



ENHANCED BIKEWAYS TREATMENT EVALUATION STUDY

PRELIMINARY FINDINGS: THE HIGHLIGHT REPORT



INTRODUCTION

Enhanced Bikeways Treatment Evaluation Study

This Preliminary Findings Report evaluates Denver's protected bikeways on Lawrence and Arapahoe Streets using 22 metrics developed from the project goals related to safety, functionality, and community input. The information gathered through this study will be used to inform future design of protected bikeways in Denver.

In 2011, the City and County of Denver (CCD) established a bold vision of implementing an enhanced bicycle network in *Denver Moves Bicycles*. This plan identified physical and operational changes to streets in Downtown and throughout the City. Subsequently in 2016, CCD released a "Next Steps" plan, as part of *Denver Moves Bicycles*, that identified a network of enhanced bikeways for Downtown and key corridors that connect Downtown to nearby neighborhoods and other citywide destinations. Enhanced bikeways are designed to accommodate all types of bicycles and include protected bikeways.

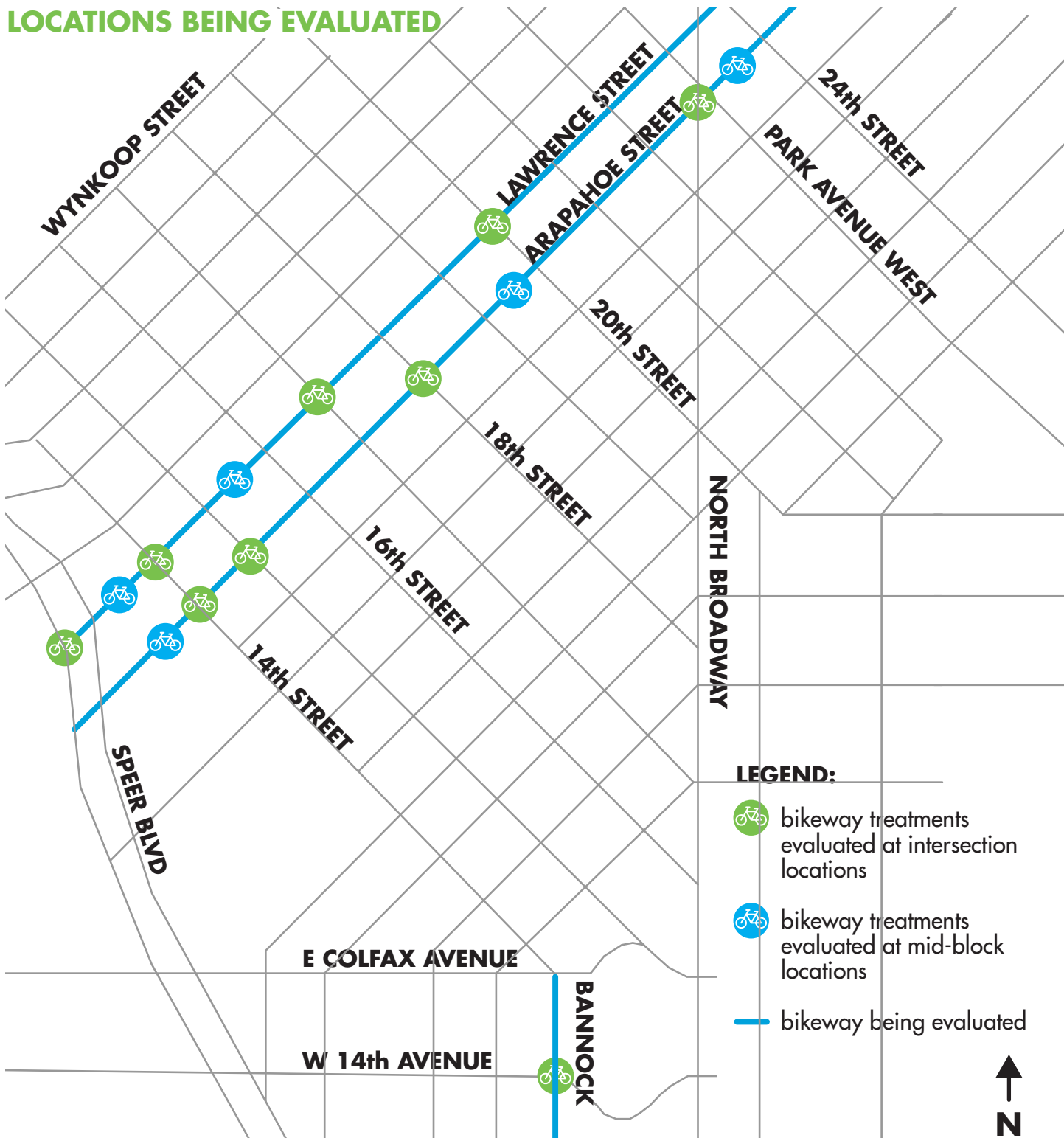
The purpose of this project is to understand more about Denver's enhanced bikeways and their specific design treatments. In August, September, and November of 2016, the project team collected the first round of data. The data being collected for the study is defined by the project goals and performance metrics established during a "Partnering Workshop" that took place early on with key stakeholders; Bicycle Colorado, Bike Denver, Auraria Higher Education Center, Walk Denver, Downtown Denver Partnership, and CCD staff. This project evaluates several of the different design elements (see list below) implemented along the Lawrence and Arapahoe Street parking enhanced bikeways and the bicycle signal at 14th Avenue and Bannock Street:

- Vehicle parking and loading compliance
- Bicycle and vehicle signal compliance
- Intersection approach functionality
- Floating bus islands
- Intersection treatments
- Contra-flow bike lane segment

In addition, in 2016 three different surveys were deployed to gather public input pertaining to the bikeways and are noted below and on the back cover:

- Downtown Denver Commuter Survey: Given by Downtown Denver Partnership electronically to all Downtown Denver Employees
- Enhanced Bikeways Evaluation Study Online Survey: Deployed by CCD electronically to project stakeholders
- Enhanced Bikeways Evaluation Study Intercept Survey: Given in the field to bikeway users and pedestrians along project corridors

LOCATIONS BEING EVALUATED



10 Days of data collection in the AM/Noon/PM peak hours

14 Observation locations

168 Total hours of field data collected

4,328 Total bicycles observed during the study

PROJECT GOALS

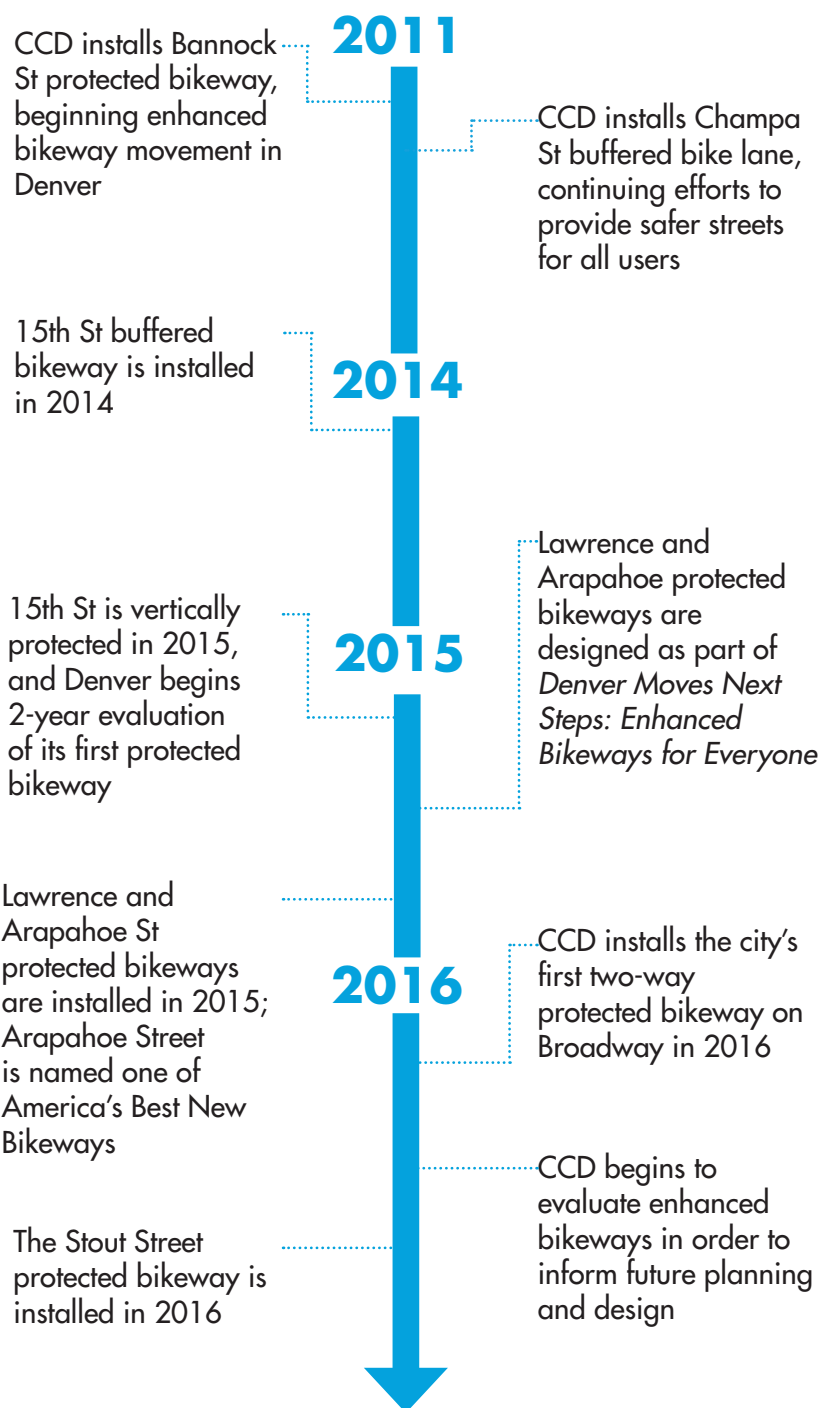
-  Understand safety along the protected bikeways
-  Understand how protected bikeways are being used
-  Understand community opinions about protected bikeways
-  Understand the economics of protected bikeways

METRICS

-  Public perception of safety
Avoidance maneuvers
-  Signal compliance - all modes
Parking compliance
Loading zone compliance
Bicycle riding location
Bicycle volumes
Bicycle demographics
Parking utilization
Loading utilization
-  Community input
User input
Commuter input
-  Business owner input
Retail sales tax

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TIMELINE OF DENVER'S ENHANCED BIKEWAYS





HOW IS USAGE CHANGING ALONG THE BIKEWAYS?

Comparison of annual count data suggests more people are using the protected bikeways since being implemented.



128% change in people riding bicycles on Arapahoe St between 13th St and 14th St after the protected bikeway was implemented.



135% change in people riding bicycles on Lawrence St between 19th and 20th St after the protected bikeway was implemented.



WHO IS USING THE BIKEWAYS?

This study observed users of all ages and abilities utilizing the bikeways on a variety of modes.



76% males



23% females



1% families



The enhanced bikeways are being used by a variety of users and modes

- People of all ages and abilities
- People riding bicycles and riding skateboards
- People walking and running
- People in wheel chairs
- People on one-wheels
- People in cars (including Transportation Network Companies (TNCs) and taxis)
- People on motorized scooters



HOW ARE PEOPLE USING THE BIKEWAYS?

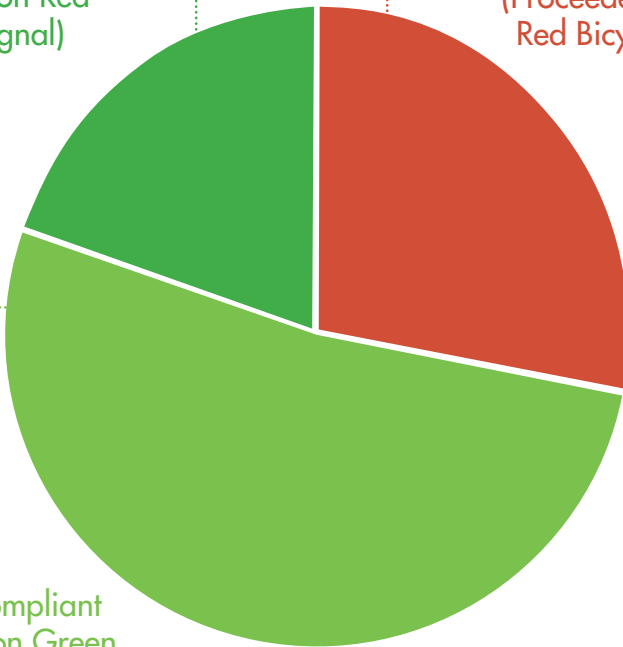
Compliance was studied among parked cars, as well as bicycles and vehicles at signalized intersections.

Bicycle Signal Compliance - 18th & Arapahoe

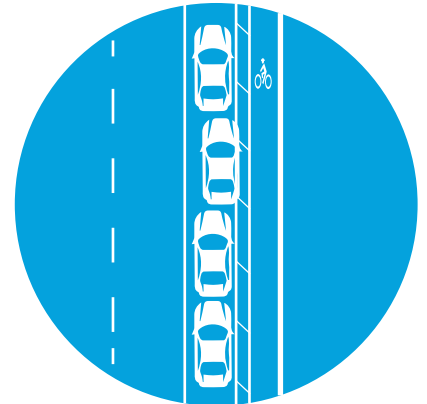
23% Compliant
(Waited on Red
Bicycle Signal)

33% Non-Compliant
(Proceeded Through
Red Bicycle Signal)

44% Compliant
(Arrived on Green
Bicycle Signal)



Parking Compliance



75% of cars parked centered (horizontally) in the parking space. The remaining **25%** of cars parked on the street, parked (at least partially) in the bikeway, buffer zone, or on the buffer line.



31% of right-turning vehicles at Arapahoe & 18th did not comply with the red arrow, proceeding through when the arrow was red.



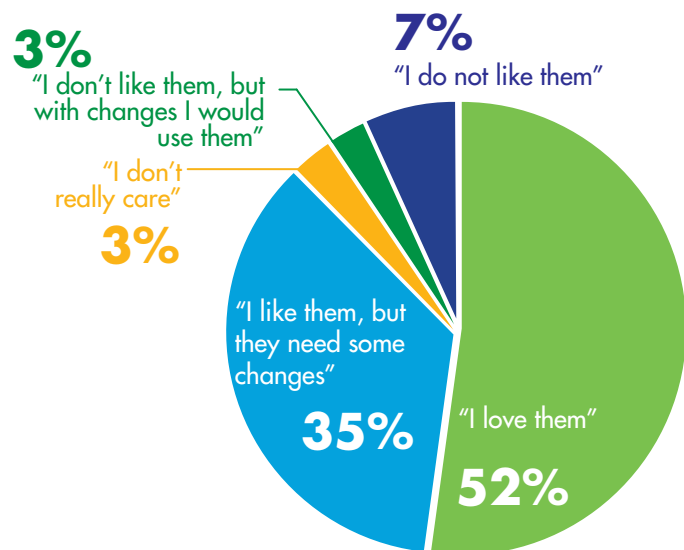
WHAT DO PEOPLE SAY ABOUT THE BIKEWAYS?

Three surveys were distributed publicly in order to collect community input. 7,978 total responses were gathered.

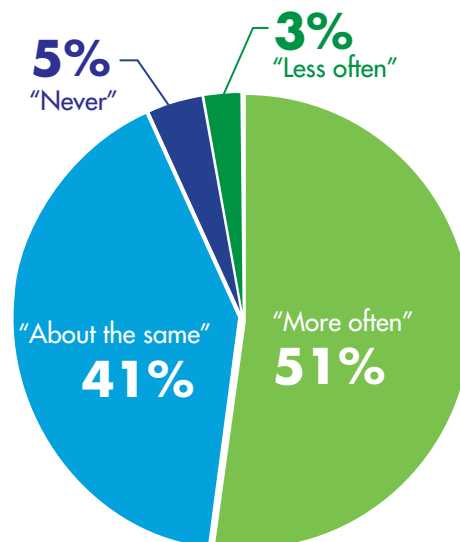


83% of online respondents agree that the enhanced bike lanes are safer than conventional bike lanes.²

Overall, what is your general reaction to the Lawrence and Arapahoe enhanced bikeways?¹



Since the implementation of the Lawrence and Arapahoe bikeways, do you ride the corridor?²





When asked, "What is the best thing about the enhanced bikeways?"²

- 1. Safety**
- 2. Separation from Traffic**

This document is an interim report. The numbers and statistics are preliminary and will change with additional data collection taking place in 2017. This report does not include all observed and collected data. The project team intends to draw conclusions and make recommendations only after all data has been collected and analyzed.

THIS STUDY LIVES ON AT:

<https://www.denvergov.org/content/denvergov/en/bicycling-in-denver/planning/enhanced-bikeway-study.html>

ENDNOTES:

¹ Downtown Denver Partnership, Inc., Downtown Denver: The Way We Move, Results of the Downtown Denver Commuter Survey (Denver: 2016)

² City and County of Denver, Enhanced Bikeways Evaluation Study: Online Survey (Denver, 2016)

³ City and County of Denver, Enhanced Bikeways Evaluation Study: Intercept Survey (Denver: 2016)