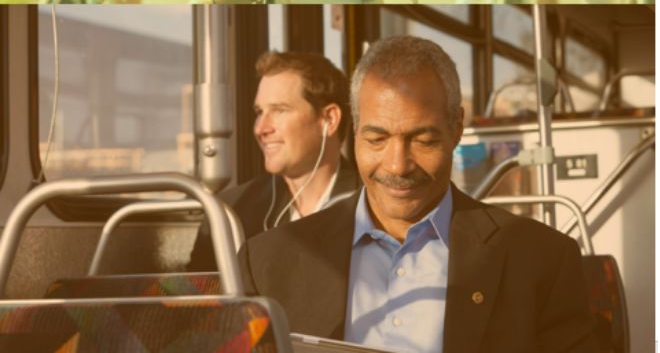
2022 Transportation Demand Management (TDM) Conference
Breakout Room 158

Video Link: https://www.youtube.com/watch?v=paw265pksZ0

Contents

Session 1.1: Improvement in TDM Inclusion and Understanding: **Lessons Learned from TDM Inclusion in Local Government Codes**

Audrey DeBarros



CDOT TDM Conference

November 4, 2022

Lessons Learned from TDM Inclusion in Local Government Codes

Commuting Solutions

Advocate.

Educate.

Innovate.

Ride.

Commuting Solutions

Nonprofit Transportation Management Organization (TMO) for the northwest metro region

Founded in 1998

Mission: ***we connect people to places in the northwest metro region today and for the future.***

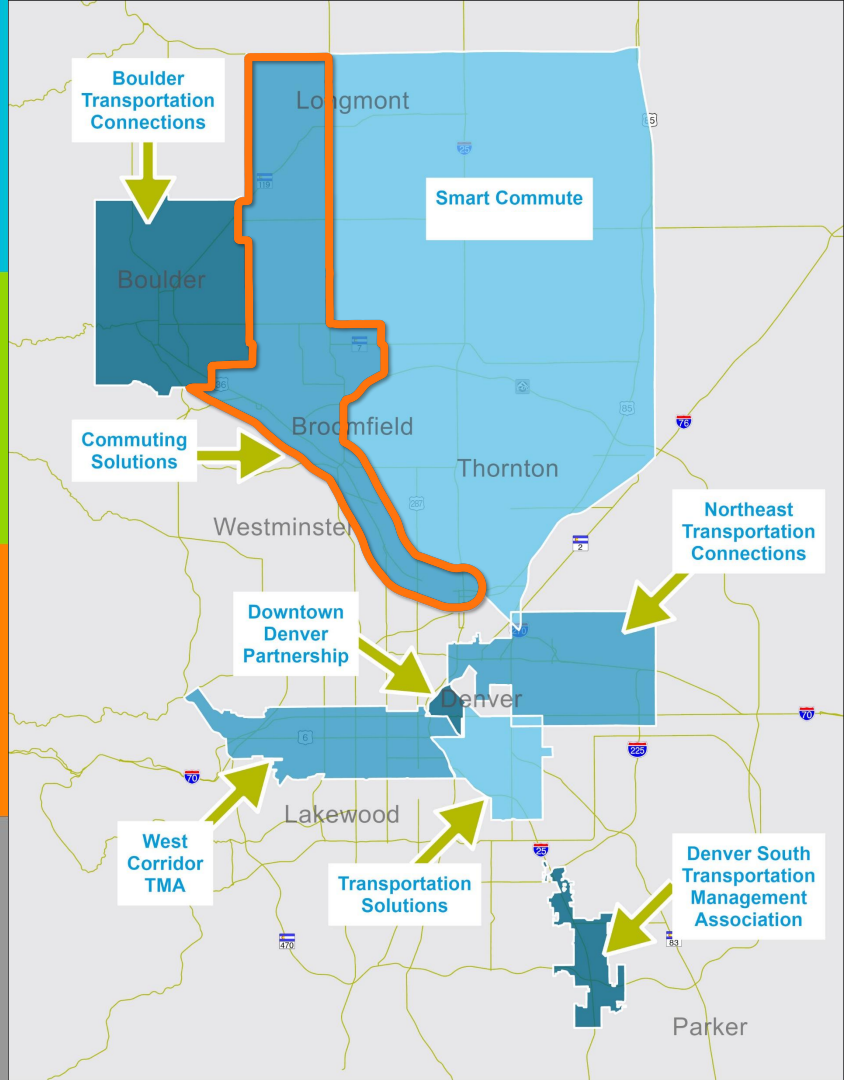
Partner in the DRCOG Way to Go TDM Partnership with 7 TMOs

Advocate.

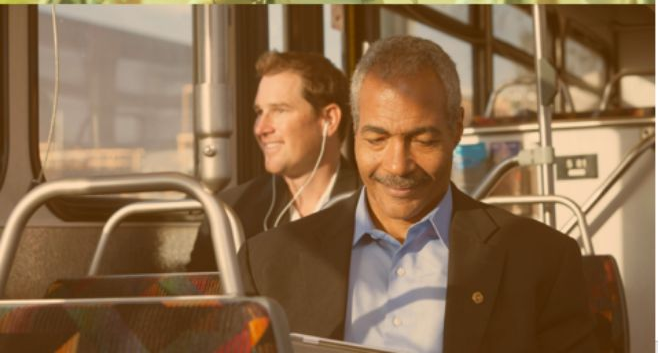
Educate.

Innovate.

Ride.



About Commuting Solutions



NW TDM Toolkit Project Purpose

- Support jurisdictions implement TDM for new development using their existing code.
- Make regional recommendations for TDM implementation methods using existing codes, including discussion of the potential for more robust guidance, implementation, and enforcement.
- Prepare a region-wide toolkit that can be given to developers interested in implementing TDM in their projects.

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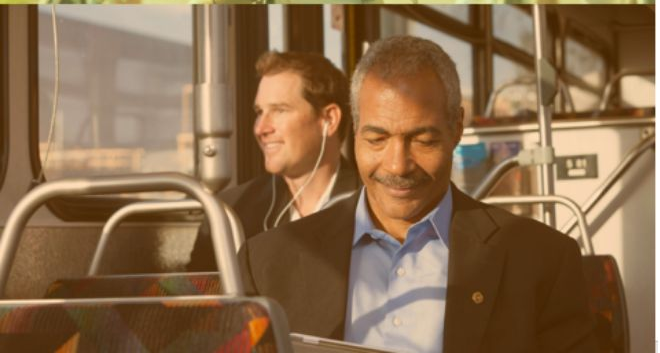

Process and Data Gathering

Interview jurisdictions and comb their parking codes for TDM-supportive language:

- City of Boulder
- Boulder County
- Town of Superior
- City of Louisville
- City and County of Broomfield
- City of Westminster
- City of Lafayette
- Town of Erie
- City of Longmont

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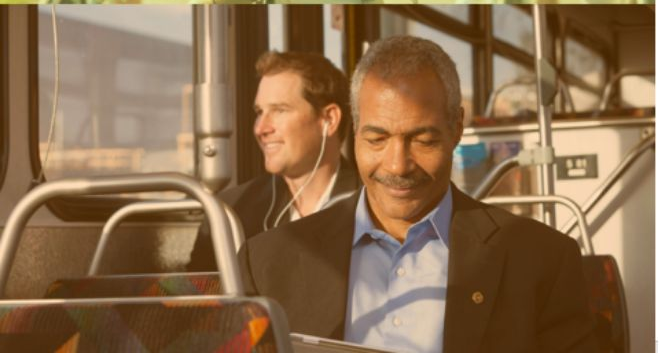

Data Gathering

TDM-supportive language and what we looked for:

- Parking maximums and lower minimums
- Minimum bicycle parking requirements
- Parking reductions for proximity to transit
- Shared parking/parking management

Source: RTD

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Data Gathering

TDM-supportive language and what we looked for:

- Requirements for transit amenities
- Requirements for pedestrian or transit-oriented design
- Programmatic TDM measures
- TDM plan requirements

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Findings and Themes

Strengths

- Leadership across jurisdictions is generally amenable to a more multimodal future, including policy changes to support TDM.
- Mixed use developments are being planned to integrate and support existing and future transportation options.
- Support for TDM programs provided by Boulder Transportation Connections, Commuting Solutions, Smart Commute Metro North, and DRCOG.

Weaknesses

- Existing TDM plan requirements from past developments are a challenge to enforce.
- Worsened by the pandemic, transit service can be sparse or difficult to connect to in some communities.
- Historically suburban land use patterns are an inherent challenge to traveling without a car.

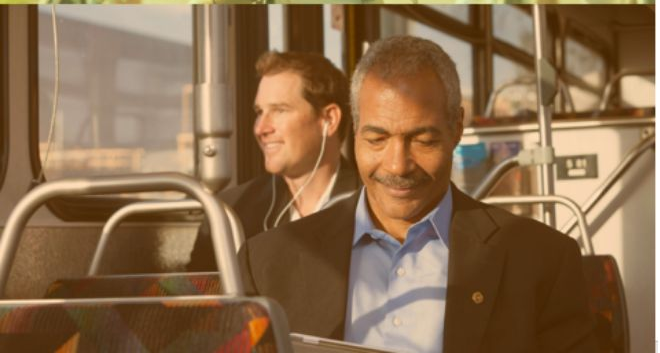
Findings and Themes

Opportunities

- The area is ripe to set the stage for more robust regional TDM regulation in the future.
- Regional collaboration can help align priorities for funding and TDM to benefit everyone.
- Many developers want to build less parking and provide TDM strategies but there is often inconsistent guidance for TDM and unknown impacts.

Threats

- Fear of pre-covid transit service not being restored.
- Some public opposition to new mixed-use developments and their perception to increase congestion.
- TDM in existing low-density areas may vary in effectiveness.



Additional Considerations

- Are there existing plans to provide a policy basis for requiring TDM?
- Can targets be matched to local or regional goals?
- How are different land use contexts more or less TDM-supportive?
- What policies are most effective for different project types?
- How can monitoring and compliance be integrated? Is policy change required?

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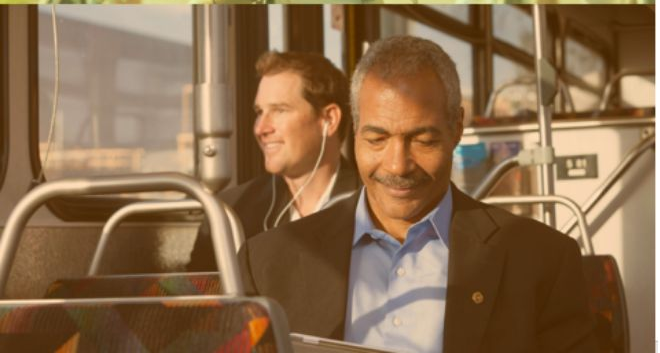

Lessons Learned

- All jurisdictions are open to these conversations, and many have been having them internally.
- Align discussions with public and city leadership around TDM outcomes (e.g., transportation choice, quality of life, traffic reduction, and affordability)
- A TDM toolkit should estimate TDM strategy impact and account for land-use context. Creates predictability for developers and manages expectations for jurisdictions.
- A regional toolkit can't be too prescriptive. There is a balance between producing something useful ***and*** relevant.
- Pursue regional advancements towards TDM and showcase the cost savings for developers.

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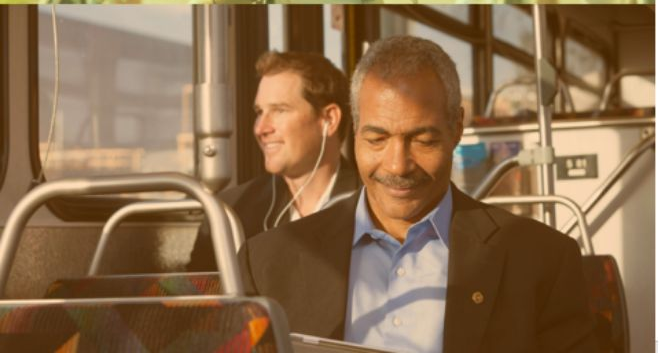

Next Steps

- Toolkit Development and finalization
- Debriefing meetings with all jurisdictions
- Vet possibility for future model regulation or policy changes

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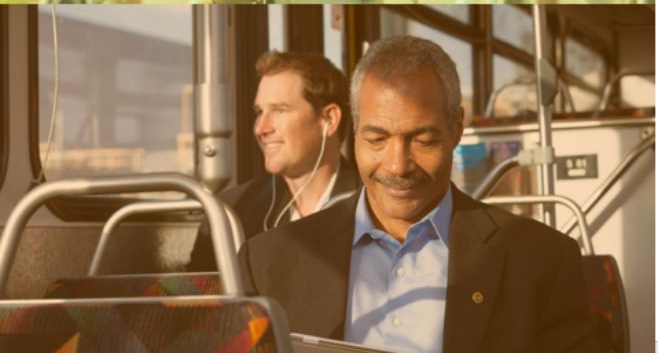

Contact Us

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Session 1.2: Improvement in TDM Inclusion and Understanding: **Building a Multi-level TDM Guide for the City of Boulder**

Andy Keeton

Presentation consisted of an overview of the Multi-level TDM guide that shows transportation options for the City of Boulder which can be at: https://cam.commutifi.com/area/boulder

Session 1.3: Improvement in TDM Inclusion and Understanding: **Smart Commute's Suite of Flexible Micro-Transit & Mobility Options**

Jeanne Shreve

Smart Commute's Suite of Flexible Micro-Transit & Mobility Options

Supporting Underserved Workforce Needs in Suburban Settings

November 4, 2022

Session I: Improvement in TDM Inclusion & Understanding
2022 Transportation Demand Management, Second Annual Conference

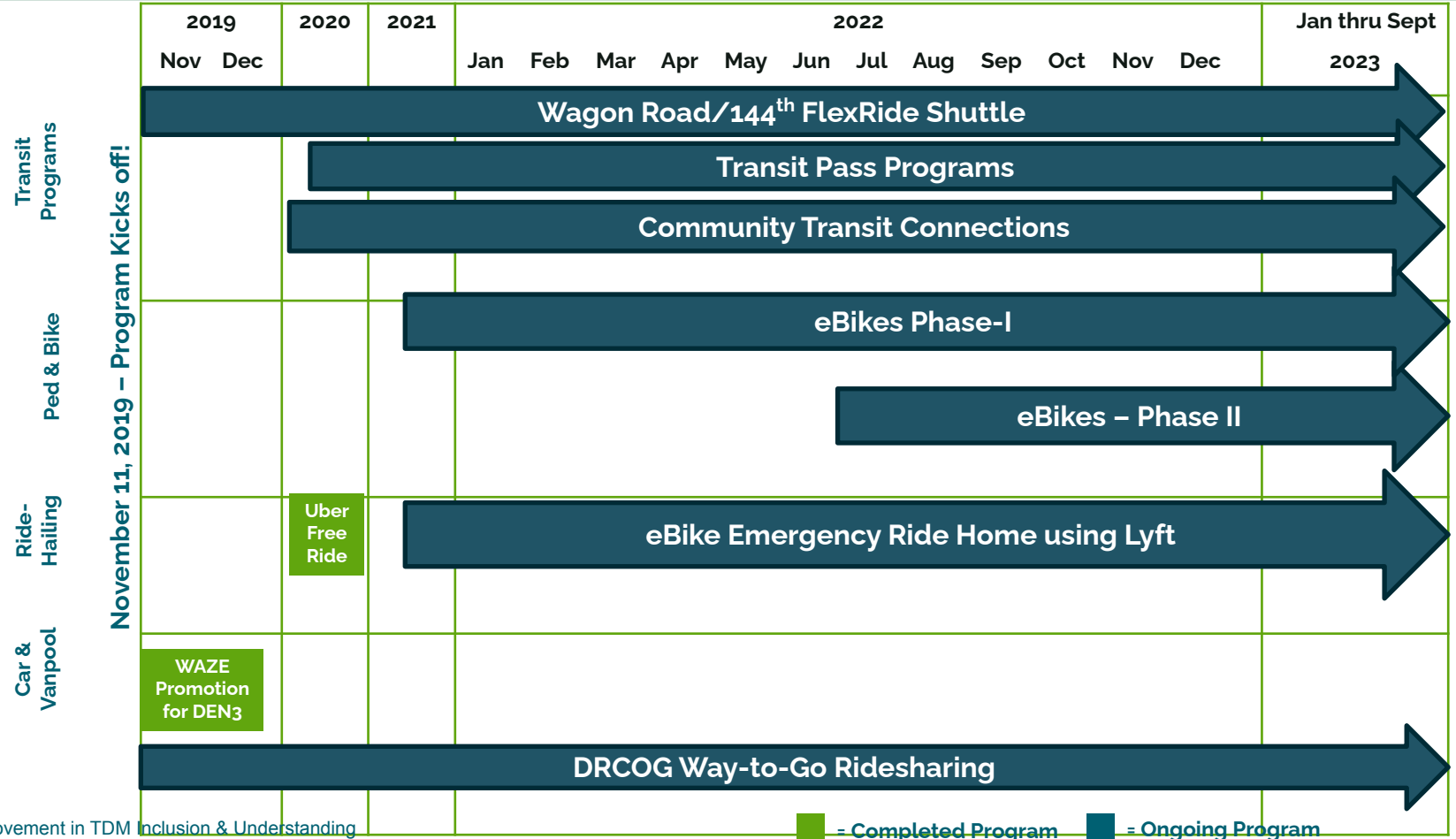
Agenda

- **Program Overview**
- 144th FlexRide Shuttle Highlights
- Uber Free Ride Program
- eBike Program
- Key Lessons Learned

Overview of Program

- **DRCOG Funding approved August 2019 w/ program kick-off November 2019**
- **4-year grant promotes mobility options for workforce at 144th & I-25**
  - The grant allows flexibility to add or change mobility options to meet the needs of the area's shiftworkers and residential communities.
  - Some geographic leniency is allowed to expand the service area to nearby businesses and residential communities, or to connect to new transportation alternatives, such as the N-Line that opened in 2020
  - **2022**
    - **Potentially expand 144th FlexRide coverage to the N-Line**
    - **Enhance all FlexRide connections in the north area**
- **$2 million Budget (80% / 20% split between federal & local match)**
  - $1.6 million Federal Funds or $400k per year
  - $400k in Local Match or $100k per year
    - Annual $100k local match comes from local jurisdictions, RTD, & private sector businesses.

Program Timeline



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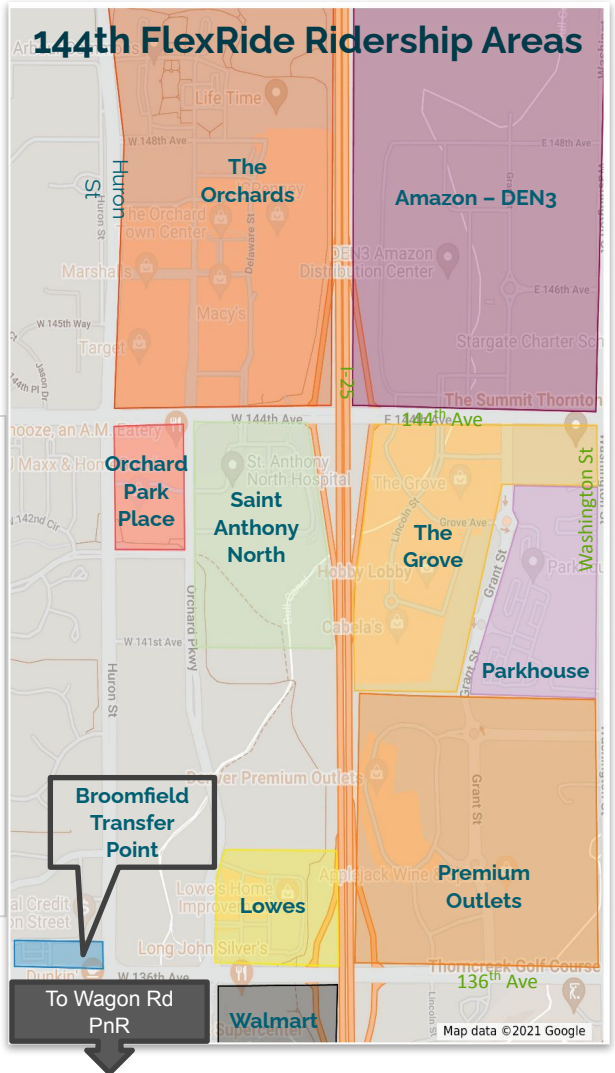
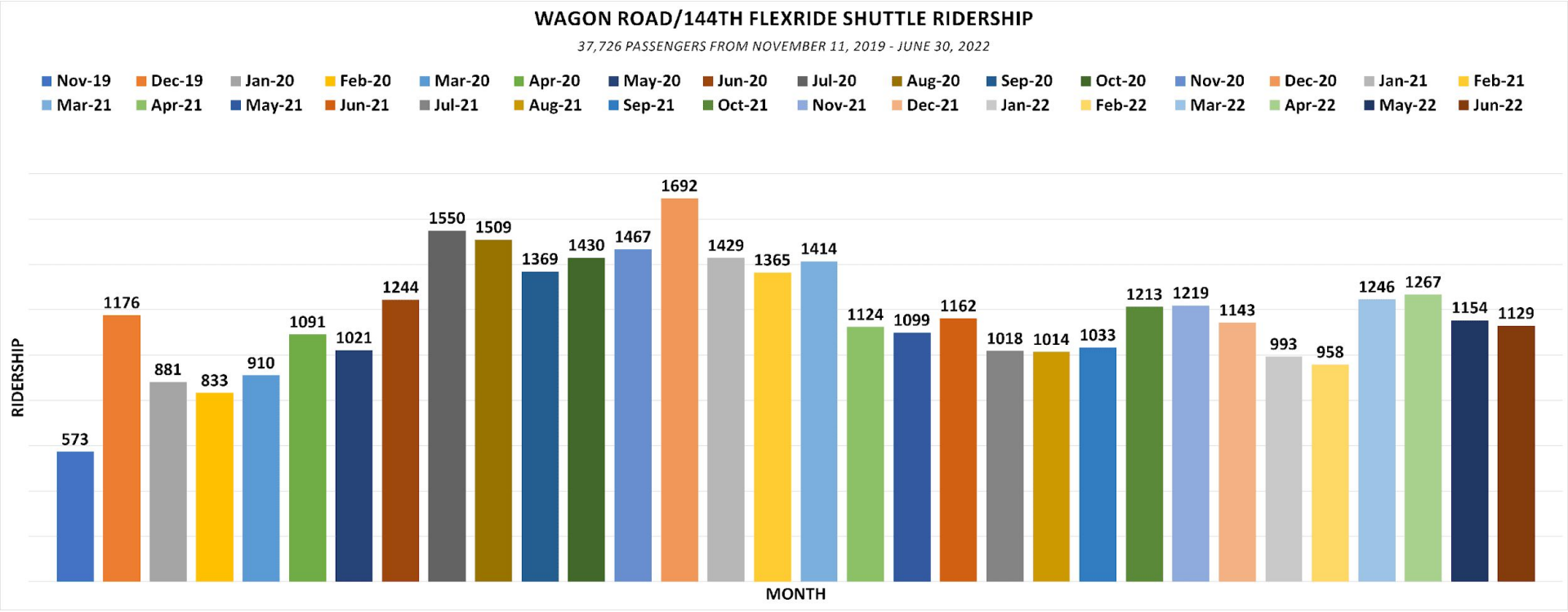
144th FlexRide Shuttle Highlights

Most Popular Stops

1. Wagon Road PnR
2. Amazon - DEN3
3. Saint Anthony North
4. Parkhouse Apartments
5. The Grove
6. Premium Outlets
7. The Orchards
8. Orchard Park Place
9. Lowes
10. Walmart
11. Broomfield Transfer Point



144 FLEX Shutte Data



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- Program Overview
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- **Uber Free Ride Program**
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Uber Ride Ride Program

SMART COMMUTE METRO NORTH

15TH ANNIVERSARY DRMAC Denver Regional Mobility & Access Council

Uber Free Rides

The Denver Regional Mobility and Access Council (DRMAC) is partnering with Uber to provide up to 2,500 free rides throughout the Denver Metro area now through June 30, 2020.

Smart Commute is one of several agencies distributing the free tickets to help individuals with transportation challenges.

How the Program Works:

- Ticket is good for a one-way ride, up to $25
  - If cost of trip is more than $25 rider pays the difference
  - If cost of trip is less than $25 rider forfeits the remaining value
- For funding purposes riders will need to provide the following information to Smart Commute for each one-way ride:
  - Name/address/phone and email
  - Trip purpose
  - Origin of trip
  - Destination of trip
  - (Optional) U.S. Military/Medicaid recipient
- Riders may request tickets for roundtrips

The Program is directed towards individuals and families needing transportation for critical trips. Given the limited workforce transportation opportunities in the north area, Smart Commute would like to first target distribution of the Uber tickets for employees needing to get to-and-from work. However, tickets can be used for critical trips for grocery shopping, medical trips, etc.

Smart Commute is requesting your HR staff distribute this information to Supervisors and Associates about the Uber Free Ride opportunity.

Contact Smart Commute for more information and tickets: 720.263.0106

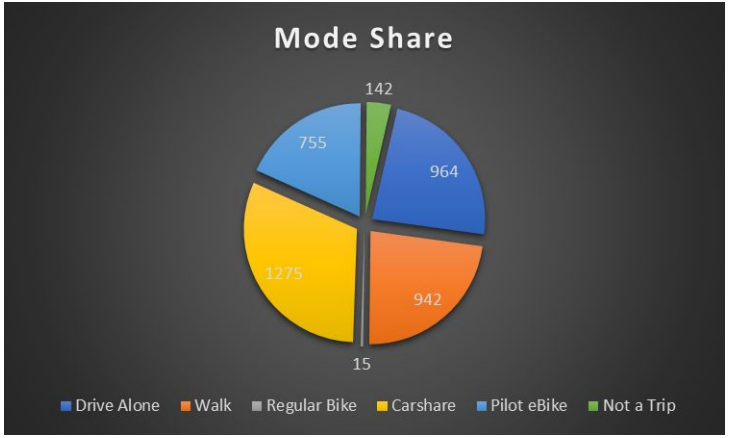
Agenda

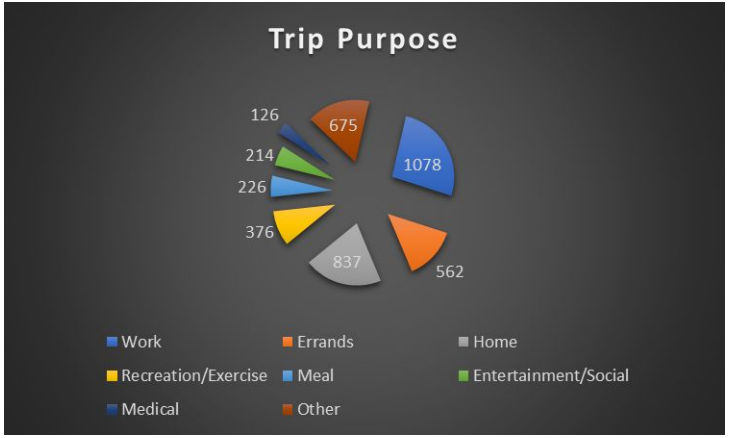
- Program Overview
- 144th FlexRide Shuttle Highlights
- Uber Free Ride Program
- **eBike Program**
- Key Lessons Learned

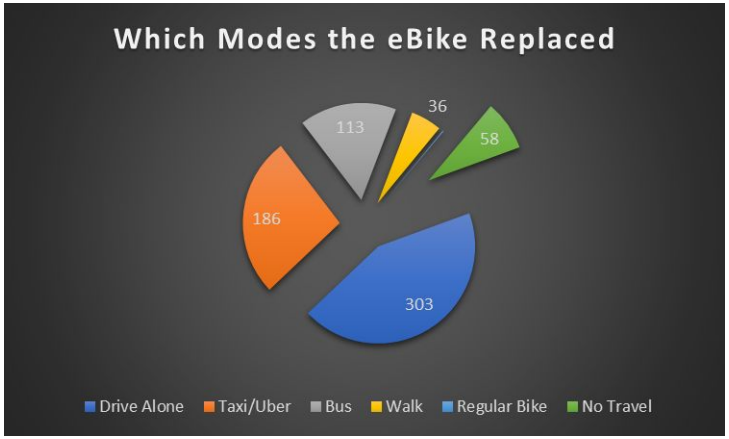
Can Do Colorado eBike Program 2021-2023

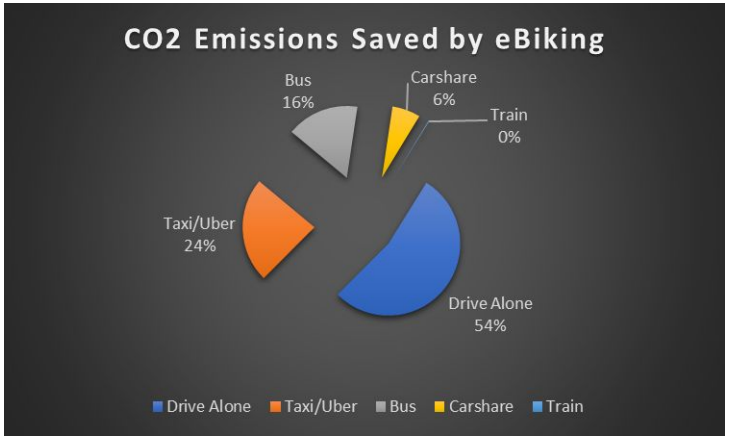
- *Can Do Colorado eBike Program* Budget: $149k
- Initial Funding Sources
  - Phase-I Funding for 10 Participants
    - $50k in Colorado Energy Office – for eBikes, basic accessories, and mandatory eBike safety & operations training, staff time
  - Phase-II Funding
    - $79k in RTD funding
    - $20k Smart Commute local match fund
  - What it pays for:
    - eBikes and accessories
      - 30 upright eBikes
      - Up to 5 Recumbent/eTrikes for adaptive use
    - Training & eBike maintenance
  - Incentives (tune-ups, gift cards, etc.)
  - Staff time
- Additional funding provided by the Colorado Community Action Association

eBike Data


Mode Share
142
755
964
1275
942
15
Drive Alone
Walk
Regular Bike
Carshare
Pilot eBike
Not a Trip


Trip Purpose
126
675
214
1078
226
376
837
562
Work
Errands
Home
Recreation/Exercise
Meal
Entertainment/Social
Medical
Other


Which Modes the eBike Replaced
36
113
58
186
303
Drive Alone
Taxi/Uber
Bus
Walk
Regular Bike
No Travel


CO2 Emissions Saved by eBiking
Bus
16%
Carshare
6%
Train
0%
Taxi/Uber
24%
Drive Alone
54%
Drive Alone
Taxi/Uber
Bus
Carshare
Train

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- Program Overview
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- eBike Program
- **Key Lessons Learned**

Lessons Learned

- *Technology*
- *Planning & Implementation*
- *Hands-on customer service is essential*

Session 2.1: Generational Gap and TDM Challenges: **Essential Workers & Generational Gap**

Erica Denney

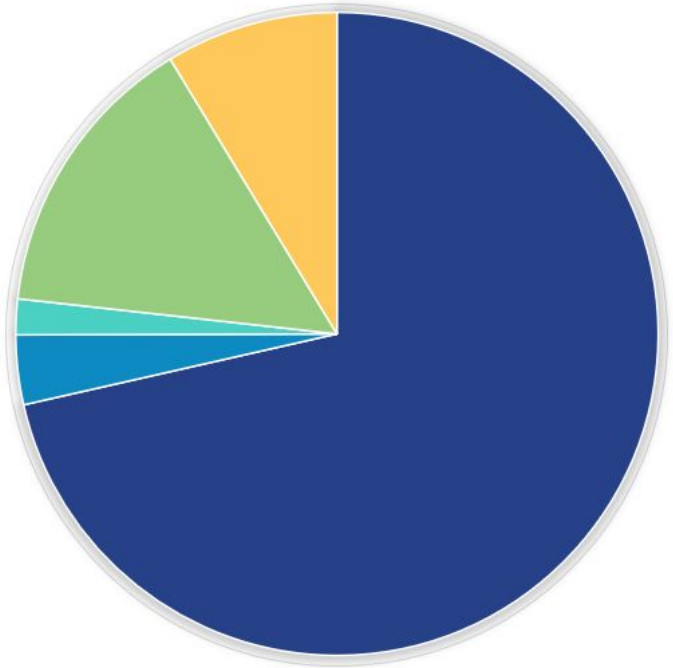
Essential Workers – Trucking

Percentages of Freight Moved - Nationally

Commodity Flow by Mode	2017
Trucking	71.6%
Air (Including Trucking)	3.4%
Rail	1.8%
Parcel, US Postal Service	14.6%
Other Transportation	8.7%

Source: 2017 Commodity Flow Survey, *U.S. Bureau of Transportation Statistics, U.S. Department of Transportation, in partnership with, U.S. Census Bureau, U.S. Department of Commerce*

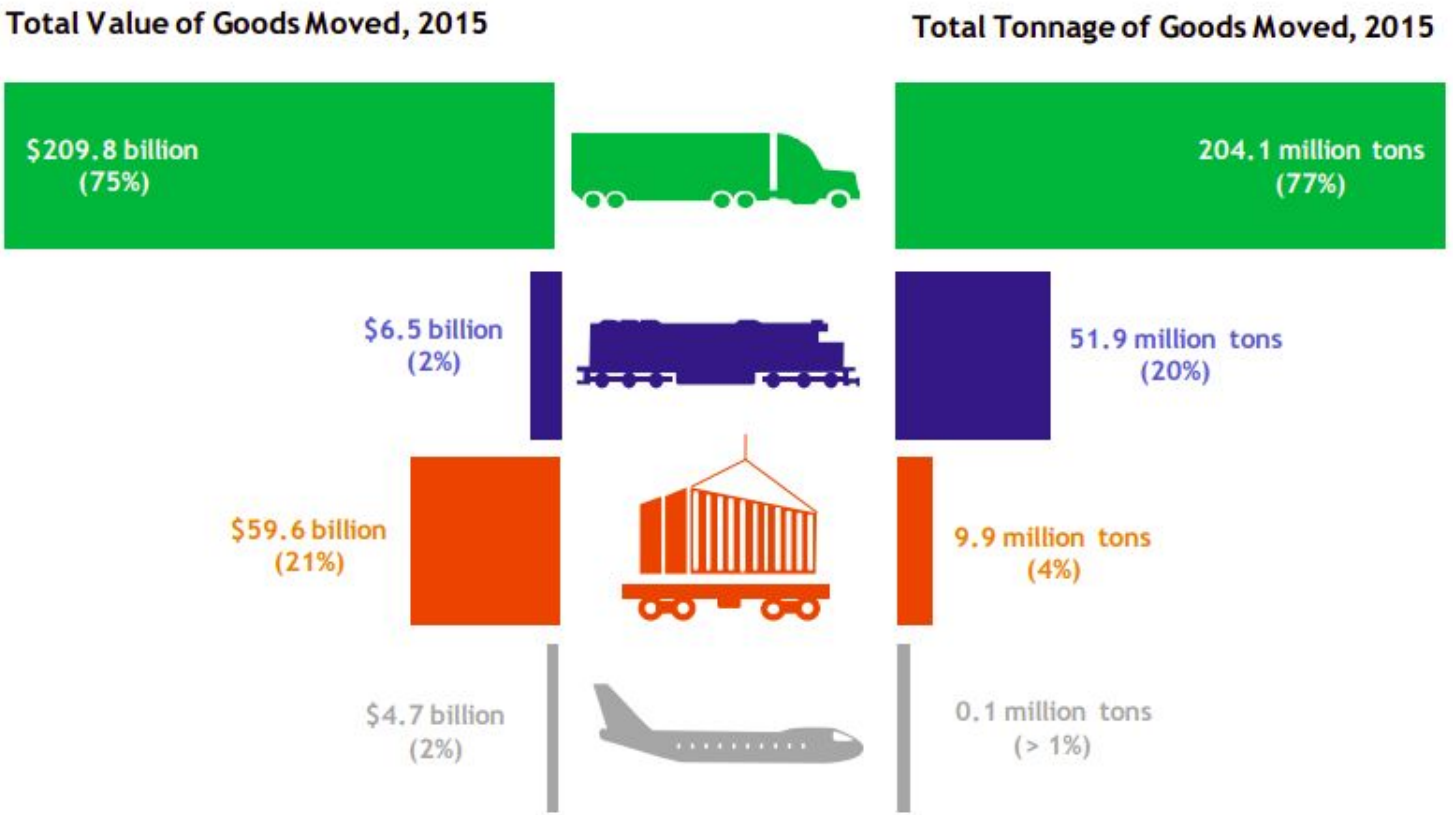
Note: Sum of percents do not add to 100% due to rounding.



Colorado Employment in Trade & Logistics Cluster

Source: Bureau of Labor Statistics, 2015

Colorado – Value Goods Moved

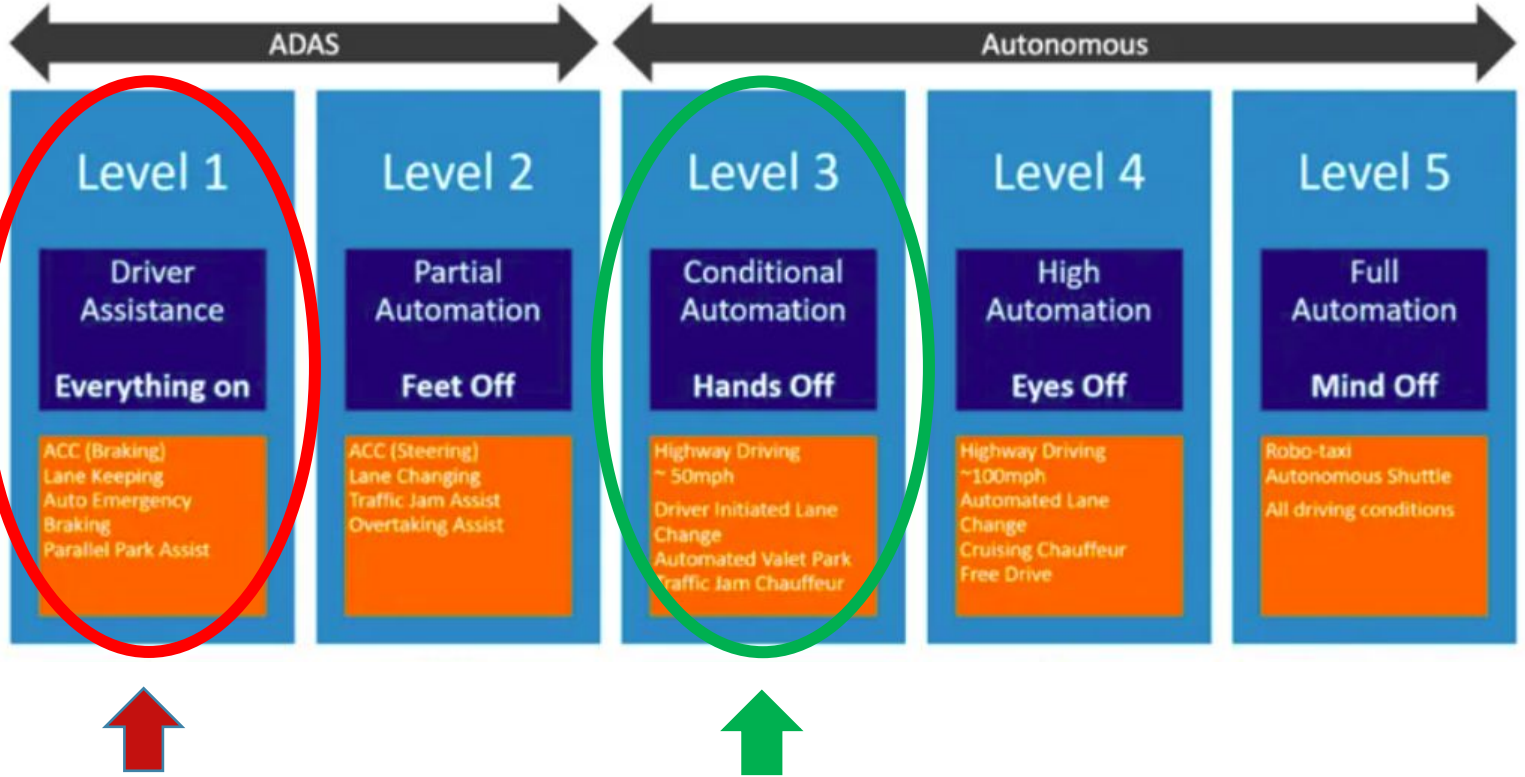


Source: FHWE, Freight Analysis Framework, 2015 & CDOT Freight Plan

Congestion

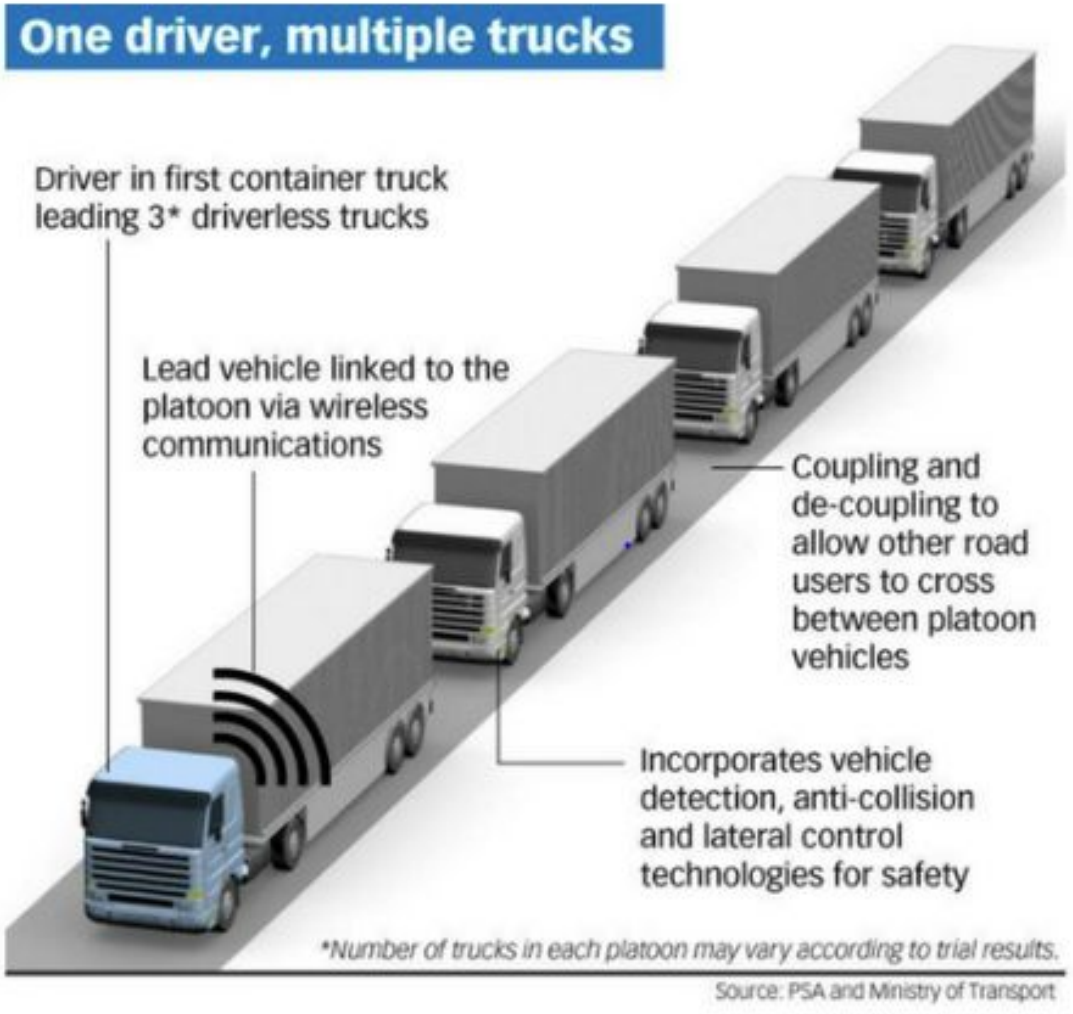
- ATRI: Top 10 Concern Nationally
- Industry attempts to avoid rush hour – Regulations & Customers make challenging
- Office Employees from across the state
- Delays are COSTLY

Future – Autonomous Trucks



Convoying

- One step closer to full autonomy
- Tough for most companies
- Public education required



The Future

Electric

More and more states backing ridding OEM's from producing internal combustion engines.

Technology

Trucking has fallen behind in technology upgrades. Startups world wide assisting in efficiency improvements.

New Generation

Generation who have been in the industry since de-regulation beginning to retire. New technology savvy generation stepping in.

Session 2.2: Generational Gap and TDM Challenges: **The Evolving Future of TDM**

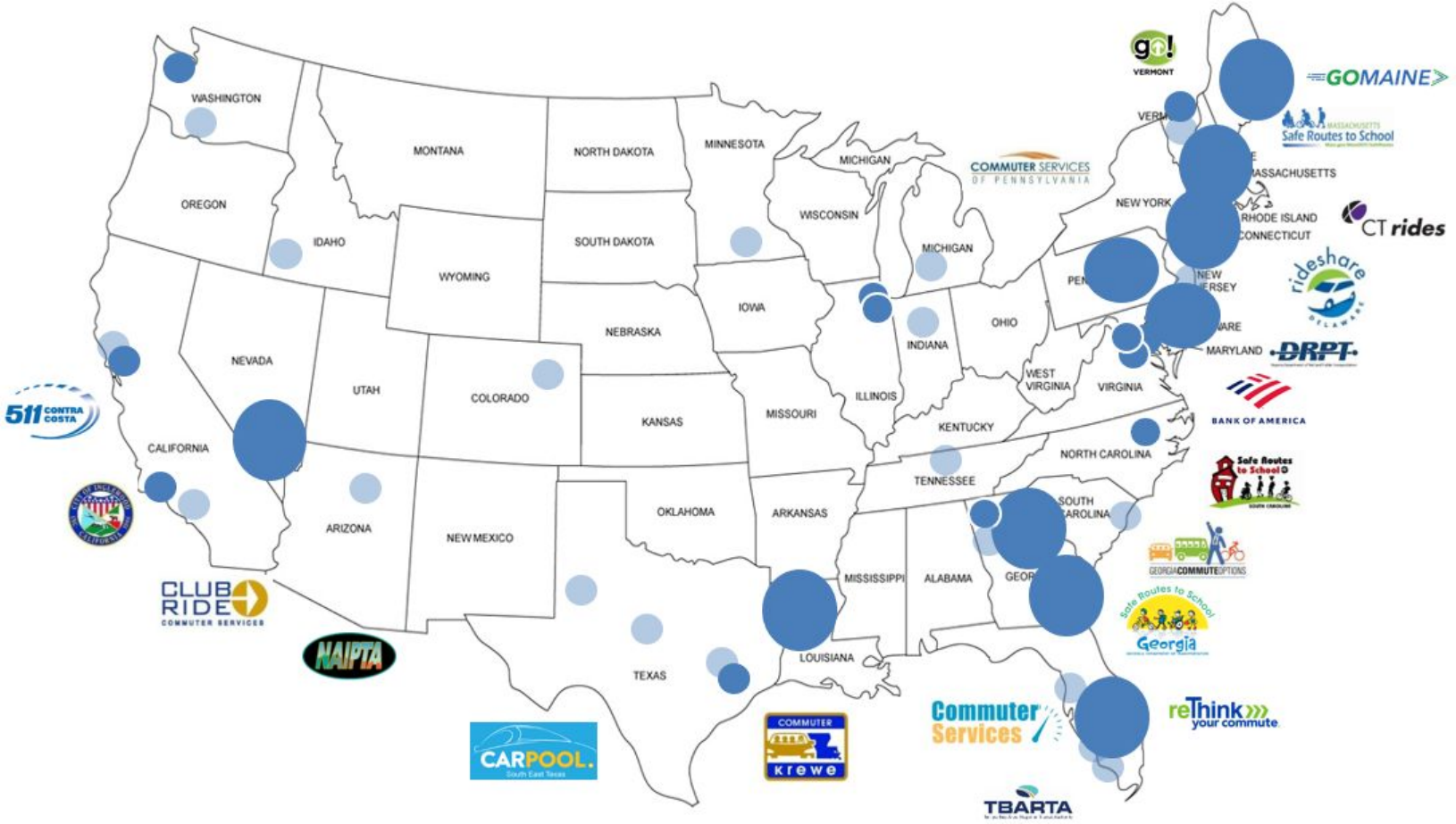
Thomas Cerny

The evolving future of TDM

Things to consider

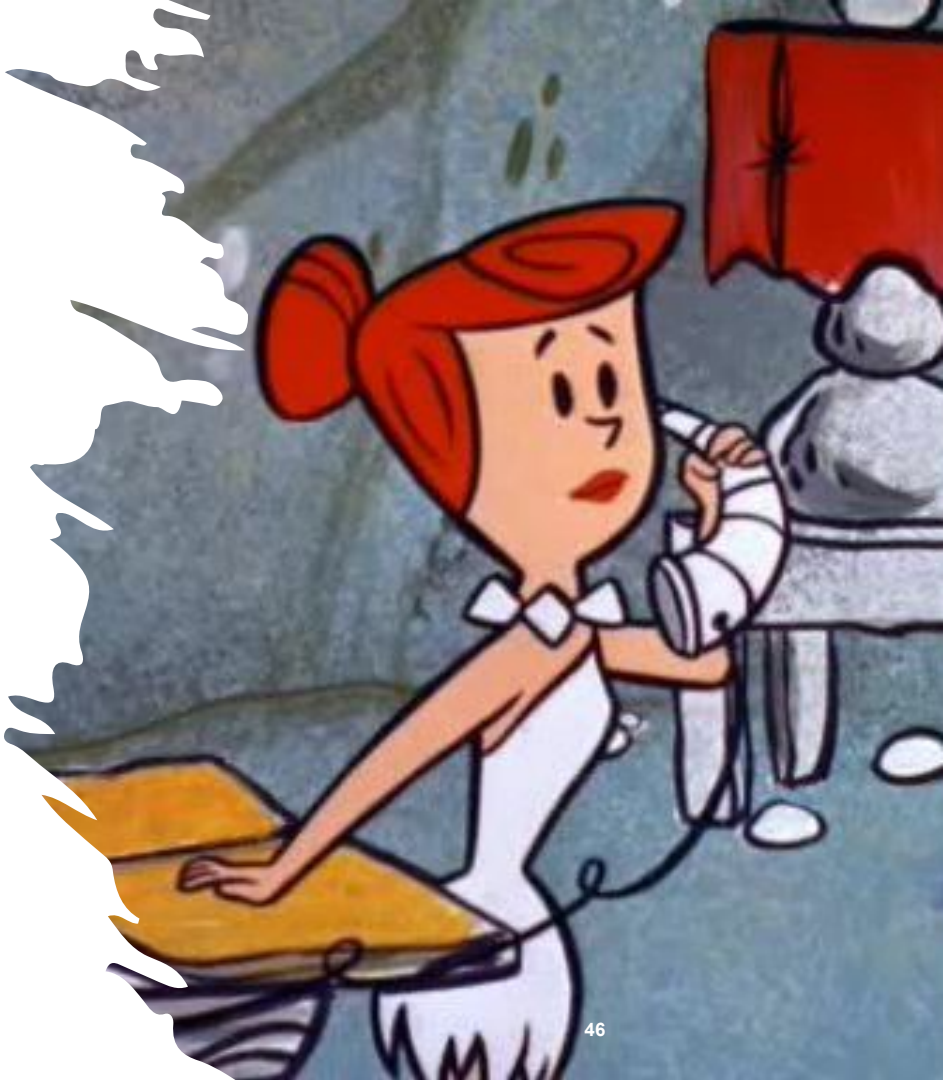
thomas.cerny@aecom.com

AECOM


WASHINGTON
OREGON
CALIFORNIA
NEVADA
IDAHO
MONTANA
WYOMING
UTAH
ARIZONA
COLORADO
NEW MEXICO
NORTH DAKOTA
SOUTH DAKOTA
NEBRASKA
KANSAS
OKLAHOMA
TEXAS
MINNESOTA
IOWA
MISSOURI
ARKANSAS
LOUISIANA
WISCONSIN
ILLINOIS
MICHIGAN
INDIANA
OHIO
KENTUCKY
TENNESSEE
MISSISSIPPI
ALABAMA
GEOR
SOUTH CAROLINA
NORTH CAROLINA
VIRGINIA
WEST VIRGINIA
PEN
NEW YORK
NEW JERSEY
MARYLAND
DELAWARE
RHODE ISLAND
CONNECTICUT
MASSACHUSETTS
VERM
VERMONT
GOMAINE
Safe Routes to School
CT rides
rideshare
DRPT
BANK OF AMERICA
Safe Routes to School
GEORGIACOMMUTEOPTIONS
Safe Routes to School
Georgia
reThink your commute
Commuter Services
TBARTA
COMMUTER SERVICES OF PENNSYLVANIA
511 CONTRA COSTA
CLUB RIDE
COMMUTER SERVICES
NAIPTA
CARPOOL.
South East Texas
COMMUTER
krewe

Work from Home

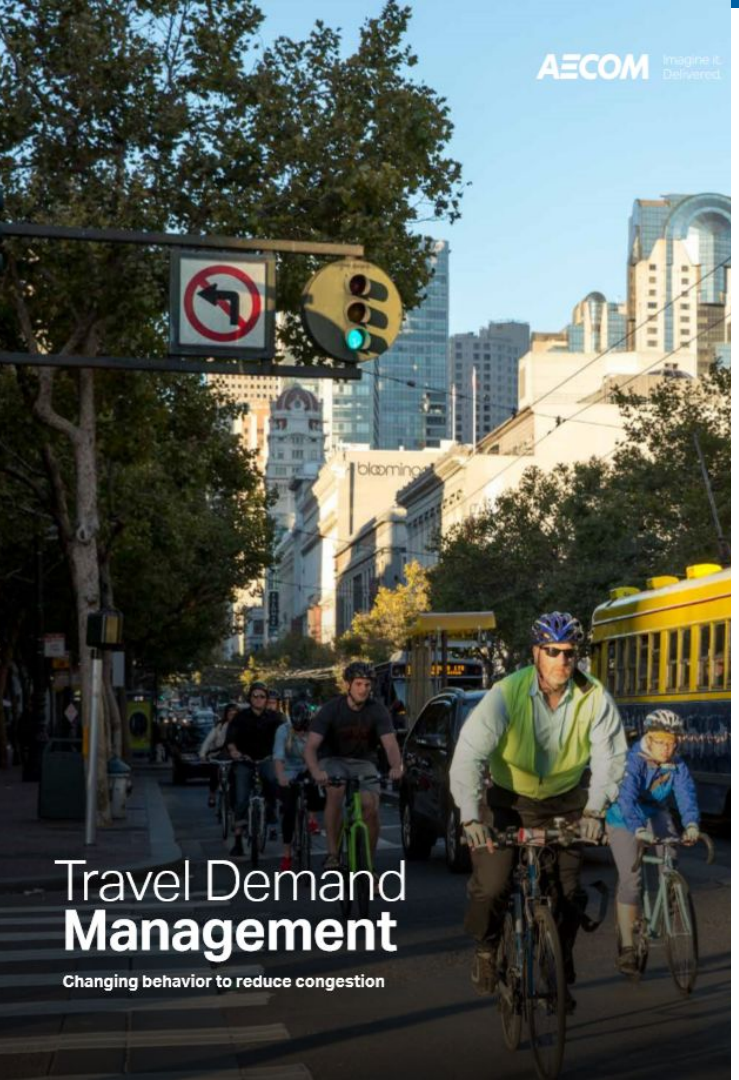
- Appears to be stabilizing
- As much as 25% - 30% of days spent in WFH environment?
- Hybrid workers comfortable with longer commutes
- “Current trend” is to have everyone in the office on the same days



Transit Ridership

- Appears to be leveling @ 70% of pre pandemic ridership levels
- Full recovery years away – if at all
- Safety concerns significant
- Bus driver shortage
- More difficult to promote to choice riders

Note: 2022 APTA study indicated 71% of 117 agencies surveyed had to cut or reduce service.

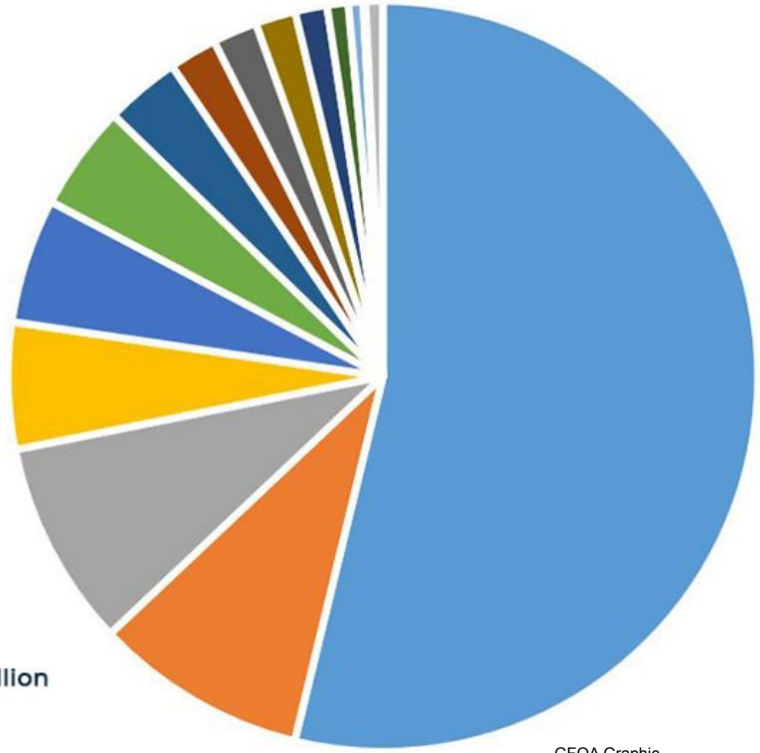


Employers

- ESG/Sustainability big with white collar employers – and investors
- Filling open positions with reliable staff most important to blue collar/entry level employers
- Current trend is to have Hybrid employees in the office on the same days
- Employers don’t know what they don’t know – still not focused on commute impacts

New IIJA Funding Opportunities

- **Previously-Passed Transportation Funding * | $650 billion**
- **Roads, Bridges and Related Programs | $111 billion**
- **Energy, Power and Electric Grid Reliability | $107.50 billion**
- **Freight and Passenger Rail | $66 billion**
- **Broadband | $65 billion**
- **Water and Wastewater Infrastructure | $55 billion**
- **Public Transportation | $39.20 billion**
- **Airports | $25 billion**
- **Natural Disaster Prevention and Mitigation | $23.30 billion**
- **Cleaning-Up Abandoned Sites | $21 billion**
- **Army Corps of Engineers | $16.70 billion**
- **Highway and Pedestrian Safety | $11 billion**
- **Ports and Coast Guard | $7.8 billion**
- **Cybersecurity and Other Infrastructure Programs | $10.11 billion**



GFOA Graphic

So what does this mean for TDM?

Lots.

- Big-time wake up call
- Are TDM programs in the right places?
- Do we have the right outreach employees and approaches?
- Are we agile enough to quickly adjust to traveler needs?
- Can we measure our impact?

For your consideration…

- Let's be realistic when it comes to promoting transit use.
- Will the current level of service keep a choice rider?
- Must focus very limited marketing resources

“Old School” opportunities?

- Could we be seeing the return of carpooling?
- Significant family presence in entry level jobs
- High gas price perception
- “All In” hybrid work favors ridesharing
- Need for dynamic vanpools
- Could have significant impact on an employers “greening”

Congestion not going away

- Leverage disruptive construction PI funds
- Lots on the way…

Changes in employer relationships…

- Target ESG/sustainability assistance and carbon impact reduction with white collar employers
- Congestion/parking shortage not as big an issue

…and focus

- Adjust TDM program focus from urban centers to “collar communities”?
- Retrain or hire new outreach staff to reach blue collar workers
- Broaden programs to reach all travelers – not primarily commuters? Lots of mid-day travel.
- School travel reduction efforts?

Final thoughts

- Fascinating time to be in the TDM business!
- TDM works – let's show it
- Persistence pays off with employers
- Keep program simple
- Stay flexible and ready to mobilize – change is constant and quick response expected

Thank You!

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Session 3: Show Me the Money: Securing TDM and EV Funding Using Federal & State Legislation and Programs

Amanda Mansfield, Devin Edgley, Carrie Atiyeh
and Allison (Crump) Moore-Farrell

Show Me the Money: Securing TDM and Electric Vehicle Funding Using Federal and State Legislation and Programs

CDOT TDM ACT Conference
November 4, 2022

btc BOULDER TRANSPORTATION CONNECTIONS

BOULDER CHAMBER

COLORADO Energy Office

CITY OF BOULDER

Panel

Moderator: Amanda Mansfield
Executive Director, BTC; Senior Manager of Transportation, Boulder Chamber

Panelist: Devin Edgley, Policy Program Specialist, Boulder Chamber

Panelist: Carrie Atiyeh, Board Administrator/Senior Program Manager, Colorado Energy Office

Panelist: Allison (Crump) Moore-Farrell, Senior Transportation Planner, City of Boulder

BOULDER CHAMBER

btc BOULDER TRANSPORTATION CONNECTIONS

Panel Topic

How government entities, employers and the broader community can access State and Federal financial assistance to pursue:

- Employer-based travel demand management (TDM) programs
- Electric vehicle (EV) purchase discounts
- E-bike rebate programs
- E-bike purchase subsidies
- EV charger purchase and installation subsidies
- Zero emission fleet truck purchases
- Zero-emission bus purchases
- Zero-emission rideshare fleet vehicles
- No cost public transit trips

Panel Questions

1.) From the business and broader community perspective, what are exciting opportunities on the horizon regarding Federal and State legislation that would provide funding for travel demand management (TDM) and transit initiatives and improve safety for all road users?

2.) What Federal and State policy programs exist that community members can take advantage of to incentivize the purchase of electric vehicles, no-cost buses, fleet vehicles, and e-bikes as well as electric vehicle charging infrastructure?

3.) What is the City of Boulder doing to advance electric vehicle adoption and what are electric vehicle advancement opportunities that municipalities and the community can take advantage of?

Question & Answer time to follow at the end (10 minutes)

Panel Question #1

From the business community perspective, what are exciting opportunities on the horizon regarding Federal and State legislation that would provide funding for travel demand management (TDM) and transit initiatives and improve safety for all road users?

HB22-1026: Alternative Transportation Options Tax Credit

- 50% off tax credit to employers for employee alternative transit option
- Up to $250,000 tax credit with a cap of $2,000 per employee
- Vanpool, carpool, transit tickets, provision of e-bikes, shared micro-mobility company memberships (e-bike/e-scooter share), carshare, guaranteed ride home
- Begins January 2023 ends January 2025

SB22-180 Program to Reduce Ozone Through Increased Transit

$28 million to ozone transit programs
$30 million for state highway fund project
$10 million to transportation development division for revitalizing main street program

- Grant program to Regional Transportation District (RTD) to offer free rides for 30 days during high ozone season
- Grant money will supplement up to 80% of RTD's cost for providing free rides during ozone season
- 3-year pilot program to extend transit program throughout the state for reducing ground-level ozone emissions

Inflation Reduction Act of 2022 (EV)

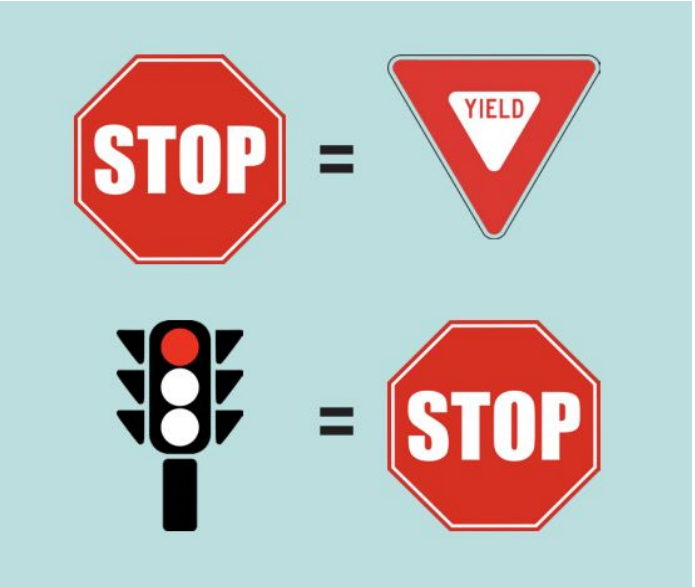
- ***To reduce our deficient and to promote domestic clean energy.***
- Light Duty EV Tax Credit- up to $7500 starting 2032
- Used EV Tax Credit- up to $4000, or 30% of the price of sale. Less than $25,000 total cost, and at least 2 years old.
- Commercial EV Credit- up to 30% of sale price of vehicle
- **30c Tax Credit- 30% capped at $30,000 provides businesses with e- charging stations (includes 2 and 3 wheel)**

***peopleforbikes.org

Safety Stop Law

Bikes and other “low speed conveyances” (15 years of age and older) can ride slowly through stop signs without stopping first, as long as they are yielding right of way to pedestrians and other road users who have the right-of-way.

Bicyclists and users of low-speed conveyances (15 years of age and older) may also proceed at red lights after coming to a complete stop, if there is no oncoming traffic.



Call to Action

- Reach out to Boulder Transportation Connections (BTC) to learn more about how your worksite can take advantage of the HB22-1026 50% tax credit for every dollar spent to encourage sustainable commuting
- Encourage your employees and coworkers to ride RTD at no cost during the Zero Fare for Better Air campaign month in summer 2023 and beyond
- Reach out to BTC to learn more about how you can take advantage of EV and EVSE tax credits
- To ensure safe commuting and travel for all modes, educate your employees/coworkers and community about the Safety Stop Law rules of the road for bicyclists

Thank you!

Devin Edgley

Policy Program Specialist, Boulder Chamber

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BOULDER CHAMBER

Panel Question #2

What Federal and State policy programs exist that community members can take advantage of to incentivize the purchase of electric vehicles, no-cost buses, fleet vehicles, and e-bikes as well as electric vehicle charging infrastructure?

Colorado Incentives Overview

CDOT TDM ACT Conference

November 4, 2022

SB21-260 Transportation Electrification Enterprises

- SB21-260 created new sources of dedicated transportation funding and new state enterprises to enable a sustainable transportation system
- Community Access Enterprise (within CEO) supports electric vehicle (EV) charging and hydrogen fueling infrastructure, and low and moderate income adoption of EVs and e-bikes
- Clean Fleet Enterprise (within CDPHE) incentives the use of electric motor vehicles and other clean fleet technologies by owners and operators of motor vehicle fleets
- Clean Transit Enterprise (within CDOT) supports planning efforts, transit site upgrades, procurement of electric transit buses, and deployment of associated charging infrastructure

Community Access Enterprise

- Projected revenue $310M over 10 years

- Support for existing programs
  - Charge Ahead Colorado
  - DCFC Plazas Program
  - Can Do Colorado eBike Program

- New programs
  - Community Accelerated Mobility Projects (CAMP) - Technical Readiness and Implementation
  - Vehicle Investment for Sustainable Transportation Access (VISTA) - high-emitting vehicle replacement
  - Fleet Infrastructure Resources (FIR) - medium-/heavy-duty charging infrastructure

- Stay up to date, learn more at: https://energyoffice.colorado.gov/board-commissions/community-access-enterprise

Clean Fleet Enterprise

- Projected revenue $289M over 10 years

- Program Portfolios
  - Clean Fleet Vehicle & Technology
  - Clean Fleet TNC
  - Remote Sensing Prioritization
  - Clean Fleet Vehicle Workforce Development
  - Clean Fleet Planning, Research & Evaluation

- Stay up to date, learn more at: https://cdphe.colorado.gov/clean-fleet-enterprise

Clean Transit Enterprise

- Projected revenue $134M over 10 years

- Programs
  - Planning
  - Facility Modification
  - Vehicle Acquisition
  - Charging/Fueling Infrastructure

- Stay up to date, learn more at: https://www.codot.gov/programs/innovativemobility/cte

Colorado EV Infrastructure Grant Programs

- Charge Ahead Colorado: Community-based Level 2 and DC Fast-Charging stations
- DCFC Plazas: High-speed charging stations developed statewide
- DCFC Corridors

o's major corridors

Charge Ahead Colorado - Incentives

Station	Match	Incentive
L2 – Fleet	80%	$6,000
Level 2 – Dual Port	80%	$9,000
DCFC – Under 100kW	80%	$35,000
DCFC – Over 100kW	80%	$50,000

Station	Match	Incentive	Eligibility
Level 2 – Fleet	80%	$6,000	
Level 2 – Dual Port	80%	$9,000	
Level 2 – Dual Port	90%	$11,500	IQ Eligible
Level 2 – 19 – 25kW	80%	$12,500	
DCFC – Under 100kW	80%	$35,000	
DCFC – Over 100kW	80%	$50,000	
*Enhanced DI Incentive	90%	$1,000	DI Eligible

Charge Ahead Colorado - Eligibility

- Enhanced DI Incentive – Disproportionately impacted communities (DI) are identified in Colorado's Enviroscreen tool when measured at the Census Block Group level. Communities meeting the following criteria:
    - SB21-260 Disproportionately Impacted Community (DIC) Definition
    - National Electric Vehicle Infrastructure (NEVI) DAC Definition
    - Enviroscreen DIC (90th percentile +)
    - Transportation Equity Community (75th percentile +)
- Enhanced DI Incentive restricted to entities serving the community including libraries, community centers, rec centers, non-profits, schools, public entities for the specific use of the public, places of worship, Multi-family Housing (MFU) IQ eligible organizations

Charge Ahead Colorado - Eligibility

- Income qualified incentive – 66% of the tenants are at 80% Area Median Income (AMI) or less
  - Qualify through established programs such as: Housing Choice (Section 8) Vouchers, Low Income Public Housing, HUD Subsidized Project Based Section 8, Low Income Housing Tax Credit, operated by a Housing Authority, etc.
  - Documentation including land use restriction agreement for verification
- Alignment with other programs
  - Stacking of incentives including utilities
- Stay up to date, learn more at: https://energyoffice.colorado.gov/zero-emission-vehicles/ev-charging-station-grants-programs/charge-ahead-colorado

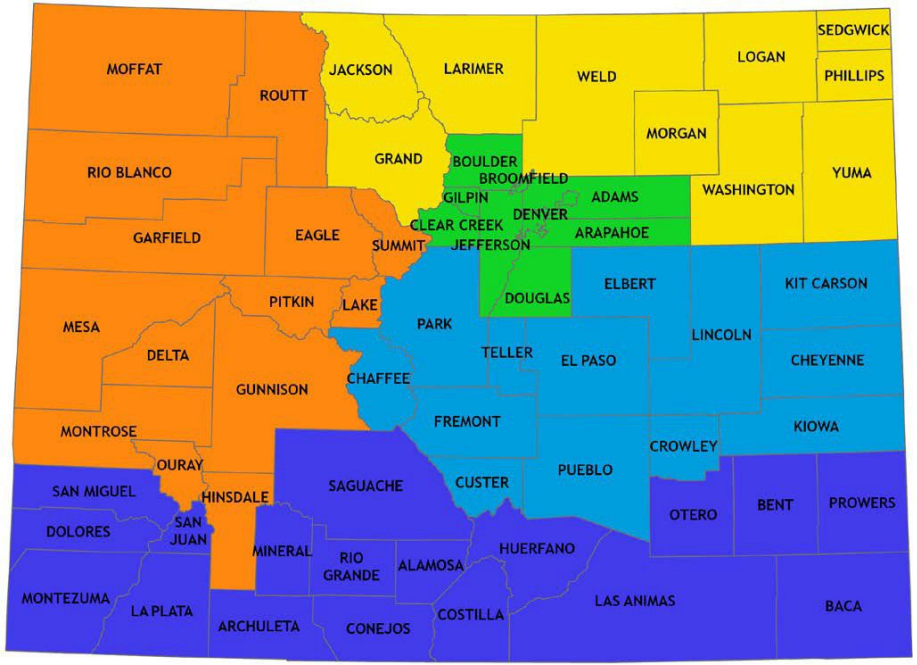
Upcoming

- DCFC Plazas Program
  - Incorporating NEVI and CAE requirements into the Plazas program framework
  - Charging station gap analysis
  - Prioritization of gaps and upgrading of existing sites
  - Program is partially funded by CMAQ

eBike Incentives

- SB22-193, $12M for eBike incentives
  - New statewide eBike point of sale rebate program for low- and moderate-income individuals
    - Launch ~ March 2023
  - Can Do Colorado (full implementation)
    - Grants available to local governments, non-profit organizations, community-based organization, tribal governments
    - Procurement conducted in mid-November, documents can be found at: https://energyoffice.colorado.gov/zero-emission-vehicles/can-do-colorado-ebike-pilot-program
- eCargo bike commercial delivery pilot
  - New CAE program, details TBD

ReCharge Colorado



- Coaches throughout every community in the state
- Help consumers, local governments, workplaces and multi-unit housing developments identify monetary savings, grant opportunities and other advantages related to deploying EVs and charging infrastructure
- Learn more at: https://energyoffice.colorado.gov/zero-emission-vehicles/recharge-colora

Infrastructure Investment & Jobs Act (IIJA)

- IIJA provides $7.5 billion for EV charging
- $5 billion in the National Electric Vehicle Infrastructure (NEVI) formula program
  - Colorado expected to receive $57 million over 5 years
  - FY22 apportionment is be $8,368,277
- $2.5 billion in the Discretionary Grant Program (competitive)
- States were required to develop and submit EV Infrastructure Deployment Plans to the Joint Office of Energy & Transportation by 8/1/22
  - The Joint Office approved Colorado's Plan on 9/14/22

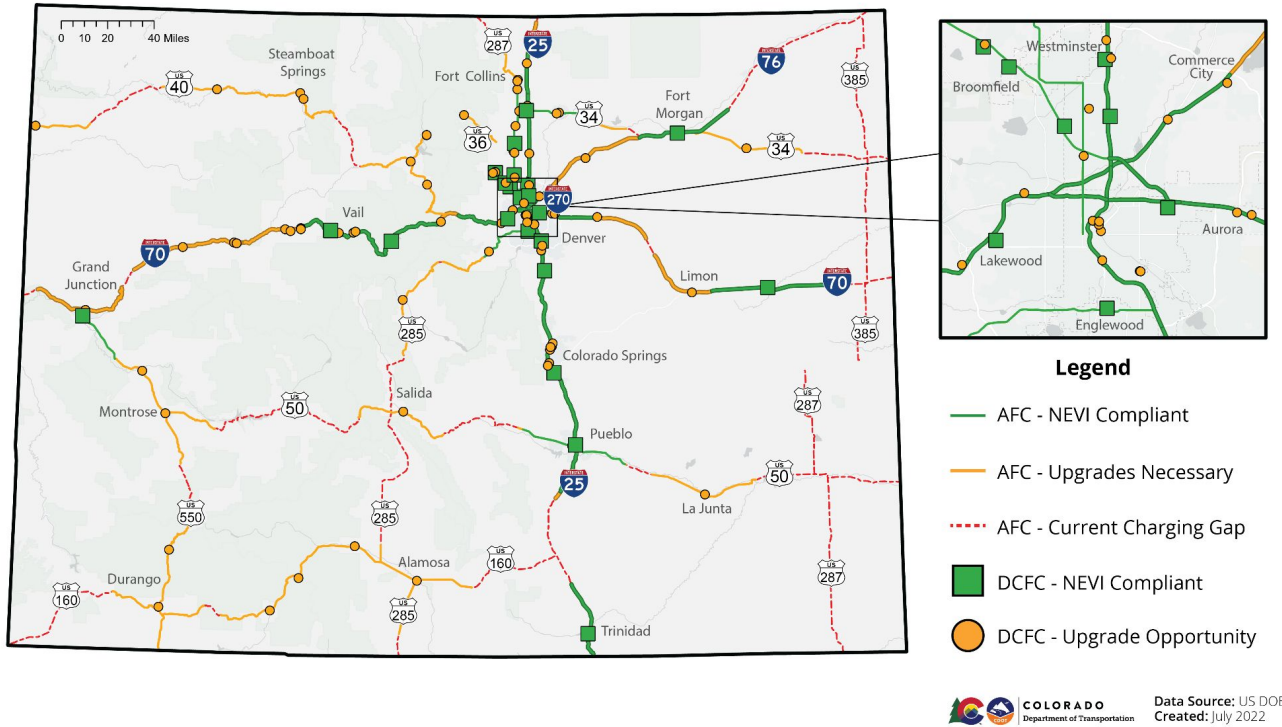
Key Requirements for NEVI

- Purpose: To create a national network of charging infrastructure across the United States
- Projects within 1-mile of federally-designated EV corridors
- Prioritization of rural areas and disproportionately impacted communities; additional focus on support for MHD freight and goods movement
- Charging locations no more than 50 miles apart along a corridor
- Focus on DC fast-charging locations with a minimum 150 kW charging for 4 vehicles simultaneously (beyond most current locations in Colorado)
- Eligibility for battery storage, renewable generation, and other elements to manage demand charges and increase resiliency
- Ability to reimburse operational and maintenance expenses for up to 5 years

Potential NEVI Investment Priorities

Publicly Accessible Electric Vehicle Fast-Charging Network

Within 1 mile of Alternative Fuel Corridor (AFC) - Gap Analysis



COLORADO Department of Transportation

Data Source: US DOE
Created: July 2022

Call to Action

- Sign up for enterprise emails to stay up to date as new programs and funding opportunities are launched
- Apply for Charge Ahead Colorado, applications due Nov. 16 at 5pm MT
- More to come on DCFC Plazas and NEVI funding opportunities
- Connect with your ReCharge Coach

Thank you!

Carrie Atiyeh
Senior Program Manager
Colorado Energy Office
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COLORADO
Energy Office

Panel Question #3

What is the City of Boulder doing to advance electric vehicle adoption? What are electric vehicle advancement strategies that municipalities and the community can foster?

Municipalities Leading by Example

- City fleet electrification
- Procurement of EV charging infrastructure
- Secondary EV market support
    - Used EVs eligible for tax credit due to Inflation Reduction Act

Community Adoption Opportunities

- EV workforce development
- School bus electrification
- EV communications and understanding
- Micromobility incentives
- All electric / low emissions zones
- Rideshare electrification

Charging Solutions

- Regional fleet charging hub
- Community charging hubs
- Micromobility charging infrastructure
- Multifamily charging infrastructure

Call to Action

- Maintain both future focus and celebrate short-term successes
- Seek appropriate and collaborative funding
- Communicate and provide educational materials

Thank you!

Allison (Crump) Moore-Farrell
Senior Transportation Planner
City of Boulder
MooreFarrellA@bouldercolorado.gov

Call to Action Recap

Government Entities:

- Apply for funding to purchase & install electric vehicle charging infrastructure through the Charge Ahead Colorado program
- Apply for funding to administer the Can Do CO e-bike rebate program
- Apply for funding to implement a DCFC Plaza
- Sign up for Enterprise Fund emails for info on new programs and funding opportunities to fund electric bus, fleet, and bike purchases
- Connect with your ReCharge Colorado Coach to learn about funding support for electric vehicle and charging infrastructure adoption
- Educate your constituents about the Safety Stop Law rules of the road for bicyclists

Community Members:

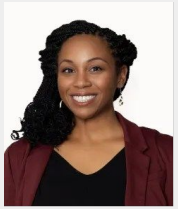
- Apply for funding to purchase & install electric vehicle charging infrastructure through the Charge Ahead Colorado program
- Apply to be a recipient of an e-bike as part of a local e-bike rebate program
- Ride RTD at no cost during the 2023 Zero Fare for Better Air campaign month and beyond
- Take advantage of Federal, State, Xcel and manufacturer/dealer discounts to purchase a low-cost electric vehicle
- Connect with your ReCharge Colorado Coach to learn about funding support for electric vehicle and charging infrastructure adoption
- Educate yourself and your community about the Safety Stop Law rules of the road for bicyclists

Employers:

- Apply for funding to purchase & install electric vehicle charging infrastructure through the Charge Ahead Colorado program
- Reach out to Boulder Transportation Connections (BTC) to learn more about how your worksite can take advantage of the HB22-1026 50% tax credit for every dollar spent to encourage sustainable commuting
- Encourage your employees to ride RTD at no cost during the 2023 Zero Fare for Better Air campaign month and beyond
- Connect with your ReCharge Colorado Coach to learn about funding support for electric vehicle and charging infrastructure adoption
- Educate your employees about the Safety Stop Law rules of the road for bicyclists

Thank you!

Moderator: Amanda Mansfield Executive Director, BTC; Senior Manager of Transportation, Boulder Chamber



Panelist: Devin Edgley, Policy Program Specialist, Boulder Chamber

Panelist: Carrie Atiyeh, Board Administrator/Senior Program Manager, Colorado Energy Office

Panelist: Allison (Crump) Moore-Farrell, Senior Transportation Planner, City of Boulder

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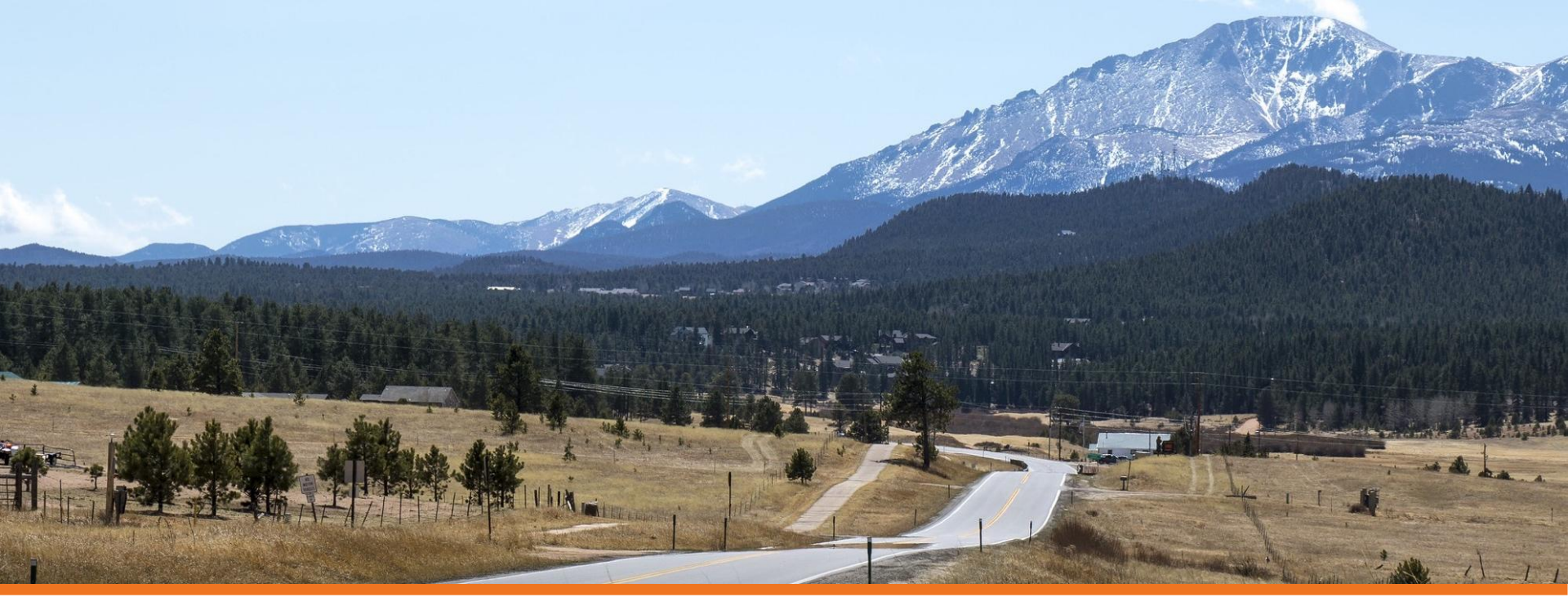
btc BOULDER TRANSPORTATION CONNECTIONS

BOULDER CHAMBER

<u>Session 4.1</u>: TDM Innovation and Successes: **Office of Transportation Safety**

Elayna McCall



COLORADO
Department of Transportation

Office of Transportation Safety

Federal Fiscal Year 2024
Grant Opportunities

Background

Highway Safety Office (HSO):

- Develop and administer behavioral grant programs, through funding from the National Highway Traffic Safety Administration (NHTSA) to improve the traffic safety environment in Colorado.

Our Mission:

- Reduce the incidence and severity of motor vehicle crashes and the associated human and economic loss.

Background/New Transportation Bill

Upcoming Grant Opportunities

- FFY 2024 begins October 1, 2023
- Infrastructure Investment and Jobs Act (IIJA) aka the Bipartisan Infrastructure Law (BIL)

Changes from FAST Act for Non-Motorized Users:

- Expanded funding under new bill:
- Amended the definition of nonmotorized road user and expanded allowable uses of funds;
- Definition of nonmotorized road user;
- Funding Available: Approx. $9 million available across all program lines

Non-Motorized Road User

Definition of nonmotorized road user:

- pedestrian;
- individual using a bicycle, scooter, or personal conveyance;
- individual using a low-speed or low horse powered motorized vehicle, including electric bicycle, electric scooter.

Proposed Eligible Use of Funds

- Training of law enforcement officials, supporting enforcement mobilizations and campaigns designed to enforce State traffic laws.
- Public education and awareness programs designed to inform motorists and nonmotorized road users: regarding:
    - information relating to nonmotorized mobility and the importance of speed management to the safety of nonmotorized road users;
    - safety equipment, including lighting, conspicuity equipment, mirrors, helmets, and other protective equipment, and compliance with any State or local laws requiring the use of that equipment;
    - responsibilities of motorists with respect to nonmotorized road users

Grant Application Process Overview

Funds available through Infrastructure Investment and Jobs Act (IIJA)

- Must address one of 14 Core Performance Measures
- Projects are for Federal Fiscal Year 2024

  - October 1, 2023 through September 30, 2024 Year Funding Cycle
  - Three Year Funding Cycle - Funded Year to Year - Based on Performance
  - https://www.codot.gov/business/grants/safetygrants

Application requirements should:

- Clearly state the problem to be addressed
- Be supported by local, relevant data
- Identify the target population
- Provide baselines to measure project impact
- Show impact on one or more core performance measure

Emphasis Areas

C-1. Reduce the number of traffic fatalities

C-2. Reduce the number of serious injuries in traffic crashes

C-3. Reduce the fatalities per Vehicle Miles Traveled (VMT)

C-4. Reduce the number of unrestrained passenger vehicle occupant fatalities, all seat positions

C-5. Reduce the number of fatalities in crashes involving a driver or motorcycle operator with a BAC of .08 and above

C-6. Reduce the number of speeding-related fatalities

C-7. Reduce the number of motorcyclist fatalities

Emphasis Areas

C-8. Reduce the number of unhelmeted motorcyclist fatalities

C-9. Reduce the number of drivers age 20 or younger involved in fatal crashes

C-10. Reduce the number of pedestrian fatalities

C-11. Reduce the number of bicyclist fatalities

C-12. Reduce the number distracted drivers involved in fatal crashes

C-13. Reduce the number of drivers age 65 and older involved in fatal crashes

C-14. Reduce the number of fatalities in crashes involving a driver or motorcycle operator testing positive for THC greater than 5 nanograms

Timeline

Applications Open

February 3, 2023

Applications Due

March 17, 2023

Grant Start Date

October 1, 2023

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Community Traffic Safety Grants Manager
Colorado Department of Transportation
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Carol Gould
Highway Safety Office Manager
Colorado Department of Transportation
Carol.gould@state.co.us

Session 4.2: TDM Innovation and Successes: **See Sense**

Max Gesten and Andrew Iltis

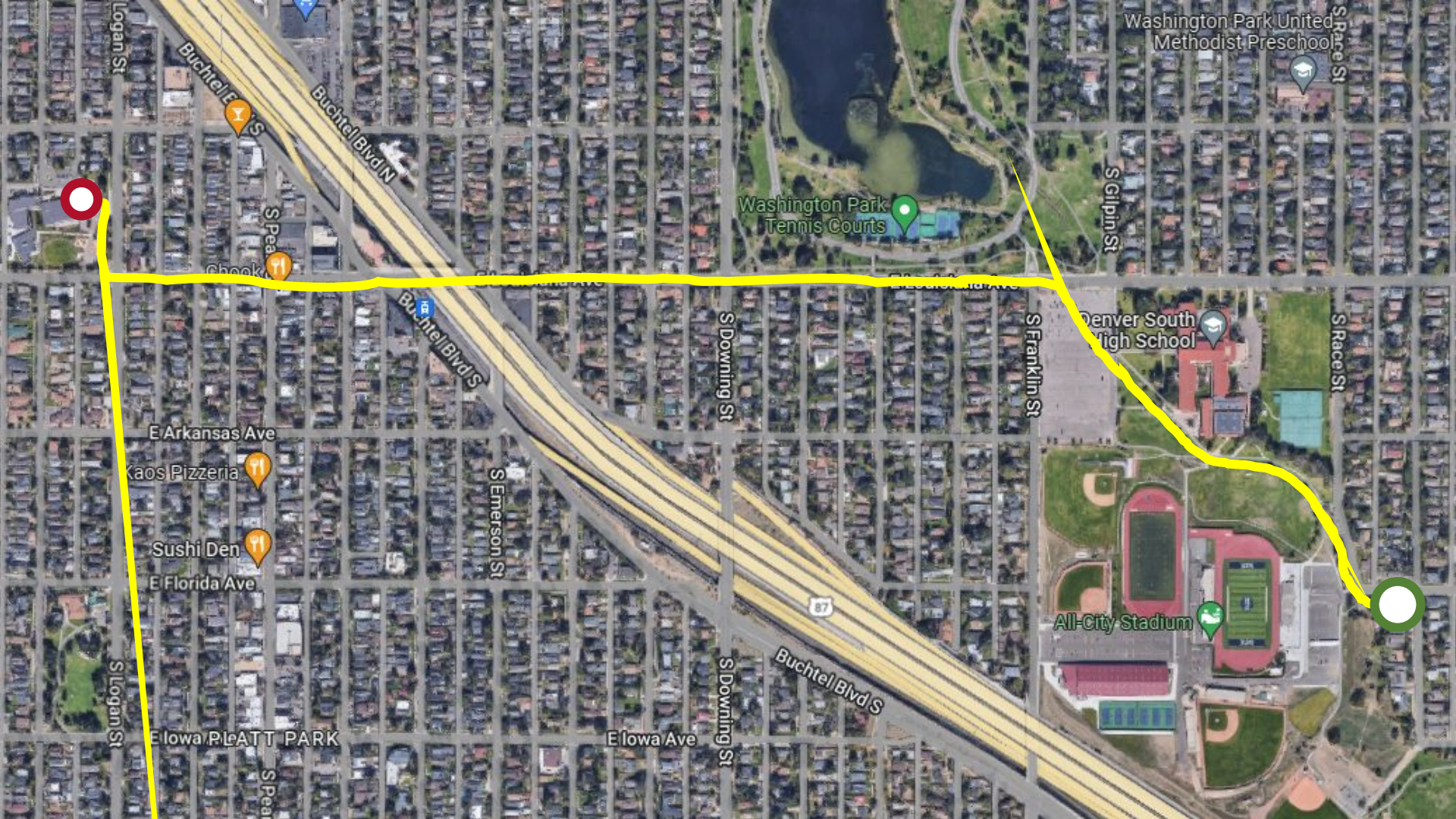

KENSINGTON GARDENS
Kensington Palace
HYDE PARK
The Serpentine
What you pay
Cycle hire only
Santander
Santander
Santander
500

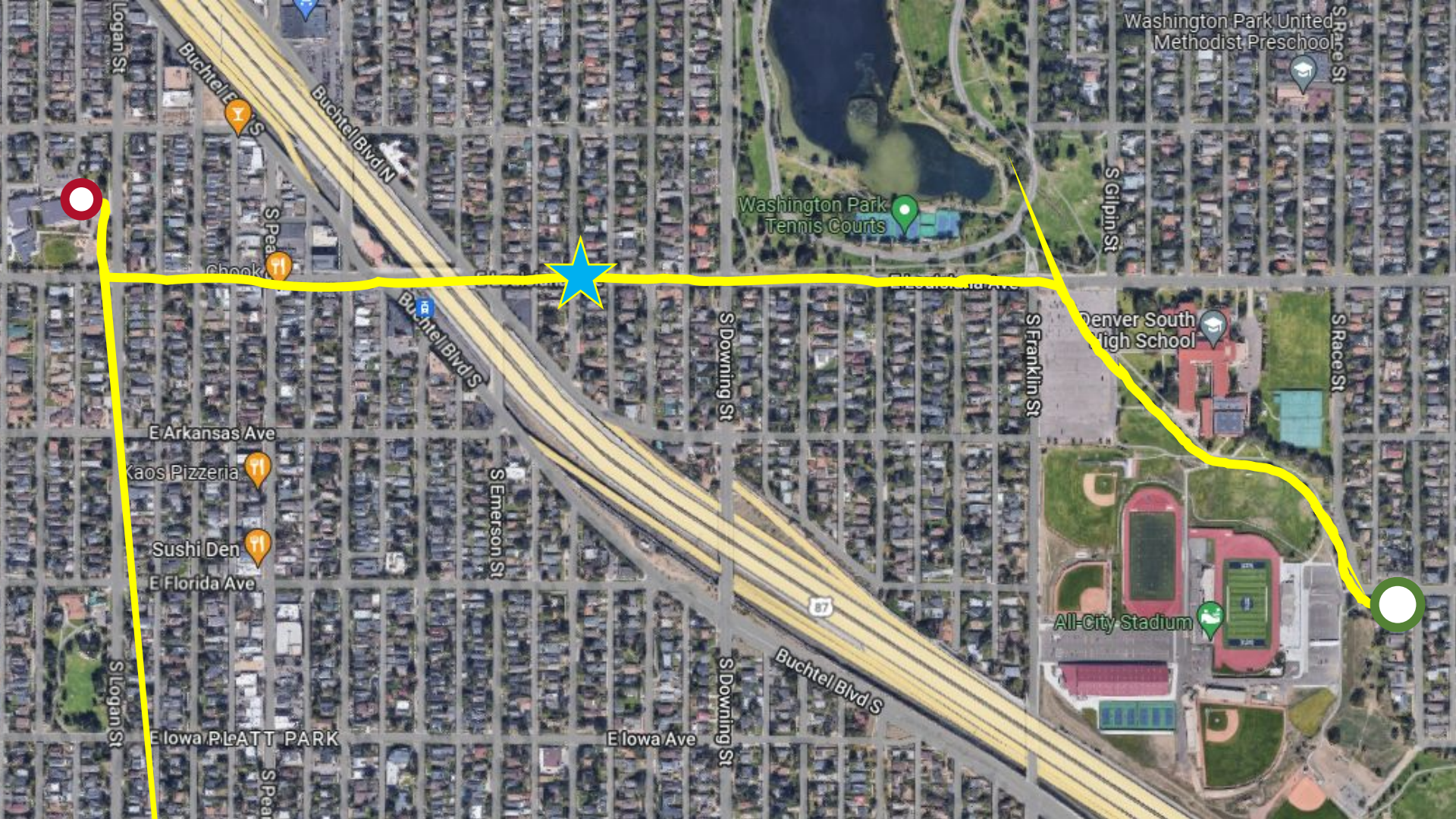
Meet Jen!

- Occupation = Elementary School Nurse
- One way Commute Distance + 1.42miles
- Between 35 to 45 yrs
- Commute mode = Driving


SPEED
LIMIT
25


Jackson
ALIZED


Washington Park United Methodist Preschool
S Race St
Buchtel Blvd N
Washington Park Tennis Courts
S Gilpin St
Chook
Buchtel Blvd S
S Downing St
S Franklin St
Denver South High School
E Arkansas Ave
Kaos Pizzeria
S Emerson St
Sushi Den
E Florida Ave
87
All-City Stadium
S Logan St
E Iowa PLATT PARK
E Iowa Ave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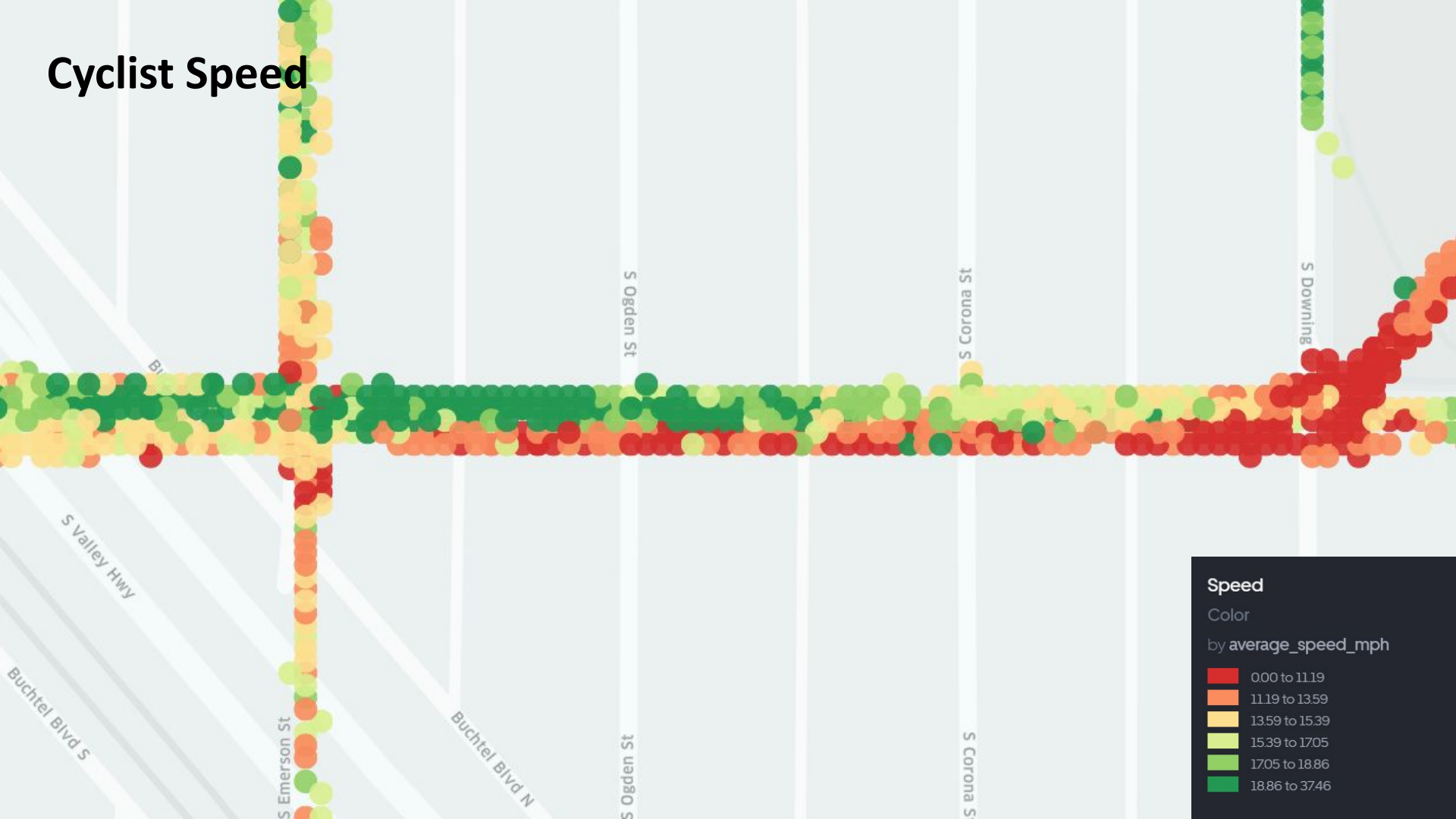
Buchtel Blvd S
E Iowa Ave
PLATT PARK


PARKING
ONLY
THIS LANE
NO
PARKING
ANY
TIME

Cyclist Speed

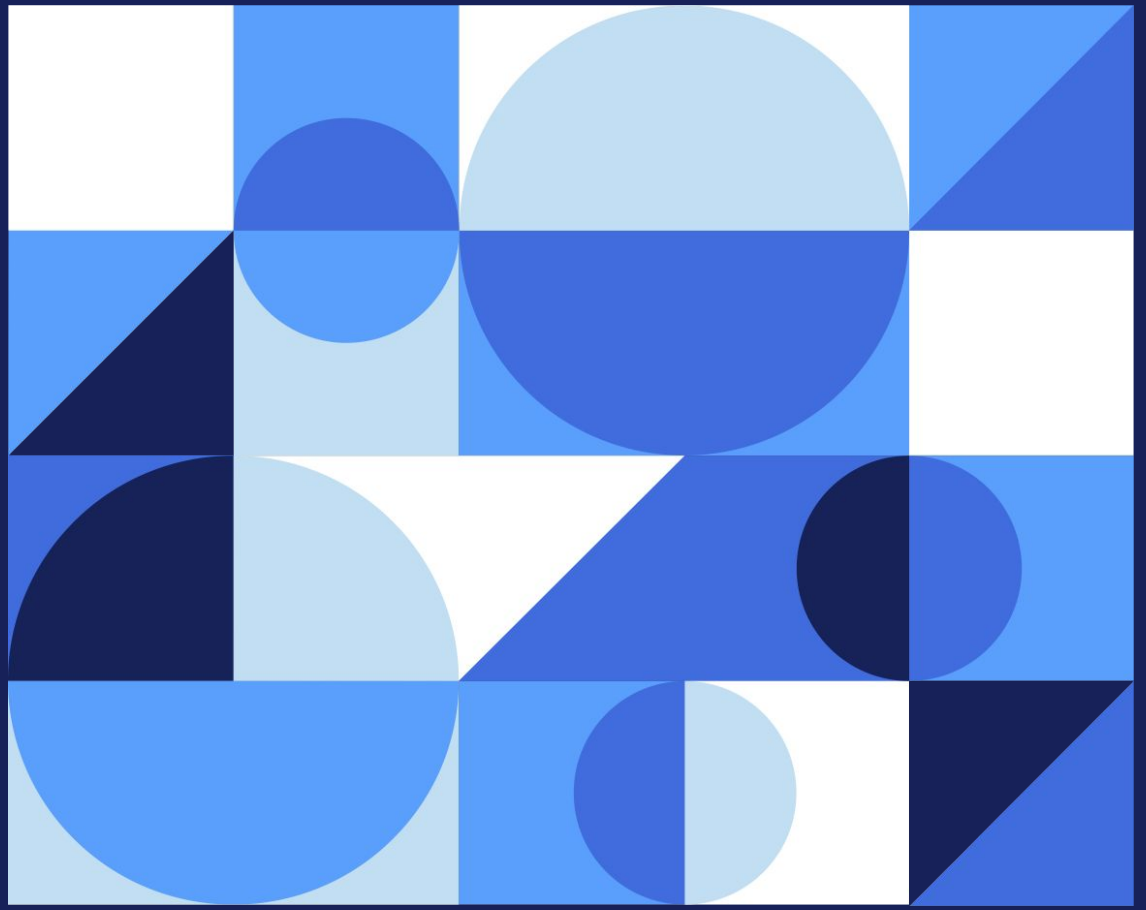


Cyclist Braking Intensity

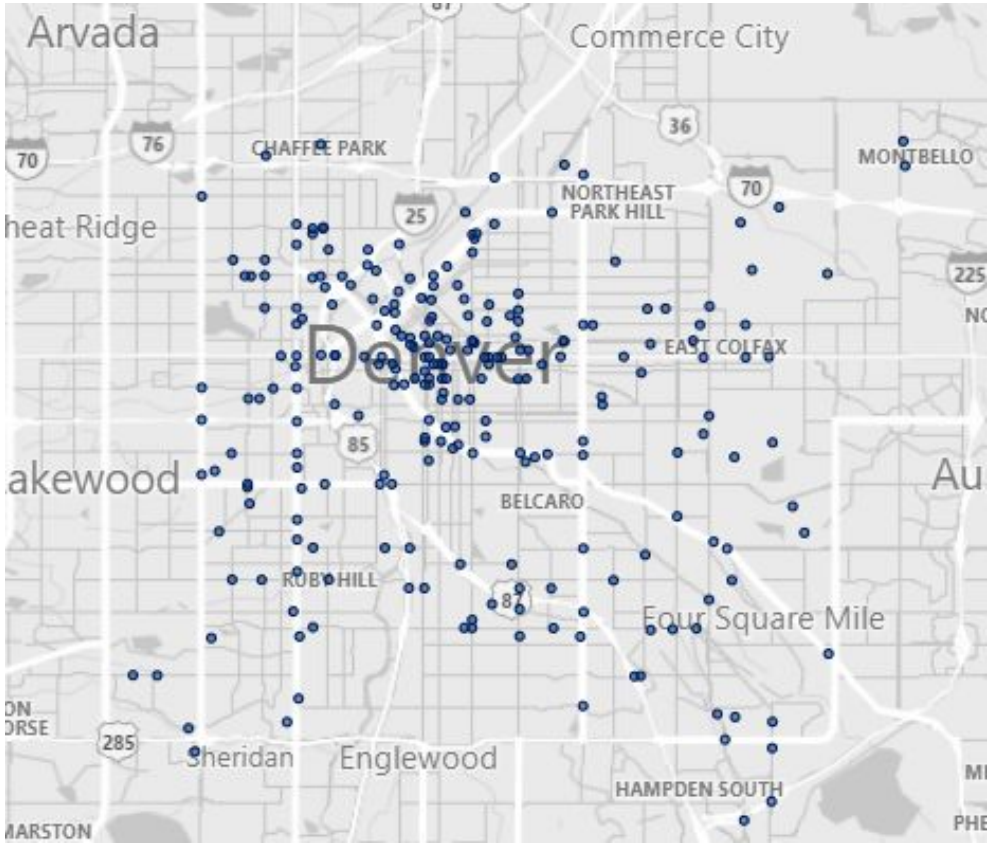
Downtown Denver Partnership

See.Sense

November 4, 2022



Seriously injured cyclist crash locations



Source: City of Denver, https://www.denvergov.org/content/denvergov/en/vision-zero.html

Reported vs Unreported Data

	2013	2014	2015	2016	2017	2018	2019	2020	2021
Fatal	1	5	2	5	1	6	3	1	4
Serious	29	43	36	31	28	21	28	26	23

Source: City of Denver,
https://www.denvergov.org/content/denvergov/en/vision-zero.html

Project Partners

Downtown Denver Partnership

DENVER
THE MILE HIGH CITY

SEE.SENSE®

Gates®

Project Summary:

179
Active Cyclists

50,265
Lbs. CO_2 Saved

26,000
Miles Covered

960
Million sensor readings throughout study

6,300
Rides logged by participants since April 2021

SEE.SENSE®

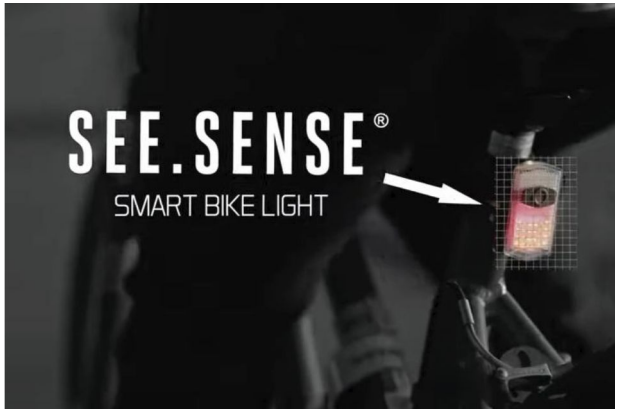
50%
Women-Represented

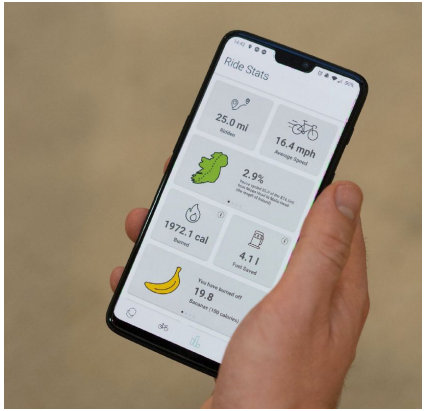
50%
Minority-Represented

AI-enabled sensor technology that monitors the rider's environment up to **800 times per second**

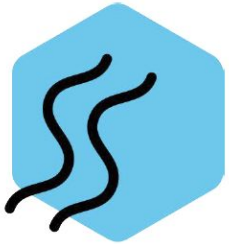
Methodology

See.Sense bike lights **generate highly granular sensor data** collected by a companion app. Sensor data is passively collected, which **removes perception bias of the user**. This data is supplemented with **qualitative perception data** in the paired app. See.Sense AI **profiles each individual rider** to determine a normal range of values; analyzed data layers measure data outside normal ranges. **By profiling individual riders, the datasets are standardized and individual variances removed**.

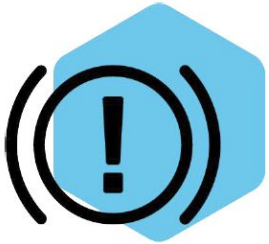




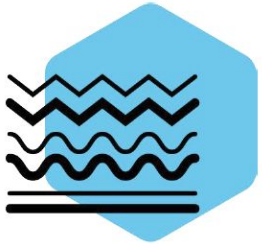
SWERVING



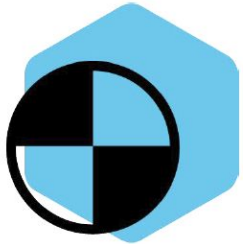
BRAKING



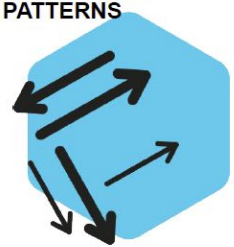
ROAD ROUGHNESS



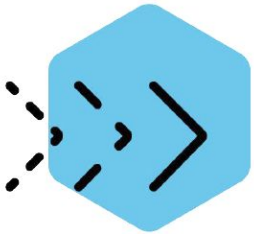
COLLISIONS



MOVEMENT PATTERNS



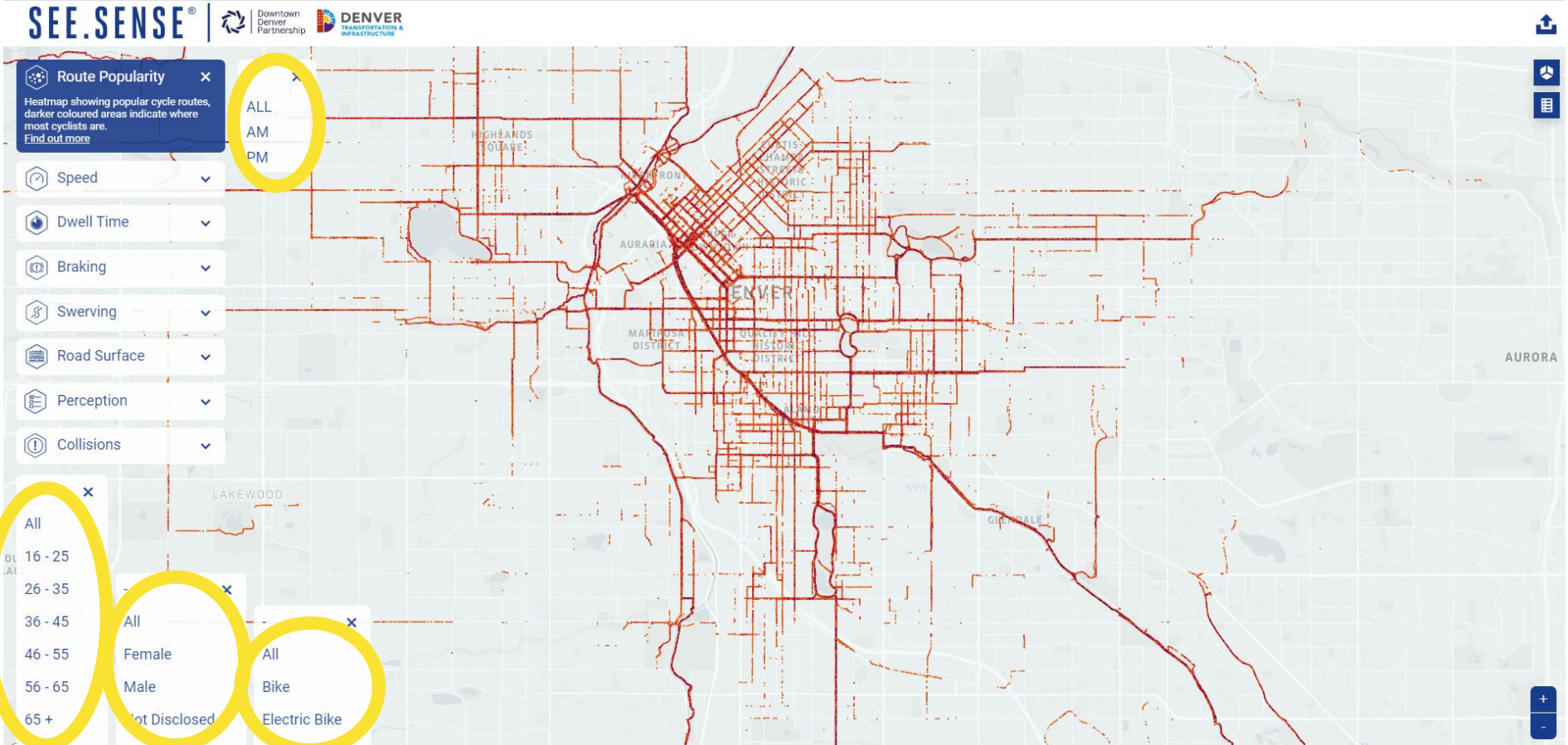
SPEED



DWELL TIMES

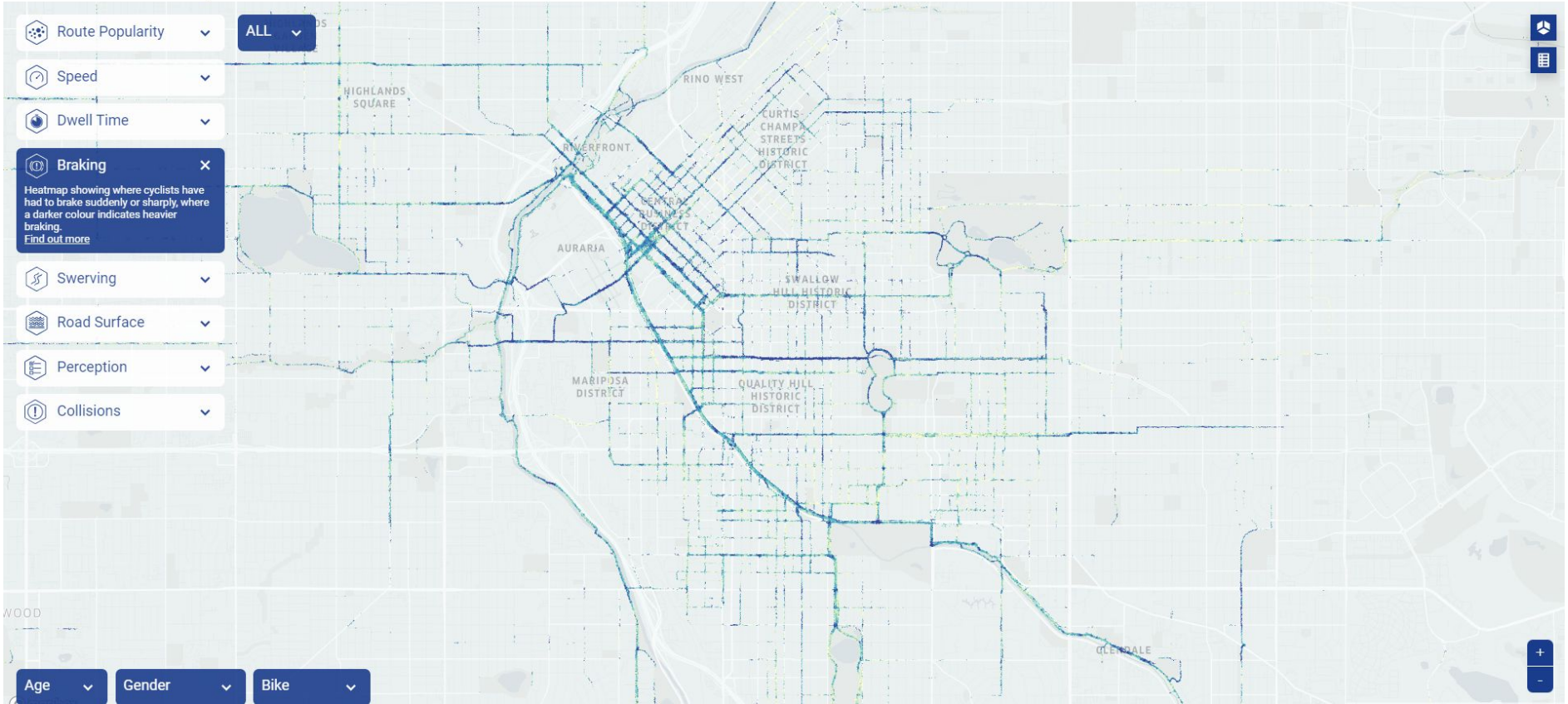
CYCLIST SURVEY REPORTS

Route Popularity

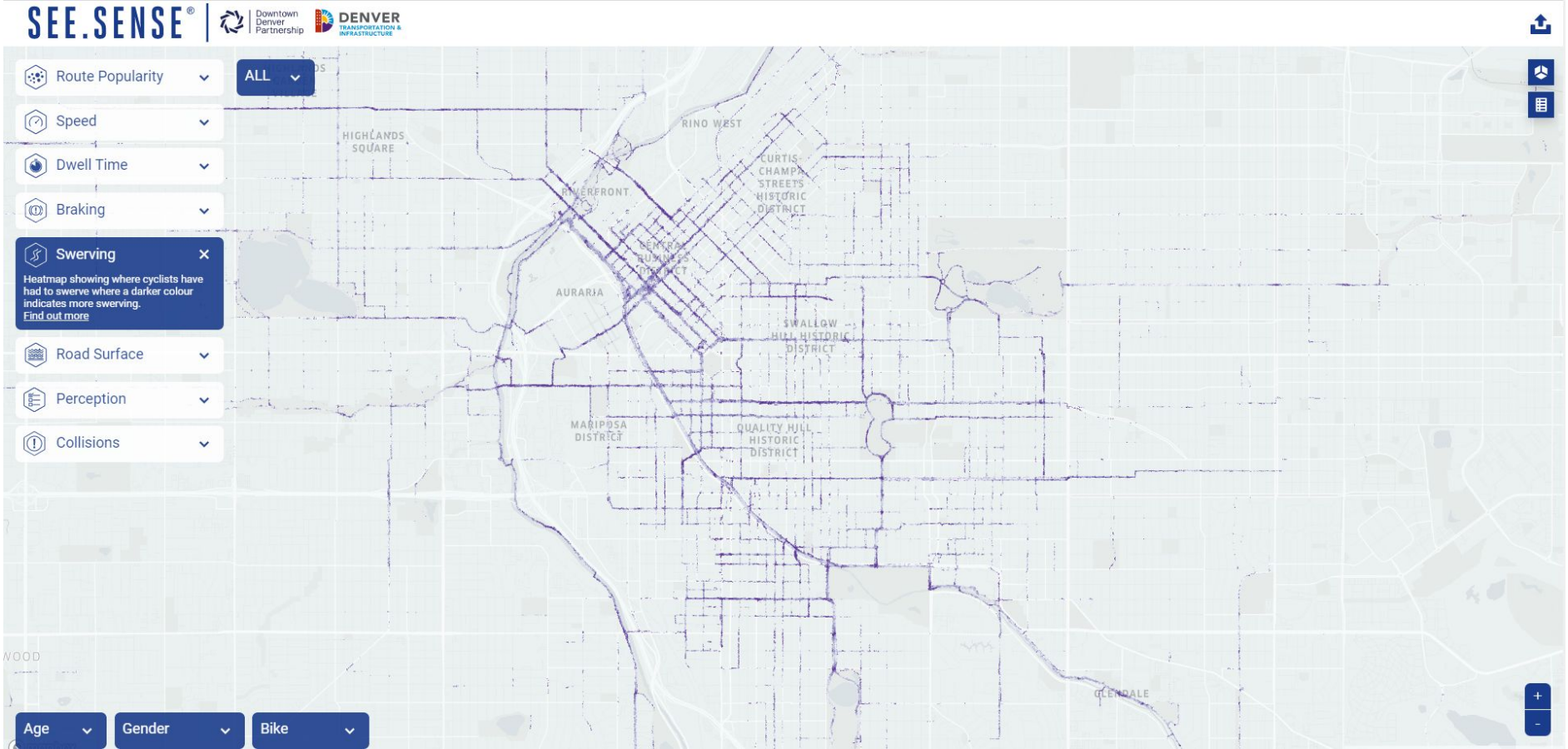


Braking

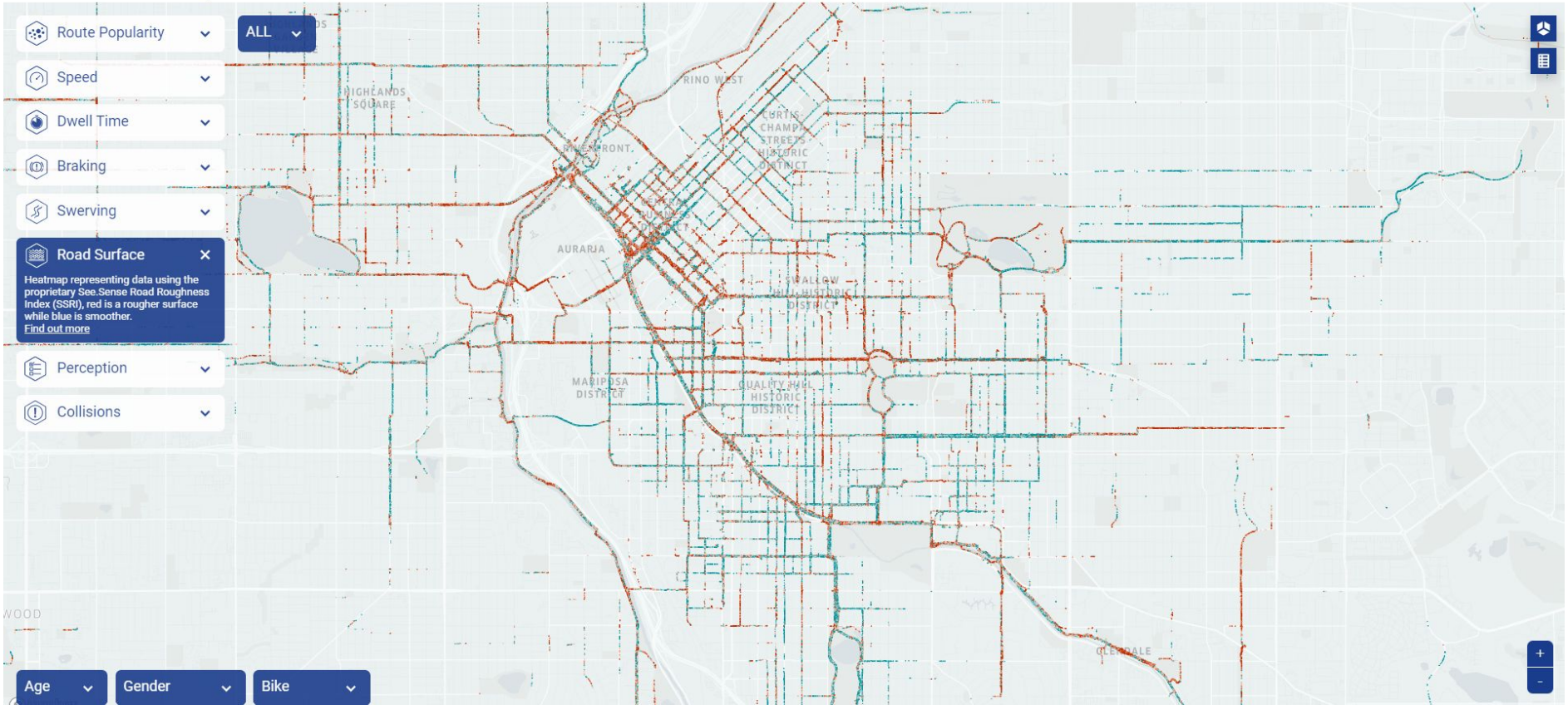
SEE.SENSE® | Downtown Denver Partnership | DENVER TRANSPORTATION & INFRASTRUCTURE



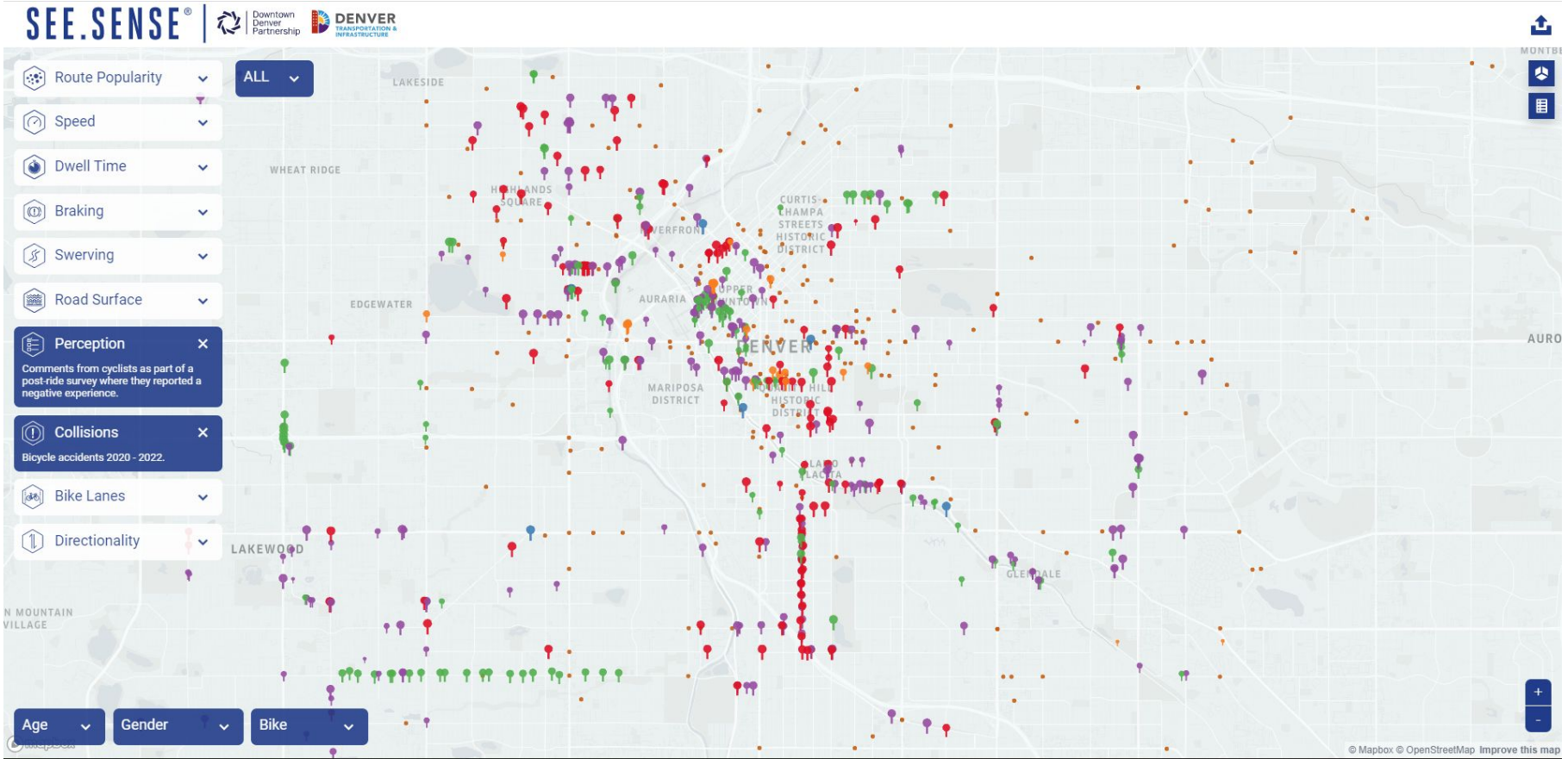
Swerving


SEE.SENSE®
Downtown Denver Partnership
DENVER TRANSPORTATION & INFRASTRUCTURE
Route Popularity
ALL
Speed
Dwell Time
Braking
Swerving
Heatmap showing where cyclists have had to swerve where a darker colour indicates more swerving.
Find out more
Road Surface
Perception
Collisions
HIGHLANDS SQUARE
RINO WEST
CURTIS PARK STREETS HISTORIC DISTRICT
RIVERFRONT
AURARIA
SWALLOW HILL HISTORIC DISTRICT
MARIPOSA DISTRICT
QUALITY HILL HISTORIC DISTRICT
GLENDALE
Age
Gender
Bike

Road Surface

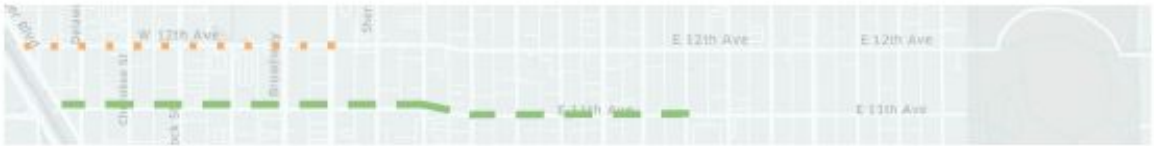


Perception + Actual Collisions



Area of interest - 11th Avenue & 12th Avenue

Popular routes of 11th and 12th Avenues between Cheesman Park and Spear Blvd.



Designated cycle lane on 11th Avenue

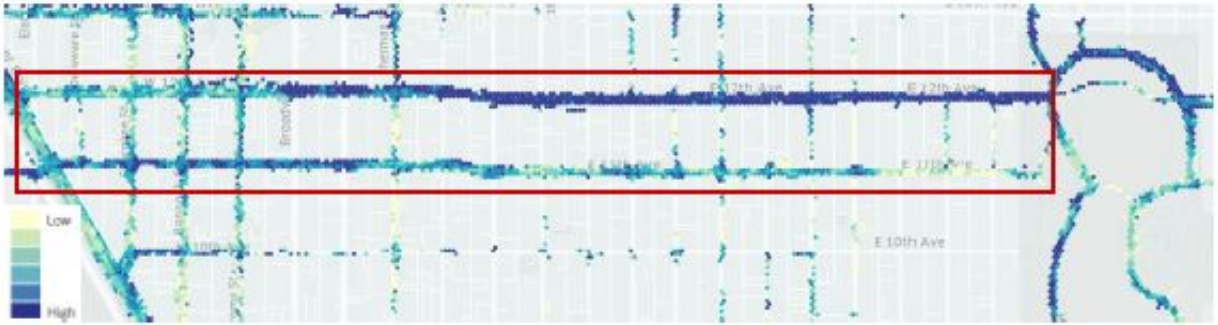
Cyclists have shared lane with vehicular traffic on 12th Avenue

Area of interest - 11th Avenue & 12th Avenue

Braking

Levels of heavy braking are on average 2.5x higher on 12th Ave compared to 11th Ave.

This may be explained by the designated cycle lanes on 11th, compared to 12th Ave where cyclists share the lane with all other traffic.



Cyclists have shared lane with vehicular traffic

Designated cycle lane

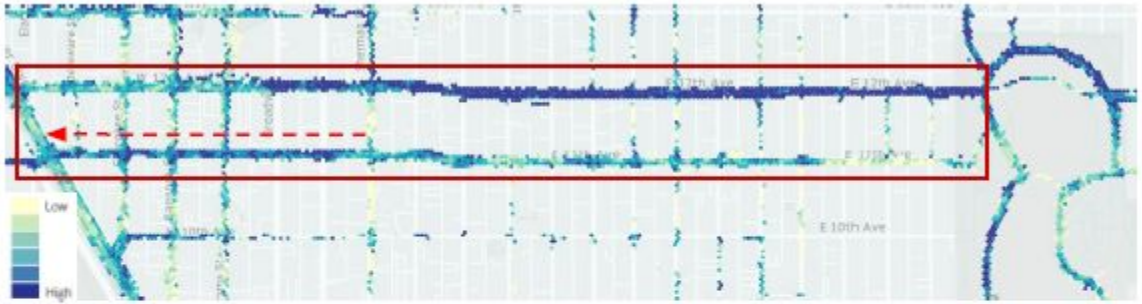
Area of interest - 11th Avenue & 12th Avenue

Braking

Levels of heavy braking on 11th Ave intensify after Sherman St and remain high until Speer Blvd.

This is surprising as this is an area with designated cycle lanes.

However, reports from cyclists in our app suggests this may be due to cars having to navigate the cycle lane to park.

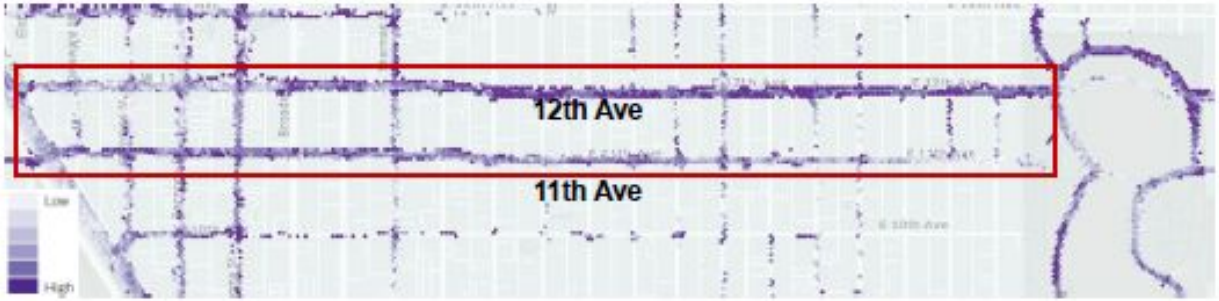


"Cars swerving into the bike lane in front of me to park; more obstructions of bike lane by parked cars that were partially parked in it causing me to navigate into traffic lane...Drivers seem very unaware there is a bike lane here"
"Car pulls over to obstruct bike lane on 11th"
"There needs to be more awareness made of cyclists especially on streets with bike paths like 11th. More signs maybe?"

Area of interest - 11th Avenue & 12th Avenue

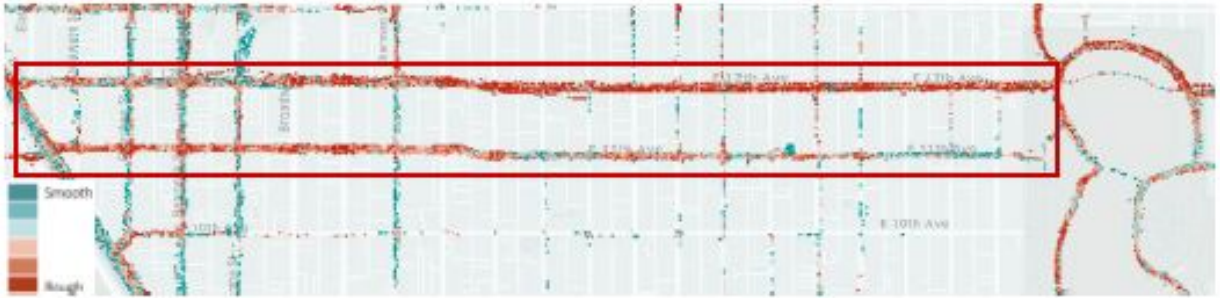
Swerving

Levels of heavy swerving are on average 1.5x higher on 12th Ave compared to 11th Ave.



Road Surface

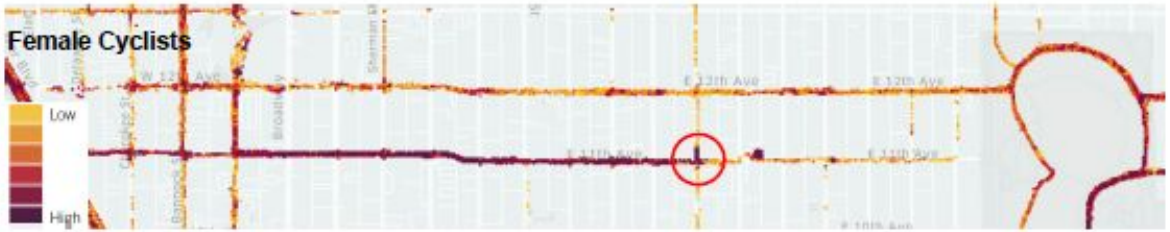
Higher levels of rough road surface experienced by cyclists on 12th Ave compared to 11th Ave.



Area of interest - 11th Avenue & 12th Avenue

Male / Female Cyclists Comparison

Female cyclists prefer using the designated cycle lanes on 11th Avenue, where as Male cyclists do not seem to prefer one or the other.
Female cyclists also prefer using the main road to exit Cheesman Park onto 12th Avenue, then make their way onto 11th to use the cycling infrastructure.
The cycle lane begins at 11th and Emerson St. and Emerson St. is a popular route for female cyclists between 11th and 12th.



Cyclists have shared lane with vehicular traffic

Designated cycle lane

W 13TH AVE - CYCLE LANE INTRODUCTION (Platte River Trail - Mariposa St.)

See.Sense data can also be used to measure the impact of new infrastructure.

Before
41 active cyclists
95 miles covered

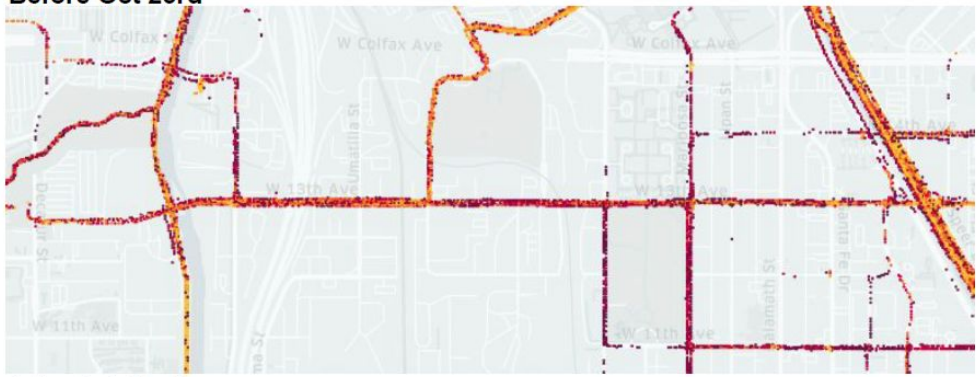
After
10 active cyclists
30 miles covered

Early indications of an increase in usage, with **2.3 miles per cyclist before** the cycle lane was introduced, and **3.0 miles per cyclist after** its introduction.

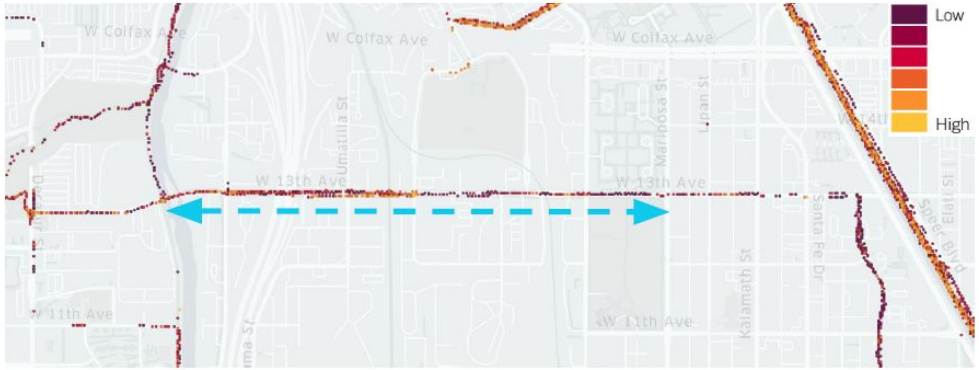
This also indicates that cyclists are now staying on W 13th Avenue to use the cycle lane rather than using other routes.

Cycle lane location

Before Oct 23rd



After Oct 23rd



W 13TH AVE - CYCLE LANE INTRODUCTION (Platte River Trail - Mariposa St.)

Swerving / Braking

Again, difficult to tell if the cycle lane introduction has had an effect until the data builds further.

Initial areas of heavy swerving and braking seem to be appearing in the same locations as before, around the railway tracks.

Swerving

Before

After

Low

High

Braking

Before

After

Low

High

W 13TH AVE - CYCLE LANE INTRODUCTION (Platte River Trail - Mariposa St.)

Speed

The average speed of cyclists along W 13th Avenue has **increased from 12.4 mph to 14.6 mph** since the introduction of the cycle lane, indicating cyclists may feel safer and therefore more confident to travel at a higher speed.

Road Surface Comparison

Difficult to draw any strong conclusions so far. Once the data builds more over the coming months, any changes in cyclist experience will become more clear.

Initial data indicates a smoother road surface experienced by cyclists between Umatilla St. and Zuni St. (circled in red).

A rougher road surface is commonly experienced when crossing railway tracks (circled in black).

Speed

Before

After

Low

High

Road Surface

Before

After

Smooth

Rough

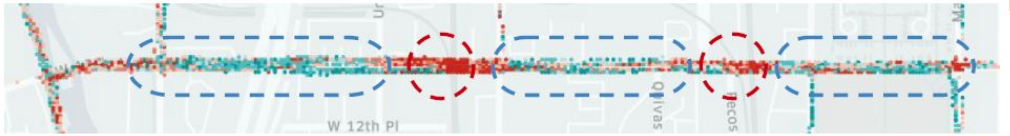
ADDITIONAL ANALYSIS - W 13TH AVE *(JUNE '22)*

Road Surface Comparison

Road surface roughness shows significant improvement after the introduction of the cycle lane. With smoother road surfaces experienced by the cyclists along the majority of W 13th Ave (circled in blue), apart from the two railway crossings (circled in red).

Before

After



Smooth

Rough

Areas with high levels of braking

Highest levels of braking

1 Walnut St. & Broadway
Busy intersection, no cycling infrastructure

2 Wazee St. & 16th St. Mall
No cycling infrastructure, road surface changes at intersection

3 E 19th Ave & Pennsylvania St.
Cycling infrastructure on E19th, evidence of rough road surface

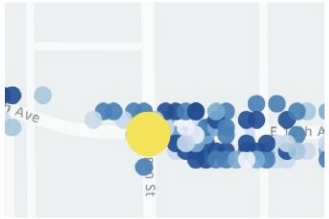
4 W 13th Ave - between Shoshone St and Umatilla St.
Crossing train line

5 W 13th Ave & Mariposa St.
Cars cross cycle lane to turn

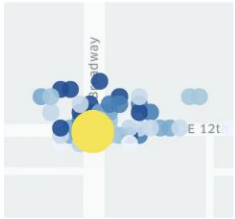
6 E 12th Ave & Logan St. (12th Ave in general)
No cycling infrastructure, a lot of parked cars near intersection.

LOCATIONS WITH HIGH LEVELS OF BRAKING & AND A COLLISION / CLOSE PASS

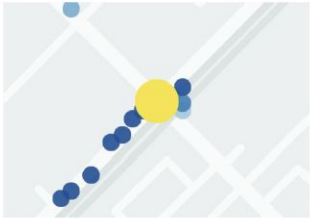
1. W 13th Ave
Crossing railway tracks between Shoshone St and Umatilla St.



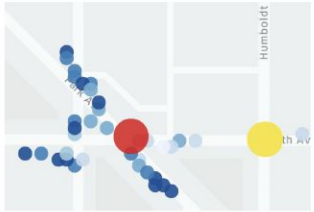
2. E 12th Ave & Logan St



3. E 12th Ave & Broadway



4. Welton St & 21st St



5. E 16th Ave & Park Ave

6. W 13th Ave & Bannock St

Close Pass (See.Sense Reports)

Collisions (2020/21)

Areas with high levels of swerving

Highest levels of swerving

1 20th St & Blake St
Busy intersection, no cycling infrastructure

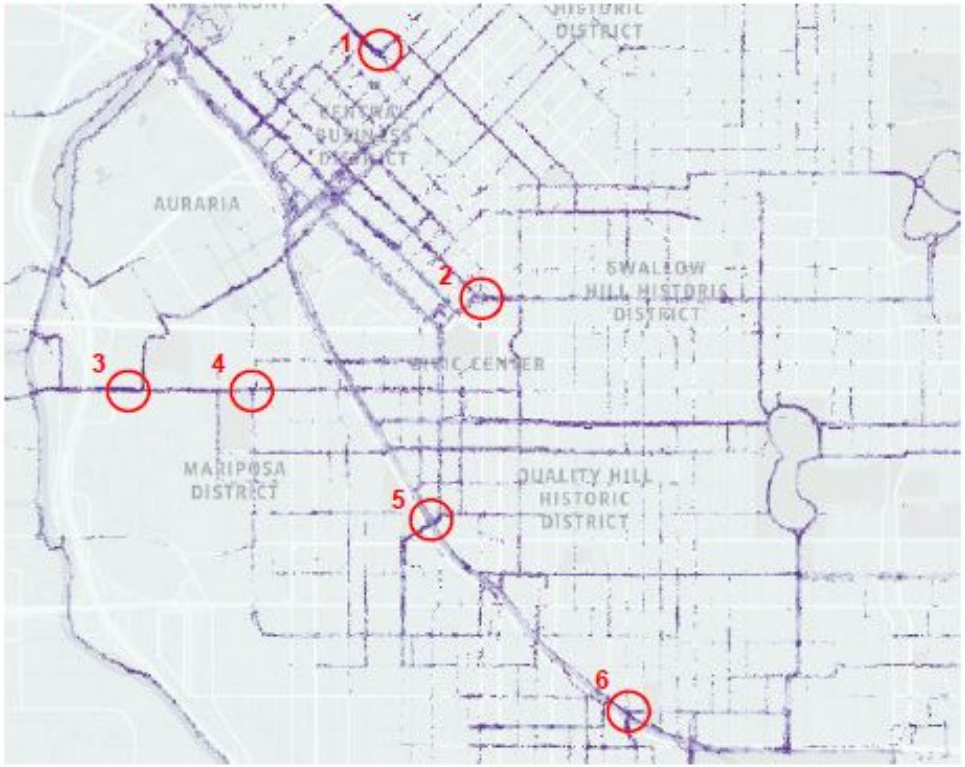
2 N Broadway & E 16th Ave
Cycle infrastructure on 16th leads onto very busy 5 lane road without infrastructure

3 W 13th Ave - between Shoshone St & Umatilla St.
Crossing train line

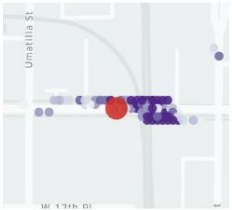
4 W 13th Ave & Mariposa St.
Cars cross cycle lane to turn

5 Bannock St. crossing Speer Blvd
to Sunken Gardens Park

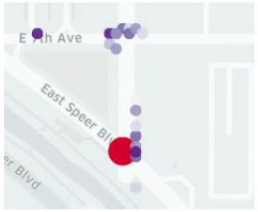
6 Emerson St & E Speer Blvd
Crossing busy main road to stay on cycling infrastructure on Emerson St



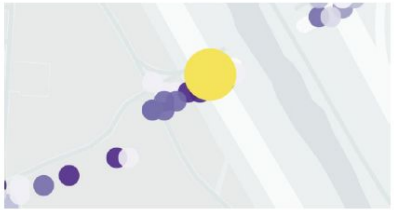
LOCATIONS WITH HIGH LEVELS OF SWERVING & A COLLISION / CLOSE PASS



1. W 13th Ave
Crossing railway tracks between Shoshone St and Umatilla St.

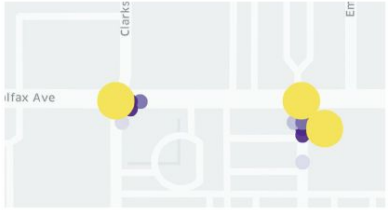


2. E Speer Blvd & Lincoln St



3. Speer Blvd
Entering Sunken Gardens Park

4. E 14th Ave & Sherman St
Entrance to Liberty Park

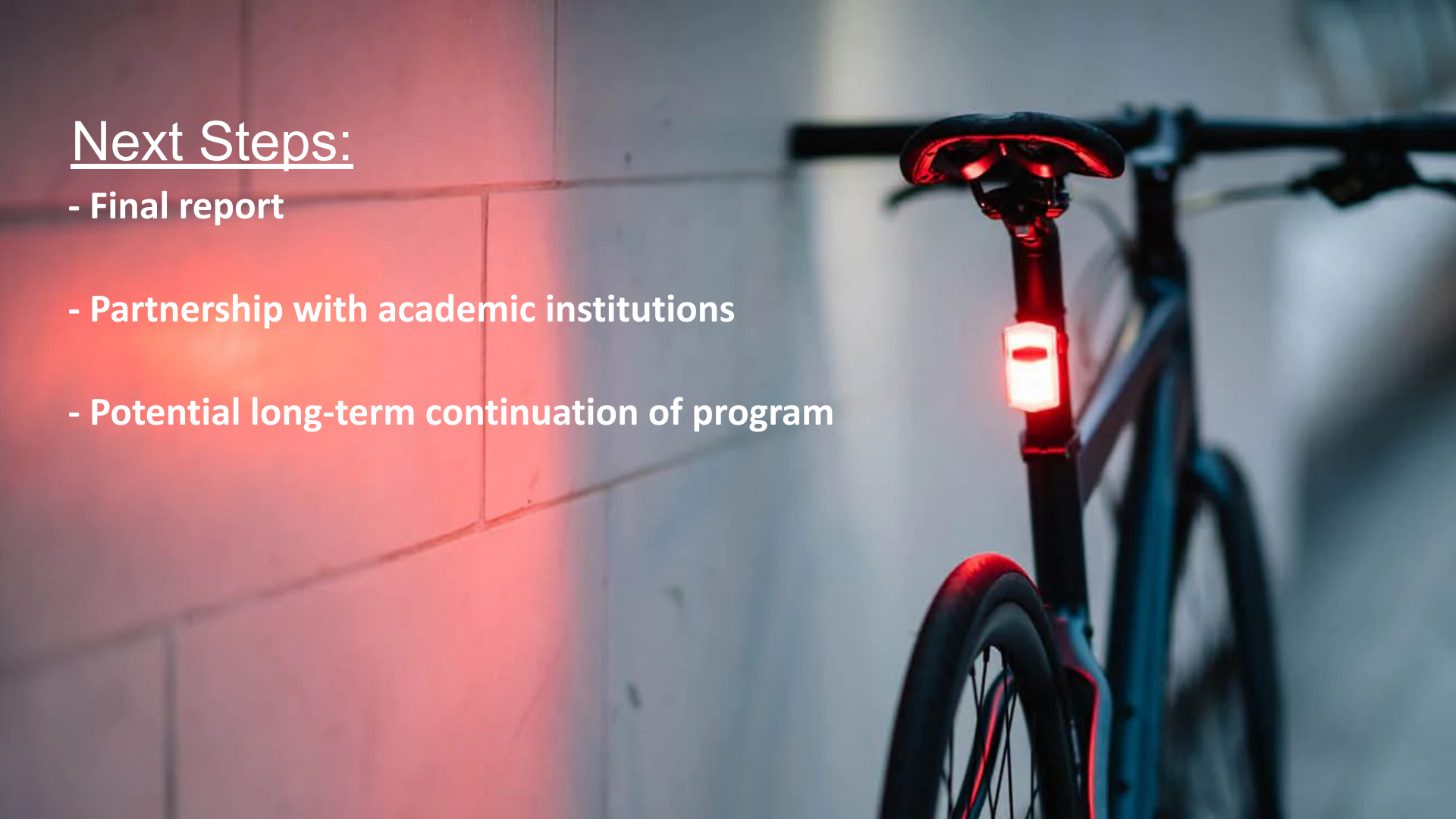


5. E Colfax Ave & Clarkson St / Emerson Street

6. 20th St & Blake St

Close Pass (See.Sense Reports)

Collisions (2020/21)



Next Steps:

- Final report

- Partnership with academic institutions

- Potential long-term continuation of program

Downtown Denver Partnership

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Thank You

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