Table of Contents

PAGE 2  Letter from the Director
PAGE 3  The Transportation Master Plan
PAGE 6  How is Boulder Doing?
PAGE 10 Evolution of the Transit System
PAGE 13 Human Powered Action
PAGE 21 Completing the Streets
PAGE 24 Programs for Change
PAGE 26 Partnering on the Bigger Picture
PAGE 28 Transportation Finance
PAGE 31 A Look into Our Crystal Ball

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 including two toll gates
1869 Silver discovered in Caribou. Boulder Canyon road continued to Nederland through the canyon with 33 bridges
We close out 2011 with grateful hearts as we celebrate significant progress in the implementation of the Transportation Master Plan, the city’s blueprint for creating sustainable travel choices.

Due to our progress, Boulder was invited to become a member of the International EcoMobility Alliance. Despite widespread economic challenges, 2011 saw significant investment in our local and regional mobility system.

In November 2011, Boulder voters supported a measure to bond against existing revenues, which will generate up to $49 million to upgrade parks, city buildings, the transportation system and our library. The funds will help Boulder catch up on essential maintenance of streets and pathways and support a handful of new projects, including innovative street designs in the emerging mixed-use neighborhood at Boulder Junction. New developments slated to break ground in Boulder Junction in 2012 include RTD’s Depot Square, a public-private partnership to build a regional bus station, hotel, residences and refurbish the historic train depot.

On the regional scene, 2011 saw the commitment of over $300 million to begin converting US 36, an Eisenhower-era highway, into a “green” commuting corridor. A managed lane will support speedy Bus Rapid Transit service and carpools, and a bikeway will connect community bike systems along the corridor. Ground-breaking for the first phase of improvements will occur in 2012, with corridor agencies and communities working to identify additional funding to extend the improvements into Boulder.

While we celebrate the one-time infusion of money, ongoing funding for maintenance and operations remains a significant challenge, as local, state and federal funds decline and shared solutions remain elusive. With the Transportation Advisory Board as the host, Boulder will continue the exploration of local, long-term funding to sustain our multimodal system.

A cornerstone of our transportation future is community partnerships. This year Boulder celebrated the launch of a public bike share system by the nonprofit Boulder B-cycle. Also lauded were the efforts of the grassroots GreenStreets and Paint-the-Pavement partnerships and strengthening ties with our partners, including Community Cycles, Boulder East and Boulder County. New partnership opportunities with the Boulder Valley School District and the University of Colorado are also exciting.

We would like to thank the many staff, elected officials and community members who have contributed to expanding travel choices in Boulder. We’d also like to say a heartfelt goodbye and thank you GO Boulder Program Manager Martha Roskowski. Martha is leaving the city to embark on a project to support innovative bike facilities nationwide. She will be missed.

The events of 2011 remind us that the future will not look like the past. I am honored to work with an extraordinary team of elected officials, committed staff, dedicated TAB members and community partners as we explore new opportunities together.

Onward,

Tracy Winfree
Director of Public Works for Transportation
The Transportation Master Plan

Putting Policy into Action

First adopted in 1989, the Transportation Master Plan (TMP) is the city’s long range blueprint for travel and mobility. It is periodically updated by City Council with advice from the Transportation Advisory Board. The TMP is set under the umbrella of the Boulder Valley Comprehensive Plan and serves a variety of broad community goals.

1989 The original TMP called for shifting away from single occupant vehicle trips. It recognized the need to reconcile two sometimes conflicting goals: “to provide mobility and access in the Boulder Valley in a way that is safe and convenient” and “to preserve what makes Boulder a good place to live by minimizing auto congestion, air pollution, and noise.”

1996 Update Set an objective of “no long term growth in vehicle traffic” to limit the environmental and community impacts of auto travel. The document identified ten major arterial streets and committed to making them work for buses, bikes, and pedestrians as well as cars, making Boulder a pioneer in building “complete streets.”

2003 Update Created three investment programs: what could be built with current funding, an action plan for a logical increment of improvements and a vision plan which described full build-out of the system.

Four policy focus areas were identified:
• Enhancing Regional connections;
• Expanding Transportation Demand Management (TDM) efforts, especially via public private partnerships;
• Completing the multimodal corridors with 28th Street as the top priority;
• Identifying the funding necessary to achieve the goals of the plan.

2008 Update Recognized the planned FasTracks regional transit services, and outlined the funding challenges for transportation. The Complete Streets Investment Program identifies a strategic set of the highest priority investments for the community through 2025.

HISTORY

When Council adopted the first TMP, they created a new workgroup within the Transportation Division called the Alternative Transportation Center to develop options to driving alone. Recognizing the value of a catchier name, the group soon became Great Options in Transportation, or GO Boulder. Over the years, the group has led programs and projects which make riding the bus, walking and biking more attractive, including strong marketing and outreach efforts. Today, the multimodal approach is fully integrated into the work of the Transportation Division. The GO Boulder team continues to engage people in the city’s transportation planning efforts and policy initiatives while developing and implementing innovative programs.

1873 Two railroads come to town, from Erie and Golden with city or county contributions
1877 University of Colorado opens
1883 First train runs from Denver through Boulder to Sunset at 8,000 ft. The line crossed Boulder Creek 66 times
1890 Boulder Wheel Club established for bicyclists. Larger Union Depot built at 14th and Walnut
GOAL 1989

to preserve what makes Boulder a good place to live by minimizing auto congestion, air pollution, and noise."
How Long is Forever?

“It takes forever to drive across town,” is a common complaint.

The city has conducted a statistically accurate survey of auto travel time on two east-west and two north-south corridors in town over the last 25 years. These studies show that “forever” is about 15 minutes during rush hour traffic and that number has remained relatively steady over the years. While traffic has increased over the life of the study, the city has been able to maintain travel times with intersection improvements and traffic signal coordination.
In the past twenty years, the city has received more than two dozen transportation-related awards, including recognition for the TMP, the Community Transit Network, Eco Pass programs, parking management, and a number of construction projects. Most recently, the city was the one US speaker at the EcoMobility conference in Korea and was invited to become a part of the International EcoMobility Alliance. A complete listing of awards can be found at www.BoulderTMP.net

How is Boulder Doing?

If you don’t count it, it doesn’t count.

Boulder’s quest to provide a balanced, multimodal transportation system includes a number of goals and objectives by which progress is measured. Today, some of the measurable objectives are being achieved while others are not yet on track. The city has a strong metrics program that provides multiple sources of data to track progress toward the goals. Travel surveys 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.

In 2008, the League of American Bicyclists awarded Boulder its highest honor, the Bicycle Friendly Communities Platinum level designation. Boulder is one of three communities that have received this award.
The TMP has 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 25 percent of all trips by Boulder residents by 2025. While Boulder has made progress toward the goal, the city is not currently on track to reach it. Since 1990, SOV trips have been falling by about 0.4 percent per year. That rate would need to double to 0.8 percent per year to reach the goal. Today, each resident takes an average of about 12 trips per week in a SOV. If each resident shifted four of those trips to other modes, the goal would be reached.

The areas of the city with paid parking, including downtown and the CU campus, are on track to achieve or exceed the goal. A combination of additional investment and enhanced policy could help reach the goal, as would external factors such as a significant increase in the price of gasoline.

Since 1990, the city has seen increases in transit and bicycling use, while walking has remained relatively stable and single occupant vehicle use has declined. This chart is based on travel diary surveys of residents. 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.

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

1899 New rail line to Ward at 9,450’ and advertised as the “Switzerland Trail of America”
The 1996 TMP update adopted a goal of holding vehicle miles traveled (VMT) steady at 1994 levels. As of 2009, the city is achieving this goal. VMT is measured by a combination of regional modeling, counts of cars entering Boulder at key locations and intersection counts. While some of the progress can be attributed to Boulder’s efforts, the economic downturn has reduced VMT growth across the nation as well.

Since 1990, the city has seen increases in transit and bicycling use, while walking has remained relatively stable and single occupant vehicle use has declined.

<table>
<thead>
<tr>
<th>Year</th>
<th>VEHICLE MILES TRAVELED</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>0.00</td>
</tr>
<tr>
<td>1992</td>
<td>0.50</td>
</tr>
<tr>
<td>1994</td>
<td>1.00</td>
</tr>
<tr>
<td>1996</td>
<td>1.50</td>
</tr>
<tr>
<td>1998</td>
<td>2.00</td>
</tr>
<tr>
<td>2000</td>
<td>2.50</td>
</tr>
<tr>
<td>2002</td>
<td>3.00</td>
</tr>
<tr>
<td>2004</td>
<td>3.50</td>
</tr>
<tr>
<td>2006</td>
<td>4.00</td>
</tr>
<tr>
<td>2008</td>
<td>4.50</td>
</tr>
<tr>
<td>2010</td>
<td>5.00</td>
</tr>
</tbody>
</table>

**FACT**

Since 1990, the city has seen increases in transit and bicycling use, while walking has remained relatively stable and single occupant vehicle use has declined.
One of the TMP objectives calls for minimizing the number of intersections that are heavily congested to support efficient travel by car and bus. In 2009, less than 20% of intersections were heavily congested (in technical terms: Level of Service E or F), meeting the TMP objective. Signal timing enhancements, intersection operational improvements and shifting trips away from automobiles are factors in this success. The increased congestion in 2011 is due to three intersections moving into Level of Service E or F due to shifts in travel due to Broadway construction projects and increased activity at 29th Street Mall.

The American Community Survey (ACS) provides insight into how Boulder’s mode shares compare to other communities and the nation as a whole. A three year average of ACS data from 2008 to 2010 shows that Boulder sees significantly more trips made by other modes when compared to the Denver region and the nation as a whole. People residing in Boulder ride transit at twice the national average, walk more than three times as often, and ride bikes 21 times more often than the national average. These results parallel the trends in the city’s surveys which show these mode shares increasing over time. Boulder residents are almost four times as likely to walk, bike or use transit than the average resident of the Denver region.
Evolution of the Transit System

In 1990, 15,100 customers rode the bus in Boulder each day. Transit service consisted of a hub and spoke system focused on the downtown, with buses coming every half hour at best. Since then, transit has become a centerpiece of the transportation system, transformed through deliberate initiatives to attract new riders to transit. In February 2010, transit ridership peaked at nearly 37,000 daily trips. On average, just over 30,000 daily trips were made throughout the year.
Community Transit Network

In the early 90s, the city reached out to the community for help in designing transit service that worked for them. Their ideas and enthusiasm helped launch Boulder’s Community Transit Network and gave birth to the Eco Pass program. Based on their input, the city launched the HOP service in 1994 to connect major activity centers. Buses come every 10 minutes or less. The vehicles have big windows, seating that promotes conversation, on-board music and branding with bold and distinctive graphics. The HOP’s ridership exceeded projections within the first six weeks of service. The success of the HOP was followed by the SKIP on Broadway, which transformed service along the city’s busiest transit corridor, almost tripling ridership. The JUMP, BOUND, STAMPEDE, DASH and BOLT followed, offering both local and regional services.

Most transit services in Boulder are operated by RTD, the region’s transit agency, primarily funded by a 0.6 cent regional sales tax. The HOP is operated by Special Transit, a local non-profit, whose partnership on this innovation helped build the credibility to expand to other services. The city partners with RTD and the university students to fund the HOP, and subsidizes RTD services on the JUMP and BOUND to maintain high frequencies. The University of Colorado and Boulder County also augment RTD’s local and regional services to make transit a convenient and attractive option. As is the case across the country, transit funding is a major challenge, with service cutbacks and rate hikes a current reality. In Fall of 2011, RTD proposed an unprecedented $12 Million decrease in transit funding throughout the region in an effort to gain stable financial footing for the future. In the fall of 2011, RTD suggested more than $1 million in cuts for Boulder based routes. In the face of public concern, RTD rescinded its proposal to cut service on the SKIP route, but eliminated the 203. These reductions combined with planned fare increases have exacerbated the need to establish more reliable funding mechanisms for Boulder’s local transit system.

1917 Pearl Street paved

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 Boulder Street Railway management taken over by Public Service Company.
1931  Public Service Company purchases a fleet of 4 Mack buses and the last streetcar is retired on June 1.

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

**JOURNEY TO WORK BY BUS**
Boulder Residents, 2009

- **City of Boulder:** 9.8%
- **Denver:** 7.8%
- **Denver Metro Area:** 4.6%
- **Nation:** 5.0%

Source: 2009 American Community Survey

**BUS BIKE WALK**

Source: RTD Annual Ridership Data.
Biking is an integral part of Boulder’s identity. Long before the TMP was adopted, Boulder was celebrating the bicycle with iconic events like the Red Zinger and Coors Classic races. The city’s bicycle program launched one of the country’s first Bike to Work Days in 1977 and outfitted pathway maintenance crews with bike trailers. The adoption of the TMP solidified the commitment to bicycling. Today, Boulder residents make 12.3 percent of their work trips by bicycle, a rate 20 times the national average. Boulder is home to many Olympic and professional athletes, numerous bicycle-related businesses and organizations, a vibrant bike culture, and many regular folks who use their bikes to enjoy Boulder’s great outdoors.
Boulder has a robust bicycle network, with 159 centerline miles of bike facilities. In comparison, the city has 305 centerline miles of roads. The system includes:

1. 58 miles paved multiuse pathways with 78 underpasses
2. 34 miles of roads with bike lanes on both sides
3. 4 miles of roadway with a climbing bike lane and downhill bike route
4. 10 miles of road with paved shoulders
5. 43 miles of roads designated as bike routes
6. 10 miles soft surface trails

An estimated 95 percent of Boulder’s arterial streets accommodate bicyclists, and all local and regional buses in Boulder are equipped with bike racks. The city’s system is bolstered by a robust network of pathways and paved shoulders in surrounding Boulder County to facilitate longer trips by bike.

**FACT**

- 1949: Denver-Boulder Bus Company established with 17 buses running through Lafayette to Denver
- 1946: 340 parking meters installed in downtown
- 1952: Toll road opens with a toll of $.25 for Boulder to Denver travel. Eight months after opening, traffic was up 11 percent on most arterials

Boulder Denver Area Nation

<table>
<thead>
<tr>
<th>Year</th>
<th>Census</th>
<th>ACS 2000</th>
<th>ACS 2006</th>
<th>ACS 2008</th>
<th>ACS 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td></td>
<td></td>
<td>3.5%</td>
<td>4.0%</td>
<td>5.1%</td>
</tr>
<tr>
<td>2000</td>
<td></td>
<td></td>
<td>4.0%</td>
<td>4.5%</td>
<td>5.7%</td>
</tr>
<tr>
<td>2006</td>
<td></td>
<td></td>
<td>4.5%</td>
<td>5.0%</td>
<td>6.1%</td>
</tr>
<tr>
<td>2008</td>
<td></td>
<td></td>
<td>5.0%</td>
<td>5.5%</td>
<td>6.6%</td>
</tr>
<tr>
<td>2009</td>
<td></td>
<td></td>
<td>5.5%</td>
<td>6.0%</td>
<td>7.1%</td>
</tr>
</tbody>
</table>

Source: US Census and American Community Survey
Highlights:

Boulder celebrates Walk & Bike Month in June, with over 95 events, highlighted by Bike to Work Day, with 5,000 participants in 2011. The month-long celebration is coordinated by Community Cycles, a local non-profit, with support from the city. The city partners with Community Cycles on a variety of other bicycling efforts.

The city’s third annual Winter Bike to Work Day drew 1,320 participants in 2011, an event designed to thank cyclists and encourage more to stay in the saddle all year long.

A year after installing two bike corrals in downtown Boulder, the concept of offering bike parking in a former on-street parking space is proving popular with many. Of 58 people who responded to a survey, 49 liked the new facilities. “I think converting more parking space is a great idea and a way to free up more sidewalk space for pedestrians, outdoor tables and merchant displays,” said one respondent. Based on the success of the pilot program, city staff is developing criteria to evaluate proposals for additional corrals. A bicycle parking survey showed a 44 percent increase in bikes being parked in the downtown area between 2007 and 2011.

GOBikeBoulder.net offers personal bike routing along Boulder’s on-street and off-street bikeways.

Boulder B-cycle, a public bike sharing system launched in 2011. By October 2011, the system included 15 stations focused on the downtown area.

Boulder has developed several treatments to reduce conflicts where multi-use pathways cross roadways, special signage to remind drivers to be aware when crossing, and raised right turn bypass islands to reduce conflicts between the modes.

When the snow falls, two maintenance crews are mobilized at the same time: one for roads and one for the pathway system. The bikeway winter maintenance team consists of two trucks and a special plowing machine. It generally takes about 8 hours to plow the entire pathway system.

Greenways

In 2011, Boulder’s Greenways program expanded to include all 14 tributaries to Boulder Creek. The Greenway system of grade-separated multiuse pathways serves as the backbone of Boulder’s off-street system, providing access across the community with minimal street crossings. The Greenways program grew out of a Boulder Creek project launched in 1984. It integrates diverse objectives of habitat protection, water quality enhancement, storm drainage and floodplain management, with providing trails and recreation opportunities while protecting and enhancing cultural resources. Sitting at the foot of the Rocky Mountains, Boulder has the highest flash flood risk of any community in the state. Underpasses and pathways are designed to direct and channel floodwaters, allowing flood control dollars to be used to help fund construction of the pathway system.

1960 Council grants authority to hire the first traffic engineer as numerous intersections produce traffic jams. The city engineer takes on this title. The terminus of the toll road at 28th and Baseline is known as “malfunction junction.”

1956 Boulder architects Charles Haertling and Tician Parachristou proposed a 20 year plan for closing the downtown to cars from 9th to 17th and Pine to Arapahoe.

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

Walking is recognized by the TMP as the primary mode of travel. Virtually every trip, including those by car, includes some travel by foot. Boulder has worked hard to provide an accommodating environment for pedestrians. Every day, thousands of people use Boulder’s sidewalks and trails to exercise, shop or travel to school or work.

The Pearl Street Mall in downtown Boulder offers an outstanding pedestrian environment. Closed to all but foot traffic since 1977, the engaging environment and abundant pedestrian amenities make a walk along its half-mile length a pleasant stroll.

<table>
<thead>
<tr>
<th>JOURNEY TO WORK BY FOOT</th>
<th>Boulder Residents</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>9.1%</td>
</tr>
<tr>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>6%</td>
<td></td>
</tr>
<tr>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>0%</td>
<td></td>
</tr>
</tbody>
</table>

Source: 2008–2010 American Community Survey Three-Year Average
Breaking down barriers

Major streets can be significant barriers to walking. The city has a goal of providing safe pedestrian crossings of major streets every 1/8 mile. In 2000, the city began implementing new enhanced pedestrian crossing treatments to draw attention to busy crosswalks and to encourage drivers to yield to pedestrians. The devices have encouraged more pedestrian activity at these locations with drivers yielding more frequently.

In 2011, the city updated its “Pedestrian Crossing Treatment Installation Guidelines,” a policy document first adopted in 2006 to help provide safe and efficient pedestrian facilities and continues to create new pedestrian crossing treatments and modify existing ones, including testing new innovations such as a new type of pedestrian crossing treatment called a HAWK.

Repairing sidewalks

Broken or damaged sidewalks are not only an eyesore and an inconvenience, but can be a safety hazard and barrier to pedestrian travel. The city’s Annual Sidewalk Repair Program divides the city into zones, and completes all repairs and installs missing curb ramps in the highest priority zone before moving on to the next zone. The city’s Miscellaneous Sidewalk Repair Program responds to requests anywhere in the city for repair of damaged sidewalks and installation of curb ramps. Both programs share the cost of sidewalk repairs with the adjacent property owner. Work to install or repair curb ramps is done at no charge.

Completing missing links

The TMP calls for “eliminating breaks and discontinuities in the sidewalk system” and “ensuring adequate connections to public transit.” The Missing Sidewalk Links Program identifies and constructs missing segments across the city, ranging from local residential streets to arterial streets in commercial and retail areas to streets adjacent to schools. Between 2009 and 2011, the city constructed three missing sidewalk link projects adding approximately 530 linear feet of sidewalks to the system.
Safe Routes to School

Walking and biking to school provide numerous benefits to children and the community, so the city works closely with Boulder Valley School District on school transportation issues. In Colorado, the state requires open enrollment as well as focus and charter schools, which create additional transportation challenges since a significant number of students are driven to school. Nevertheless, robust encouragement programs spearheaded by parent volunteers have achieved spectacular results. Bear Creek Elementary received the James L. Oberstar Safe Route to School award in 2009 and Heatherwood Elementary received the award in 2011. Other innovative projects help make biking and walking an option for many students.

In 2001, the city received a three-year federal grant to hire an alternative transportation coordinator to work within BVSD. Since then, BVSD has funded the position on an on-going basis and achieved measurable results.

BVSD and the city partner on Safe Routes to School efforts, with the city applying for federal funds for infrastructure projects around schools and BVSD taking the lead on the encouragement and education efforts. The city and BVSD together have received $1.5 million in federal Safe Routes funds since 2005.

In 2009, city staff worked closely with neighbors, parents and BVSD when a proposal to expand parking and the drop-off area of an elementary school met resistance. The city participated in a collaborative effort that instead developed a comprehensive travel management plan that promotes walking and biking, accommodates safe student drop-off and preserves playground space which had been slated for parking. Currently the city is partnering with Boulder County and BVSD to provide Eco Passes for faculty and staff at nine pilot schools and are considering how to expand the program.

In 2011, neighbors painted a mural on the street at 19th and Grove as part of a new program which helps transform roadway public space into neighborhood assets. In 2011, the city finalized guidelines for the Paint the Pavement program, following a 2009 installation in the Martin Acres neighborhood which served as a successful pilot. The program was created in response to neighborhood interest and encouragement from City Council and the Transportation Advisory Board.
Boulder B-Cycle

Launched on May 12, 2011, Boulder B-cycle is a community bicycle sharing program that provides quick and easy bike access for short trips—perfect for meetings, errands, and mid-day exercise. Boulder B-cycle is a local non-profit effort. As of late November 2011, Boulder B-cycle had 1,153 annual members and 5,788 people had used the system, logging 17,500 trips and pedaling 52,300 miles.

The May launch followed a two-year process led by the city which included public input, soliciting proposals and identifying start-up funding to help launch the system. The system opened with 12 stations and is on target to have 20 stations and 150 bikes in circulation on its first birthday.
Safe Streets Boulder

A new 2011 report analyzes collisions involving bicyclists, pedestrians and motor vehicles. The Safe Streets Boulder report, from the city of Boulder’s Transportation Division, analyzes collisions that occurred between the beginning of 2008 and April 2011.

Key Findings

Of all collisions involving motor vehicles in Boulder over the study period, 6% involved a bicyclist, 1.9% involved a pedestrian and 0.1% involved a skateboarder.

Who is at Fault?

In vehicle/ped collisions, drivers were cited three times more often than pedestrians.

In vehicle/bike collisions, drivers were cited 1.8 times more often than bicyclists.

In about 30% of collisions, no one was cited.

The full report is available at www.bouldertransportation.net.
Completing the Streets

The city’s 2003 TMP update included a focus on transforming the major streets that accommodate travel across town and connect with the regional system. A series of improvements were identified and are being systematically implemented to better accommodate all modes and better integrate adjacent land uses along these important corridors. The approach has made Boulder a national leader in implementing “complete streets.”

Broadway

Broadway is the major north-south arterial in the western half of the city, linking residential areas, the University of Colorado campus, the Pearl Street Mall and Uni Hill business districts, and a large complex of federal labs. It has “good bones” in terms of adjacent land uses and walkability with a connected grid system of streets. It is Boulder’s most mature example of a complete street. More than 20 percent of traffic along the corridor travels by bike, foot and bus.
The SKIP high frequency bus runs the entire length of the corridor, and is the second busiest local service in the RTD district. The southern half of the corridor enjoys strong regional transit connections to Denver. The corridor serves as a major thoroughfare for bicyclists, with facilities ranging from adjacent multi-use paths, frontage roads signed as bike routes, on-street bike lanes and a four-block contra-flow lane, built in 1993. In the early ‘90s, the city constructed a signature pedestrian and bicycle underpass at College Avenue to eliminate crossing conflicts between vehicles and students.

Smaller details such as wider sidewalks, raised right-turn bypass islands, pedestrian-actuated flashing crosswalks, innovative signage and vehicle turning restrictions have helped make the corridor a functional and attractive thoroughfare for bicyclists and pedestrians. At the northern end, the city added on-street parking to help invigorate local businesses in the newly redeveloping North Boulder area. The city has replaced the asphalt surface with concrete for a significant portion of the corridor, a major project with long-term maintenance benefits. Where possible, utilities have been put underground.

The next major project underway for Broadway is improvements at Euclid Avenue, adjacent to the University of Colorado. This transit stop is one of the busiest in the RTD region; bicyclists and pedestrians flow in all directions through the intersection and on the adjacent multi-use path. The project, which broke ground in 2011, will improve the transit stops, build a pedestrian underpass, separate users on the multimodal path and improve automobile operations. The $7.8 million project is an ambitious partnership funded by the city of Boulder, Boulder County, RTD, CU students and administration, CDOT and the federal government.

Eastern Boulder

Unlike the western portion of the city, Boulder east of Folsom Avenue developed after the 1950s, and is characterized by large buildings, large parking lots and little connectivity. Guided by the TMP, the city has been implementing transportation projects to transform busy arterials into complete streets, improve connectivity and change the character of the area through land use changes. Boulder Junction’s area plan supports creating mixed uses and improved urban design. Changes are occurring on several corridors.

28th Street

28th Street has been a focus since the early 2000s. It is one of Boulder’s busiest streets, as this continuation of US 36 through Boulder carries 50,000 cars a day. In the early 2000s the city launched a planning process to rethink the corridor. Significant public input, culminating in a design charrette, developed a new vision for the corridor.

One of the first projects was a significant facelift for the southern section. Dubbed “Hello Boulder,” it serves as a community gateway and the entrance to the University of Colorado campus. A $10 million project refurbished the frontage road to prioritize buses and bikes; and added multi-use paths, transit superstops, extensive landscaping improvements and public art. A stretch along the frontage road was rezoned to allow denser development of mixed-use flats, townhomes and small-scale retail. Completed in 2005, the project was recognized with an Exemplary Human Environment Award for Encouraging Non-motorized Transportation by the Federal Highway Administration in 2008.

The development of the Twenty Ninth Street lifestyle shopping area in 2006 added multi-use paths and new

1972 Voters turn down bond proposal for transportation improvements including a quarter of the spending for bikes
1973 RTD funding of half a cent sales tax approved though it fails in Boulder and Douglas Counties
1974 RTD takes over the Boulder bus system from Public Service Company
Since 1990, the city has completed many major infrastructure projects.

### Transportation Projects Construction Timeline Summary

- **Valmont Reconstruction 47th Street to 55th Street** - 1992
- **Bear Creek Bikeway** - under Baseline to US 36 - 1992
- **College Underpass at Broadway** - 1992
- **13th Street contra-flow Bikelane** - 1993
- **Broadway Corridor reconstruction** - Regent to University - 1994
- **Broadway Improvements (Violet to US 36) and Broadway Ped/Bike Underpass at Fourmile Canyon Creek** - 1994
- **30th Street - Arapahoe to Colorado - Bikelanes** - 1996
- **55th Street Improvements (Baseline to Arapahoe) and 55th Street Ped/raised crossings and intersections/Bike Underpass at Wellman Canal** - over 2 miles bike lanes added - 1996
- **Baseline Ped/Bike Underpass at Skunk Canyon Creek** - 1997
- **University Hill - Streetscape Improvements and Urban Design** - 1997
- **Broadway/Bear Creek Underpass** - 1998
- **Arapahoe - 55th to 63rd** - On street bikelanes - 1998
- **Norwood Broadway to 26th Street - Streetscape, traffic calming and MUP & sidewalk** - 1998
- **Pearl Streetscape** - 15th to 18th Street - 1999
- **Broadway Ped/Bike Underpass at Skunk Canyon Creek** - 2000
- **Table Mesa Reconstruction - Bikelanes - sidewalks** - 2001
- **28th - Phase 1 (Baseline to Taft) Multi-modal, landscaping and art Improvements** - completed in 2003
- **Broadway Reconstruction Project (University to Pine) and Broadway Bridge at Boulder Creek** - 2003
- **28th - Phase 2 (Taft to Arapahoe) Multi-modal, landscaping and art Improvements** - completed in 2006
- **28th/Iris Intersection Improvements Project** - completed in 2007
- **Baseline Bikelanes (Broadway to 27th Way), and 27th Way Ped/Bike Underpass at Skunk Canyon Creek** - 2008
- **28th/College Avenue Transit Improvements** - 2008
- **North Broadway bikelanes Iris to Norwood** - 2009
- **Broadway Reconstruction Project (Pine to Iris)** - 2010
- **30th Street Transportation Improvements Project** - 2011

Street connections in the central section of the corridor, which was dubbed “New Town” in the design charrette. Improvements led by the city include improved crosswalks and raised right turn bypass islands at major intersections to increase safety for bicyclists and pedestrians. In the northern section, dubbed “Service City,” the city has completed some sections of multi-use pathways and a lane shared by buses and bicycles. Flashing crosswalks at key locations along the corridor provide additional crossing opportunities. Additional funding is still needed to complete the planned improvements along 28th Street, but progress is being made.

**30th Street/ Boulder Junction**

A complete streets project that wrapped up in 2011 gave 30th Street bike lanes along its entire length, continuous sidewalks and wider multi-use paths in some sections. The project also replaced an aging bridge and installed a bike/ped underpass which will connect to the rapidly developing Boulder Junction area. The total project cost was $9.1 million, with $6.3 million coming from federal funds.

The area around 30th Street is changing rapidly. One new housing complex opened in 2011 and two more are scheduled to break ground in 2012 in the Boulder Junction area. One of these will include a new regional bus facility, affordable housing, a hotel and a refurbished historic depot along with public spaces and a shared street. The city’s investment in 30th Street has prepared the corridor for the changing land uses in the area. A city-led planning study scheduled to be launched in 2012 will consider changes to the southern section of 30th Street where it travels through a residential area near the University of Colorado’s east campus, which is slated for significant new development in the coming years.

The city also broke ground in 2011 on a project to add multi-use paths along a section of Arapahoe Avenue, an east-west corridor that intersects 28th and 30th.
After 17 neighborhood meetings, the paving of Goss Grove Street is completed along with traffic control measures.

GO Boulder’s efforts are amplified by a network of 450 volunteer employee transportation coordinators at 230 businesses. Each year, GO Boulder honors the tireless efforts of these excellent volunteers.

Programs for Change

The adoption of the TMP launched a strong travel demand management (TDM) effort of programs and strategies to increase the efficiency of the transportation system by changing travel behavior. Marketing and education efforts have had a key role in the city’s overall strategy.

TDM highlights

GO Boulder oversees a variety of TDM efforts aimed at reducing single-occupant vehicle trips, traffic congestion and parking demand. The combination of TDM efforts and investments in bicycle, pedestrian and transit infrastructure and services has resulted in significant reductions in single-occupant vehicle trips and transportation-related emissions. According to the 2008-2010 American Community Survey three year average data, just over half of Boulder residents drive alone to work. Boulder residents are three to four times more likely to bus, bike or walk to work compared to Denver Metro residents and the nation as a whole.

In the face of a 12.5% increase in RTD and Eco Pass rates, GO Boulder restructured its Business Eco Pass Support Program in 2011. GO Boulder contracted with Boulder East, a nonprofit organization focused on providing TDM options to employers in the eastern sector of the city, to expand its services to all Boulder businesses. With additional funding to attract new participants in the program, Boulder East enrolled 18 new employers with an estimated 2,025 employees newly eligible to receive Eco Passes.

In 2011, GO Boulder began redesigning the TDM planning process for new commercial and residential developments. The process, which will continue into 2012, will result in a new TDM Toolkit to guide developers through the TDM Plan process that aims to mitigate the impacts of new developments on the transportation infrastructure. In this new approach, developers will have packages of TDM strategies to select from which are each projected to significantly reduce traffic impacts.
**Eco Pass**

The city’s strongest TDM tool is RTD’s Eco Pass, a discounted annual transit pass purchased by employers and neighborhoods. City surveys have found that those with an Eco Pass are five to nine times more likely to use transit than those without a pass. The changes in travel behavior associated with access to an Eco Pass translate into significant reductions in vehicle trips and mobile emissions, with an estimated 40 percent fewer emissions. For work trips, Boulder employees with an Eco Pass travel less than half the annual vehicle commute miles compared to employees without a pass. In 2011, 69,425 people who live, work or study in Boulder have access to Eco Passes.

The program is provided by RTD, and uses an “insurance” model. Per-pass costs are low, but the passes must be purchased for all employees or neighbors providing RTD sufficient revenue to cover the transit trips taken by pass-holders. GO Boulder subsidizes the purchase of Eco Passes for both neighborhoods and businesses.

The program was piloted by downtown Boulder businesses and RTD in 1989. After the program proved successful, RTD began offering it region-wide as the Business Eco Pass in 1993. The University of Colorado student pass program also began at this time. The Neighborhood Eco Pass was piloted in 1993 and became an official RTD program in 1997.

**Downtown Boulder**

In Boulder’s central downtown area, only about a third of employees arrive by car. Downtown employees are two to three times more likely to ride transit, bike or walk than their counterparts elsewhere in the community. Paid parking is a key motivator, supported by strong bicycle and pedestrian infrastructure and high-frequency local and regional transit service, and new carsharing initiatives. In 2011, city staff worked with eGo Carshare to reserve two parking spaces in the downtown for carshare vehicles, which quickly became the most used vehicles in the fleet. Revenues from parking meters and garages are used to buy Eco Passes for all 5,969 employees who work downtown, based on the concept that shifting employee trips to other modes will free up parking for visitors and customers. Downtown Parking Services estimates that it cost $24,000 to build a parking space in a structure, and $600 to maintain it, compared to $125 per employee for an Eco Pass in 2011.

**ECO PASSES IN BOULDER**

2011 • 69,425 Passes Available to Neighbors, Workers and Students

- **University of Colorado**
  - Students: 29,884
  - CU Faculty and Staff: 7,580
  - University of Colorado Students: 29,884

- **Neighborhood Eco Passes**: 10,884

- **Business Eco Passes**: 15,108

- **Downtown Employees**: 5,969

**2011** • 69,425 Passes

- 9% CU Faculty and Staff
- 11% Neighborhood Eco Passes
- 16% University of Colorado Students
- 22% Business Eco Passes
- 43% Downtown Employees
**Land Use**

The collaboration between land use planning and transportation is integral to developing a balanced transportation system. Boulder has a growth boundary, articulated in the Boulder Valley Comprehensive Plan and reinforced by 43,000 acres of city-owned open space which circles the city. As a result, Boulder’s growth will continue to be inward, in redevelopment and increasing density. In terms of transportation, this has kept Boulder a compact city, and allowed infrastructure dollars to be spent enhancing the system rather than building new roads to new “green field” developments. On the downside, Boulder’s growth limits have contributed to higher housing costs and increased regional commuting trips, with about 50,000 people commuting in to work in Boulder each day. Anticipating changes to the community, Boulder’s land use, housing and transportation planning teams work together to create area plans and master plans for focused areas of the community, such as Boulder Junction.

**Boulder Junction**

Boulder Junction is a new pedestrian and transit oriented neighborhood planned on 160 acres adjacent to the future FasTracks regional commuter rail and bus rapid transit stations. In 2007, the city adopted an area plan to guide the area’s redevelopment. The combination of mixed use and relatively dense redevelopment, a fine grained and well connected transportation system, parking management, and a comprehensive and aggressive TDM program is expected to reduce single occupant vehicle travel by more than 70 percent for those who live and work in the area. Two unique improvement districts are being approved to manage parking and to provide Eco Passes and other TDM programs. Two major developments have been approved in Boulder Junction. They will add an underground bus facility, almost 400 housing units, a 140 room hotel, 390 space parking structure and rehabilitate the historic depot.

**Climate Action Plan**

In 2002, the Boulder City Council passed a resolution committing the city to achieving the Kyoto Protocol goals for greenhouse gas reduction by 2012. In 2006, Boulder voters passed the country’s first-ever carbon tax—a fee on household and business electricity use—to fund the Climate Action Plan to achieve the goals. A variety of programs have been put into place, including a robust partnership with Boulder County, and progress is being made. Transportation accounts for 22 percent of greenhouse gases in Boulder, so accomplishing the goals of the TMP have taken on even greater urgency.

In 2011, TDM efforts were also supported by additional funding from the city’s Climate Action Plan (CAP) and the revenues collected by carbon tax. The primary use of these funds is to support GO Boulder Business and Eco Pass Rebate and Subsidy programs. With the remaining funding, GO Boulder provided financial and technical assistance to Community Cycles Earn-A-Bike Program, Boulder Valley School District’s Trip Tracker program, Boulder East’s Eco Pass Pick-Up program, and GreenStreets, Boulder’s cyclovia program that closes Pearl Street from east of the pedestrian mall to Folsom to vehicular traffic allowing pedestrians and bicyclists to experience a re-purposed public space.
**FasTracks**

In 2004, voters in the Denver region approved a 0.4 percent sales tax for FasTracks, a system of regional rapid transit services. FasTracks will build 122 miles of new commuter rail and light rail, 18 miles of bus rapid transit (BRT) lines, and enhance bus service across the eight-county district. The Boulder area is slated to receive two services: Commuter rail service, called Northwest Rail, and BRT service along US 36, the highway connecting Boulder and Denver. While originally slated to be completed before 2020, funding challenges have delayed the complete regional program.

**US 36**

As the major connection between Boulder County communities and the rest of the Denver region, the US 36 corridor has seen significant development and traffic growth over the last 20 years. Planning for improvements began in the mid-1990s and was finally completed in 2009 with the adoption of an Environmental Impact Statement for the corridor. While early discussion identified as many as six lanes in each direction as a possibility, the final plan lays out a strong multimodal solution, with a managed lane in each direction to accommodate BRT, carpools and toll-paying vehicles and a bikeway the entire length of the corridor. Key players in the creation of the vision were the US 36 Mayors and Commissioners Coalition, representing the counties and cities along the full length of the corridor, and the public-private partnership of the US Commuting Solutions organization. The united vision of this coalition and its efforts at the regional and national level has brought additional dollars to the corridor to fund the improvements. In 2010, the corridor was awarded a federal TIGER grant which leveraged significant local and state dollars to begin construction in 2012 for a majority of the managed lane and bikeway.

**University of Colorado at Boulder**

The University of Colorado-Boulder campus (CU) is a major activity center and employer, with almost 30,000 students and nearly 8,000 faculty and staff. Over the years, students and the CU Environmental Center have been integral in the evolution of the university’s transportation policy. In 1991, students voted, by a four to one margin, to assess themselves for an unlimited transit pass, similar to an Eco Pass, which continues today. At the time, students drove alone for 55 percent of trips, and student bus ridership was about 300,000 trips per year. Transit ridership increased 200 percent in the first year of the student transit pass and reached 2.9 million trips in 2009. CU added Eco Passes for all faculty and staff in 1997, resulting in an 85 percent increase in transit use in the first year. CU partners with the city to support a high-frequency connector transit service called the Stampede and both organizations are planning for increased development of the East Campus. The University has also significantly improved pedestrian and bicycle facilities, and partners with the city on projects to improve access to campus. The parking supply on campus is limited, managed and self-supporting. By 2009, SOV mode share by students for travel to campus dropped to 11 percent.

**Boulder County**

The county plays a key role in regional transportation. The city and county have shared the comprehensive plan for the Boulder Valley since 1977 and the county has embraced a strong vision for a multimodal transportation system. The county provides funding to augment transit services between communities, actively markets the Eco Pass, and was instrumental in piloting an Eco Pass program for residents of low-income housing. A county sales tax, approved by voters in 2001 and continued in 2007, is adding bikeable shoulders to county roads and is expanding the regional pathway system. In 2009, the county’s update of their transportation element recognized the role of transportation in greenhouse gas production and includes goals to minimize environmental impact and to ensure equitable access and safety for all modes. The county expects to finish a multimodal Transportation Master Plan in 2012.
Transportation Finance

In 2011, the city of Boulder’s revised budget for transportation was $23 million. The primary source of revenue was a 0.6 percent sales tax, specifically dedicated to transportation, which was approved by voters in 1967. Federal funding, which is awarded through a competitive process and tied to large infrastructure projects, makes up the next largest source in 2011. Development Excise Taxes, which are charged on new developments in the city, contribute a small amount to offset the impacts of the development.
From 2002 to 2011, the Transportation Fund declined 19% percent in actual dollars. The decline in 2002 and 2003 was due to the high tech slump and increasing regional retail competition. The budget began to recover in 2007 and 2008, then dropped again. When adjusted for inflation, the decrease in spending power is even greater, with an estimated 38% decline in purchasing power since 2001.

While new projects generally get the most notice, a majority of the Transportation Division’s work is in operations and maintenance. Keeping the existing system safe and operating efficiently is the top priority of the city’s TMP. The percentage of the budget which goes to operations and maintenance has grown from about 60 percent in 2001 to nearly 80 percent in 2011.

In an effort to reduce costs, the Transportation Division has implemented both efficiencies and reductions. Merging transportation and utilities maintenance workgroups increases efficiency and allows a larger workforce to be mobilized for winter storms or emergencies such as water pipeline breaks. A GIS-based digital inventory of all signs and other items in the public right of way, and a pavement management system of the condition of roads and sidewalks allows more efficient dispatch and response, and facilitates tracking and evaluation.

Reductions have been guided by the TMP, which places top priority on safety and operations of the existing system. Since 2001, the neighborhood traffic mitigation program has been eliminated and aesthetic efforts such as street sweeping and median maintenance have been reduced. The rate of improvements to the system slowed significantly and the major projects underway are those that leverage city funds with larger federal grants. The schedule for routine maintenance of the roadway pavement system with chip/seal and overlays has been lengthened. Transit services have been reduced on the HOP, JUMP and BOUND routes. Eco Pass subsidies have been reduced, and the marketing efforts of GO Boulder have been nearly eliminated.

In 2011, voters approved a ballot measure to bond against existing revenues, providing a welcome one-time infusion of funds for capital projects. Over a three year period, the Transportation Division will receive $17 million to address important deficiencies such as pavement overlays, road reconstruction and replacing signs, and $9 million for high priority new projects. As this one-time funding does not resolve the long-term funding gap, the Transportation Advisory Board and City Council continue to explore options for additional, sustainable local revenues.
Over the years, the city has reinforced its commitment to building a multimodal system. In 2000, the city took a closer look at whether its investments aligned with policy direction and priorities, asking “does the city’s transportation spending line up with what we said was important?”

As a result of that analysis, the city redirected $1 million annually to enhancing the pedestrian, bicycle and transit system, and another $1 million to maintaining the system. While this amount did still not achieve a preferred level of maintenance, it significantly improved the condition of the multimodal system. One example is the addition of a second snow plowing truck for the bike system which improved bike system clearing to be comparable to that of the road system.

Since 2001, the city has tracked expenditures by mode, identifying how maintenance and operations activities and capital improvements are divided up by modes of transportation.

Just under half of total transportation spending has gone to roadways since 2001, with the rest split between bicycle, pedestrian and transit. Of the total, about two-thirds has supported maintenance and operations of the existing system, including subsidies to transit services; while one-third has gone to enhancements to the system.

A closer look at the enhancement spending shows that more than three quarters of improvements have been focused on bicycle, pedestrian and transit projects. Roadway improvements account for less than a quarter of spending, with most of those projects adding turn lanes at congested intersections.
The future: A look Into Our Crystal Ball

Looking toward the next 20 years of transportation gives few answers but suggests that in a changing world, we will travel differently.

**2004** City and RTD purchase Pollard property for the bus facility to anchor the Boulder Transit Village

**2004** FasTracks Passes

**2007** Adoption of Transit Village Area Plan with strong parking and TDM elements

**2008** Boulder awarded Platinum designation for Bicycle Friendly Communities

**2009** First Winter Bike to Work day

**2008** US 36 Final EIS approved

---

**Will the cost of providing transportation continue to outpace our revenues?**

Due to changes in sales tax revenue, inflation and the rise of construction costs, Transportation Division purchasing power has decreased by 38% in the last decade. Currently the city is looking to diversify and increase transportation funding through a variety of finance mechanisms.

**Did peak oil production occur in 2005 as some assert, or is that date still to come?**

While the global recession has limited price increases over the last two years, gas prices are sure to increase. Demand for petroleum continues to increase in the developing world and China is now the largest market for cars. To date, there is no proven new technology or fuel source that can sustain current transportation trends, so significant changes may be in store.
Will the effects of demographic change and the real estate collapse affect transportation demand in the long term?
Many writers think the combined effects of the aging of the baby boom generation, the unsustainable level of housing and transportation costs in household budgets, and the preference of the younger generation for walkable, mixed-use neighborhoods will fundamentally change where we want to live and how we travel. Close in, walkable, transit served, mixed use neighborhoods have increased in value during the real estate collapse and continue to be in high demand. Such neighborhoods make walking, biking and transit viable for a majority of trips.

How will the development of communications technology impact transportation?
Smart phone technology is putting internet access into people's pockets and purses. This instant access to information and increasing use of social networks is already changing how we work and communicate. While virtual interactions continue to grow, so does travel. Seemingly, people still want to be with other people.

Will the troubling and costly obesity epidemic continue to worsen?
Two-thirds of American adults are over-weight or obese. This guarantees increased healthcare cost for diabetes, strokes and heart disease. Yet we know how to build communities that make active living possible for all and that would significantly improve our health. Unlike many communities across the nation, people in Boulder can choose to walk, bike, ride the bus or carpool, whether motivated by the price of gas, concerns about climate change, a desire to improve fitness or simply lifestyle choices. While this Complete Streets orientation is spreading, in most parts of the country it is still the exception rather than the norm.

The crystal ball suggests that most solutions to our challenges will likely need to occur locally. These include the city's ability to expand the multimodal system, to keeping up with basic repair and maintenance of our existing system, and to respond to impacts of peak oil and climate change. Boulder is actively looking at other potential funding sources for transportation and at ways to reduce our greenhouse gas emissions.

One final question is easy to answer: Will Boulder think creatively about its transportation future?

The answer is yes.
The city is already reconsidering how we use the significant public spaces of our transportation system. A “repurposing” of streets could move to the forefront of Boulder’s transportation thinking, as the community considers low-cost approaches to converting traditional auto space to make way for other modes and to support vibrant community life in these public spaces. As has been so often the case, the vision, commitment and creativity of the community will be the strongest asset as Boulder moves into the future and must decide how transportation fits in.