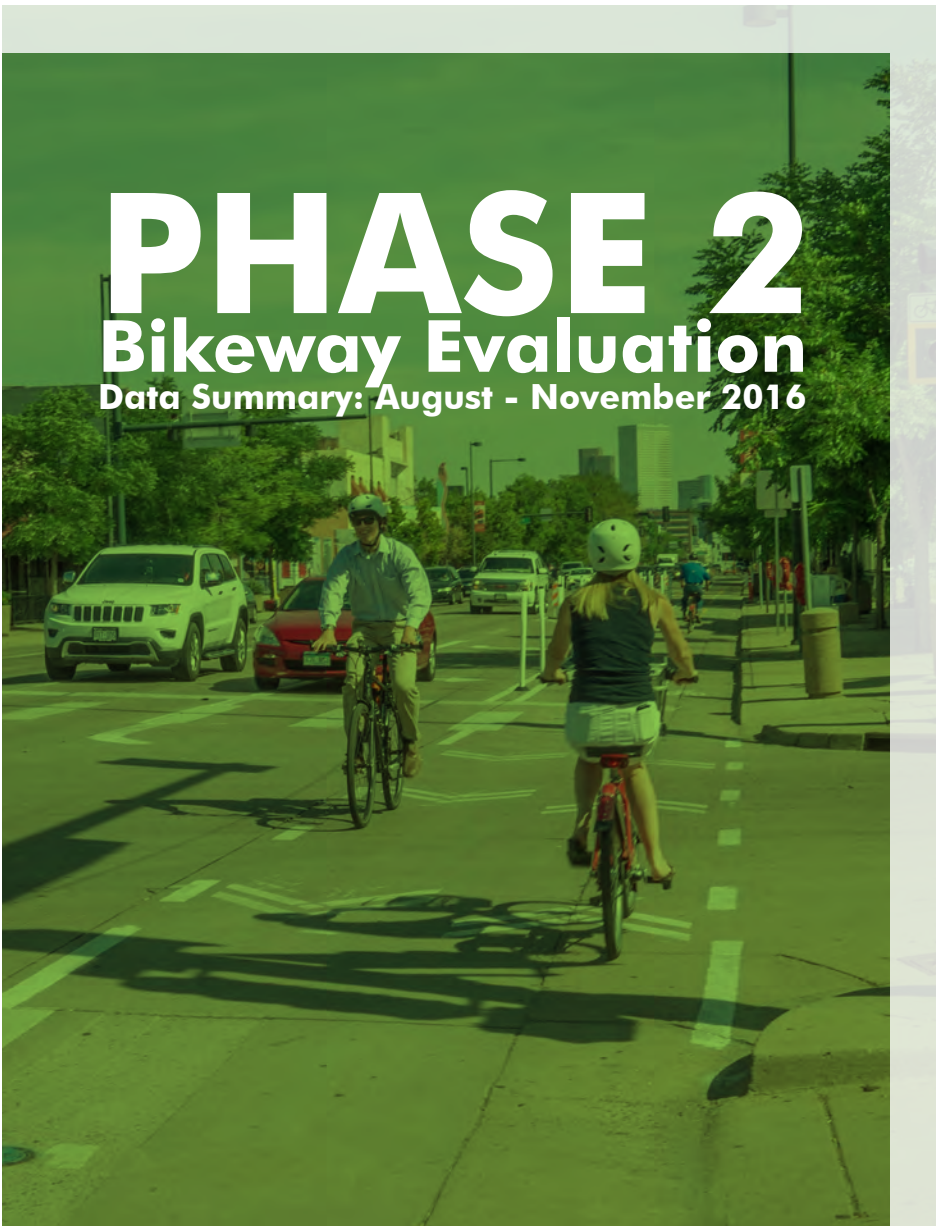


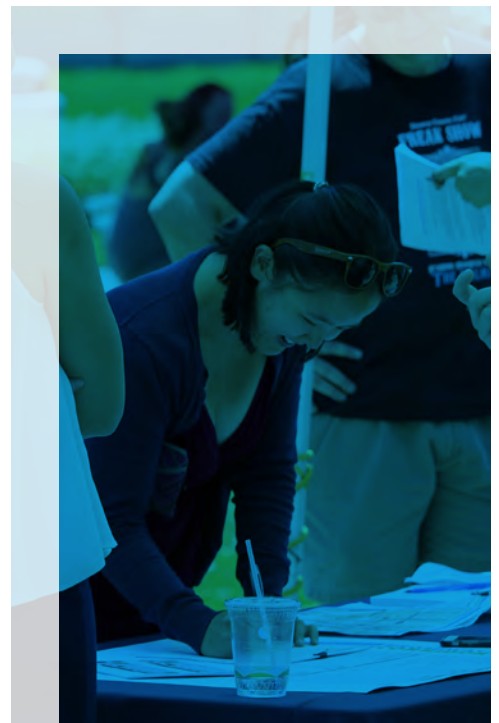


Denver *Moves* BROADWAY / LINCOLN CORRIDOR STUDY



PHASE 2 Bikeway Evaluation Data Summary: August - November 2016

RELEASED
May 2017





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Mayor Michael B. Hancock

City Council District 7 Representative Jolon Clark

Project Management Team

Emily Snyder, Urban Mobility Manager

Dan Raine, Project Manager

Curt Upton, Community Planning and Development

Scott Burton, Parking, City and County of Denver

Lacy Bell, Regional Transportation District (RTD)

Executive Steering Committee

Crissy Fanganello, Director of Transportation

Steve Hersey, Director of Traffic Operations

Amy Rens, Senior Traffic Engineer

Justin Schmitz, Traffic Engineer

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City and County of Denver Staff

Bike Denver

Walk Denver

Bicycle Colorado

South Broadway Merchants Association

Over 500 businesses, community members, and commuters who provided feedback about the Bikeway Evaluation

Project Team

Molly Veldkamp, Project Manager, Fox Tuttle Hernandez Transportation Group

Bill Fox, Fox Tuttle Hernandez Transportation Group

Steve Tuttle, Fox Tuttle Hernandez Transportation Group

Alicia Zimmerman, Fox Tuttle Hernandez Transportation Group

Morgan Huber, Fox Tuttle Hernandez Transportation Group

Marjorie Alexander, Two Hundred

John Barden, Two Hundred

Ben Davis, OnSight

Jay Renkens, MIG, Inc.

Mark De La Torre, MIG, Inc.



Table of Contents

Chapter 1: Introducing the Broadway Bikeway	2
Broadway Bikeway Design Features	3
Chapter 2: Evaluating the Bikeway	5
<u>Goal 1</u> : Everyone arrives safely to their designation	11
Crashes by Mode & Type	11
Public Perception of Safety	11
People Driving in the Transit Lane	12
Bicycle Riding Location	12
<u>Goal 2</u> : Collaborate with the community & businesses	14
Business Input	15
Community Input	16
Commuter Input	17
Participation in Outreach Opportunities	18
<u>Goal 3</u> : Provide mobility options for everyone	20
Vehicle Travel Times	20
Vehicle Travel Volumes	21
Parallel Corridor Traffic	22
Parking Space Utilization	22
Bicycle Volumes	23
Bicycle Demographics	23
Sidewalk Pedestrian Volumes	24
<u>Conclusion</u>	24
Chapter 3: Planning for What's Next	25

Chapter 1.

Introducing the Broadway Bikeway

Denver is growing. This growth is putting increased pressure on Denver’s transportation system. The City and County of Denver (the City) has been setting policy direction to handle this change for over a decade, taking a multimodal approach of moving people. Broadway and Lincoln are changing as well.

In line with its philosophy for mobility, City plans have identified the importance of, and made recommendations for, the Broadway/Lincoln corridor.

In line with its philosophy for mobility, City plans have identified the importance of, and made recommendations for, the Broadway/Lincoln corridor. Recommendations include the addition of a protected, two-way bikeway on Broadway, enhancement of the existing transit lane, pedestrian improvements, and cohesive parking management strategies.

During Phase 1 of the Broadway/Lincoln Corridor Study, a two-way, parking-protected bikeway was identified as one of the potential projects to improve safety in the corridor, make the corridor more livable, and improve mobility for all users. As a first step toward implementing recommendations, the City decided to install a temporary bikeway on a segment of the Broadway corridor for Phase II (Bikeway Evaluation). This enabled operational evaluation of a bikeway and other mobility changes before making major infrastructure investments along the larger corridor. The Bikeway Evaluation is the initial step of planned mobility projects in the corridor.

In August 2016, after six months of design and analysis, the City opened a two-way, parking-protected bikeway on a six-block segment of Broadway between Bayaud Avenue and Virginia Avenue. The City installed a long enough segment to collect meaningful data on operational impacts and utilized fiscally conservative

methods, with no major capital improvements required. The implementation and observation of the Broadway bikeway is helping the project team and the public learn about the operation of a two-way bikeway along a one-way street and will inform the design of a potential future corridor-long facility.

Project Goals

- Everyone arrives safely to their destination
- Collaborate with the community and businesses
- Provide mobility options for everyone

Data Collection

- August 2016 through November 2016

Online Survey Responses

- 240 total responses

The figures on the opposing page show the cross-section of Broadway before and after the bikeway was installed. To create space for the bikeway, parking on the east side of Broadway was moved out from the curb, replacing the eastern-most travel lane. Three travel lanes were maintained, matching the three northbound travel lanes on Lincoln, the paired roadway in a one-way couplet. A striped buffer was painted between the parking lane and the two-way bikeway; flexible bollards were installed in the buffer.

BROADWAY BIKEWAY DESIGN FEATURES



Broadway cross section before the Bikeway



Broadway cross section after the Bikeway

Many engineering design features were incorporated into the project to minimize conflicts between people riding bikes and people driving cars along Broadway. The design features were developed using guidance from the City’s Bikeway Design Guidelines and national design guidelines. The the purpose of the Bikeway Evaluation was to study these features to understand how they affected Broadway and contributed to safe operations on the corridor.

Bicycle and Left Turn Signals:

New bike signals, as well as automobile left turn pockets and left turn signals, were installed at Bayaud Avenue, Cedar Avenue, Alameda Avenue, and Virginia Avenue. The left turn signals prohibit people in cars from turning left when people riding bikes and walking are permitted to cross at intersections. The bike signals provide a red signal for people riding bicycles when people in cars are turning left across the bikeway. The bike signals also provide signal indication for people riding northbound on Broadway.

Green Paint at Conflict Zones:

At driveways and intersections without a signal, green paint is used to signify an area where a higher degree of caution is necessary. It shows where motorists can cross the bikeway. Both bicyclists and motorists entering this area must exercise caution. Green has been approved by the U.S. Department of Transportation Federal Highway Administration for use in bikeways.



Bike Signal at Cedar Avenue



Green pavement markings and sign with supplemental flasher at Maple Ave.

Signs:

Signs stating “Left Turning Vehicles Yield to Bicycles” are installed at intersections without traffic signals. “Two-Way Bike Traffic” signs are posted at driveways to remind drivers to look both ways for bikes before entering the roadway.

Physical Barrier:

The parking lane along the bikeway provides a physical barrier between people driving cars and people riding bikes or walking on the east side of the street. Painted buffers and flex posts provide physical separation where parking is not permitted. The reconfiguration moved traveling automobiles 10 feet further away from the sidewalk, which creates a more comfortable sidewalk for walking and enjoying the restaurants and shops along Broadway.



Parking along the Bikeway

Chapter 2.

Evaluating the Bikeway

The implementation and observation of the Broadway bikeway is helping the project team learn about the operation of a two-way bikeway along a one-way street and will inform the design of a potential future corridor-long facility.

Before the installation of the bikeway, the project team worked with the City, stakeholders, and the general public to develop goals and identify evaluation criteria to be used to evaluate the success of the bikeway against those goals. As such, many avenues were provided for input.



Pop up event



CCD Project Manager Dan Raine talking with a stakeholder in the study area.

Community Meetings and Events:

Prior to installing the bikeway, the City hosted pop-up meetings at Civic Center EATS downtown to alert commuters to the upcoming study on Broadway and at Illegal Pete's in the Broadway corridor to inform the community. Bike Denver and Bicycle Colorado hosted six events in the corridor to encourage people to visit the study area and provide feedback about the bikeway. Walk Denver also hosted an event to engage people in the study area.

Business Meetings:

The City attended Broadway Merchants Association Meetings, walked the corridor and went door-to-door to meet with business owners 12 times over the course of the project.

Project Website:

The project team hosted a website, DenverMovesBroadway.com, which shared information about the project, posted routine project updates, and hosted an online survey to gather input from the community, commuters, and businesses about their experience with the bikeway.

Through each of these avenues as well as emails and phone calls, the City continues to receive support for the project, ideas and suggestions for improving the bikeway facility, and requests for extending the project into Downtown. The City has also received emails expressing concerns about the bikeway, loss of parking and questions regarding signal operation. In addition, a few emails requested the removal of the bikeway and end of the project due to perceived congestion. Reasons cited for these comments focused largely on the travel delay associated with waiting for the traffic signal to allow vehicles to turning left from Broadway.

"I love the new bike path! We are missing key North-South bike paths. I would love to see it extended up to Colfax and beyond"

Online Survey:

An online survey was open from August 15, 2016 to November 30, 2016. During that time, 240 people responded to the survey.

“This is a great first step. We need a LOT more of this.”

Online Comments:

The online comment portal that was opened during the Broadway/Lincoln Corridor Study remained open throughout the Bikeway Evaluation.

Email Notices:

The City used the stakeholders contact list collected throughout the project to provide information and encourage input about the bikeway.

Based on the identified goals and evaluation criteria shown in Figure 8, the project team collected performance measure data on the bikeway and Broadway corridor. Two data collection reporting periods were identified. First, the City collected data for three months after the bikeway was installed. This data was used to understand the preliminary impacts of the bikeway. Data was collected in September, October, and November 2016. In December 2016, the City released a summary of selected three-month data that informed their decision to continue the study through 2017. The summary is shown in Figure 9. This report provides additional detail about the first three months of data collection. The City will continue data collection in 2017 and will report the impacts of the bikeway after it has been installed for one year. The one-year report will be released at the end of 2017.

“Please stop taking street lanes and turning them into bike lanes.”



An email project update sent in October 2016



An email project update sent in October 2016

BROADWAY BIKEWAY GOALS AND EVALUATION

Goal 1: Everyone Arrives Safely to Their Destination

Performance Measure	Before Data	6 Months After	15 Months After
Crashes by Mode & Type	Completed: 2012-2014 DPD crash database	Total crashes will be reported	Crash analysis will be reported
Public Perception of Safety	To Be Completed	Survey results will be reported	Survey results will be reported
Speed Limit Compliance	Completed: 2015 average mean speed from DPW database	Not recorded during this timeframe	Compliance results will be reported
Signal Compliance	Not recorded	Not recorded during this timeframe	Compliance results will be reported
Stop Compliance at Unsignalized Intersections	Not recorded	Not recorded during this timeframe	Compliance results will be reported
Stop Compliance at Driveways	Not recorded	Not recorded during this timeframe	Compliance results will be reported
Parking Compliance	Not recorded	Not recorded during this timeframe	Compliance results will be reported
People Driving in Transit Lane (3-6 PM)	Underway	Compliance results will be reported	Compliance results will be reported
Bicycle Riding Location	Completed: September 2015	Riding location results will be reported	Riding location results will be reported

Goal 2: Collaborate with the Community and Businesses

Performance Measure	Before Data	6 Months After	15 Months After
Business Input	Completed: July 2016	Survey results will be reported	Survey results will be reported
Retail Sales Tax	Completed: Q3 2015	Not recorded during this timeframe	Sales tax results will be reported
Community Input	Completed: October 2015	Survey results will be reported	Survey results will be reported
Commuter Input	Completed: October 2015	Survey results will be reported	Survey results will be reported
Participation in Outreach Opportunities	Completed: October 2015	Participation results will be reported	Participation results will be reported
Business/Community Bikeway "Ownership"	Not recorded	Not recorded during this timeframe	Results will be reported

Goal 3: Provide Mobility Options for Everyone

Performance Measure	Before Data	6 Months After	15 Months After
Vehicle Travel Times	Completed: September 2015	Travel times will be reported	Travel times will be reported
Vehicle Traffic Volumes	Completed: March/September 2015	Traffic volumes will be reported	Traffic volumes will be reported
Parallel Corridor Traffic	Completed: March/June 2016	Traffic volumes will be reported	Traffic volumes will be reported
Parking Space Utilization	Completed: March 2013	Parking results will be reported	Parking results will be reported
Transit On-Time Arrival	Underway	Not recorded during this timeframe	Arrival results will be reported
Transit Ridership (Boardings/Alightings)	Underway	Not recorded during this timeframe	Ridership results will be reported
Bicycle Volumes	Completed: September 2015	Bicycle volumes will be reported	Bicycle volumes will be reported
Bicyclist Demographic	Completed: September 2015	Bicyclist demographics will be reported	Bicyclist demographics will be reported
Bike Parking Utilization	Not recorded	Not recorded during this timeframe	Parking results will be reported
Sidewalk Pedestrian Volume	Underway	Pedestrian volumes will be reported	Pedestrian volumes will be reported
Summer/Winter Maintenance	Not recorded	Not recorded during this timeframe	Results will be reported

BROADWAY BIKEWAY STUDY

Preliminary Data: August - November 2016

The City and County of Denver has been studying the two-way, parking-protected bikeway on Broadway between Bayaud and Virginia to evaluate performance based on the goals for the study. Based on the first three months of data, the City has made the decision to continue the bikeway study through 2017. The key data that supported the City's decision include:

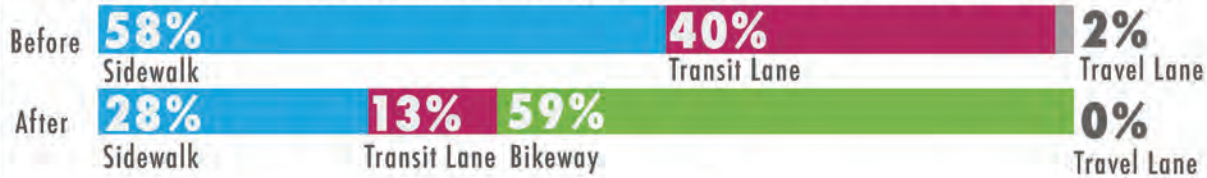
1. People feel safer in the study area
2. People are riding bikes in the bikeway
3. In general, people support the bikeway

Goal: Everyone arrives safely to their destination

"I feel safer" was the #1 survey response from people walking and biking in the study area

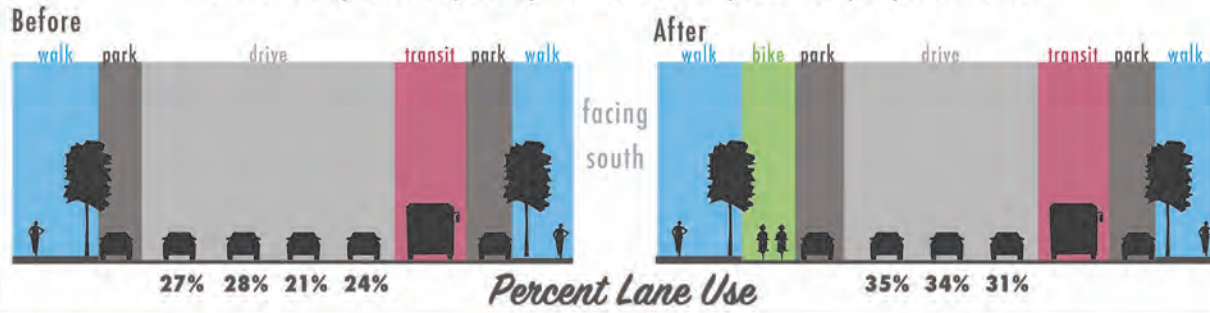
Where are people riding bikes on Broadway?

People are now riding bikes in the bikeway rather than on the sidewalk or in travel lanes

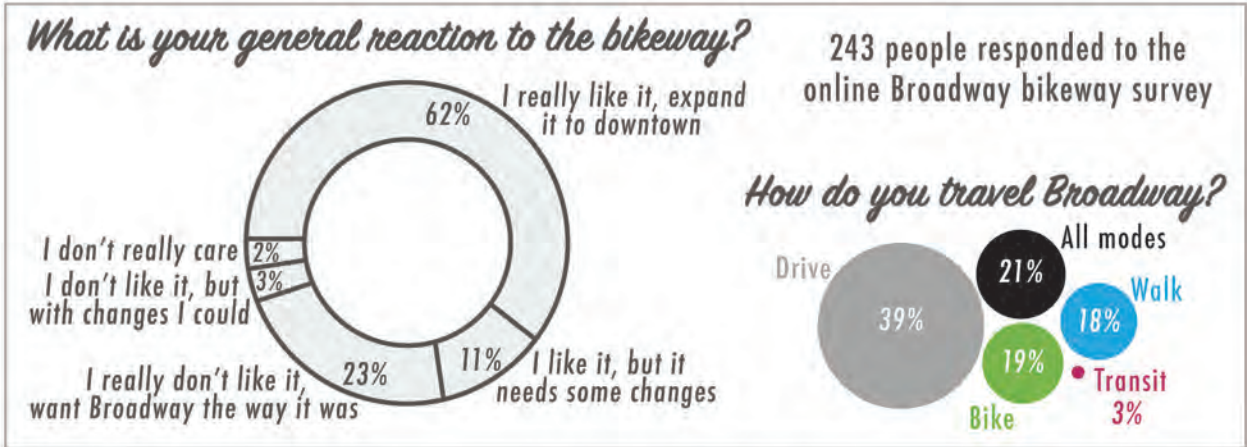


Goal: Provide mobility options for everyone

The Broadway bikeway study has created a place for people on bikes



Goal: Collaborate with the community & businesses



The City is working with businesses to understand their bikeway concerns, particularly regarding parking. Several of the parking spaces that were removed have been reinstated. The City is committed to monitoring parking and continuing work with the business community.

2016 Community Events

350 community members attended bikeway events

- 🚲 Civic Center EATS pop-up
- 🚲 Illegal Pete's pop-up
- 🚲 Bikes on Broadway Social
- 🚲 Tour de Fat Broadway Pre-Ride
- 🚲 Broadway Coffee Bean Ride
- 🚲 Broadway Ice Cream Ride
- 🚲 Bikes on Broadway Walking Tour
- 🚲 Women Bike Colorado Movie Night

Next Steps: What to expect on Broadway in 2017

❄️ The City is committed to routine snow removal in the bikeway throughout the 2016-2017 winter ❄️

The City will continue to collect data on the Broadway bikeway through 2017 to evaluate performance based on the goals. Next steps for the project include:

- 📅 February 2017 release of full three-month data summary
- 📅 December 2017 release of full one-year data summary
- 📅 2017-2018 evaluate feasibility of full corridor implementation

Stay Involved...

As this study continues into 2017,

- ✅ visit the study area
- ✅ support local businesses
- ✅ take the online survey
- ✅ share your thoughts online

Preliminary data released in December 2016

GOAL 1: EVERYONE ARRIVES SAFELY TO THEIR DESTINATION

Safety was the number one priority for the bikeway. Four performance measures were used to understand the safety of the bikeway during the first three months: crashes by mode and type, public perception of safety, people driving in the transit lane, and bicycle riding location.

CRASHES BY MODE & TYPE

Reported crashes are incidents where an officer from Denver Police arrived on the scene and filled out a Colorado crash report form. To assess the safety of the corridor with the bikeway, data was evaluated for the same time period from the previous year. From August through November 2016, while the Bikeway evaluation was in place, there were 13 reported crashes across all modes of travel. From August to November 2015, when the bikeway was not in place, there were 40 crashes across all modes in the study area. Three crashes involving a bicycle were reported in the study area between January 2015 and November 2016. All three bicycle crashes occurred in 2015, none occurred in 2016 while the bikeway was in place. Overall, these findings show a reduction in the number and severity of crashes following the installation of the bikeway.

(Data Source: <https://www.denvergov.org/opendata/dataset/city-and-county-of-denver-traffic-accidents>. This source is a dynamic data set that is updated each business day and does not include counter reports or incidents with damages less than \$1000.)

PUBLIC PERCEPTION OF SAFETY

An online survey was open to collect feedback after the bikeway was installed. The online survey asked people about their experience after walking, bicycling, and driving through the study area. Respondents could select multiple responses. 240 people responded to the online survey. Overall, the people who responded to the survey felt safer with the bikeway in place regardless of their mode choice.

PEOPLE WALKING IN THE STUDY AREA

“I felt safer” and “There were fewer people riding bikes on the sidewalk” were tied for the top most selected responses from people walking in the study area.

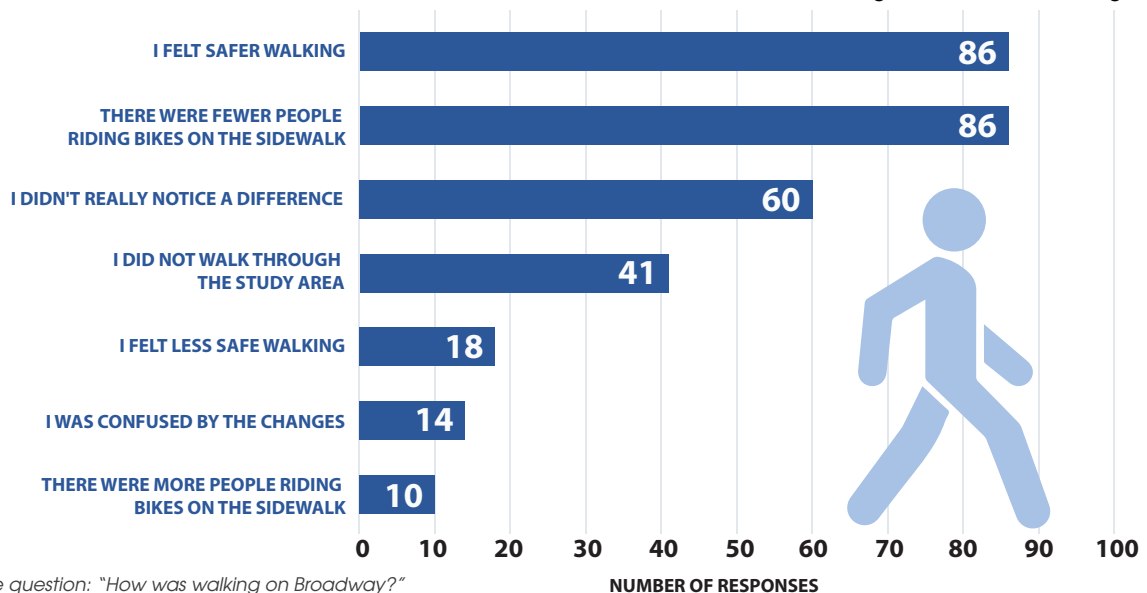
PEOPLE CYCLING IN THE STUDY AREA

“I felt safer” was the most selected response from people bicycling in the study area.

PEOPLE DRIVING IN THE STUDY AREA

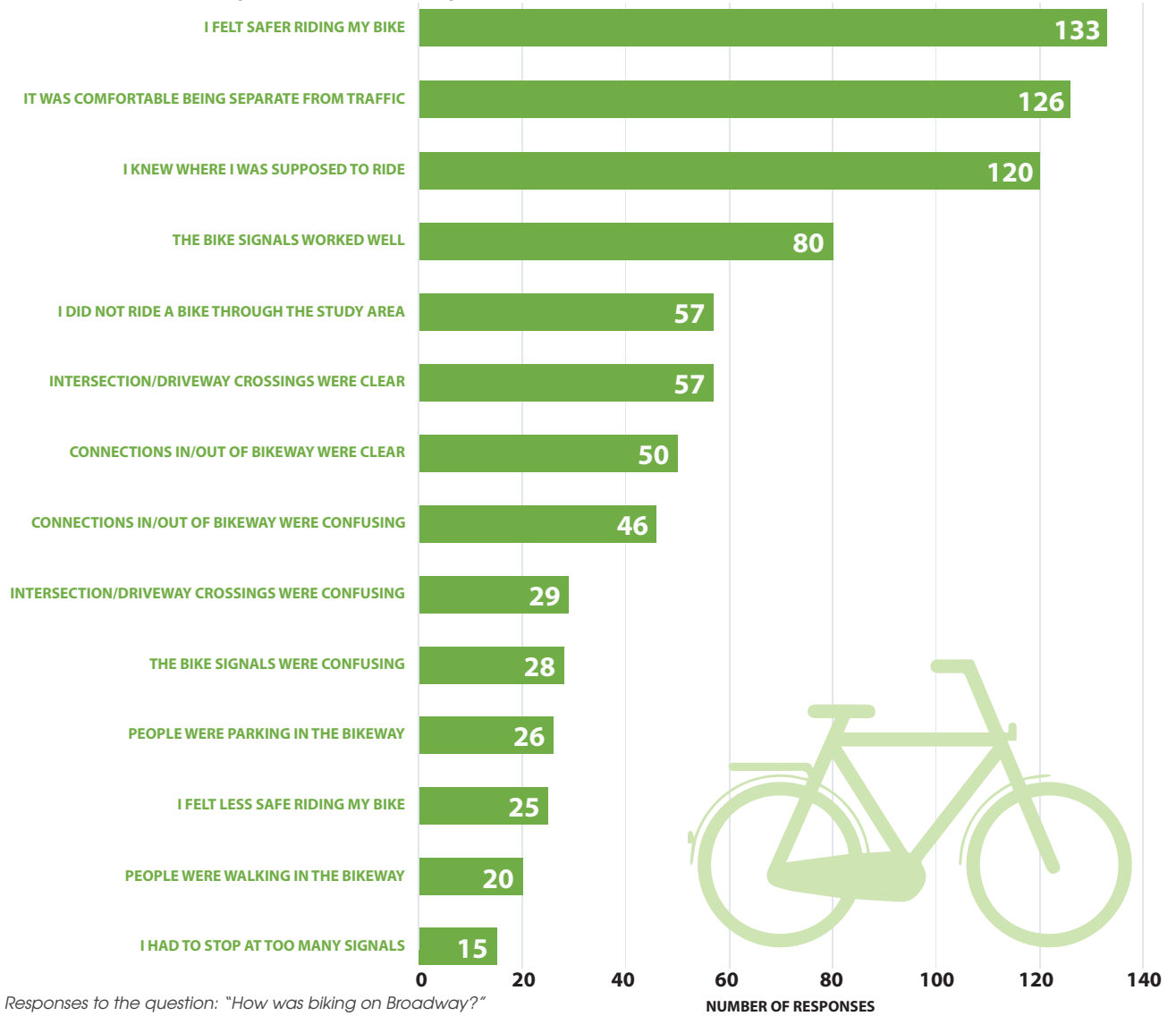
“It was comfortable being separate from bicycle traffic” was the most selected response from people driving in the study area. “I felt safer” was selected by 47 respondents about driving in the study area.

How was walking on Broadway?



Responses to the question: “How was walking on Broadway?”

How was biking on Broadway?



Pedestrians on Broadway



Bicyclists on Broadway

PEOPLE DRIVING IN THE TRANSIT LANE

The western-most travel lane on Broadway is a dedicated transit and right-turn lane from 3:00-6:00PM every weekday. Signs and flashing lights designate the lane for buses operated by the Regional Transportation District (RTD). Both the City and RTD were interested in how many people driving personal vehicles would use the dedicated transit lane as a through lane (in violation of the time-of-day restriction) after removing one of the general-purpose travel lanes. This also helps inform future decisions regarding operation of the transit lane.

The number of people driving in the western-most travel lane during the restricted hours increased by one percent after the bikeway was installed. Approximately 120 vehicles per hour used the western-most lane when it was dedicated to transit and right-turn lanes. For perspective, the other three travel lanes carry an average of 850-900 vehicles per hour per lane. While the number of people using the transit lane increased slightly after the bikeway was installed, the dedicated lane continues to provide a high-efficiency path for transit during the evening rush hour.

BICYCLE RIDING LOCATION

During the Phase 1 Study, the project team observed where people were riding on Broadway. The majority (58%) rode on the sidewalk, some (40%) rode in the transit lanes, and a small number of people (2%) rode in the travel lanes. After the bikeway was installed for evaluation, the majority (59%) of people rode in the bikeway. There fewer people riding bikes on the sidewalk (28%) and transit lane (13%); no one was observed riding in the general purpose travel lanes after the bikeway was installed. People on bicycles chose the dedicated space when the option was available.

“Seems like there are still bikers using the sidewalk.”



Buses only sign

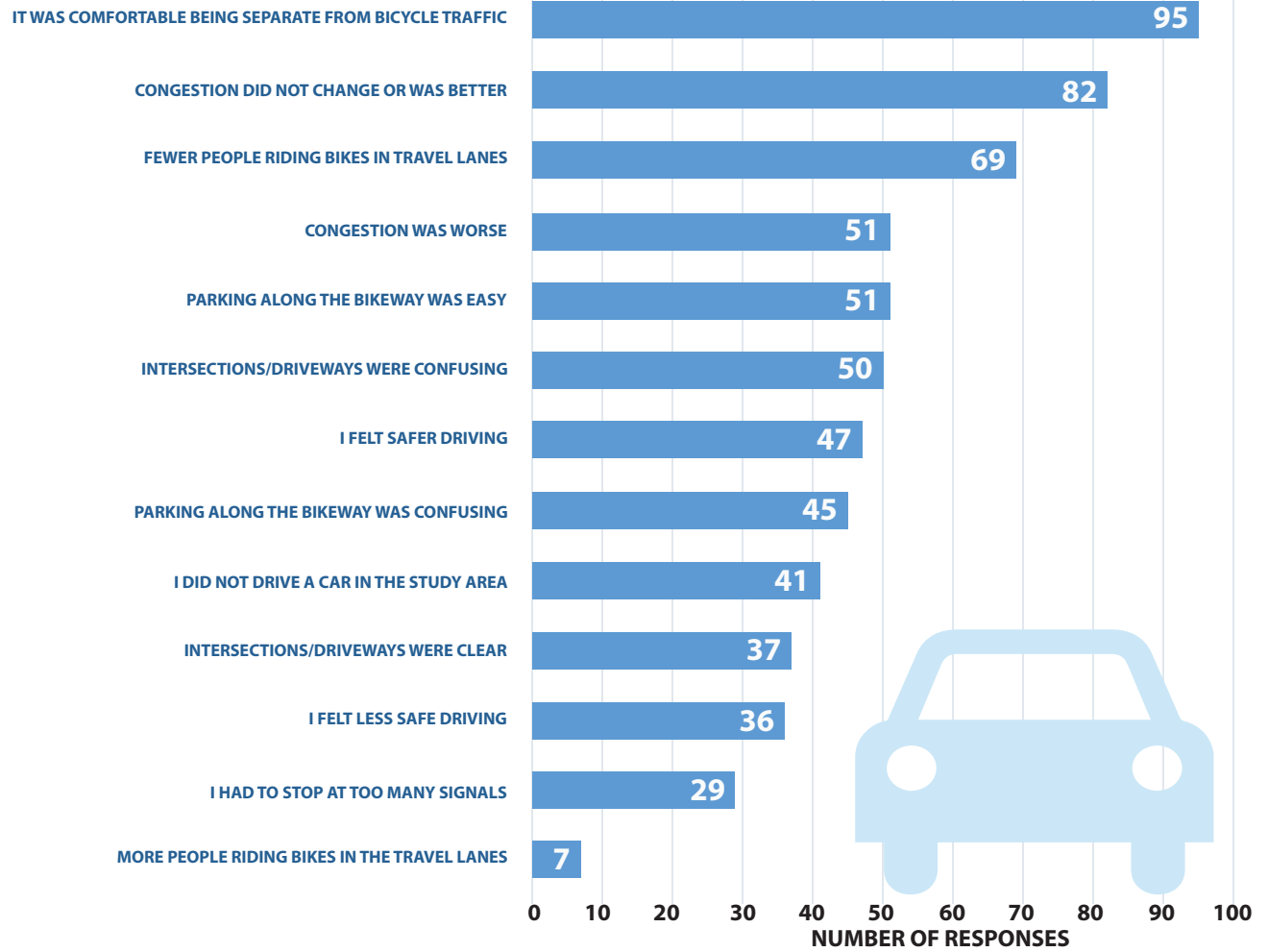


Broadway looking north of Ceder Ave

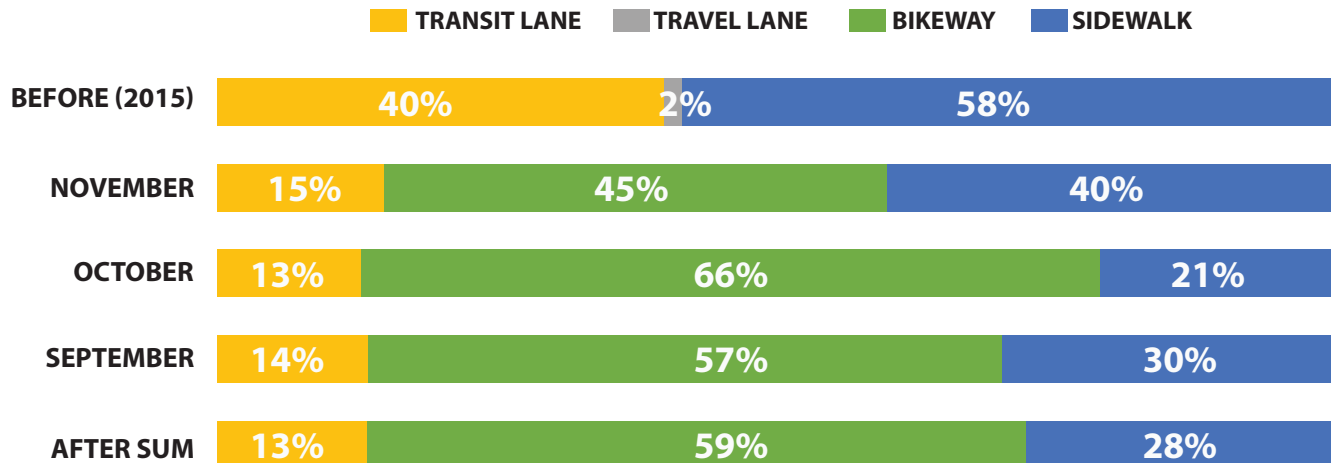


Bicyclist on Broadway

How was driving on Broadway?



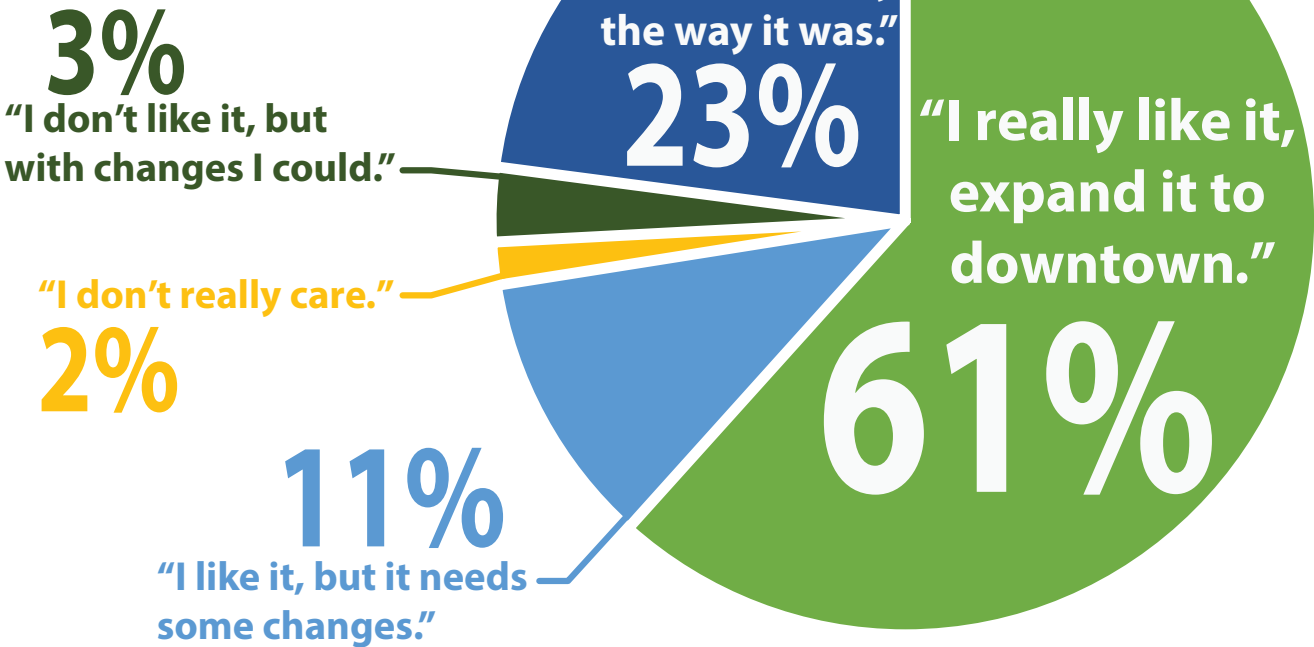
Bicycle Riding Location



GOAL 2: COLLABORATE WITH THE COMMUNITY & BUSINESSES

Overall, what is your general reaction to the bikeway?

240 Total Responses



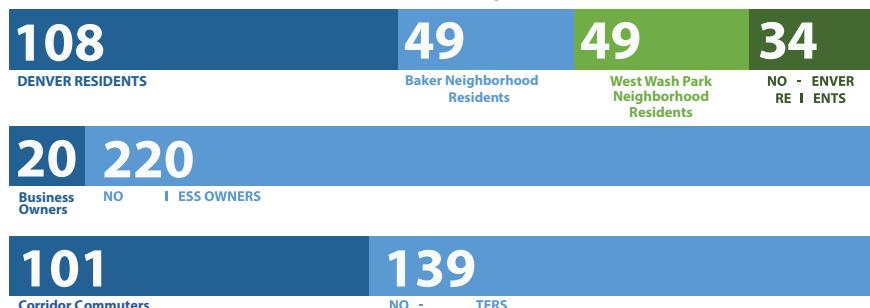
Collaboration with the community and businesses in the corridor was critical to the development of the vision for the future of Broadway and Lincoln during Phase 1. The City continued the commitment to engage with the community and businesses during the Bikeway Evaluation. Part of understanding the success of the bikeway is understanding how people working, living, and traveling through the study area react to it. They hosted two in-person pop-up meetings and maintained a website (www.DenverMovesBroadway.com) that included an online survey and online comment form to collect feedback throughout the study.

Additionally, the City attended three Broadway Merchants Association Meetings and walked door-to-door to talk with business owners four times.

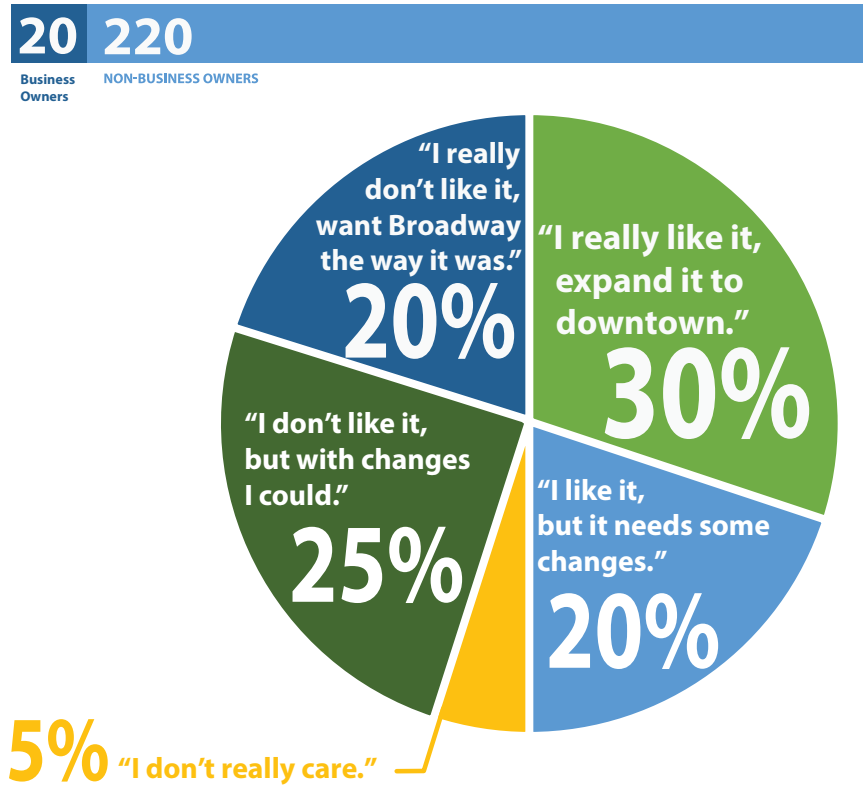
240 people responded to the online survey. Overall, the responses supported the bikeway.

Most people (61%) "really like" the bikeway and want it expanded downtown. Just under a quarter of people (23%) "really don't like" the bikeway and want Broadway reverted to the way it was. The remaining 15% of respondents wanted changes to the bikeway (14%) or did not really care (2%).

Who responded to the survey?



BUSINESS OWNER INPUT - 20 RESPONDENTS



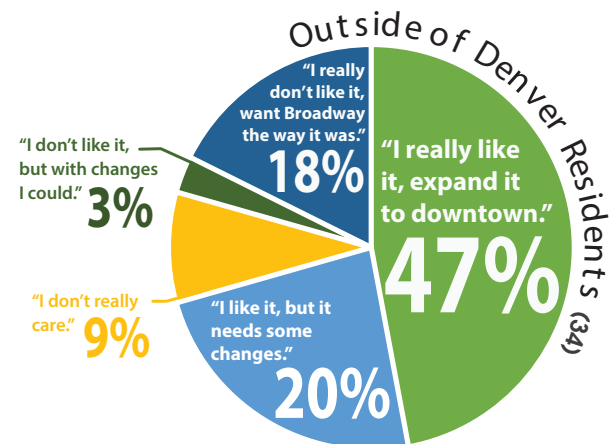
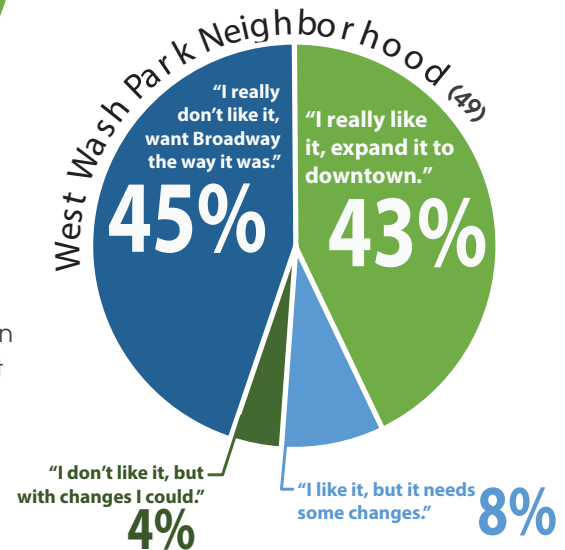
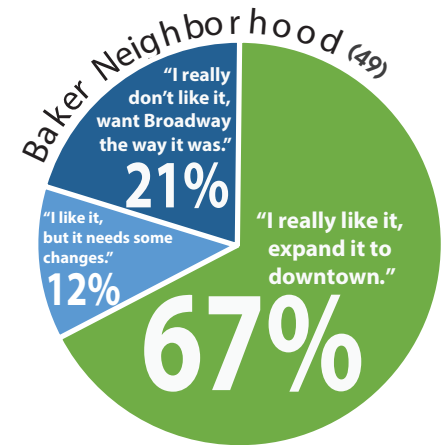
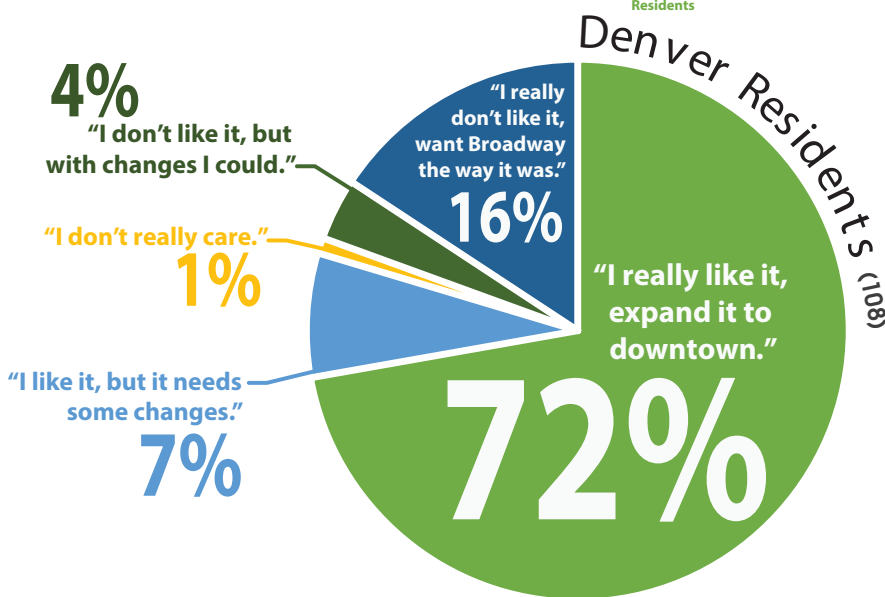
Business owners on Broadway providing input

BUSINESS INPUT

20 business owners responded to the online survey. When asked about their general reaction to the bikeway, half of the business (50%) responded that they like the bikeway while just under half of the businesses (45%) did not like the bikeway. However, 25% of those who did not like the bikeway could like it with changes.

Business outreach related to the Bikeway Evaluation outreach began on July 13, 2016, when the project team went door to door between Ellsworth and Virginia to let each business know about the upcoming project and construction schedule. During the construction and immediately after opening the bikeway, the City started hearing concerns from some businesses along the bikeway. The issues were focused on parking and loading zone changes that accompanied the bikeway. The City met with businesses eight times between August 15 and October 31, 2016. During these meetings, the City listened to concerns, provided data from the first month of data collection, and worked closely with businesses to develop parking and loading zone changes that would not impact the integrity and safety of the new bikeway. On November 3, 2017, the City implemented the parking and loading zone changes along the bikeway. The City met with businesses three additional times following the modifications and is committed to continuing the conversation through 2017.

COMMUNITY INPUT - SURVEY RESULTS BY RESIDENCE



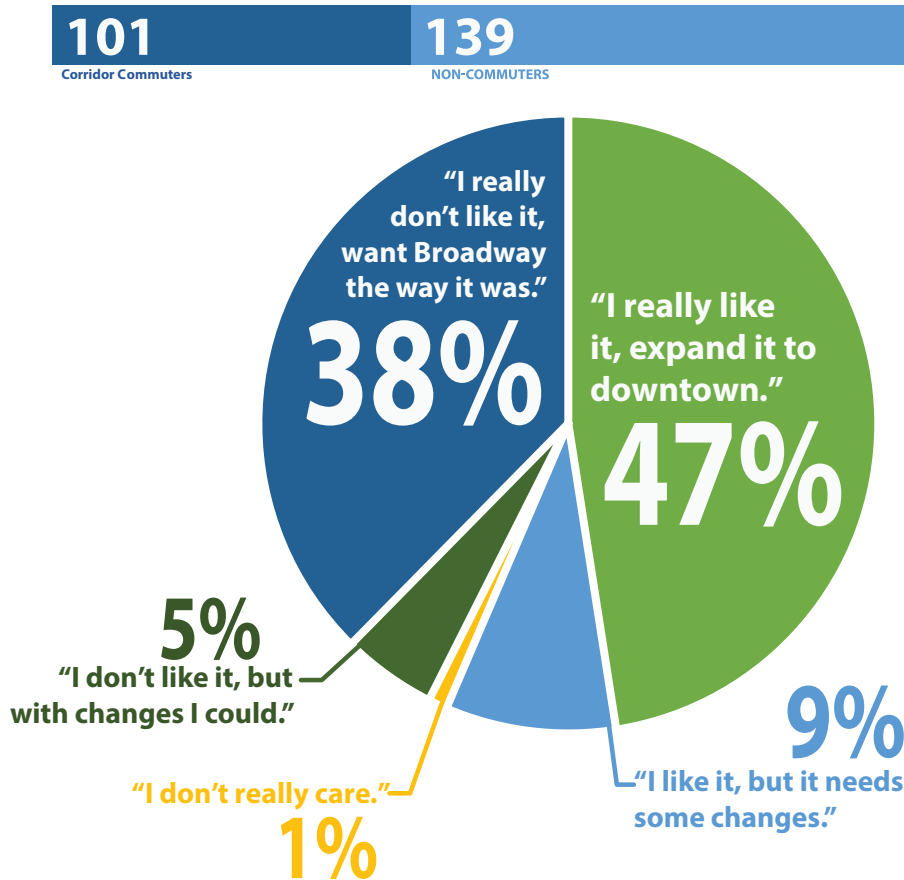
COMMUNITY INPUT

Two neighborhood associations, the Baker Historic Neighborhood Association (Baker) and West Washington Park Neighborhood Association (West Wash Park), as well as the general public provided input on the bikeway.

After Phase 1 of the Broadway/ Lincoln Corridor Study, the Baker Historic Neighborhood Association submitted a letter to the City supporting the recommendations of the study. Baker Neighborhood support for the bikeway changes on Broadway continued through the Bikeway Evaluation. 49 Baker residents responded to the survey. Almost 80 percent of respondents like the bikeway; only 21 percent wanted Broadway returned to the way it was.

The West Washington Park Neighborhood Association expressed concerns about the bikeway causing traffic diversion into the neighborhood. 49 West Wash Park residents responded to the survey. The respondents were split between liking and disliking the bikeway. Many of the respondents who like the bikeway are eager to see the bikeway extended so they have a safe place to ride on Broadway. Concerns voiced by respondents who do not like the bikeway were related to changes to travel lanes on Broadway and concerns about congestion.

COMMUTER INPUT - 101 RESPONDENTS



COMMUTER INPUT

Broadway is used by many commuters in and out of Denver. 101 commuters responded to the survey; commuters are respondents who said they use Broadway to get to or from work,

regardless of mode choice. Their responses were split regarding the bikeway. Just over half (56%) of the commuter respondents like the bikeway while just under half of the respondents (43%) dislike the bikeway.

"108 Denver residents responded to the survey. The result is overwhelming support for the bikeway and expansion of the bikeway. Almost 80% of Denver residents like the Broadway Bikeway."



Commuters on Broadway

34 people living outside of Denver responded to the survey. Respondents self-identified where they lived. Six people were from a community northwest of Denver (Boulder, Broomfield, Niwot, Westminster); five were from communities west of Denver (Lakewood, Golden, Wheat Ridge); 20 people were from communities south of Denver (Littleton, Englewood, Centennial, Parker, Colorado Springs, Castle Rock, Lone Tree); and one was from out of state in Oakland, CA. Most these respondents (70%) liked the bikeway.

PARTICIPATION IN OUTREACH OPPORTUNITIES

350 community members attended the eight bikeway events that took place during the study.

The events included:

- **Civic Center EATS pop-up**
July 21, 2016
- **Illegal Pete's pop-up**
July 21, 2016



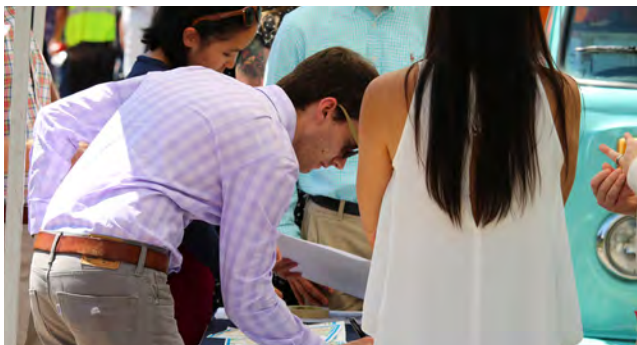
- **Bikes on Broadway Social**
August 15, 2016
- **Tour de Fat Broadway Pre-Ride**
September 10, 2016
- **Broadway Coffee Bean Ride**
October 12, 2016
- **Broadway Ice Cream Ride**
October 16, 2016
- **Bikes on Broadway Walking Tour**
October 29, 2016
- **Women Bike Colorado Movie Night**
November 1, 2016

Two pop-up community events were held before the bikeway was installed. The project team set up at Civic Center EATS in July 2016 to talk with downtown commuters about the coming changes to Broadway. The pop-up moved to Illegal Pete's in the Broadway corridor to catch people visiting or living in the corridor. During these pop-up events, the project team talked with about 100 people regarding the Bikeway Evaluation.

“I rode the Broadway bike lanes for the first time today. Generally I think the protected lane is good. I like the bike specific signals and am still a little concerned that cars will not honor the yield signs. Naturally I would prefer a longer track. It should be easy to access these lanes from the Broadway Light rail station. In general this is vastly safer than what was in place before.”

On August 15, 2016, the day the bikeway opened, BikeDenver and Bicycle Colorado hosted a “Bikes on Broadway” event at Illegal Pete's. The event encouraged people to come out and try the bikeway, shared information about the bikeway and how to use it safely, and provided information about the scope of the study.

Throughout the study, BikeDenver, Bicycle Colorado, and WalkDenver hosted 5 additional events to engage people with the bikeway. Events included a Broadway Ride before the Tour de Fat, a morning coffee ride, an ice cream ride that encouraged families to attend, a walking tour of Broadway, and a Women Bike Colorado ride on Broadway before a movie night. Hundreds of people attended these events, rode the bikeway, and engaged in conversations about the Bikeway Evaluation.



Various outreach opportunities

GOAL 3: PROVIDE MOBILITY OPTIONS FOR EVERYONE

The project team collected data about mobility impacts of the bikeway on all users of Broadway in the study area. This data helped the City assess the bikeway to determine if the mobility impacts are acceptable and if the project should continue.

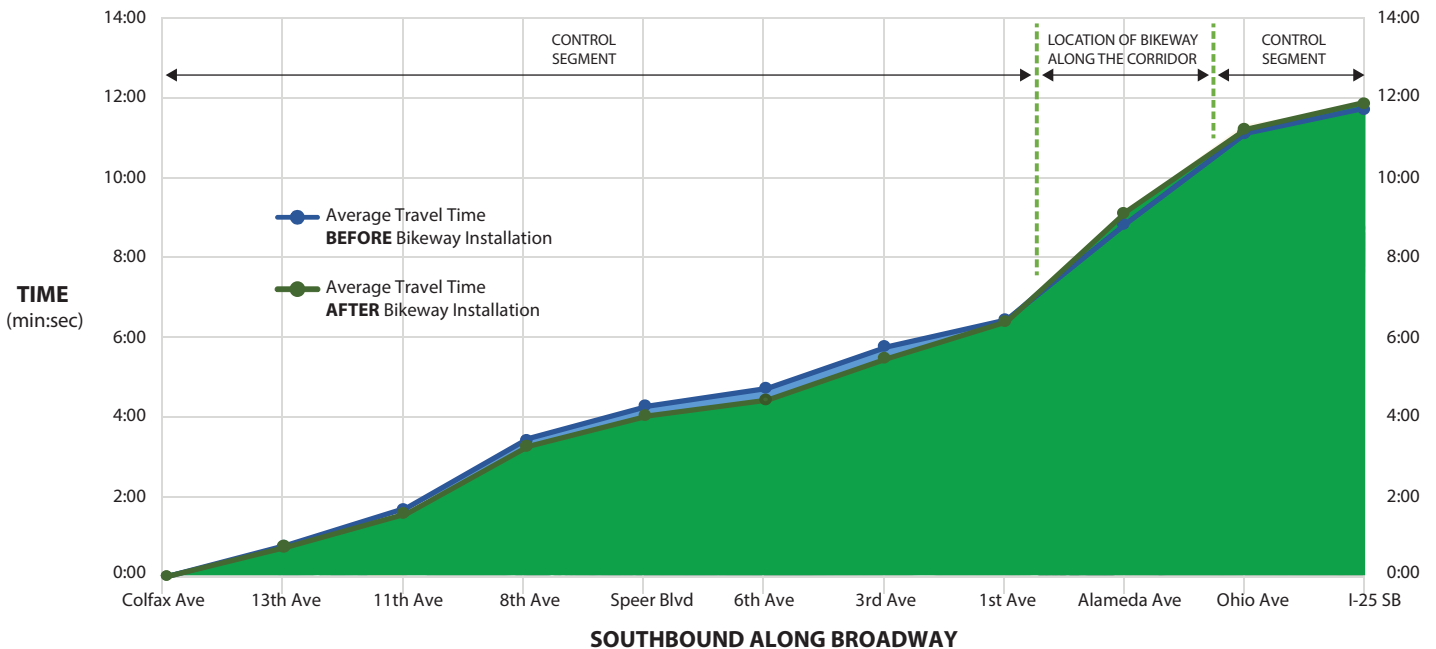
Seven performance measures were used to understand mobility changes during the first three months: vehicle travel times, vehicle traffic volumes, parallel corridor traffic, parking space utilization, bicycle volumes, bicyclist demographic, and sidewalk pedestrian volume.

VEHICLE TRAVEL TIMES

Vehicular travel times runs along Broadway from Colfax to I-25 were performed before and after installation of the bikeway. Data was collected during the evening peak between 4:15 and 6:00PM. The results of these trips show that the bikeway has had minimal on travel time from downtown to I-25 during evening rush hour. Before the installation, it took an average of 11 minutes and 50 seconds to drive the 2.5-mile stretch from Colfax Avenue downtown to Interstate 25. After, the same distance took an average of 11 minutes and 59 seconds.



Pedestrians crossing on Broadway



Travel time before and after bikeway

VEHICLE TRAFFIC VOLUMES

Average daily traffic volumes and evening peak hour traffic volumes were collected to see if traffic patterns changed after installing the bikeway. Engineer best practice considers daily variation in traffic of up to 10% acceptable. Daily traffic counts on Broadway after the bikeway was installed changed only 5%. The PM peak hour counts, when diversion from Broadway would be most likely to occur, remained constant. The consistency of the before and after data indicates that there has been little to no traffic diversion after installing the bikeway project.

Vehicle Traffic Volumes, before and after the Bikeway

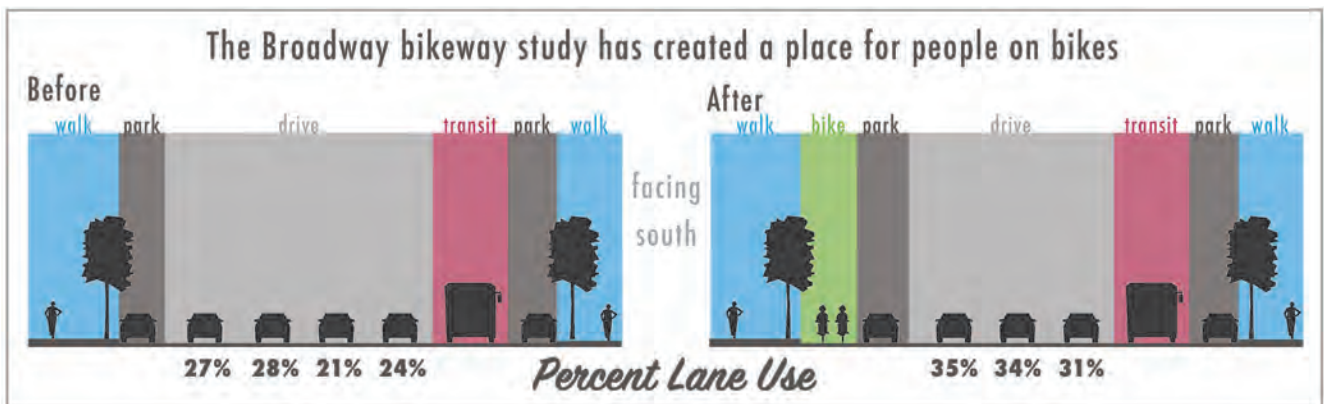
TRAFFIC VOLUMES BEFORE THE BIKEWAY (2015)



TRAFFIC VOLUMES AFTER THE BIKEWAY (2016)



The study has also monitored how many automobiles use each lane along Broadway during the PM peak hour. Before the bikeway was installed, utilization of the four general-purpose through lanes varied from 21% to 28% of total traffic in each lane. After the bikeway installation and with conversion to three general-purpose through lanes, utilization has varied from 31% to 35% by lane. The data indicates that any reduction of vehicular capacity along Broadway by removing one general-purpose travel lane for the bikeway is being offset by improved utilization of the remaining lanes.



Lane use before and after bikeway

PARALLEL CORRIDOR TRAFFIC

Traffic data were collected along parallel corridors to address concerns about vehicles deviating from Broadway to avoid any potential traffic delays that may result from the implementation of the bikeway. These counts were conducted in May 2016 in advance of the bikeway installation and September 2016, following opening the facility to the public.

Data was collected at the following locations:

- S. Broadway north and south of Bayaud Ave
- Bayaud Ave, east and west of S. Broadway
- Bannock between Maple and Cedar
- Sherman between Maple and Cedar;
- S. Logan between Maple and Cedar;
- S. Washington Street Maple and Cedar;

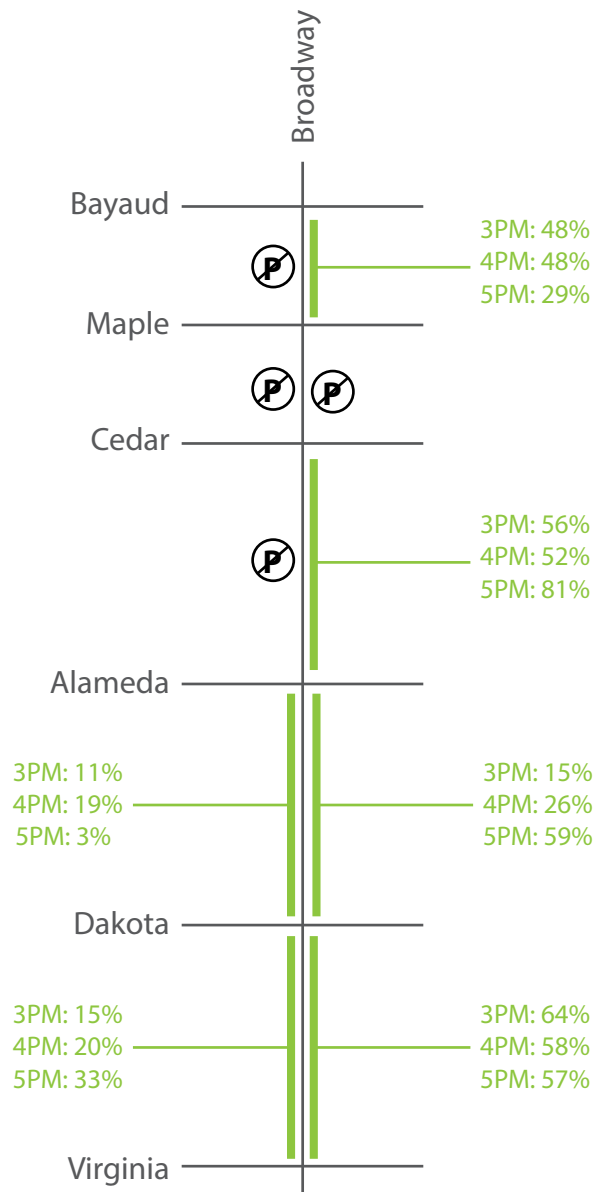
Additional data will be collected in May 2017 towards developing an understanding of any traffic diversion along the corridor. These results will be included in the final one-year report.

Parking & Businesses:

Upon opening the bikeway on August 15, 2016, businesses along this segment of Broadway insisted that the City reconsider design decisions and return additional parking on the corridor. Through careful consideration and analysis, the project team determined that it was possible to reduce the length of the left turn lanes at Cedar and Virginia and return two parking spaces to each location. In addition, a loading zone was added Broadway, between Cedar and Alameda. South of Alameda, a loading zone on the west side of Broadway was removed and converted into two parking spaces. Based on comments gathered during meetings with businesses, the City also extended time limits for on-street parking south of Alameda from one hour to two hours. The changes to introduce additional parking and adjust loading zones were made in October 2016, increasing the total of on-street parking in the five-block segment from 72 to 79.

PARKING SPACE UTILIZATION

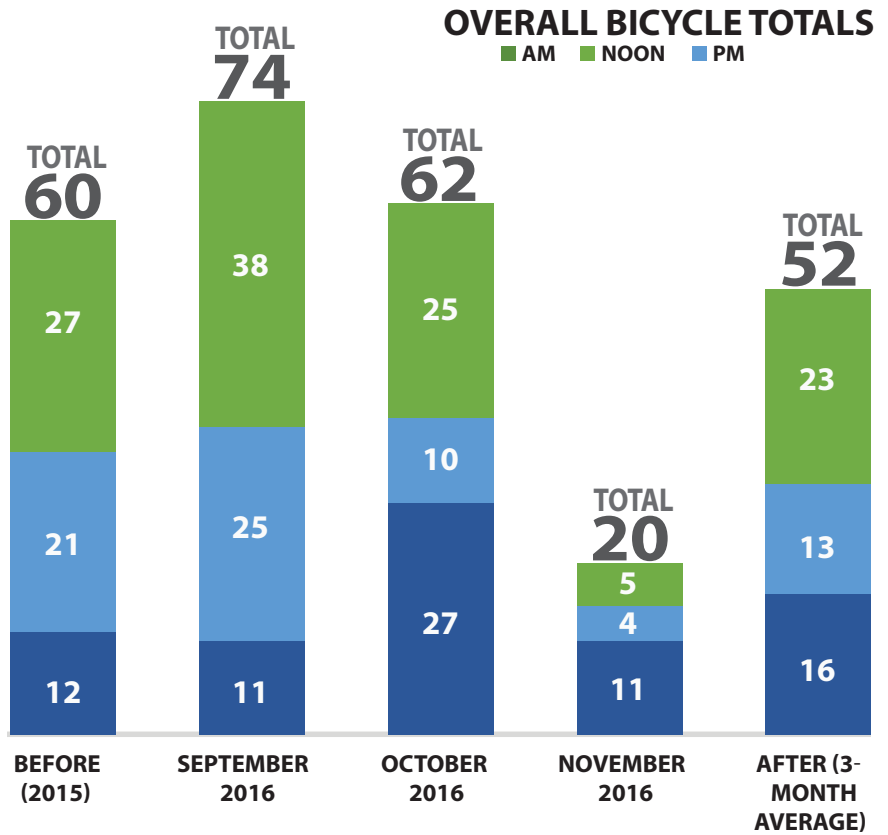
Throughout the PM peak period, on-street parking is consistently utilized along the corridor. Parking use along the bikeway was highest on the east side of Broadway, between Cedar and Alameda during the PM peak period, while a surplus of on-street parking spaces was available on the west side of the corridor, south of Alameda.



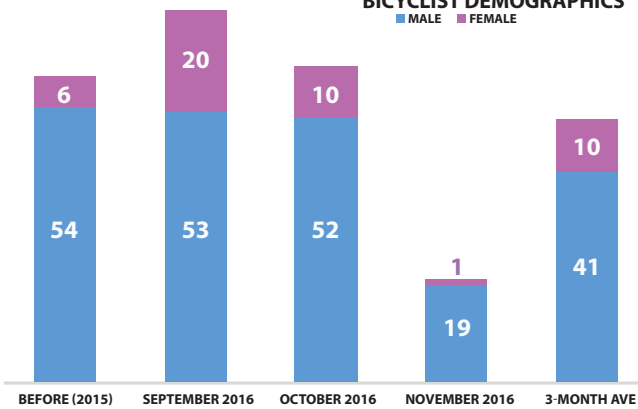
Parking utilization on Broadway

BICYCLE VOLUMES

Bicycle volumes were observed before and after the bikeway installation. During the first three months of the study, bicycle volumes remained consistent. There was a slight increase in September and a seasonal decrease in November, but on average, the volumes have remained consistent. This level of ridership is expected given limited length of the project and time of year.

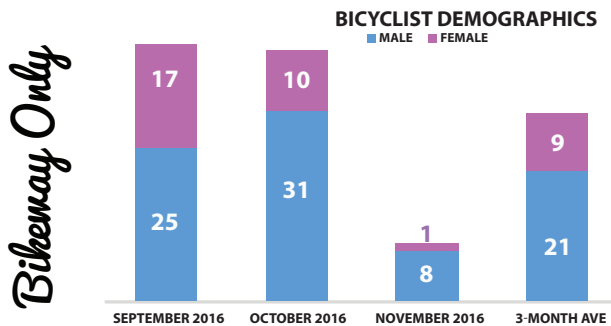


BICYCLIST DEMOGRAPHICS



BICYCLIST DEMOGRAPHICS

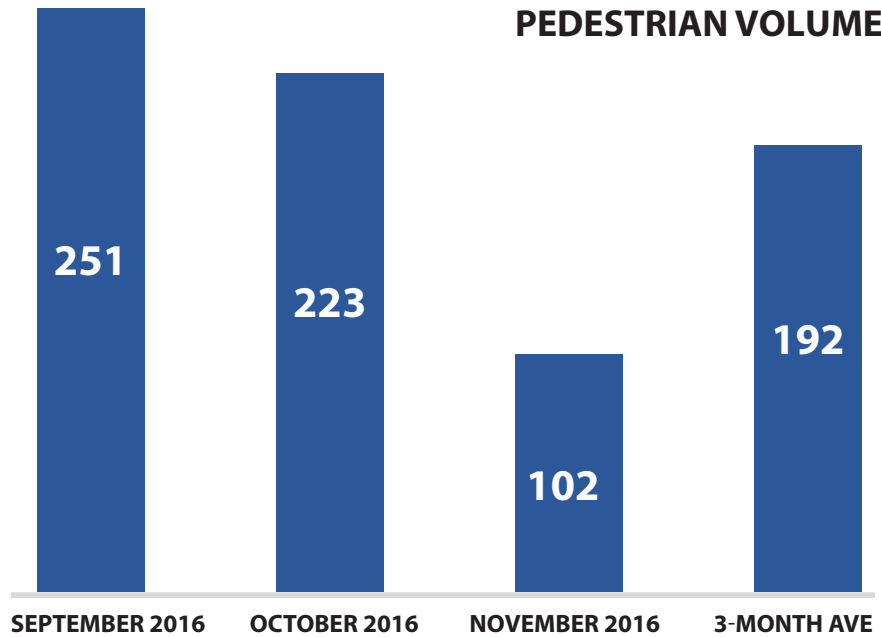
More women rode on Broadway after the bikeway was installed. Before the bikeway was installed, approximately 10% of bicyclists riding in any location on Broadway were women and 90% were men. After the bikeway was installed, on average 20% of bicyclists riding in any location on Broadway were women while 80% were men. When only the bicyclists in the bikeway are considered, 30% were female and 70% male.



PEDESTRIAN VOLUMES

SIDEWALK PEDESTRIAN VOLUMES

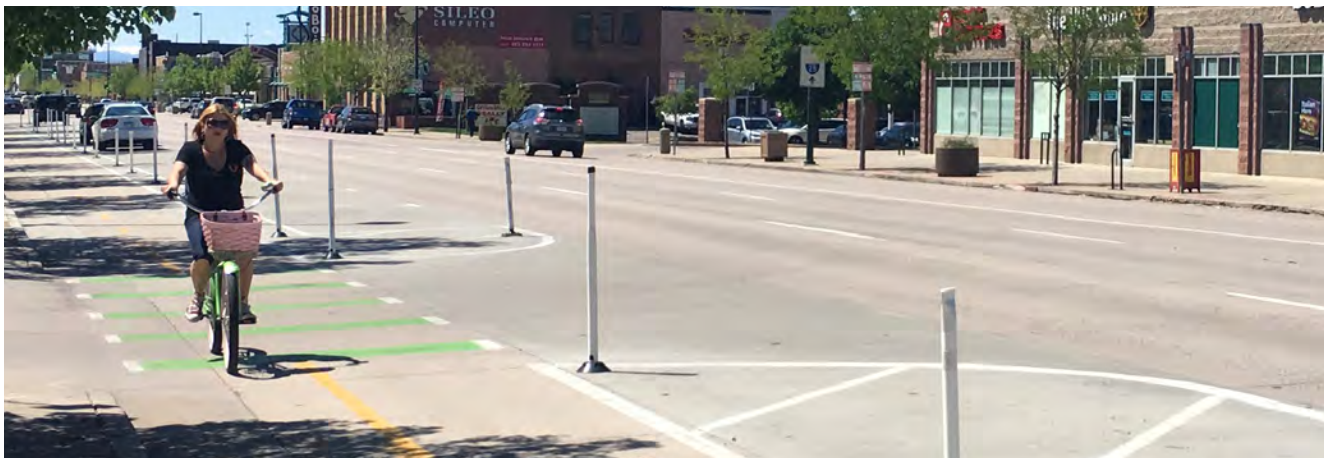
Broadway is a vibrant mixed-use district with dense commercial and residential land uses, making it a popular destination for people walking. Depending on the time of day, around 60 people per hour cross Cedar while walking on Broadway after the bikeway was installed. The number of people walking decreased in November, likely due to seasonal change. Pedestrian counts were not collected prior to installing the bikeway.



CONCLUSION

The Bikeway Evaluation is trending successfully toward achieving the stated goals. The data confirms that Broadway can continue to provide mobility for people driving, walking and taking transit, while creating a safe place for people to ride bicycles. Reconfiguring Broadway to create a more complete street increased safety and predictability for all roadway users. There are still concerns from some businesses along Broadway about the availability of on-street parking and loading zones. The City has made adjustments to maximize parking and loading activities to the extent possible while considering the needs for safe operations. More opportunity for adjustments will be looked at during the next steps of the design process.

The City has committed to keeping the bikeway in place through 2017 and will continue to monitor, evaluate and modify the bikeway as needed, to create safe mobility options for roadway users regarding of their mode choice.



Chapter 3. Planning for What's Next



Based on the first three months of data, the City has made the decision to continue the Bikeway Evaluation through 2017. The City will continue to collect performance metric data and plan to release a one-year data report at the end of 2017. The one-year report will include an update of the data included here and will add data for speed limit compliance, signal compliance (signalized intersections, unsignalized intersections, driveways), parking compliance and utilization, retail sales tax, business/community bikeway "ownership", transit on-time arrival, transit ridership, bike parking utilization, as well as summer and winter maintenance of the bikeway.

As the City continues the Bikeway Evaluation, it will take the lessons learned from the current effort and apply them forward with the next phase of the project. The City will begin design of multi-modal improvements, including the bikeway and pedestrian and transit needs, for the South Broadway Corridor in 2017. These improvements will include enhanced bikeway elements, traffic signal reconstruction,



intersection corner reconstruction, incorporation of all 24-hour priority transit improvements, pedestrian improvements with increased access to transit, on-street parking and loading zones, and ways to accommodate transportation network companies (Uber, Lyft, taxi and other rideshare operators).



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