facility, which is part of Depot Square, a state-of-the-art mixed-use development.

This development includes the new Hyatt Place Hotel, the rehabilitated historic train depot and 71 permanently affordable residential units. B-Cycle and eGo car share stations are included as well. Cyclists can connect to transit on multi-use paths or via a shared travel space for cyclists, pedestrians and cars along the new Pearl Parkway multiway boulevard. TDM programs include the Boulder Junction TDM Access and Parking Access Districts. These districts manage parking in the area and use property taxes to provide residents and employees with services, including EcoPass, carshare and bikeshare opportunities. More than 400 employees and residents already have EcoPasses, and this will continue to grow as the area develops.
Progress Toward Nine Objectives

The 2014 TMP update emphasizes performance measurement as part of a balanced, multimodal and sustainable transportation system. As a result, it establishes nine measurable objectives for the city that support the five focus areas. What follows is an assessment of how the city has performed so far in achieving these objectives and what comes next.

**Objective 1:**

**Reduce vehicle miles of travel (VMT) in the Boulder Valley by 20 percent by 2035.**

Vehicle Miles of Travel (VMT) is estimated by a combination of regional modeling and counting cars entering Boulder at key locations and at intersections.

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**Progress Snapshot**

The estimated number of vehicle miles traveled per day in the Boulder Valley is around 2.5 million, which is approximately the same as it was in 1994. The 2014 TMP update has lowered that target to 1.9 million miles per day by 2035, which is a 20 percent reduction from the current average.

**What This Means**

Boulder’s Climate Commitment seeks to reduce the greenhouse gas emissions produced by the community, and the 2014 TMP update reflects that. The update’s new VMT objective will help reduce GHG emissions by an additional 16 percent by 2035. To achieve this goal, Boulder needs to further reduce VMT for both residents and nonresident employee trips by 20 percent.

**Next Steps**

Success to date in reducing VMT has depended on improving travel options, providing incentives like the EcoPass and reducing the subsidies to auto travel like free parking. Continued progress will require actions across all of these areas. Examples are the ongoing community EcoPass study with the county and regional corridor studies to improve the speed and reliability of transit connections to surrounding communities.
Objective 2:
Reduce single occupant vehicle travel to 20 percent of all trips for residents and to 60 percent of work trips for nonresidents.

The 2014 TMP update sets a goal of reducing the number of trips made by one person driving alone in a car (called “single occupant vehicle” mode share, or SOV) to 20 percent of all trips by Boulder residents by 2035.

Progress Snapshot

According to the 2014 Boulder Valley Employee Survey, 47 percent of Boulder residents who have jobs drive to work alone, down from 59 percent in 2011. While this represents significant travel behavior change by Boulder residents, the survey found that 80 percent of non-Boulder residents make SOV trips to work, which is unchanged from 1991.

Since 1990, city residents have increased transit and bicycle use, while walking has remained relatively stable and single occupant vehicle use has declined. This chart is based on travel diary surveys of city residents only. The city uses these surveys as a means to track changes over time, rather than to provide a national comparison, as survey methodologies differ significantly.

What This Means

While Boulder has made progress—and areas of the city with paid parking, including downtown and the CU campus, are on track to achieve or exceed the objective—the city as a whole is not currently on track to reach it. Since 1990, SOV trips have been falling by about 0.4 percent per year. That rate needs to double to 0.8 percent per year to reach the current objective by 2035.

Next Steps

Today, each resident takes an average of about 12 trips per week in an SOV. If each resident shifted a bit more than six of those trips to other modes, the goal would be reached. A combination of additional investment, new TDM and parking policies, and creating more opportunities for trips that can be made by walking and biking are needed to reach these goals for residents. The city also will pursue first and last mile strategies to link people biking and walking to transit, including enhanced amenities and improved maintenance standards to keep routes free of snow and ice. The challenge is much greater for nonresident employees and needs to include better transit, vanpool and carpool connections. The result also will be influenced by regional, state and national economic factors.

1992
College Avenue underpass is constructed in partnership with CU

1993
Neighborhood EcoPass program starts

1994
In October, HOP high frequency service starts, linking CU, downtown and Crossroads Mall. It is started with the first round of awards from the new ISTEA federal funding bill

1994
Special Transit helps HOP high frequency service pass its ridership goals within the first six weeks of service
Objective 3:
Achieve a 16 Percent Reduction in Greenhouse Gas Emissions and Continued Reduction in Mobile Source Emissions of Other Air Pollutants

Reducing air pollution from transportation is a long-standing community objective, and a primary way to do it is by reducing VMT.

Progress Snapshot
Vehicles in Boulder’s transportation system produced 310,749 million metric tons of GHG in 2013. The majority of these emissions are produced by Boulder residents, although nonresident employees produce about 23 percent of the total. Heavy vehicles such as trucks and transit vehicles produce a disproportionate share of GHG (27 percent) relative to their VMT (5 percent), highlighting the need to clean the fuel source of this fleet.

What This Means
Ground transportation accounts for 21 percent of GHG emissions in Boulder. The analysis conducted when the TMP was updated estimates that the strategies in the 2014 plan would reduce transportation GHG about 16 percent. GHG reduction is directly related to reducing VMT and providing the opportunity for more trips to be short trips made by walking or biking. This is particularly true for nonresident employee trips which are long distance and have a large GHG impact.

Next Steps
While Boulder residents continue to change how they travel in ways that are consistent with the 2014 TMP update’s objectives, the mode share of nonresident employees has not changed since 1991. Faster and more predictable transit, carpool and vanpool connections are needed to affect this travel as well as first and last mile connections. Regional corridor studies will be started in 2016 for the Diagonal Highway (Colo. 119) and East Arapahoe Avenue (Colo. 7) corridors with the objective of providing these improvements. The city is also increasing its transportation demand management (TDM) and parking programs to support non-SOV trips by nonresident employees.

Objective 4:
No more than 20 percent of roadways congested at Level of Service E

Reducing traffic congestion is one of Boulder’s goals, and the 2014 TMP update calls for minimizing the number of heavily congested intersections to make travel by cars and buses more efficient. In this case, “heavily” refers to congestion that is causing vehicles to wait through more than one traffic signal cycle. Transportation officials identify this as a Level of Service E or F.

What This Means
Nine percent is well below the 2014 TMP update objective. Signal timing enhancements, intersection operational improvements such as adding turn lanes and decreases in traffic volumes during recent years are factors in this success.

Next Steps
In 2015, the city also began tracking the percentage of vehicles that experience heavy congestion during peak hours. This data will be used as future improvements are planned.
Objective 5:
Expand fiscally viable transportation options for all Boulder residents and employees, including older adults and people with disabilities.

Boulder is committed to providing transportation options for everyone in the community. Close to one third of the population does not drive due to age or infirmity, and transit access is a key aspect of mobility for this population.

Progress Snapshot
A three-year average of American Community Survey data from 2010 to 2013 shows that people residing in Boulder ride transit at twice the national average, walk more than three times as often and ride bikes 19 times more often than the national average. These results parallel the trends in the city’s surveys that show these mode shares are increasing over time. Boulder residents are almost four times more likely to walk, bike or use transit than the average resident of the Denver region.

What This Means
The city is working to expand access to transit and paratransit services and makes contributions to Via, the area’s provider of paratransit service, and RTD to make EcoPasses available to the community. The city has significantly increased its funding contributions to Via and is working with Boulder County on a community EcoPass study. Mobility for an aging population is a local, regional and national issue that will require additional attention and funding.

Next Steps
The ongoing community EcoPass study will determine the cost and feasibility of providing an EcoPass to all residents and/or workers in Boulder or Boulder County. Recommendations from the study are expected in the spring of 2016. The city is also working closely with Boulder County to implement the results of their Mobility for All study for the benefit of the aging population and people with disabilities, and with Via to develop a strategic plan to address trends, funding and new technology to meet the expected increases in demand over time. The city continues to support grant applications with Via for vehicle replacement involving low-emission and electric-powered vehicles.
Objective 6:

Increase transportation alternatives commensurate with the rate of employee growth.

As the number of jobs in Boulder increases, the transportation system needs to evolve.

Progress Snapshot

In 2014, 67.8 percent of trips to and from work by Boulder Valley employees, including both those who live in Boulder and those who don’t, were made in single occupant vehicles, down from 71.4 percent in 2011.

In 2014, 8.6 percent of trips to and from work were made by transit, up from 6.5 percent in 2011.

One way to track progress is presented in the following table, which shows the growth of workers in Boulder and changes to the transit and bike system. The table does not reflect a number of other improvements that have happened east of 28th Street, where the bus and pedestrian systems are less developed. Since the last report, these include the 63rd Street Bridge reconstruction and sidewalk improvements and the current Diagonal Highway reconstruction, as well as efforts to improve regional transit connections.

### Progress Snapshot

<table>
<thead>
<tr>
<th></th>
<th>2002</th>
<th>2015</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated Boulder Employees</td>
<td>84,530</td>
<td>98,510</td>
<td>16.54%</td>
</tr>
<tr>
<td>Local Transit Service Hours</td>
<td>215,074</td>
<td>196,205</td>
<td>-8.77%</td>
</tr>
<tr>
<td>Avg. Local Weekday Ridership</td>
<td>18,631</td>
<td>20,347</td>
<td>9.21%</td>
</tr>
<tr>
<td>Regional Transit Service Hours</td>
<td>100,956</td>
<td>131,402</td>
<td>30.16%</td>
</tr>
<tr>
<td>Avg. Regional Weekday Ridership</td>
<td>7,446</td>
<td>11,713</td>
<td>57.31%</td>
</tr>
<tr>
<td>Centerline Miles of Bike system</td>
<td>138</td>
<td>163</td>
<td>18.12%</td>
</tr>
</tbody>
</table>

Source: City of Boulder Revised "back-casted" employment estimates and GIS Inventory, RTD Weekly Transit Service Recap Summary

What This Means

The city and Boulder County have increased funding of RTD transit service to preserve community transit network frequency and increase the regional transit connections available to workers. The addition of the BOLT and DASH services to surrounding communities has significantly increased regional transit service, however RTD has reduced the number of local transit service hours. Collaboration with other regional partners led to both the U.S. 36 Flatiron Flyer bus rapid transit and FLEX service between Fort Collins and Boulder to the regional transit options. Expansion of the bike system has about kept with the rate of employee growth. The new U.S. 36 Bikeway that opened in March 2016 further adds regional bikeway options.

Next Steps

As the eastern part of the community matures and redevelops, there will be additional opportunities to increase and complete the non-auto transportation systems in these areas similar to recent transit improvements. The Renewed Vision for Transit calls for additional facilities and services throughout the community. There are studies starting to look at new regional BRT options on Colo. 7 and Colo. 119 while continued efforts are needed to enhance local and regional transit service hours. The current Boulder Valley Comprehensive Plan update will provide the framework for land use changes that could support or increase these opportunities.
Objective 7:
“Toward Vision Zero” for fatal and serious injury crashes: continuous improvement in safety for all modes of travel.

The City of Boulder works to provide a safe and efficient transportation system for people using all modes of travel. “Toward Vision Zero” is the city’s effort to eliminate fatalities and serious injuries from future traffic collisions.

Progress Snapshot
A review of collisions occurring between 2009 and 2014 is underway to identify overall trends and guide strategies for mitigating future collisions, particularly those that result in serious injuries and fatalities. Here are some initial findings:

- Since 2009, an average of 3,275 collisions per year were reported within the City of Boulder.
- The percentage of collisions that resulted in a serious injury or fatality has been relatively flat at 2 percent of all collisions over this six-year span.
- The City of Boulder has fewer fatal collisions per capita than similar Colorado cities.
- While only 8 percent of all traffic collisions in the city involve a bicyclist or pedestrian, they account for approximately 60 percent of serious injuries and fatalities sustained in traffic collisions.

What This Means
The detailed analysis of collisions from 2012 to 2014 found that traffic collisions occur most often at intersections. Signalized intersections are the most common location for motor vehicle collisions, and crosswalks are the most common location for motor vehicle collisions involving a bicyclist or pedestrian.

Next Steps
A detailed explanation of collision research findings will be in the upcoming Safe Streets Boulder report, along with a discussion of strategies to reduce fatalities and serious injuries.

The city aims to reduce the number and severity of collisions through a comprehensive approach that includes engineering, education, enforcement and evaluation strategies. These strategies will be explained in detail in the Safe Streets Boulder report, and highlights include the following ongoing efforts:

- Installing signs and pavement markings to highlight potential conflict points and to reduce conflicts between turning vehicles and bicycles and pedestrians.
- Continuing education campaigns such as Heads Up Boulder and Lighten Up Boulder to increase awareness of crosswalk- and lighting-related ordinances, and Way of the Path, which explains multi-use path etiquette to reduce bicyclist-pedestrian conflict.
- Working with partners such as the Boulder Police and CU-Boulder Police departments and the cycling community to conduct education and enforcement activities.
- Investigating restorative justice curriculum for offenders of crosswalk-related ordinances.
- Continuing to monitor and evaluate collision types, locations and other trends to further refine and enhance safety countermeasures to achieve the goals of Toward Vision Zero.
Objective 8:
Increase the share of residents living in complete, walkable neighborhoods to 80 percent.

About 26 percent of Boulder residents live in “15-minute walking neighborhoods,” which means they can walk to stores, parks, restaurants and other destinations in that time and accomplish many of their daily transportation needs by walking.

Progress Snapshot
To measure progress toward this objective, the city developed a GIS tool that creates “access scores.” As part of the 2014 TMP update, the city found that in many areas transportation facilities exist and the low access score is due to the lack of nearby destinations.

What This Means
While Boulder residents can generally access complete bike and pedestrian systems, the existing land use pattern provides few neighborhood commercial destinations in large parts of the community.

Next Steps
The BVCP update process will consider the results of the 15-minute neighborhood analysis and may result in land use changes that could provide more destinations in more neighborhoods and promote better physical connections in the community. This tool is also being developed into a Web-based tool that will be useful to a broader set of city staff and the community to perform updated analysis.

Objective 9:
Reduce daily resident VMT to 7.3 miles per capita and nonresident one-way commute VMT to 11.4 miles per capita.

To help make these VMT goals more “real” and meaningful for people, the 2014 TMP update established daily VMT per capita goals for both residents and nonresident employees. These goals reflect the 20 percent VMT reduction called for by the update and Boulder’s Climate Commitment.

Progress Snapshot
Data is collected through periodic surveys of residents and employees. Studies show that in 2012, the average VMT of Boulder residents was 11.2 miles per day, and that in 2014 nonresident employees had one-way workday commutes of 14.3 miles.

What This Means
As this is a new objective, the 2014 TMP update numbers are a baseline that can be used to evaluate future change. With the 2015 travel diary survey, the city piloted a smartphone app as a way to improve collecting personal travel data. This or similar apps will be a way for residents and employees to assess their personal relationship to this objective.

Next Steps
As this objective personalizes the broader VMT and mode share objectives, success in those areas will also be reflected here. Success across the TMP update objectives will require changes from both residents and nonresidents. As part of TMP and Climate Action implementation, education efforts will inform citizens and nonresident employees of the change needed.

New travel diary app launched and piloted in 2015
Progress Toward the Future

The City of Boulder is committed to achieving the community’s vision for a sustainable transportation system and travel options for people of all ages and stages of life. The city continues to partner with the community to achieve the goals and objectives of the TMP and to provide Boulder travelers with more options and choices for local and regional trips.

Results and highlights from the 2016 Transportation Report on Progress are used to inform the city’s transportation priorities for 2016 and beyond in the spirit of continuous improvement and on-going progress to achieving the TMP vision. While the report shows good progress in many areas, the city and community must continue to work together to accelerate the pace of change in all areas to achieve the community’s goals. For example, while great strides in mode share and vehicle miles traveled goals have been achieved, there is still a long way to go to realize the transportation vision.

Realizing continued improvement will require building on and continuing the multimodal planning, projects, programs and on-going operations, maintenance, and services of the last 25 years to advance fundamental systems changes to support the ever-changing nature of the city and the region. Success will also require sustaining and enhancing the focus on safety, funding initiatives and travel choices for people of all ages and stages of life.

Partnering on the Bigger Picture

Responding to future challenges and changes will require cooperation. The TMP establishes ambitious goals that require Boulder to work across departments in the city organization, with community groups and with regional partners. The outcome of this can be seen in long-term planning documents, such as the Climate Commitment and the Boulder Valley Comprehensive Plan update, and will inform the success of projects well into the future.

The Future of Travel in Boulder

Work in 2016 and beyond will include increased emphasis on safety for all users of the transportation system and implementation of the Renewed Vision for Transit to serve both Boulder residents and nonresident employees. Slower and more fundamental change will include cleaning the vehicle fleet by transitioning from gasoline- and diesel-powered vehicles to electric vehicles, increasing neighborhood access to more daily needs so that more trips are made by walking and biking, and further advancing transportation demand management and parking management initiatives.

Trends for the next 20 years of transportation suggest that in a rapidly changing world, new influences and choices will allow, encourage and sometimes require people to travel differently. By working together, the city and community will achieve measured progress toward improving transportation in Boulder that will result in benefits to the environment, economy and the community.

On-going monitoring and evaluation will provide check points along the way to refine, adjust and modify priorities together over time.
2016-17 Action Items

Based on the 2014 TMP update’s Action Plan and the 2016 Transportation Report on Progress, highlights of the 2016-17 Transportation work program include:

**Complete Streets**
- Maintain on-going commitment to safety and enhance high quality operations and maintenance, including the pavement management program, for all modes of travel.
- Continue to advance the Renewed Vision for Transit.
  - Launched regional U.S. 36 Flatiron Flyer Bus Rapid Transit service
  - Launched interregional FLEX service to Fort Collins.
  - HOP transit study: Update HOP Community Transit Network (CTN) route to enhance service to Downtown, 29th Street, Boulder Junction and CU
  - Eastside circulator route: plan new CTN route with CU to connect Williams Village, CU main & east campus, and Boulder Junction
- Analyze service delivery model for local, regional and interregional transit, working with agency partners.
- Continue planning East Arapahoe, Canyon Boulevard, 30th Street and Colorado Boulevard corridors, including opportunities to develop the Bicycle 2.0 Low Stress Network.
- Bicycle 2.0 Low Stress Network: in coordination with corridor plans, identify opportunities to enhance local bikeways for cyclists of all ages and riding abilities
- Complete construction of current capital projects such as the Diagonal Highway, 28th Street and Baseline multimodal projects as well as new projects such as North Broadway.

**Regional Travel**
- Continue work with RTD to enhance U.S. 36 BRT service levels for Boulder.
- Partner with RTD and other agencies to develop regional arterial Bus Rapid Transit plans for East Araphahoe Ave. (Colo. 7) and the Diagonal Highway (Colo. 119).

**Funding**
- Analyze ways to diversify transportation funding, such as transportation impact fees, development impact fees and excise taxes.
- Pursue regional, state and federal funding to leverage local investment in transportation system improvements.

**Integrated Planning**
- Continue work with Access Management and Parking Strategy.
  - Analysis of parking pricing policies and Neighborhood Permit Parking program, as well as updating the city’s off-street parking requirements and TDM plans for new development projects.
- Collaborate with partners on the Boulder Valley Comprehensive Plan update.
- Collaborate with partners on the Chautauqua Access Management Plan (CAMP).
- Support additional multidepartment and multi-agency projects.

**Transportation Demand Management**
- Partner with Boulder County and RTD to advance Communitywide EcoPass.
- Coordinate with city’s Access Management and Parking Strategies team to advance parking and TDM requirements for new development.

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**2012**
Euclid/Broadway Underpass is completed

**2013**
Ballot Issue 2B six-year and 20 twenty-year sales tax extensions for transportation funding passes

**2014**
Ballot Issue 2A City Community, Culture and Safety three-year funding passes

**2015**
Boulder Junction transit facility opens

**2016**
U.S. 36 Flatiron Flyer bus rapid transit service and FLEX service to Fort Collins begin

**2016**
Real time transit service information available
<table>
<thead>
<tr>
<th>TMP Objectives for 2035</th>
<th>Baseline</th>
<th>Progress</th>
<th>Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong> Reduce vehicle miles of travel (VMT) in the Boulder Valley by 20 percent by 2035</td>
<td>1994 level of 2.44 million daily VMT for the Boulder Valley; target now 1.3 million daily VMT</td>
<td>Est. 2.42 million daily VMT for the Boulder Valley in 2014</td>
<td>Static, needs 20 percent further reduction in daily VMT</td>
</tr>
<tr>
<td><strong>2</strong> Reduce single occupant vehicle travel to 20 percent of all trips for residents and to 60 percent of work trips for nonresidents</td>
<td>1990 44 percent SOV mode share for residents</td>
<td>Reduced to 36.5 percent in 2015 for residents</td>
<td>Positive but needs to accelerate</td>
</tr>
<tr>
<td><strong>3</strong> Achieve a 16 percent reduction in greenhouse gas emissions and continued reduction in mobile source emissions of other air pollutants</td>
<td>310,749 million metric tons of GHG in 2013</td>
<td>New objective</td>
<td>To be determined in next 2017/18 report</td>
</tr>
<tr>
<td><strong>4</strong> No more than 20 percent of roadways congested at level of service F</td>
<td>23 percent in 1998</td>
<td>9 percent in 2015</td>
<td>Positive</td>
</tr>
<tr>
<td><strong>5</strong> Expand fiscally viable transportation options for all Boulder residents and employees, including older adults and people with disabilities</td>
<td>2002 - $160,000 city support to Via</td>
<td>2015 - $290,546 city support to Via</td>
<td>6.3 percent annual increase</td>
</tr>
<tr>
<td><strong>6</strong> Increase transportation alternatives commensurate with the rate of employee growth</td>
<td>2002 - 3.822 est. residents eligible for Neighborhood EcoPass</td>
<td>2015 - 11,922 est. residents eligible for Neighborhood EcoPass</td>
<td>16.3 percent annual increase</td>
</tr>
<tr>
<td><strong>7</strong> “Toward Vision Zero” for fatal and serious injury crashes: continuous</td>
<td>2016 Safe Streets report in progress</td>
<td>New objective</td>
<td>To be determined</td>
</tr>
<tr>
<td><strong>8</strong> Increase the share of residents living in complete, walkable neighborhoods to 80 percent</td>
<td>26 percent of residents lived in a walkable neighborhood in 2014</td>
<td>New objective</td>
<td>To be determined</td>
</tr>
<tr>
<td><strong>9</strong> Reduce daily resident VMT to 7.3 miles per capita and nonresident one-way commute VMT to 11.4 miles per capita</td>
<td>11.2 mile per day for Boulder residents in 2012</td>
<td>New resident data in 2016</td>
<td>To be determined</td>
</tr>
<tr>
<td></td>
<td>14.3 nonresident one-way commute in 2014</td>
<td>New nonresident data will be collected in 2017</td>
<td>To be determined</td>
</tr>
</tbody>
</table>