

REIMAGINE



WEST COLFAX



FINAL REPORT



December 4th, 2015





Introduction

2

Existing Conditions

3

Community Meetings

7

Design Workshop

9

Reimagine West Colfax

10

Community Feedback

12

Recommendations

14



Reimagine West Colfax was a one-day pop-up demonstration of potential pedestrian and bicycle enhancements for the West Colfax corridor held on Sunday, August 16th, 2015. Temporary installations included enhanced crosswalks, median refuges, wider sidewalks, parklets, and several types of bike lanes. Though this was only a one-day event, it was the result of months of data collection, community outreach, and collaboration between several different partner organizations. The West Colfax Business Improvement District (WCBID), WalkDenver, Placematters, Radian, and Groundwork Denver

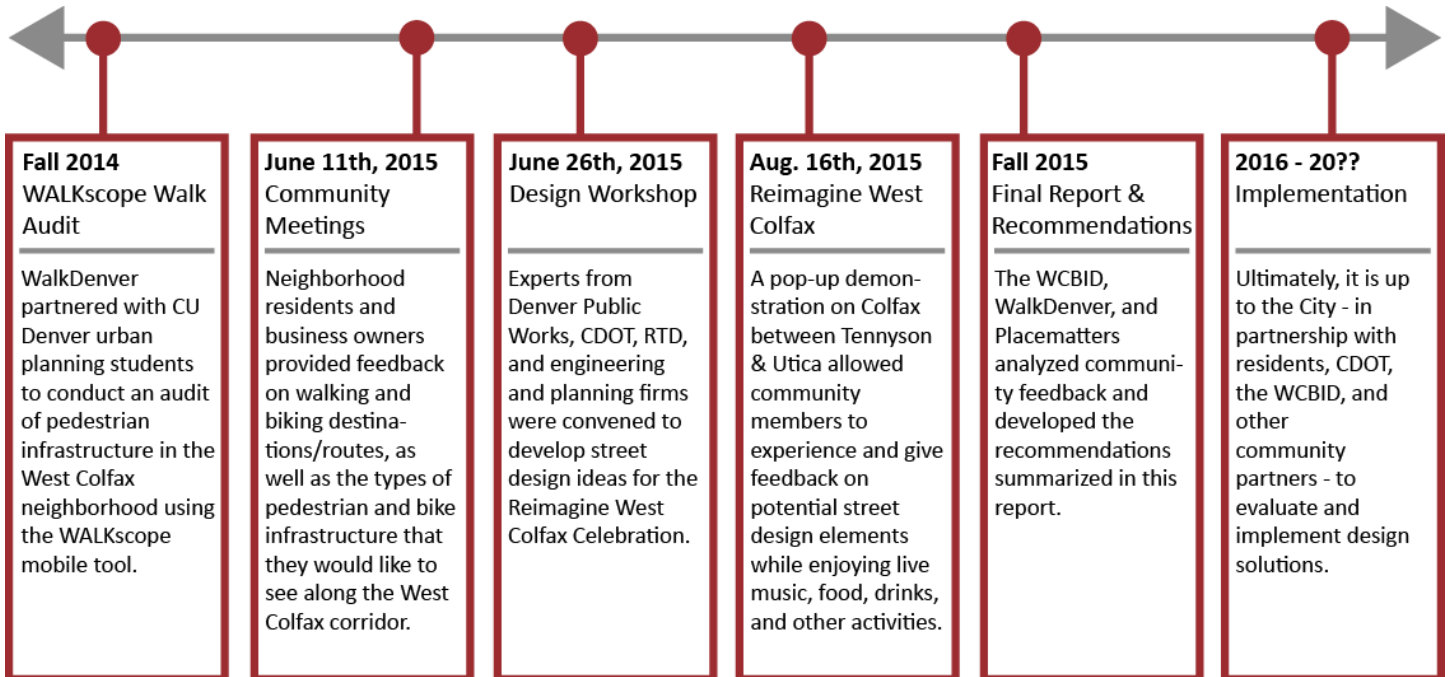


organized the event with cooperation and support from West Colfax neighborhood residents and businesses, the City and County of Denver, CDOT, and others. Funding was provided by a grant from the Gates Family Foundation as well as a successful crowdfunding campaign to which dozens of local residents and businesses contributed.

Reimagine West Colfax was hugely successful in demonstrating what a walkable and bikeable West Colfax could look like. Community feedback provided during the event underscored the overwhelming demand for design solutions that could create a safer,

more economically vibrant, and more livable West Colfax Ave. It is now up to city agencies, CDOT, and other stakeholders to follow through in developing and implementing final design solutions. This report is intended to provide guidance and recommendations on what should be included in those solutions. The report begins with a summary of the data and community input that informed the design of the Reimagine West Colfax Celebration. Then, it summarizes community feedback provided during the event. Finally, it outlines recommendations and priority locations for physical improvements along the West Colfax corridor.

Project Timeline



WALKscope Walk Audit

In the Fall of 2014, WalkDenver partnered with urban planning graduate students in Ken Schroepel’s Planning Methods class at CU Denver to conduct audits of pedestrian infrastructure in the West Colfax neighborhood using the WALKscope (www.walkscope.org) mobile tool. The following maps illustrate the generally poor condition of the pedestrian environment along the West Colfax corridor between Sheridan Blvd and Federal Blvd. Overall ratings in the pedestrian environment strongly correlate with types of sidewalks and the presence or absence of marked crosswalks. Throughout the neighborhood, wider, detached sidewalks and marked crosswalks are severely lacking, which is especially problematic along Colfax, where high traffic speeds and volumes, wide crossing distances, scarce crosswalks, and too-narrow sidewalks combine to create a very uncomfortable and unsafe pedestrian environment.

Sidewalk and Intersection Overall Quality Ratings



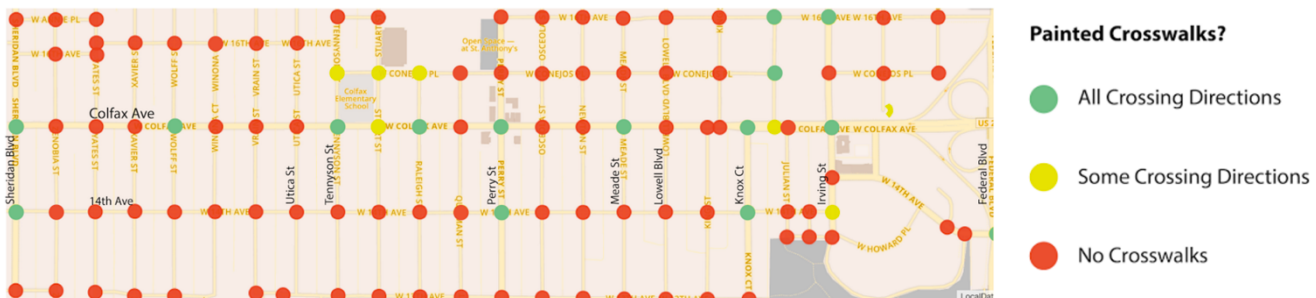
Source: WALKscope.org

Sidewalk Types



Source: WALKscope.org

Crosswalks



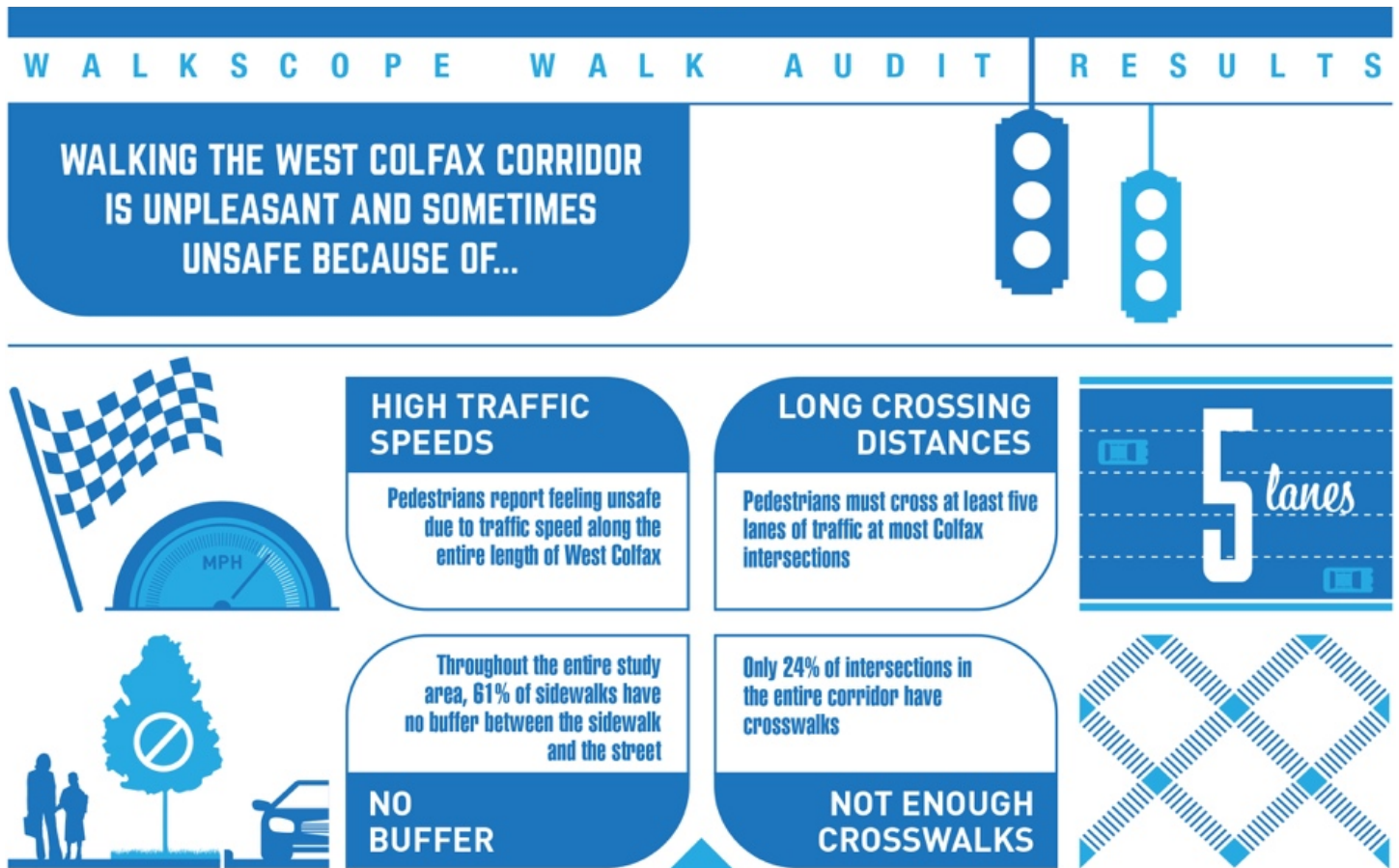
WALKscope.org

Source:

Some major takeaways from the WALKscope walk audit include the following:

- The places where the most people walk, including Colfax Avenue and the areas adjacent to light rail stations, are the least pleasant and the least safe for pedestrians.
- Unsafe traffic speeds are a major problem on Colfax.
- Crossing distance is also a problem on Colfax. Pedestrians must cross 5 or more lanes to get across Colfax at pretty much every intersection.
- Crosswalks are few and far between on Colfax, where they are needed most. In many cases, people have to walk several blocks out of their way to cross at an intersection with crosswalks.
- The lack of buffers between sidewalks and the street degrades the pedestrian environment. With few exceptions, the sidewalks along Colfax are all "attached," meaning they are directly adjacent to the street with no buffer.

Walkscope Walk Audit Results Summary*:



*To view a detailed report on walk audit results, visit <http://bit.ly/1IDySGb>

Bike Conditions

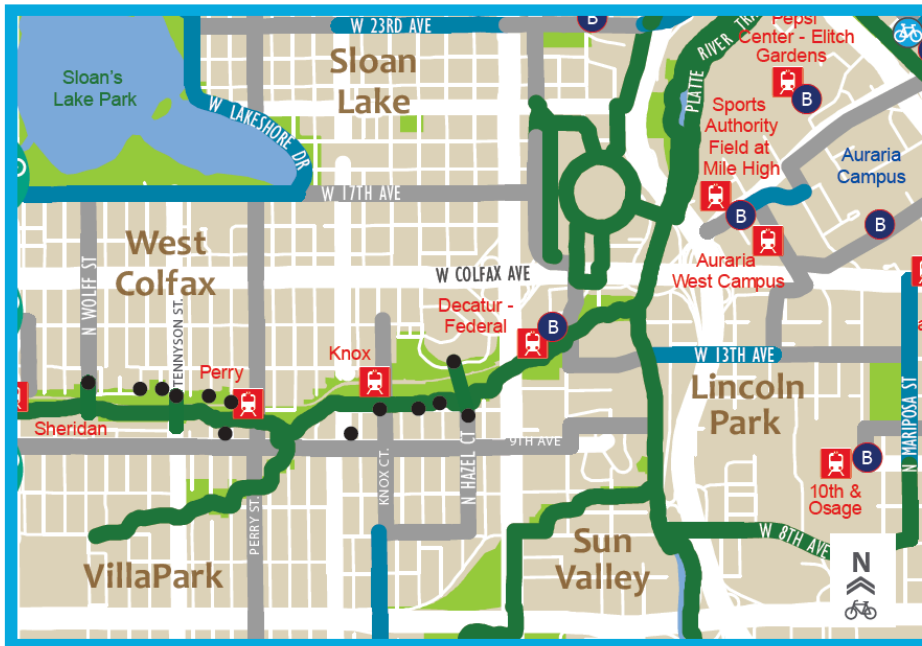
West Colfax currently offers neighborhood bike routes for north to south connections on Wolff St. and Perry St, which are about ½ mile apart, and at Knox Court. To the north, there is a bike lane on 17th at Sloan’s lake. To the south, Lakewood Gulch Trail offers a bike trail and 10th Avenue has a neighborhood bikeway. These two routes are approximately ½ mile off of Colfax, and riders face a steep incline if they wish to get to destinations on Colfax from the Gulch.

The Strava heat map shows where recreational cyclists are traveling. This map shows that cyclists are avoiding the West Colfax area. This is a market share loss, as these cyclists could be attracted to shop and dine in the area with better biking infrastructure.

Stakeholders repeatedly acknowledged, and observations reaffirmed, that pedestrians and cyclists on Colfax Avenue are often in conflict on sidewalks. Additionally, cyclists who ride in traffic lanes on Colfax Avenue face high traffic speeds and high traffic volumes.

BIKABILITY *near* WEST COLFAX

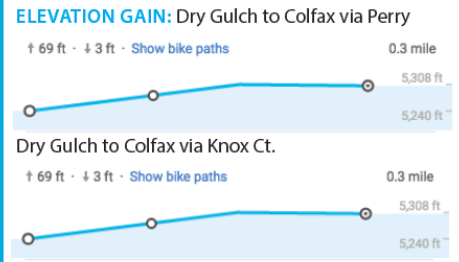
BIKE ROUTE MAP



STRAVA HEAT MAP



Strava heat map shows where Strava application users are riding; higher blue means more riders.



- Signed Route/ Shared Lane
- Bike Lane
- Multi-Use Trail/Sidewalk
- B-Cycle Station
- RTD Light Rail Station
- Trail - Street Bike Connections

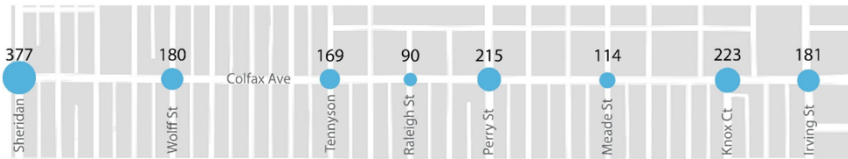
NORTH TO SOUTH CONNECTIVITY (17TH TO 9TH)

- 0 BIKE LANES TO CROSS COLFAX**
- 2 SHARED LANES CROSS COLFAX:** Perry & Knox
- 5 CONNECTIONS ACROSS THE GULCH:** Wolff, Tennyson, Perry, Knox and Sanchez Park

EAST TO WEST CONNECTIVITY (SHERIDAN TO FEDERAL)

- 0 BIKE LANES:** Within 1/4 mile of Colfax
- 0 CONNECTIONS TO DOWNTOWN:** Within 1/4 mile of Colfax
- 1 BIKE LANE:** Within 1/2 mile of Colfax

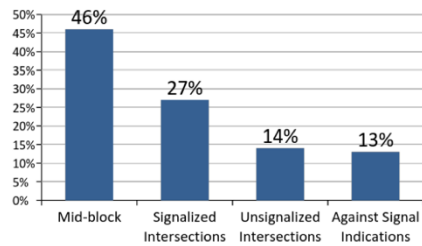
Sum of Pedestrian Counts 7AM-9AM and 4PM-6PM (single day in Jan. 2009)



Additional Data

According to pedestrian counts conducted for the West Colfax Corridor Transportation Study in January 2009 (which likely do not reflect typical warm-weather levels) pedestrian activity on Colfax is spread fairly evenly across the corridor. Due to the infrequency of signalized crossing locations on Colfax, almost half of pedestrians cross at mid-block locations. The long (40 seconds) average delays pedestrians face waiting at signalized intersections also helps to explain why a relatively low percentage (27%) of total crossings are at signalized intersections following the signal indications.

Pedestrian Crossing Locations (May 2009)

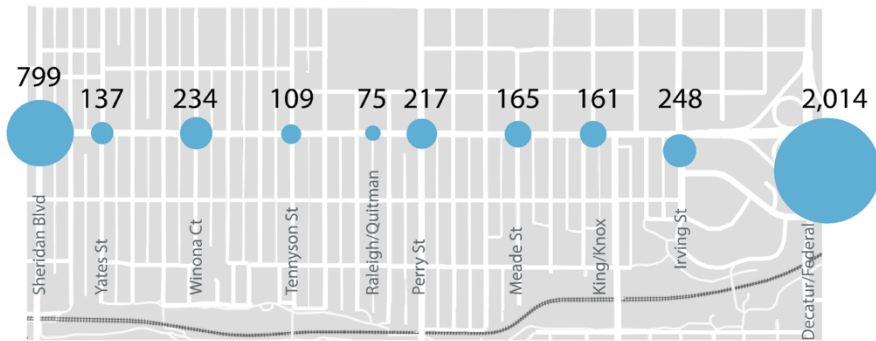


Average delay for pedestrians at signalized intersections:

40
SECONDS
(LOS LEVEL E)

Source: West Colfax Corridor Transportation Study (2009)

Average Daily Boardings and Alightings by Bus Stop Location

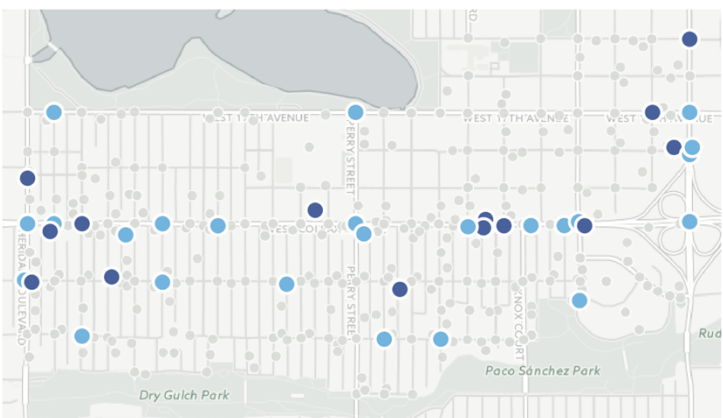


Bus stop activity is concentrated near the Federal-Decatur and Sheridan Blvd stops, with remaining activity spread relatively evenly between these two stops.

Collisions involving pedestrians and cyclists in the West Colfax neighborhood between 2010 and the end of 2014 were particularly concentrated along the stretch of Colfax between Lowell Blvd and Irving St, with another hotspot on the west end of the corridor between Sheridan Blvd and roughly Yates St.

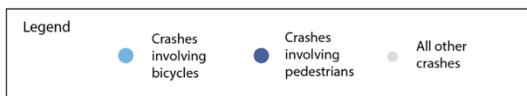
Source: RTD (Fall 2014)

Collisions (2010 through 2014)



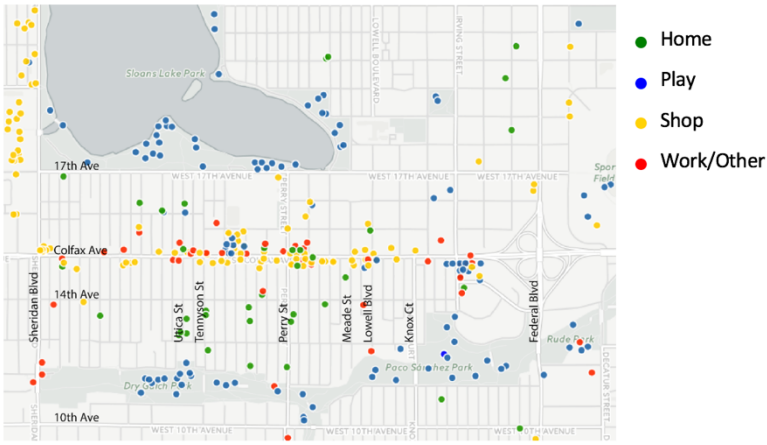
15
Crashes involving pedestrians

25
Crashes involving bicycles



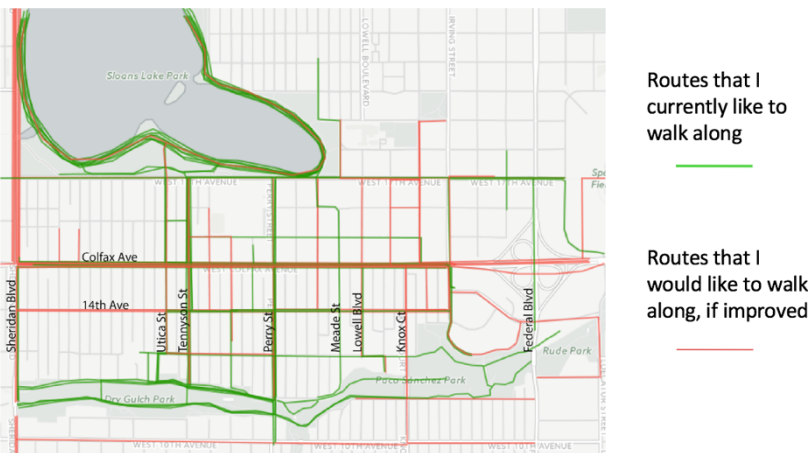
Source: Denver Open Data Catalog (2015)

What destinations do you like to walk/bike to?



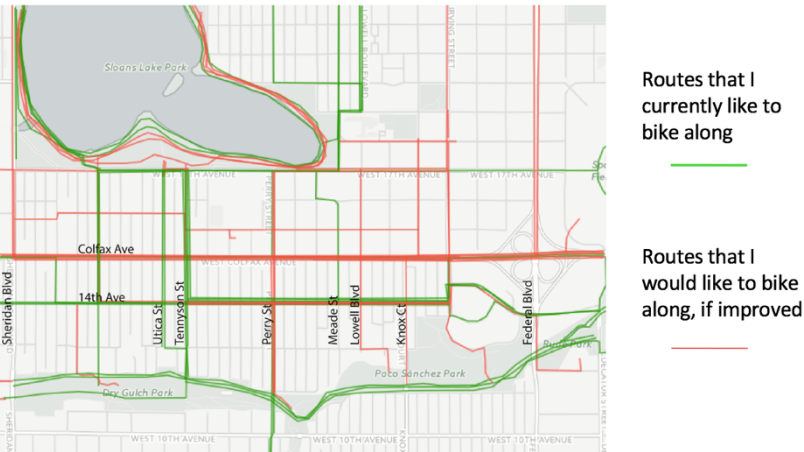
Keypad polling exercise at one of the community meetings

What routes do you or would you like to walk along?



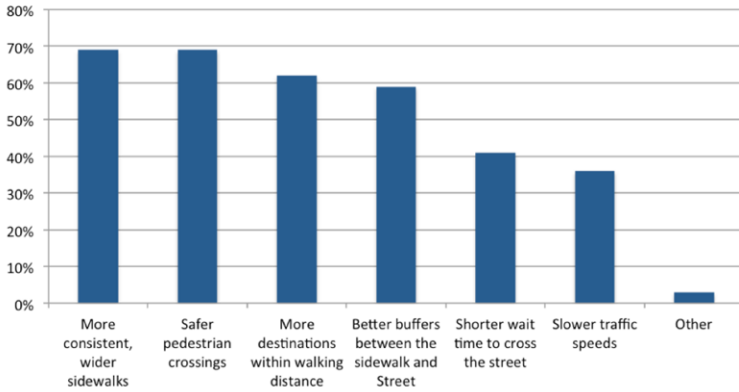
On June 11th, two community meetings were held during which approximately 46 West Colfax neighborhood residents and business owners provided input on design elements to include in the Reimagine West Colfax event, as well as to identify walking and biking routes and destinations in the neighborhood through a mapping exercise.

What routes do you or would you like to bike along?

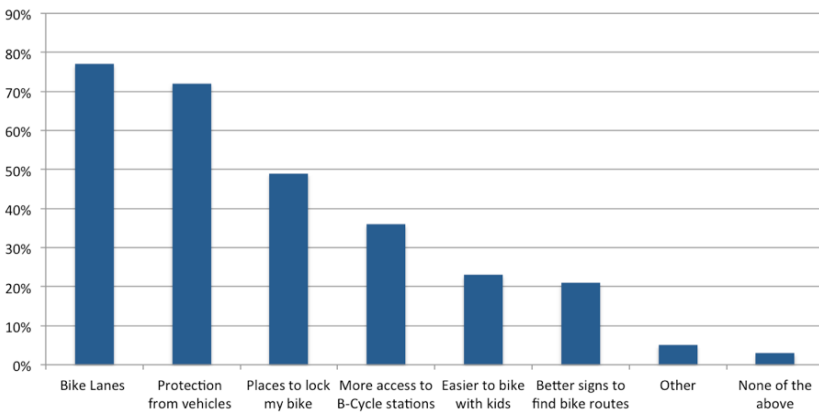


In the mapping exercise, participants used colored sticker dots and colored highlighters to map destinations and walking and biking routes on paper maps of the neighborhood. Streets with the most destinations (Colfax Ave and Sheridan Blvd) were identified by community members as the streets most in need of improvements to encourage walking and biking. Tennyson St was a preferred walking and biking route for many residents, and some other desired north-south routes marked as needing improvements include Utica, Stuart, Raleigh, Perry, Lowell, Knox, Julian, Irving, and Federal. It should also be noted that 14th Ave was marked as both a preferred biking and walking route and one that is in need of improvement.

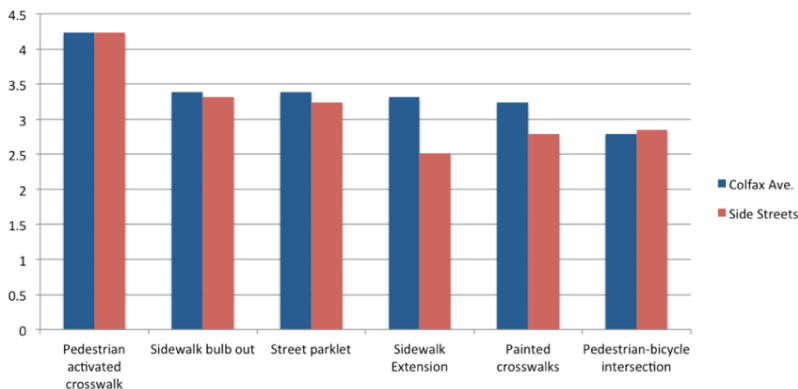
Factors to Encourage Walking



Factors to Encourage Biking



Design Element Ratings 1 (low) to 5 (high)



Community members also participated in a keypad polling survey in which they ranked factors to encourage walking and biking as well as potential design elements considered for demonstration at Reimagine West Colfax. Participants could rate design elements based on location (directly on Colfax Ave vs. on side streets, which includes intersecting north-south streets and parallel streets like 14th Ave). Consistent, wide sidewalks and safer pedestrian crossings were ranked as the most important factors to encourage walking. Bike lanes and protection from vehicles were ranked as the most important factors to encourage biking. Pedestrian-activated crosswalks and sidewalk bulb-outs were the design elements most highly ranked for both Colfax and side streets.

Illustrations of some of the different street design elements shown to survey participants:

PEDESTRIAN ACTIVATED CROSSWALK



- SAFER PEDESTRIAN CROSSING
- GIVES PRIORITY TO PEDESTRIANS
- IMPROVES WALKABILITY
- REDUCES SPEEDS

SIDEWALK BULB-OUTS



- CURB EXTENSION
- NARROWS ROAD
- REDUCES CROSSING DISTANCE
- STREETSCAPE IMPROVEMENT
- REDUCES SPEEDS
- IMPROVES TRAFFIC VISIBILITY

STREET PARKLET



- EXPANDED SOCIAL SPACE
- CREATES MORE SEATING
- DINING OPTIONS
- IMPROVES WALKABILITY
- STREETSCAPE IMPROVEMENT
- ATTRACTIVE

EXPANDED SIDEWALK



- SIDEWALK EXTENSION
- NARROWS ROAD
- REDUCES SPEEDS
- IMPROVES WALKABILITY
- IMPROVES TRAFFIC VISIBILITY



The block of Colfax between Tennyson and Utica was chosen as the location for the demonstration based on community input, opportunity to demonstrate design concepts that would be relevant to other parts of the corridor, and the presence of adjacent land owners with space appropriate for hosting the event. On June 26th, engineers, designers, and officials from Denver Public Works, CDOT, RTD, HDR, Alta Planning + Design, Toole Design Group, and Wilson & Company were convened to design a one-block demonstration that would include as many different pedestrian and bicycling infrastructure elements as possible (based on needs identified

through data collection and community feedback). The final design called for closing the outside two lanes of Colfax, leaving one vehicular lane in each direction, in order to create room for an expanded sidewalk, parklets, on-street (food truck) parking, and bulb-outs on the north side of the street. A planter-protected bike lane was later added to the plan for the south side of Colfax Ave. A vegetated median was included where the existing center turn lane is. New crosswalks were added at the intersection with Utica, and the WCBID logo was added as pavement art at Colfax and Tennyson. A protected bike lane was added to 14th Ave, with a conventional lane on Tennyson and a sharrow/neighborhood bikeway on Utica that included a diverter island at the intersection with Colfax (allowing through-movement for pedestrians and bicycles but not vehicular traffic).

Event layout*



*A protected bike lane on the south side of Colfax was later added to the plan and demonstrated during the event, as well as bulb-outs on the northwest & southeast corners of the intersection at Utica.

On Sunday, August 16th, a block of Colfax Ave between Tennyson St and Utica St was transformed into a celebration of livable street design. Participants enjoyed live music, food, and beer while testing out different street design elements. The demonstration was not intended to show what an actual redesign of Colfax Ave might look like, but to demonstrate a wide array of different elements that could be included in such a redesign, based on past data collected and on the input received during the community meetings. The main design elements are detailed below.



Pedestrian-Activated, Enhanced Crosswalks

High-visibility, colorful crosswalks were temporarily painted at the intersection of Colfax and Utica. The crosswalks also acted as pedestrian-activated crosswalks in that when a pedestrian was ready to cross Colfax, a signaler would stop traffic.



Parklets/Extended Sidewalks

A large parklet/extended sidewalk amenity zone was constructed in front of a building that will house a future Little Man Ice Cream location. The parklet included covered café seating and play space (with a giant checkerboard) and allowed users to experience how it would feel to have vertical separation as a buffer between traffic and an enhanced and expanded pedestrian realm.



Bike Infrastructure

A “Tour de Donuts” allowed participants to ride around the block testing out several different types of bike lanes and receive free Voodoo donuts as a reward. The bike lanes included a planter-protected bike lane on Colfax, a planter- and bollard-protected lane on 14th Ave, a conventional lane on Tennyson St, and a sharrow / neighborhood bikeway on Utica St.



Bulb-outs

Bulb-outs/curb extensions at the intersection of Colfax and Utica shortened crossing distances for pedestrians, increased visibility for both pedestrians and drivers at the intersection, served as a traffic calming mechanism, and created additional space for landscaping, seating, and a community feedback station for event attendees.



Pedestrian Median Refuge

A landscaped median replacing the existing center turn lane on Colfax served as an attractive traffic calming mechanism and created a pedestrian median refuge at the intersection of Colfax and Utica. Median-island refuges shorten pedestrian exposure time in intersections and allow them to cross halfway across a street, wait safely in the median, and then cross the rest of the way across the street.

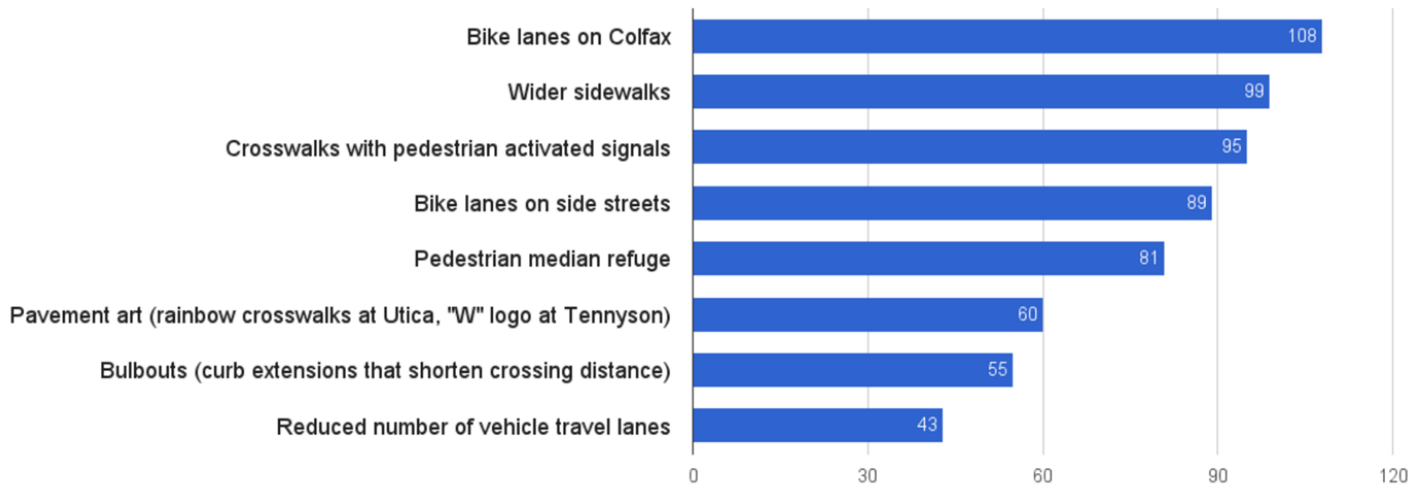


Public art

A large West Colfax BID logo painted at the intersection of Colfax and Tennyson and a wall mural painted on the side of a vacant building helped contribute to a sense of place and create visual interest.

In the community feedback surveys provided at Reimagine West Colfax, residents were given a checklist of the pedestrian and bicycle improvements that were demonstrated at the event and were asked to select the three that they felt would have the most positive impact on West Colfax Ave if implemented permanently. In all, 209 people completed the feedback survey. The results are summarized in the following chart:

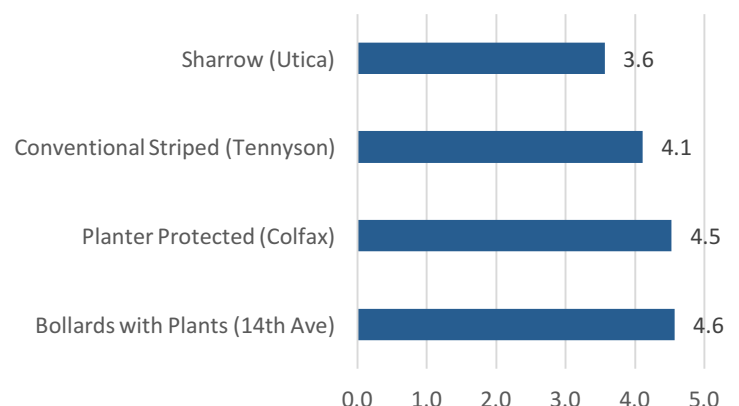
What THREE elements of today's demonstration do you think would have the most positive impact on West Colfax if they were made permanent?



Consistent with feedback received during the community meetings before the event, attendees highly favored wider sidewalks and crosswalks with pedestrian activated signals. However, unlike in the community meetings, bike lanes on Colfax were highly rated by respondents. Cyclists who participated in the “Tour de Doughnuts” rated the protected bike lanes (on 14th Ave and on Colfax) significantly higher than the conventional lane on Tennyson and the sharrow on Utica, which differs from the responses at the community meetings held before the demonstration, where conventional lanes were preferred. Overall, responses to all design elements were overwhelmingly positive, and some preferences changed before vs. after the demonstration.



Average ratings by bike lane types



Priority Intersections

Based on data collected and community feedback received before and during the Reimagine West Colfax event, the following priority intersections and recommendations were identified:

1 Colfax & Lowell Blvd



The intersection of Colfax and Lowell Blvd, currently an unsignalized intersection with no crosswalks, is a hotspot for accidents involving pedestrians and bicycles. Lowell Blvd was also identified through the community mapping exercises as a desired north-south walking and biking connection that needs improvement. Adding crosswalks, a median island refuge, bulb-outs on the south side of Colfax (where there is a parking lane), and traffic signals and/or pedestrian activated signals are some

options that could dramatically improve pedestrian safety.

2 Colfax & Utica St



The intersection of Colfax and Utica St is also an unsignalized intersection that lacks crosswalks. Utica St is a block from Colfax Elementary and is expected to see increased pedestrian activity as new businesses, including a new Little Man Ice Cream location, move in. It was also identified by community members as a route that they like to or would like to walk or bike along to get to Sloan's Lake. Adding crosswalks, a median-island refuge, bulb-outs on the north side of Colfax, and traffic signals and/or pedestrian activated signals are some options that could

make the intersection safer.

3 Colfax & Knox Ct



The intersection of Colfax and Knox Ct, although a signalized intersection with crosswalks, is a high priority intersection due to its location in the middle of a high-accident stretch of the corridor and due to the higher pedestrian counts observed at the intersection. The intersection is a safety hazard for children crossing Colfax to get to nearby Cheltenham elementary and for people traveling to the Knox Ct light rail station to the south. In the community mapping exercise, Knox Ct was identified as a

street that people would like to walk along, if improved. The WCBID is already spearheading efforts to improve this intersection, with plans to add art to the existing zebra stripe crosswalk, and is advocating for near-term implementation of a low-cost version of bulb-outs involving paint, large planters, pots, rocks or other elements to provide a buffer between traffic and pedestrians. A median refuge could also be feasible, particularly on the west side since there is no need for a left-turn lane there.

Additional Recommendations

The following recommendations are not a comprehensive list of strategies for improving West Colfax Ave, but are some of the major changes that could be made to address the needs identified through data collection and community feedback. They are not listed in any particular order.



A rare instance of a landscaped median and street trees along West Colfax adjacent to the new Renaissance West End Lofts

Install street trees and landscaping along the entire corridor

Temporary street trees and landscaping demonstrated at Reimagine West Colfax was well-received, both for its aesthetic value and because it served as a buffer between pedestrians and traffic. Currently, street trees and other amenities are almost absent on Colfax Ave between Federal and Sheridan. Waiting for these amenities to be added as properties redevelop will not produce a consistent, high-quality streetscape in a reasonable time period. Thus, funding sources and strategies for installation of landscaping and other amenities along West Colfax Avenue should be identified.

Construct median-island refuges where feasible

At intersections with low-traffic volume streets where left turning lanes are not warranted, crosswalks with pedestrian median island refuges could be installed and be paired with pedestrian-activated signals (such as HAWK signals). The median islands should include landscaping and other vertical elements to increase visibility and protect pedestrians. At signalized intersections where left-turn lanes are included, a thin median strip extending out through the crosswalk might be feasible.



Pedestrian median-island refuge in San Francisco



Colfax and Irving existing condition

Install traffic calming at Colfax and Irving

The intersection of Colfax and Irving St is a signalized intersection with crosswalks, but it is one of the most dangerous intersections along the corridor, which is particularly concerning given its proximity to Cheltenham Elementary, the new “Corky” Gonzales Library, and existing and potential new development. Irving St is the first signalized intersection that drivers encounter as they come off of the Colfax viaduct, which is designed as a limited

access freeway that promotes high speeds. Improvements to this intersection could include: traffic calming measures (such as speed humps or raised crosswalks); extension of existing median strips out into the crosswalks; more visible, enhanced crosswalks; enhanced signage to alert drivers of potential conflicts with pedestrians; and elimination of the right-turn lane from Colfax onto Irving St and replacement with a curb-extension. Also, a redesign of the Colfax/Federal interchange (see below) could help calm traffic before it reaches this intersection.

Construct bulb-outs where feasible

On sides of Colfax with on-street parking, bulb-outs at intersections could be added to shorten crossing distances, increase visibility for pedestrians and drivers, and serve as traffic calming. Ideally, bulb-outs will include landscaping and other amenities, such as benches, bicycle parking, trash cans, etc. Low-cost bulb-outs created with paint, potted plants, and other objects could be installed in the short-term, limiting the need for reconstruction of curbs and stormwater drainage.



A painted bulb-out on Baltimore Pike in Philadelphia



Sidewalk expansion under construction in Cincinnati

Study feasibility of expanding sidewalks

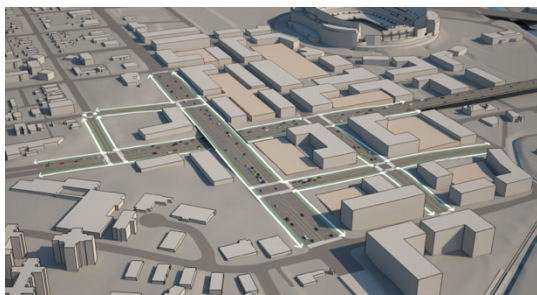
Explore the potential for expanded sidewalks along Colfax. Expanding sidewalks may require adjustments to lane widths or counts or expansion of the right-of-way. However, expanded sidewalks might be possible without these adjustments on “transition” blocks where on-street parking switches from the north to the south side of the street (b/w Lowell Blvd and Meade St, b/w Perry St and Quitman St, and b/w Tennyson and Utica).

Add new and improve existing bike facilities

East-west bike facilities parallel to Colfax Ave are several blocks away, and participants in Reimagine West Colfax highly ranked both Colfax Ave and adjacent side streets (like 14th Ave) as potential locations for protected bike lanes. Also, north-south biking infrastructure is lacking in the neighborhood. Perry St, Lowell Blvd, and Knox Ct were identified as desired bike routes in need of improvements. In addition, improved lighting, signage and wayfinding could improve experiences on existing bike facilities along the Lakewood Gulch Trail, Sloan’s Lake, and 17th Ave.



Planter-protected bike lane



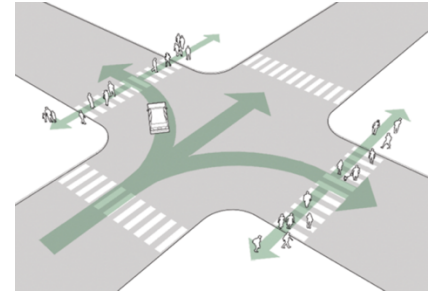
The “Re-establish Grid” alternative identified by the Colfax & Federal Interchange Study (2012)

Pursue design alternatives for Colfax/Federal interchange

The Colfax and Federal interchange occupies 27 acres of land at the gateway to the West Colfax neighborhood, and it is a massive barrier for multi-modal connectivity between West Colfax and downtown. Alternatives recommended by the Colfax and Federal Interchange Alternatives Study, such as an at-grade intersection, a re-established grid, a modified partial cloverleaf, or a tight diamond should be further studied and prioritized.

Adjust signal timing to give pedestrians priority

Long wait times (averaging 40 seconds) for pedestrians at signalized intersections were identified by the 2009 West Colfax Corridor Study as a major barrier to pedestrian convenience and safety (as it encourages pedestrians to cross at dangerous mid-block locations or against traffic signal indications). Shortening traffic signal phases and lengthening walking signal phases could reduce delays for pedestrians at intersections and give slower moving people enough time to safely cross Colfax. Having leading pedestrian intervals would also increase safety by giving pedestrians a head start and helping to ensure turning vehicles yield to pedestrians in the crosswalk.



NACTO Illustration of leading pedestrian interval



On-street parking on West Colfax is only on one side of the street, and some blocks have no on-street parking.

On-street parking will increase. The current underutilization of parking on some stretches of West Colfax may also have to do with the street’s design as a high-speed commuter corridor with little real or perceived protection for parked cars. Adding bulb-outs, street trees, and other street furniture could help give the street more of a sense of enclosure, calm traffic speeds, and generally make drivers more comfortable parking on Colfax. Additionally, parklets or bike corrals could be installed in parking lanes to liven them up and increase the walkability and bikeability of the corridor. Finally, any proposals to add on-street parking to Colfax should be examined in conjunction with bike infrastructure alternatives.

Study options to improve utilization, distribution, and quantity of on-street parking

Currently, on-street parking on West Colfax is unevenly distributed and inadequate in some locations. On-street parking switches from one side of the street to the other as one moves along Colfax between Federal and Sheridan, and many business owners have expressed a desire to have more convenient on-street parking adjacent to their businesses, preferably on both sides of the street if possible. Though parking on West Colfax is currently underutilized in some locations, as new businesses open and new development happens on West Colfax, demand for on-