Pedestrian and Bicycle Information Center

E-Scooter and Micromobility Safety Webinar Series (Part II)

Agency Case Studies

Bryan Nguyen Portland Bureau of Transportation
Ted Randell District Department of Transportation
Nathan Pope City and County of Denver

Housekeeping

⇨ **Submit your questions**

⇨ **Webinar archive: www.pedbikeinfo.org/webinars**

⇨ **Certificates and professional development hours**

⇨ **Follow-up email with more details**

⇨ **Review previous episodes and sign up for upcoming sessions**

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Discussion

⇨ **Send us your questions**

⇨ **Follow up with us:**

    ⇨ **General Inquiries pbic@pedbikeinfo.org**

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PBOT E-SCOOTER PROGRAM

Micromobility Safety

March 13, 2024

Bryan Nguyen, MURP | Shared Micromobility Coordinator

Overview

Agenda:

- Shared Micromobility History and Program Basics
- Equity Program
- Recent Milestones
- Geofencing and Safety
- Program Transition
- Data and Parking
- Next Steps

Portland Shared Micromobility History

BIKETOWN launch, 1000 smart bikes

E-Scooter Pilot July-November

BIKETOWN 2.0 1500 e-bikes East Portland expansion

Lime + Lyft chosen for long-term E-Scooter program
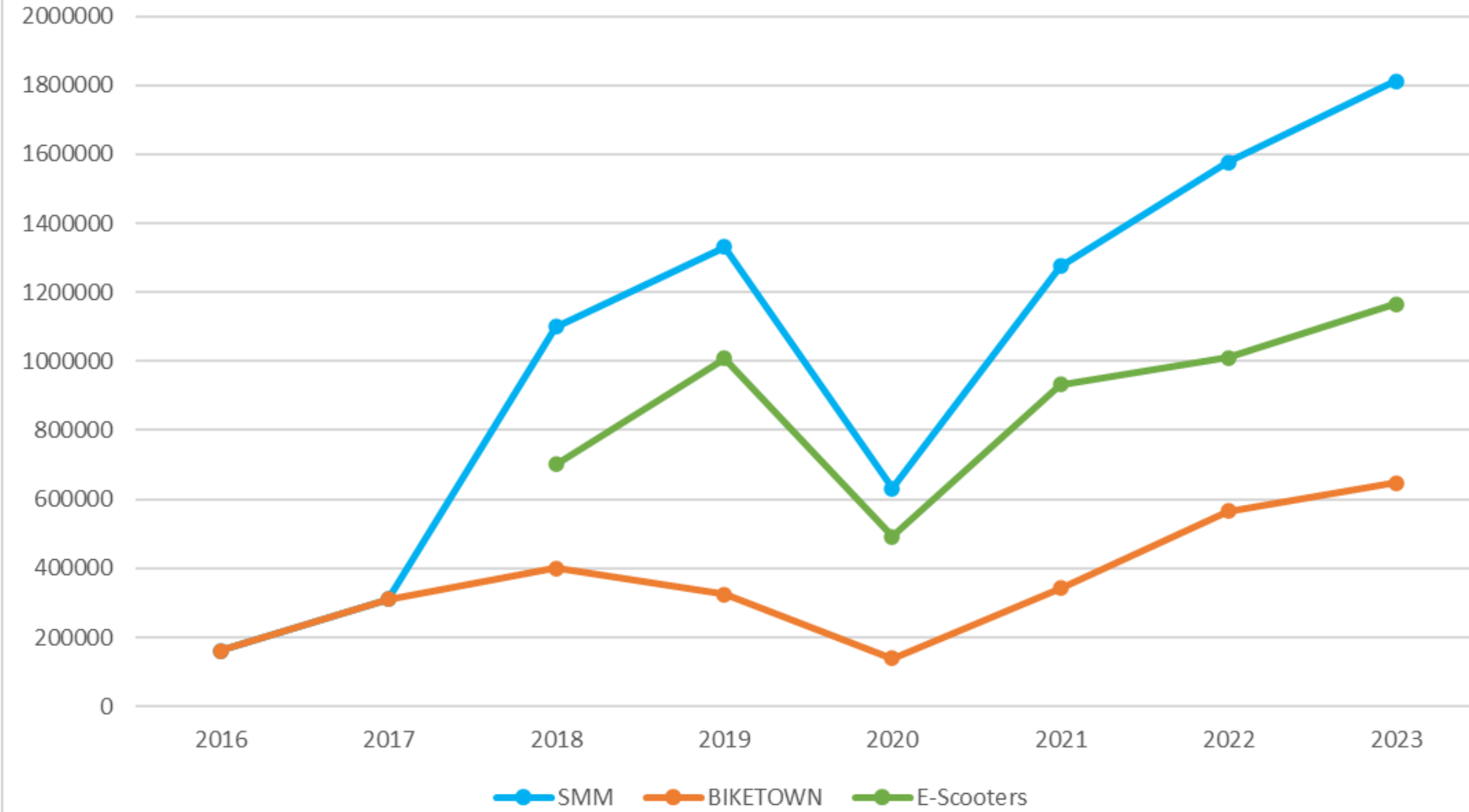
BIKETOWN increases size of e-bike fleet to 2,000

2016 **2017** **2018** **2019** **2020** **2022** **2023**

Adaptive BIKETOWN launch

Phase 2 E-Scooter Pilot (2019 – present)

BIKETOWN Expansion into North Portland and further East

PBOT
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E-Scooter Basics

2023 OPERATORS:

- Bird
- Lime
- Spin

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E-Scooters by the Numbers in 2023

Number of e-scooters permitted to operate	3,400
Service area *(citywide)*	145 mi²
Number of trips in 2023	1,165,400
All-time E-Scooter system trips *(since July 2018)*	5,307,000

E-Scooters: Equity Programs

- E-scooter companies **distributed helmets** and provided information to their equity programs through community events

- Spin and Lime **developed partnerships with community based organizations**

- Portland is one of Lime's largest equity program (i.e. Lime Access) globally by unique active users

- Recent RFP address equity issues relating to: **financial, technological, and enrollment barriers**

Recent E-Scooter Program Milestones

- **First City program to use Portland 311**, allowing improved customer service and responsiveness for e-scooter issues

- Launched **Micromobility Dashboard with Ride Report** for greater data transparency with the public

- Designed, reviewed, approved, and ordered **e-scooter pavement marking** to be installed in future bike corrals

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Geofencing and Safety

- Updating 311 form with more pictures

- Sidewalk riding still a concern, equity issues

- Slow ride zones

- No parking zones
  - Limited areas

- In-app quizzes (multiple languages) help educate users about rules of the road

- Slow speeds for new users

- Safety campaign (lock-to) with spring 2024 launch
  - Transit routes

From Pilots to Long-Term E-Scooter Program

- 2018 – PBOT established its **first E-Scooter pilot program.**

- 2019 (April) – PBOT launched its second E-Scooter pilot program which continues to this day. **Currently, three companies continue to operate in our second pilot.**

- 2020 (October) – Portland City Council direct PBOT to develop a Request for Proposals (RFP) for a **long-term contractual program.**

- 2022 (June) – RFP was released for solicitation

- 2023 (June) - RFP 2.0 was released for solicitation

- **Spring 2024 – City will launch long-term e-scooter program.**
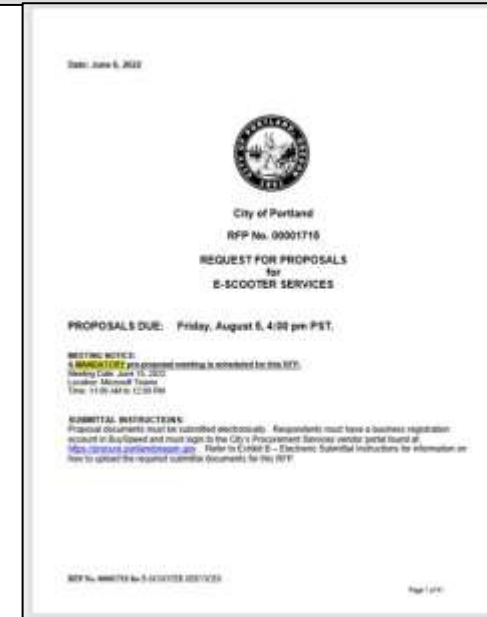
RFP Structuring for Long-Term Program

- **Lock-to requirement** for e-scooters to promote safety on sidewalks and reduce pedestrian conflicts

- **Fewer operators** to improve user experience

- More e-scooters and different form factors will be available city-wide to further **increase transportation access**

- Requiring e-scooter companies to have all W-2 employees to **promote equitable hiring practices** and workforce development

- Limit price increases to users and r**equiring discounted equity program** for e-scooter users

- **Budget neutral** through fee generated revenues

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Few of Portland's +11,000 bike parking spots are in East Portland
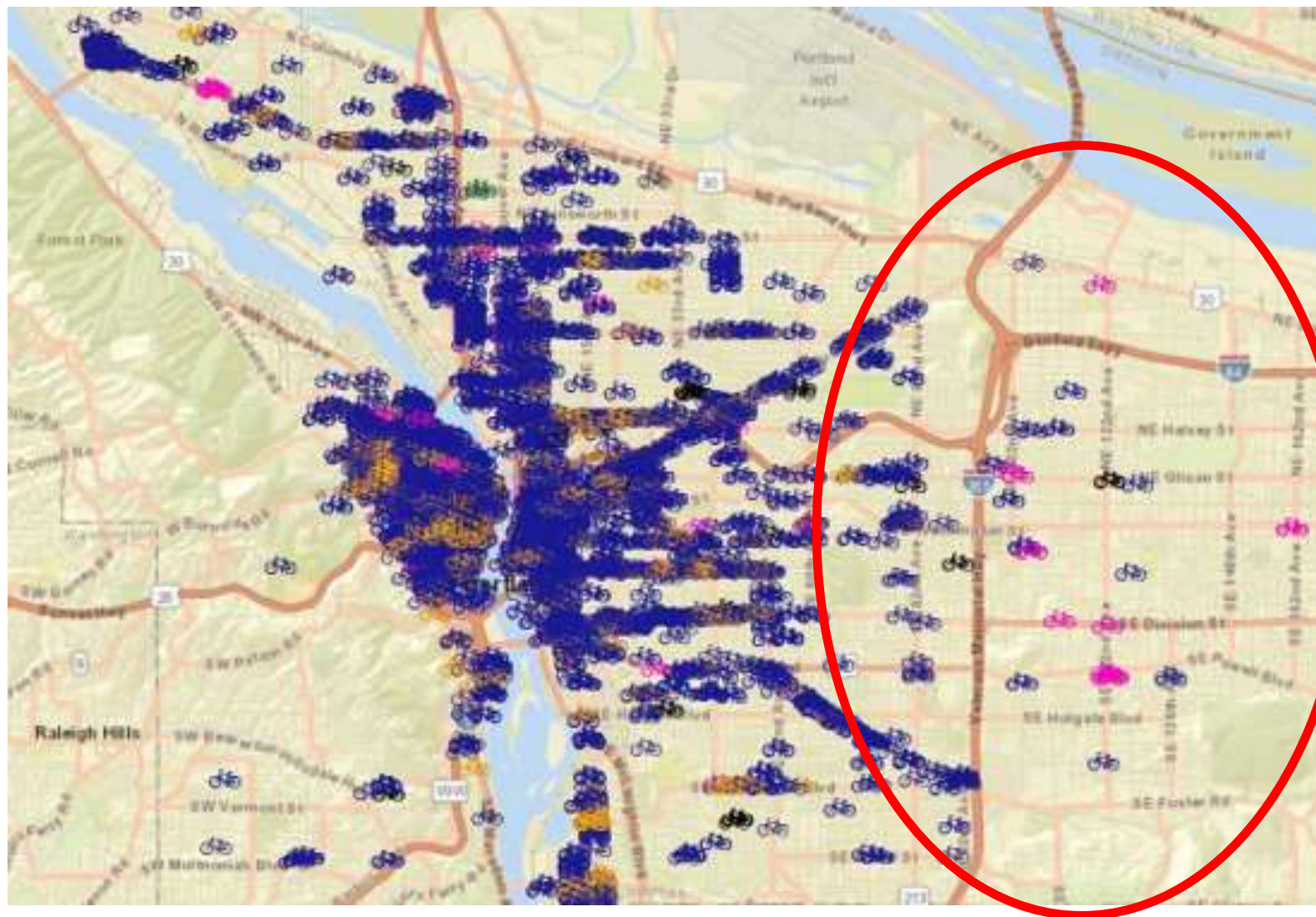
E-Scooter Parking

- Currently:
  - Dockless and % fleet equity deployment
- Future:
  - Lock-to and neighborhood coverage zones
- Installing more bike corrals
  - Goal: 375 bike staples
  - New pavement marking
  - Using data (deployments, trip starts, trip ends, etc...)
  - Daylighting intersections

Next Steps for E-Scooter Program

- Negotiate and finalize contracts with the two companies with the highest scores, Lime and Lyft, that delivers the greatest public benefits to Portlanders and continues trip growth

- Launch new fleets with two long-term e-scooter operators in spring 2024

- Continuing to install more bike parking in East Portland in FY 23-24 with new lock-to requirement

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Thank You

Bryan.Nguyen@portlandoregon.gov

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DISTRICT DEPARTMENT OF TRANSPORTATION

PBIC E-Scooter Safety Webinar, DDOT Shared Fleet Devices

Ted Randell, Micromobility Coordinator

GOVERNMENT OF THE
DISTRICT OF COLUMBIA
MURIEL BOWSER, MAYOR
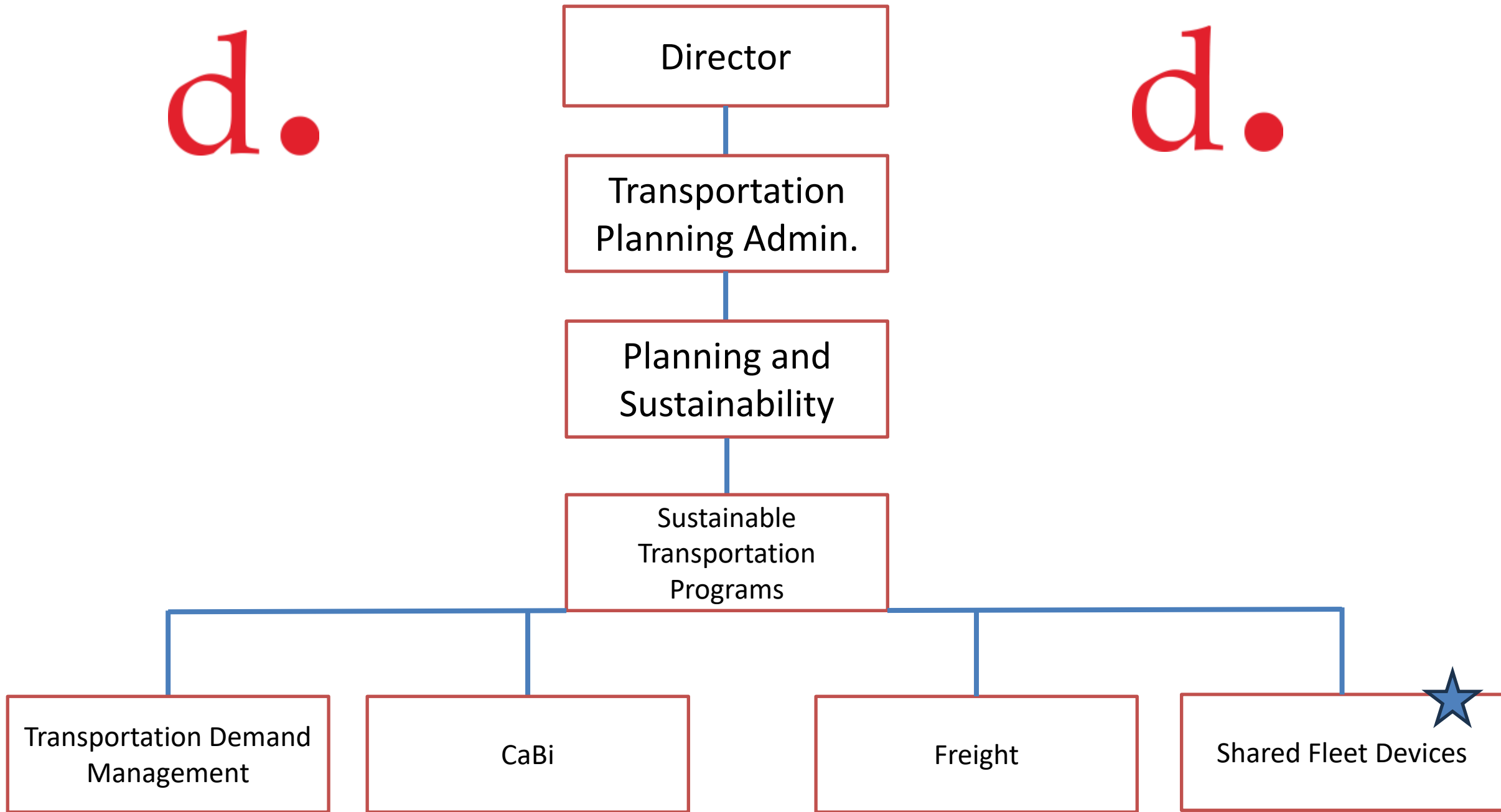
Capital Bikeshare

- Publicly owned and managed
- Long-term contract with Lyft™ for operations, management, marketing.
- Station-based
- Mixed fleet of hybrid e-bikes and classic docked bikes
- Regional (7 neighboring counties)
- Capital Bikeshare for All
- Community Partners

Shared Fleet Devices (SFD)

- Private operators
- 2-year permit terms, authorized through DCMR
- Mixed fleet of e-scooters and e-bikes (class 1 and class 2)
- All dockless (require locking)
- General fund revenue
- Low-income customer program

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DC MURIEL BOWSER, MAYOR

DDOT's Role in Shared Fleet Devices: Enforce, Plan, Analyze

Public Space Permits (2-year cycle)

- **Operational (Enforcement)**
  - Fleet oversight
  - 311 parking complaints
  - Resident concerns
  - Projects, goals, laws & regs.

- **Policy Development (Planning)**
  - Follow trends, info share
  - Recommend and respond
  - Draft and decide

- **Data Management (Analysis)**
  - Third party aggregator and internal MDS intake
  - Organize and analyze
  - Research proposals and data partners

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MURIEL BOWSER, MAYOR

SFD Program Statistics

6,776,505 trips in 2023
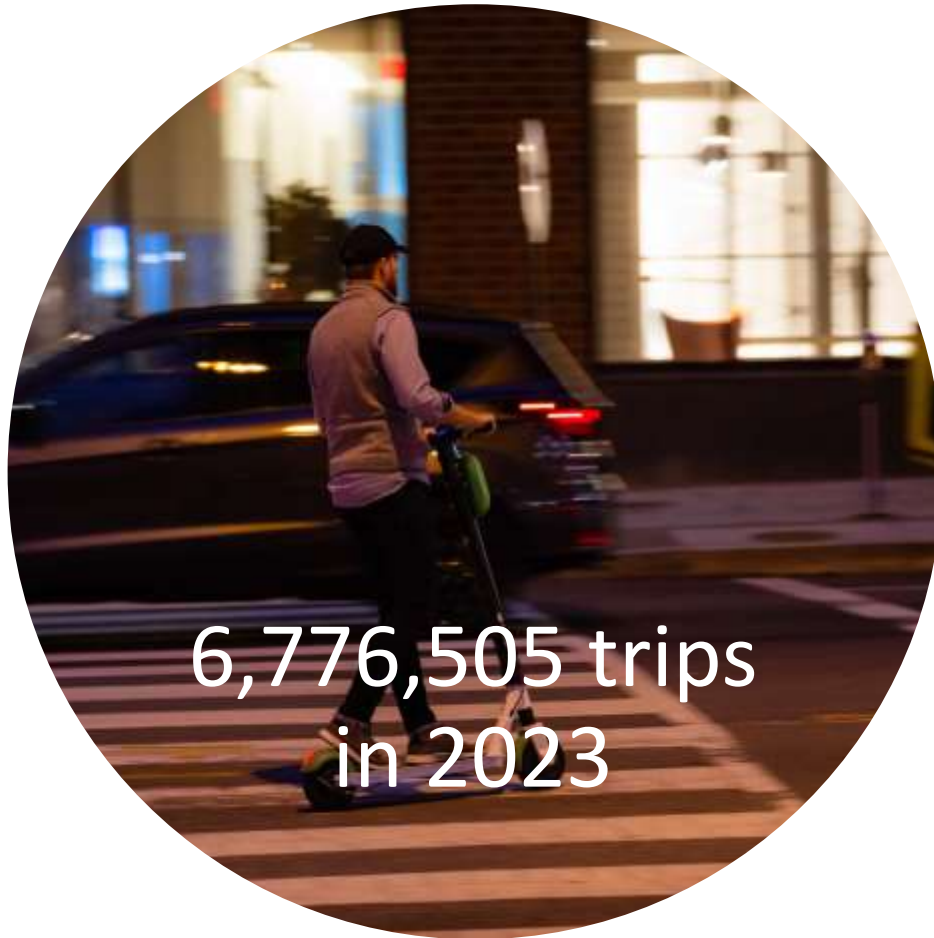
7% of trips were low-income in 2023

1.3 and 0.9 average miles/trip on bikes and scooters, respectively.

Four operators with a combined fleet allowance of up to 11,720 scooters and 6,165 bikes.

SFD 2023 Overview

- 6,776,505 trips on ebikes and scooters

- 2x bike trips from FY23 to FY24

- About 17,000 devices permitted

- Low-income customer program growth, 7% of trips in 2023 with new Low-income incentives.

Washington D.C Annual SFD Trips
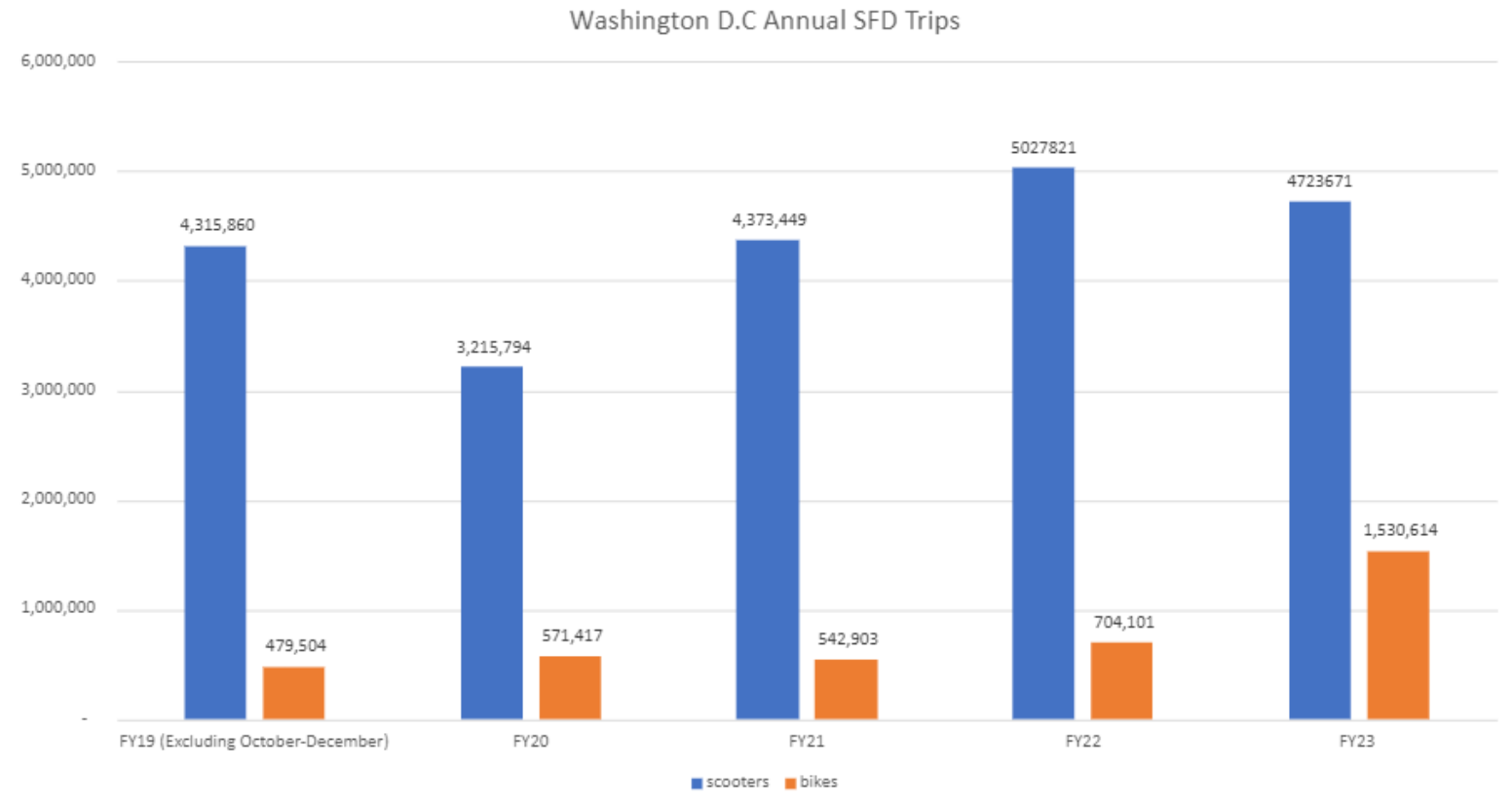
Built Environment, Safe Systems Approach

Fiscal Years 20 Through 24
Proposed
Protected Bikeways
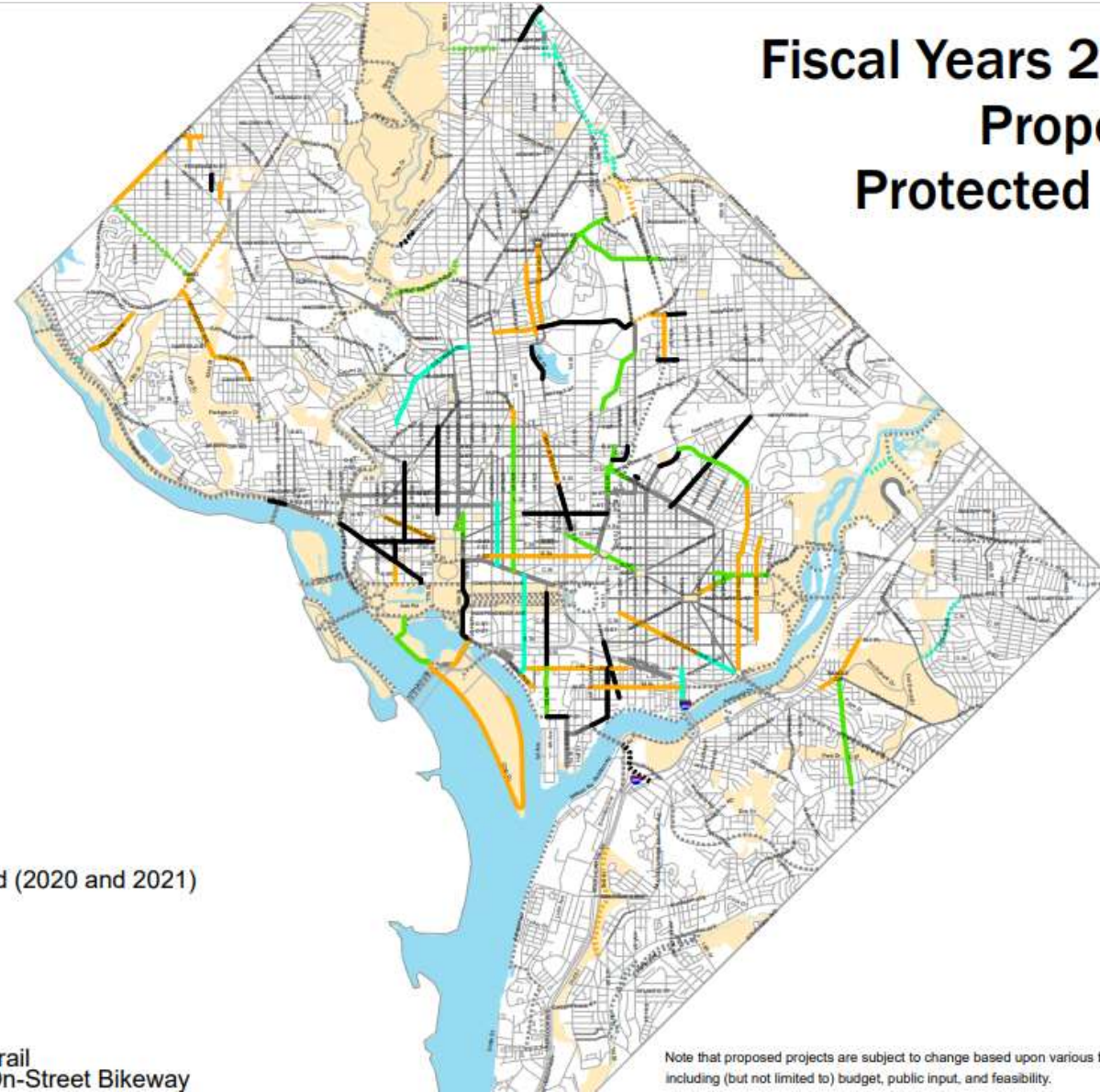
LEGEND
Completed (2020 and 2021)
2022 — Lane
Trail
2023 — Lane
Trail
2024 — Lane
Trail
Existing Trail
Existing On-Street Bikeway

Note that proposed projects are subject to change based upon various factors including (but not limited to) budget, public input, and feasibility.

February 17, 2022

GOVERNMENT OF THE DISTRICT OF COLUMBIA
MURIEL BOWSER, MAYOR

What's New in The District?

2023

- Decreased Five to four operators
- More bikes, more bike lanes!
- Lock-to audit requirement raised to 40% of all trips
- Low-Income Customer incentive

2024 (and beyond)

- Sidewalk detection/increased speed technology rules
- Review approach to parking incentives, parking density and typology.
- Updated application
- Permit structure alterations (contracts, terms, revenue sharing)
- More device types, hybrid docking?
- Continued installation of corrals and bike racks
- Growth of protected bike lane network.

DDOT installed 1,070 bike racks and 30 micromobility corrals in 2023!

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Scooter and e-Bike Safety: Challenges

Data Reporting, Enforcement

- Crash/Incident self-reporting, **underreporting**
  - Reliance on vendors and users.
  - Fear of repercussions.
- **Education** and dissemination of information to users and non-users alike.
- **Enforcement**
  - Not a police priority
  - Agency capacity
- **Crash Data and classification**
  - "electric scooter", "shared scooter", "segway", "dirt bike", "wheelchair"
  - Pedestrian or vehicle?
- **Vendor data**
  - Inconsistencies, complexities in monthly data reporting.

- **Administrative/Programmatic Challenges**
  - Inability of District to **fine** vendors or users directly
  - Budgetary and administrative constraints
    - Limited funding opportunities
    - Short term permit cycle

Table 1

Patient and accident characteristics associated with e-scooter-related injuries during a 1-year study period.

	N (%)
Age	
<16	50 (12.6%)
16–25	102 (25.7%)
26–40	166 (41.8%)
41–64	74 (18.6%)
>64	5 (1.3%)
Gender	
Male	238 (59.9%)
Female	159 (40.1%)
Nationality	
Resident	300 (75.6%)
Tourist	97 (24.4%)
Injured patient	
Rider	374 (94.2%)
Non-rider	23 (5.8%)
Pedestrian	18 (4.5%)
Carried by rider	4 (1%)
Other vehicle	1 (0.3%)
Helmet use	
Yes	55 (19.1%)

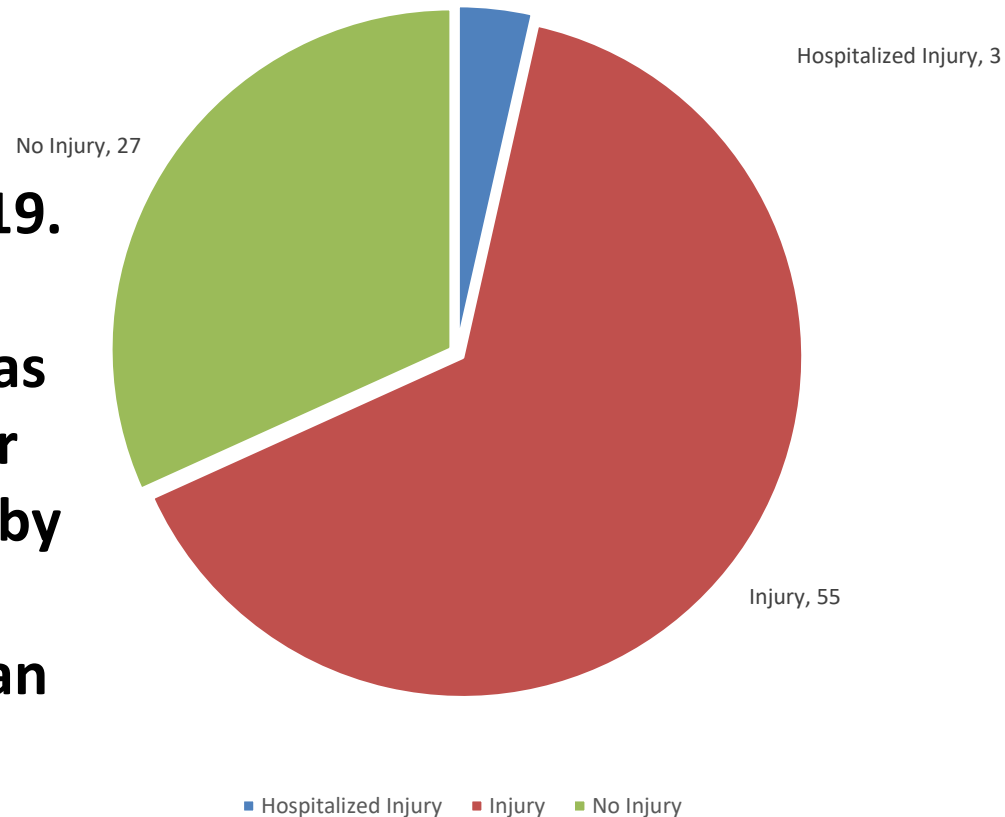## E-scooter related injuries- takeaways and focus areas.

- College-aged, younger adults
- Impact of tourism
- Riders most likely to hurt themselves (uneducated/unfamiliar?)
- Head injuries are more common in hospital admittances
- Low rate of helmet use

Coelho A, Feito P, Corominas L, Sánchez-Soler JF, Pérez-Prieto D, Martínez-Diaz S, Alier A, Monllau JC. Electric Scooter-Related Injuries: A New Epidemic in Orthopedics. J Clin Med. 2021 Jul 25;10(15):3283. doi: 10.3390/jcm10153283. PMID: 34362067; PMCID: PMC8348701.

-Chicago

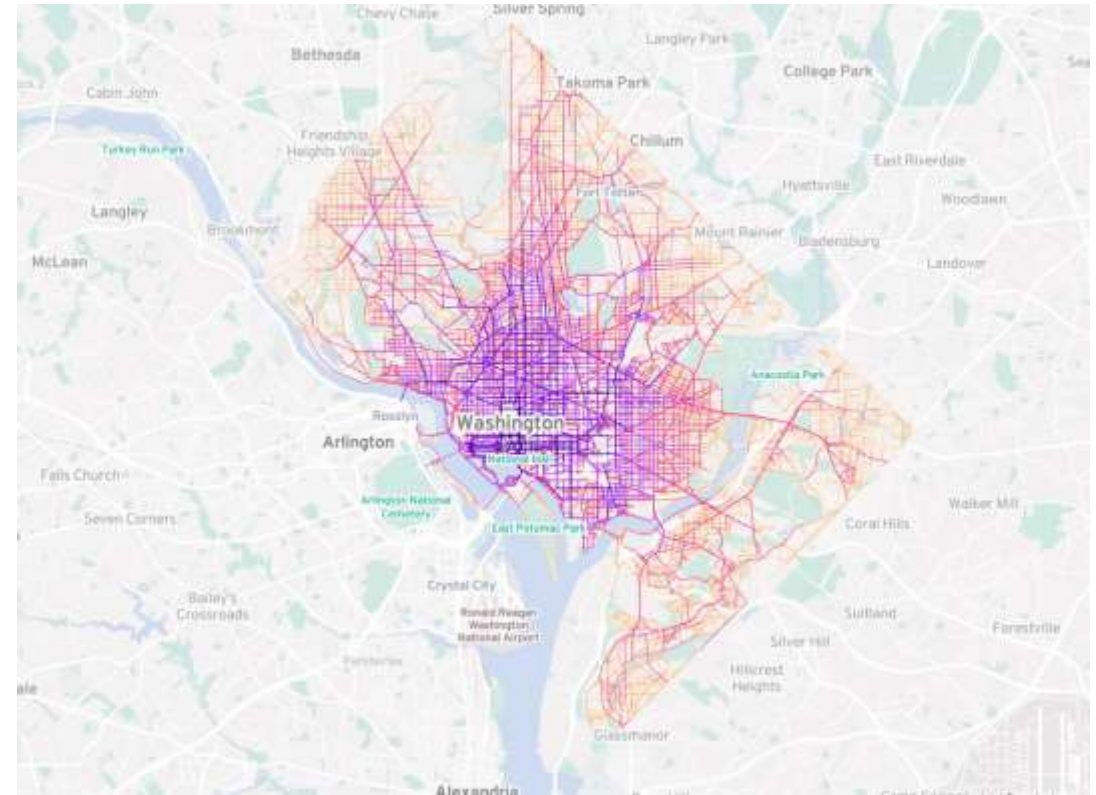GOVERNMENT OF THE DISTRICT OF COLUMBIA
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The number of reported
safety incidents in
Washington, DC from
September 2018-May 2019.
Unknown incidents were
excluded from this chart as
it may stand for a number
of safety issues reported by
the user. Hospitalized
injuries represent less than
4% of reported injuries.

Number of Reported Injuries

Hospitalized Injury, 3

No Injury, 27

Injury, 55

■ Hospitalized Injury   ■ Injury   ■ No Injury

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MURIEL BOWSER, MAYOR

Safety Toolbox:

- Trip data (devices, counts, operators, trips, etc.)
- Monthly data
- Photo audits (end-of-ride)
- Education plans, campaigns, social media.
- Police crash reports
- Safety technology on-board devices.
- 311
- Authority and discretion over permit renewal
- Future regulations
- Micromobility infrastructure expansion

interaction_type	Count of interaction_type
Accident/Injury	36
App Issue	2379
Damaged vehicle	1140
Improper parking	860
Improper riding	84
maintenance	60
null	273
other	7514
Other(Something Else)	2469
parking	1000
Ride Issue	5617
safety	31
Total	21463

Spin 2021-2022 Customer Service Interactions

Opportunities

- Better crash reporting dashboard, look at police categorization
- Advanced tech (sidewalk detection, double riding prevention)
- Permit renewal and permit type
- Public resources
  - Scooter crash reporting site
  - Feedback form
  - User surveys
  - 311 dashboard
- Regulations changes
  - Sidewalk detection
  - Speed limit
  - Operator fines
  - Improved reporting standards across industry

Thank You!

Questions?

Contact:
Ted Randell
Micromobility Coordinator
Sustainable Transportation Programs
ted.randell@dc.gov

Website: Shared Micromobility (dc.gov)

250 M St SE | Washington, DC 20003 | 202.673.6813

Program Overview
Shared Bikes & Scooters in Denver

Denver Shared Bikes & Scooters
Program Overview

E-Bikes & E-Scooter

- ~7,000 "Dockless" Devices
- Seasonal Ridership (10,000-20,000 trips/day)
- Average Trip Distance: 0.86 mi
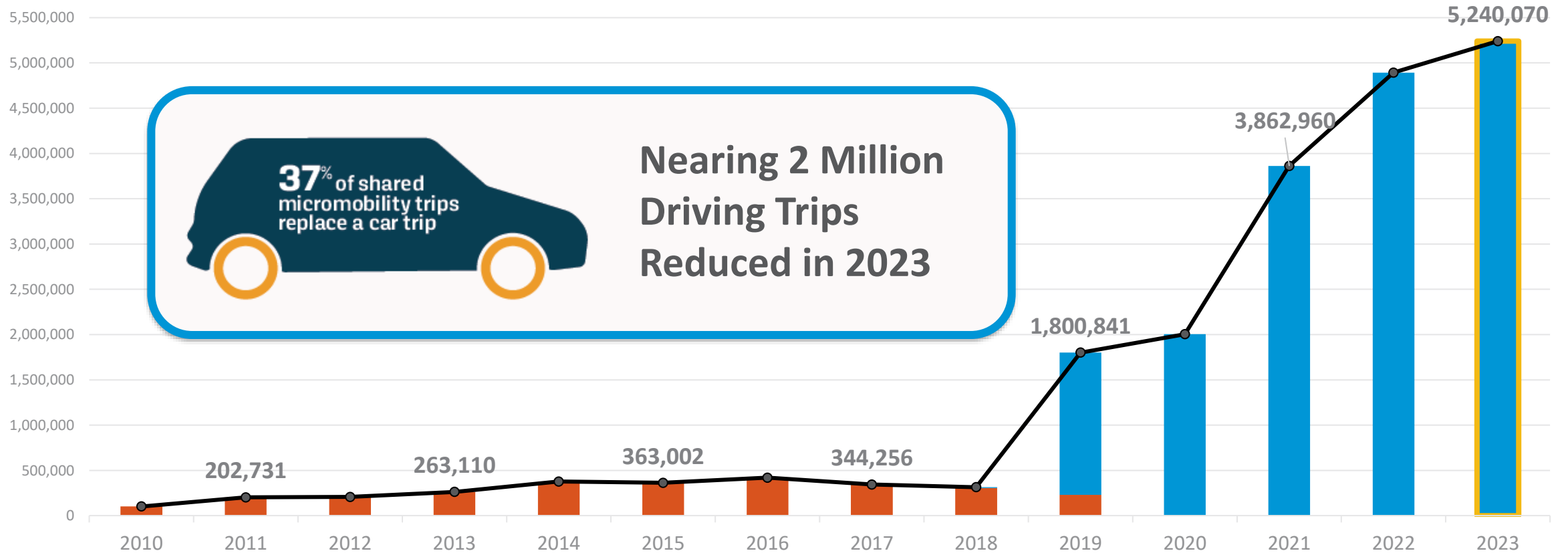- Average Trip Speed: ~7MPH

License Agreements

- 5-year Agreements with Lyft & Lime
- Requirements: 20% E-Bike, Parking Corrals, Equity Programs, Discount Passes

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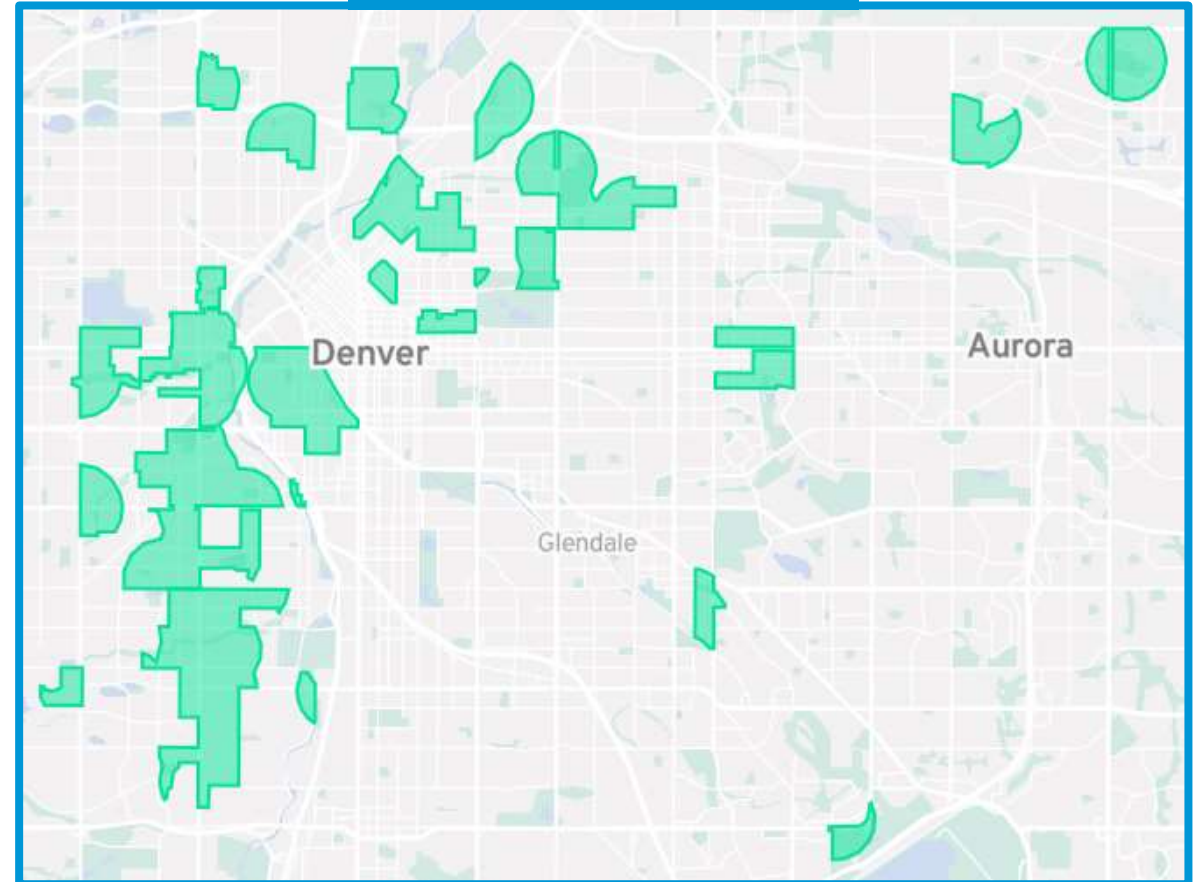
Equity Programs

Opportunity Areas

- Deployment Requirements (30% of Fleet)
- Discounted Rides [Lime only]
- ~18% of all trips in 2023

Need-based Passes

- Lyft Community Pass ($0.05/min trips)
- Lime Access (free 30-min trips)
- 3,400+ active members as of December 2023

Opportunity Areas

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Safe Riders & Sidewalks

Denver Shared Micromobility Program

Safe Riders & Sidewalks

Sidewalk Riding Concerns

- Stakeholder & community concerns around sidewalk riding

- Shared bike and scooter riders not feeling comfortable riding on the street

- Conflicts with pedestrians, poorly parked scooter

Two Approaches:

- Digital - Sidewalk Geofence Pilot (2022)

- Physical - Protected Bike Lanes (2023)

Safe Riders & Sidewalks

Sidewalk Geofence

- Stakeholders: "geofence the sidewalk"
- Test geofence GPS accuracy

Lawrence Street
Sidewalk Geofence Pilot

- Temporary "No-Ride" Geofence around sidewalk
- Test-riders on 1) on street, 2) in the bike lane, and 3) on sidewalk
- Record where scooter motors cut off
- 850 data points

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Lawrence St

Safe Riders & Sidewalks

Findings: "Consistently inconsistent"

- Test-riders were surprised by sudden stops and "late" stops

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- Produce the opposite outcome intended and create additional safety concerns

- Geofences are a great tool, especially for education, parking and large events, but not the single solution to sidewalk riding
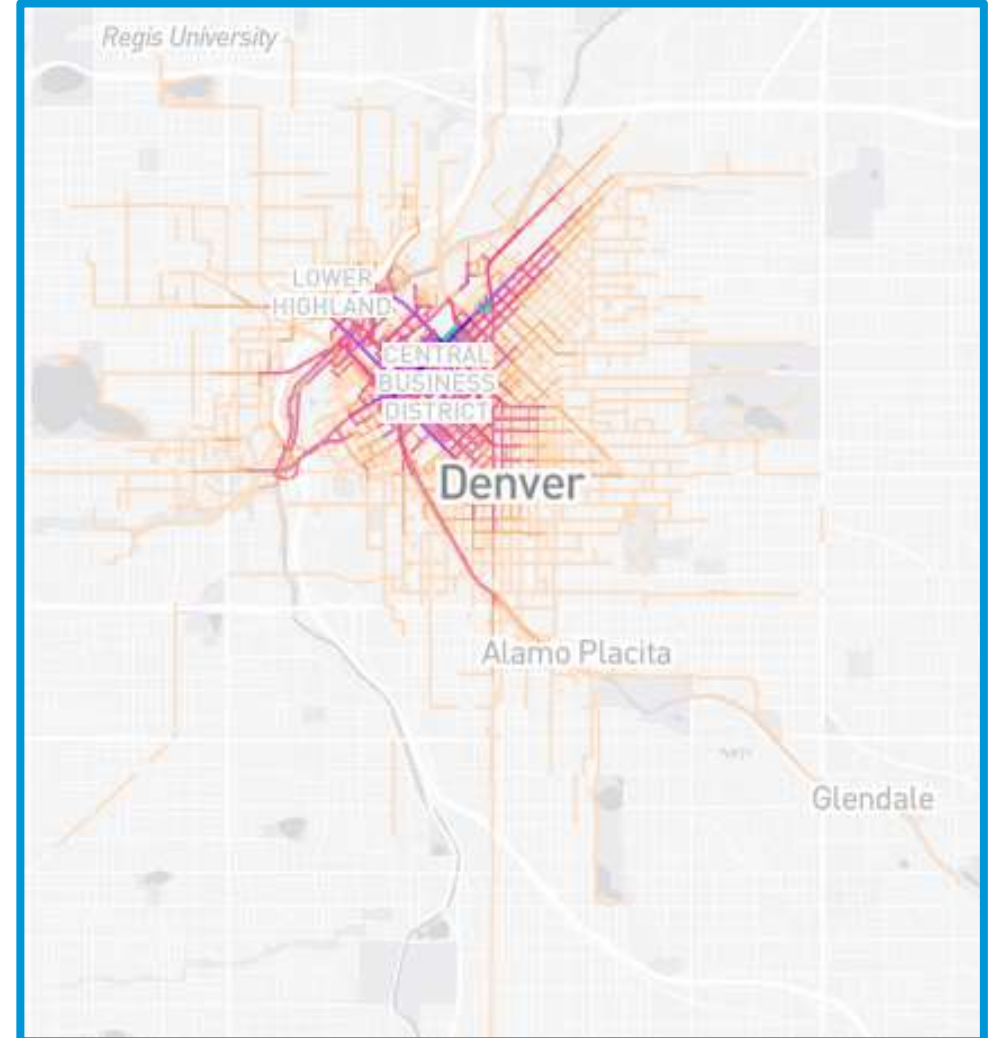

Inside Sidewalk "No-ride" Geofence
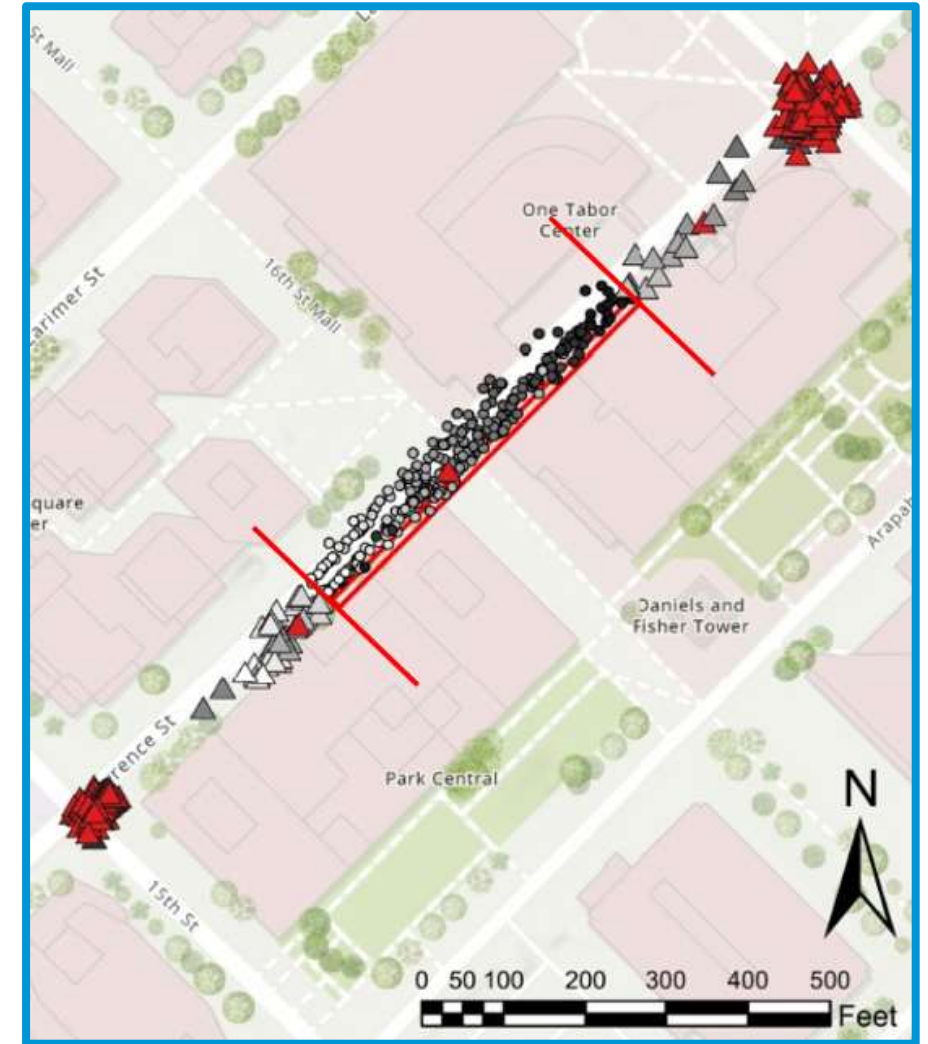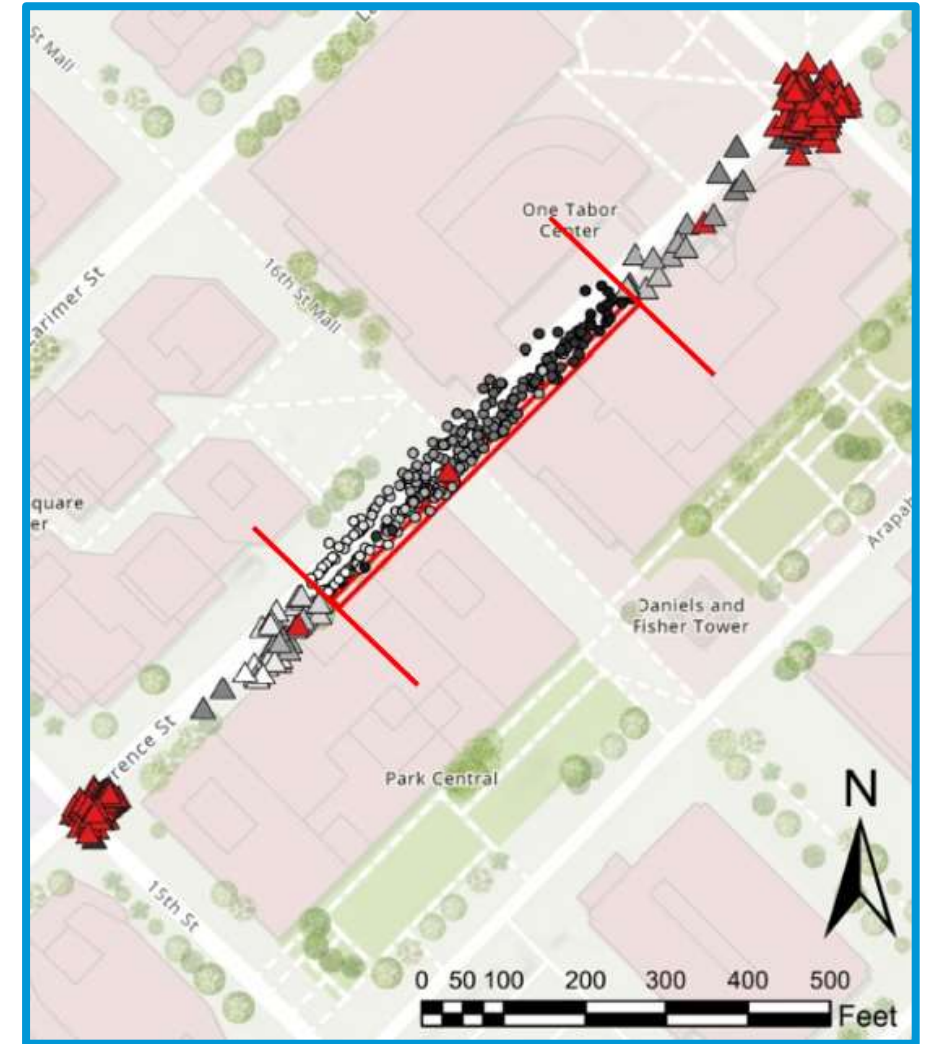
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- Reduce Sidewalk Riding

Using Shared Micromobility Data

- Ride Report
- Using trip data to help justify and prioritize projects
- "Rideshed" visualization

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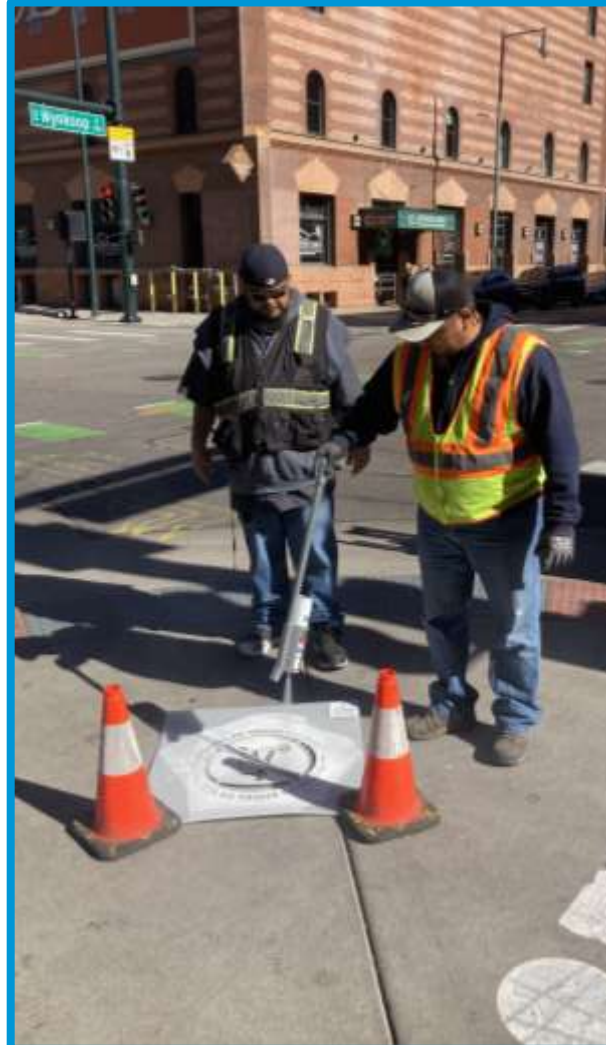
Blake/Market Multimodal Project

- Quick-build project
- 23 Blocks (~2mi) of Protected Bike Lanes
- 6 Blocks of Bus Lanes
- 3 Blocks to Pedestrian Walkways

Safe Riders & Sidewalks

Education & Signage

- Sidewalks Decals
- Education Videos
- Large Event Engagement

Parking Corrals

Corrals

- Give people a place to park
- Keep sidewalks clear & street organized
- Operator Corrals & City Corrals

Placement & Density

- Above and Below Curb
- "Inside" Protected Bike Lanes
- Gaps Analysis

Murals

- Lyft's "Dynamic Portals" murals
- Downtown Revitalization grant

Image: Mike Arzt

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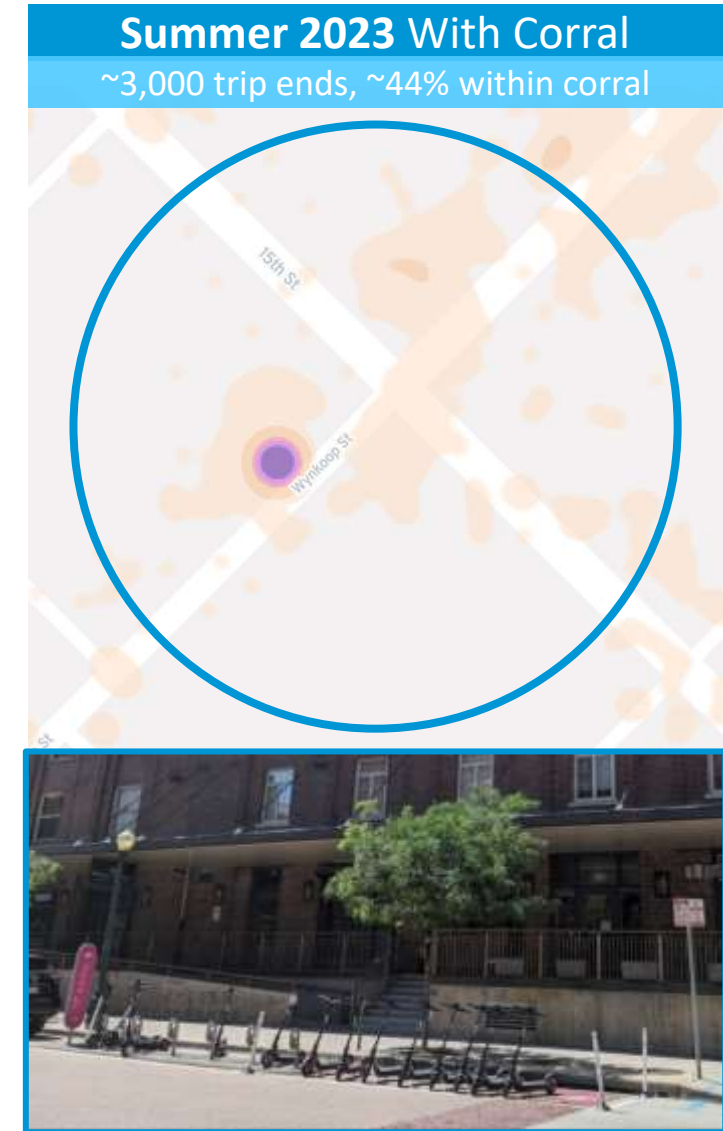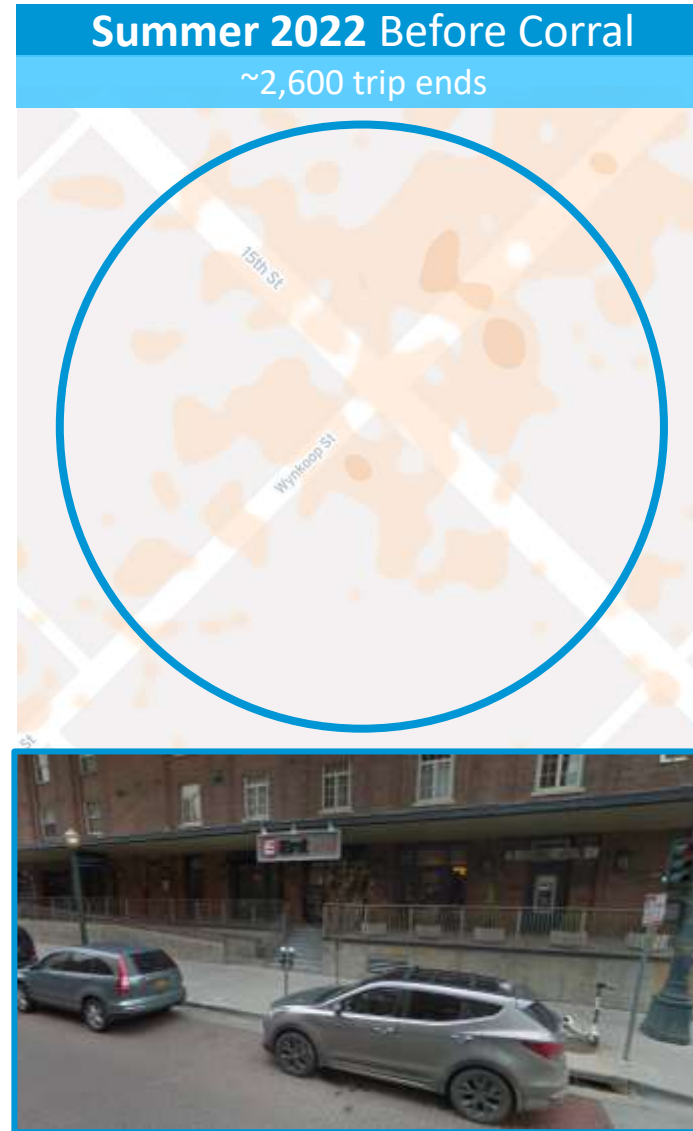
Parking Corrals

Example: 15th & Wynkoop Intersection

- Trip Ends 2022 vs 2023
- With Corral: ~44% within the corral

Summer 2022 Before Corral
~2,600 trip ends

Summer 2023 With Corral
~3,000 trip ends, ~44% within corral

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What's Next

Denver Shared Micromobility Program

What's Next

Infrastructure Upgrades

- Building & upgrading Bike+ network
- Parking corral density

Bikeway Upgrades
Increase comfort & safety of existing bikeways

Spot Improvements
Improve safety of difficult intersections & specific sections of bikeway that lack comfort

EVERYONE | Goods & Services

Thank You!

www.denvergov.org

public.ridereport.com/Denver

micromobility@denvergov.org

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DENVER
THE MILE HIGH CITY

Program Overview

Shared Bikes & Scooters in Denver

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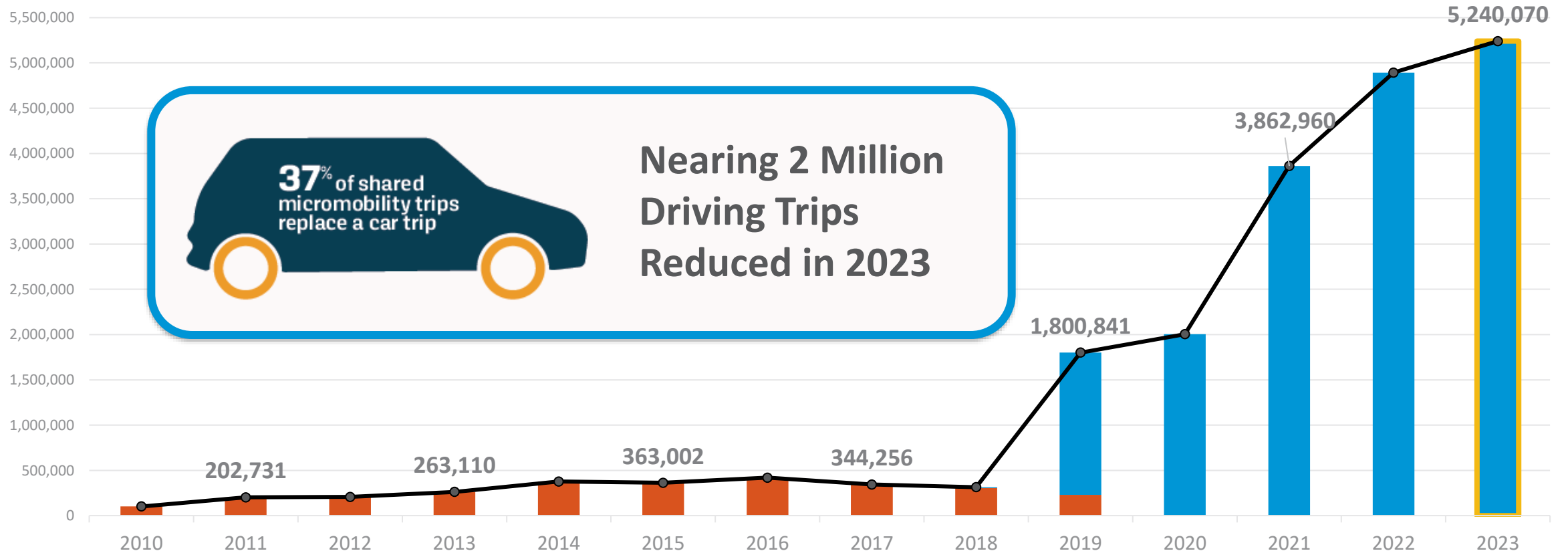- Average Trip Speed: ~7MPH

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2023: Over 5.2 Million Bike & Scooter Trips

Denver Scooter & Bike Share
Annual Ridership

■ B-cycle ■ Shared Micromobility Program ●— Total Trips

37% of shared micromobility trips replace a car trip

Nearing 2 Million Driving Trips Reduced in 2023

Year	Total Trips
2011	202,731
2013	263,110
2015	363,002
2017	344,256
2019	1,800,841
2021	3,862,960
2023	5,240,070

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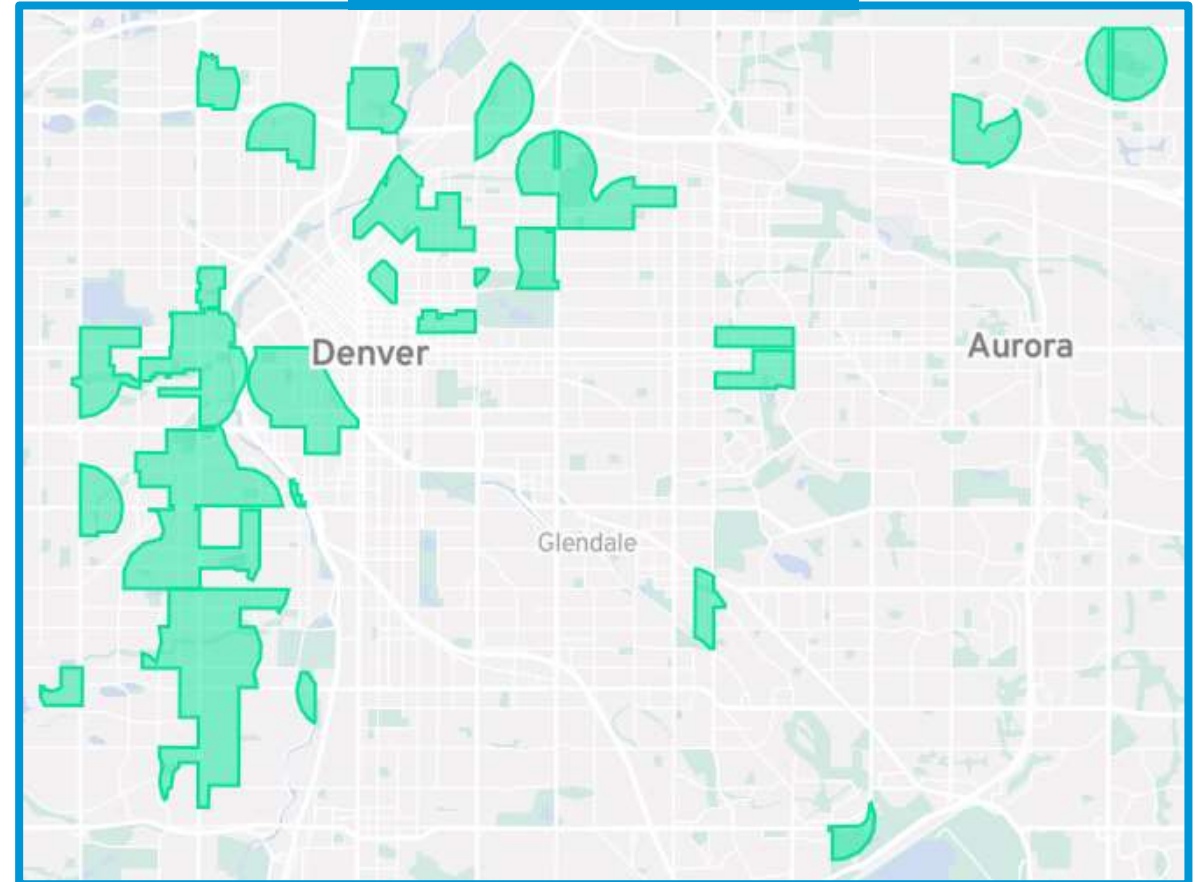
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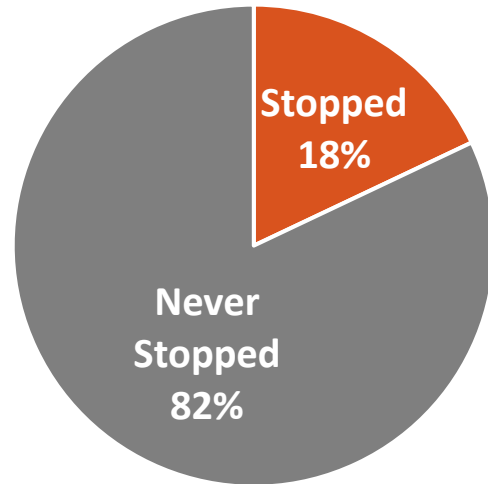- Record where scooter motors cut off

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Stopped 18%

Never Stopped 82%

Inside Sidewalk "No-ride" Geofence

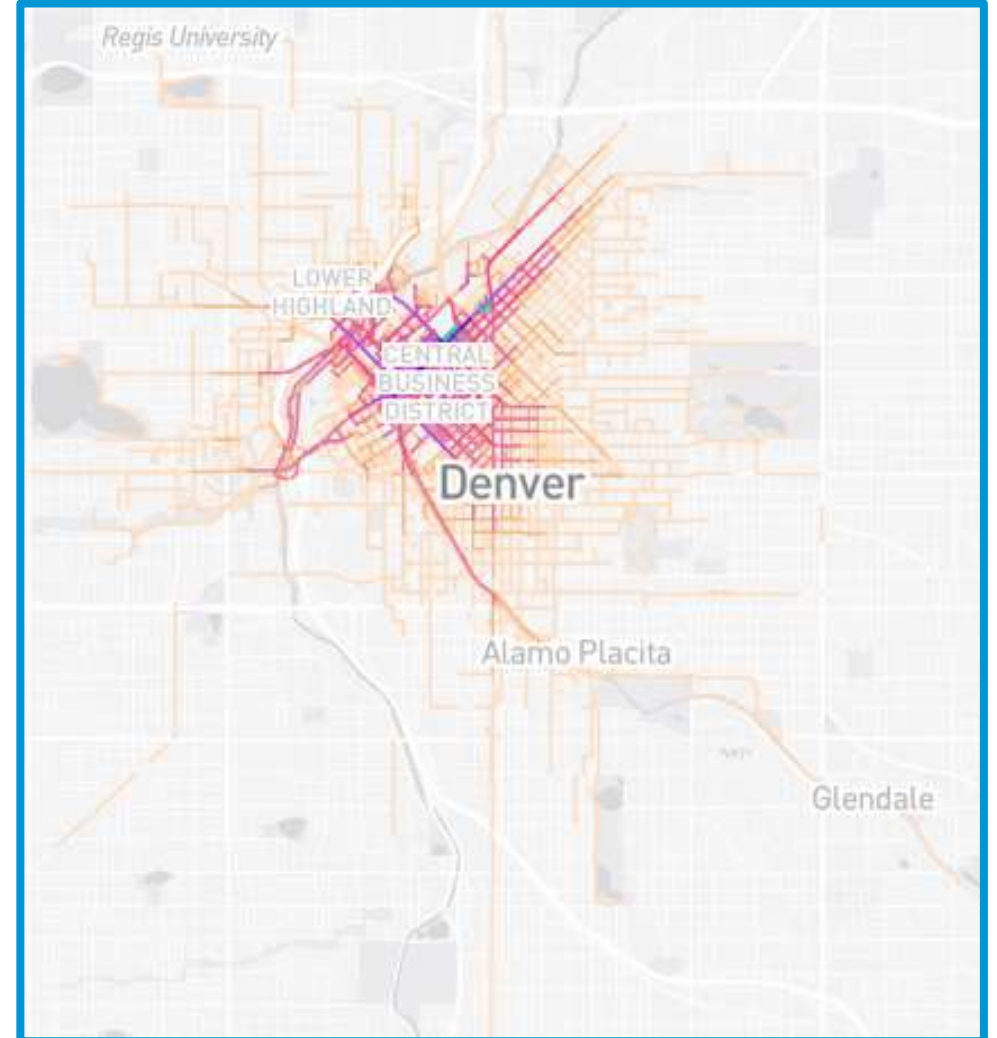DENVER MOVES EVERYONE 2050 | Our Vision to Move People, Goods & Services

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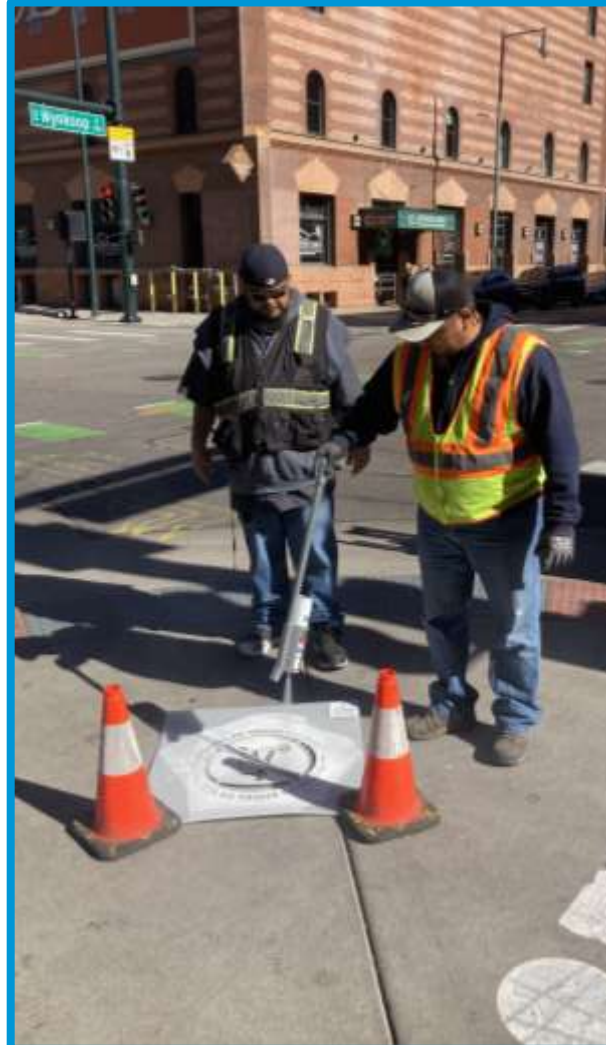
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Bike lane
Bus lane
Ped walkway

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Safe Riders & Sidewalks

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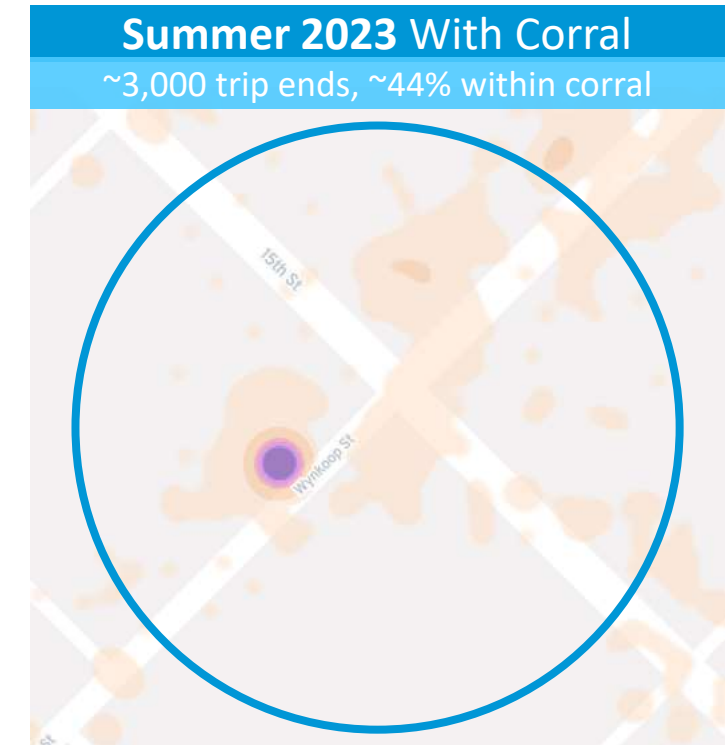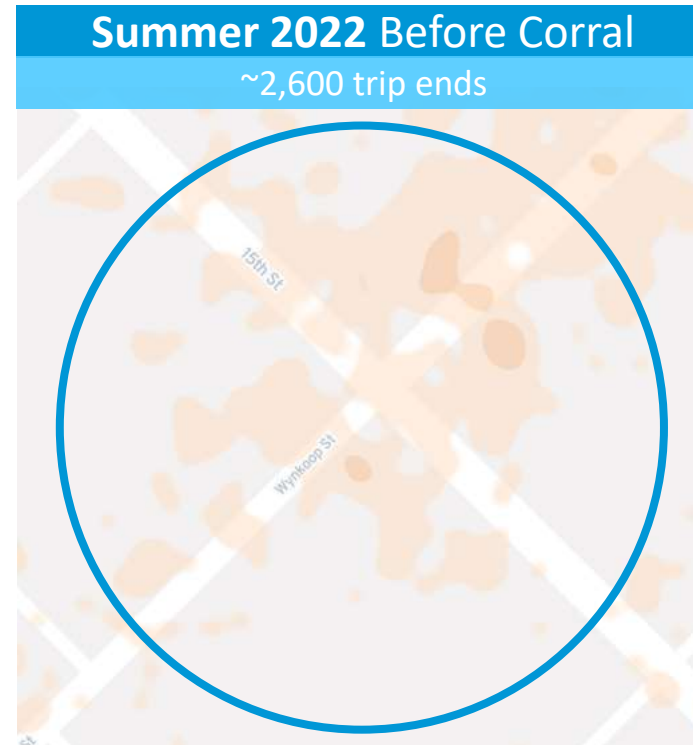- Downtown Revitalization grant

Image: Mike Arzt

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Parking Corrals

Example: 15th & Wynkoop Intersection

- Trip Ends 2022 vs 2023
- With Corral: ~44% within the corral

Summer 2022 Before Corral
~2,600 trip ends

Summer 2023 With Corral
~3,000 trip ends, ~44% within corral

DENVER *MOVES* EVERYONE | Our Vision to Move People, Goods & Services
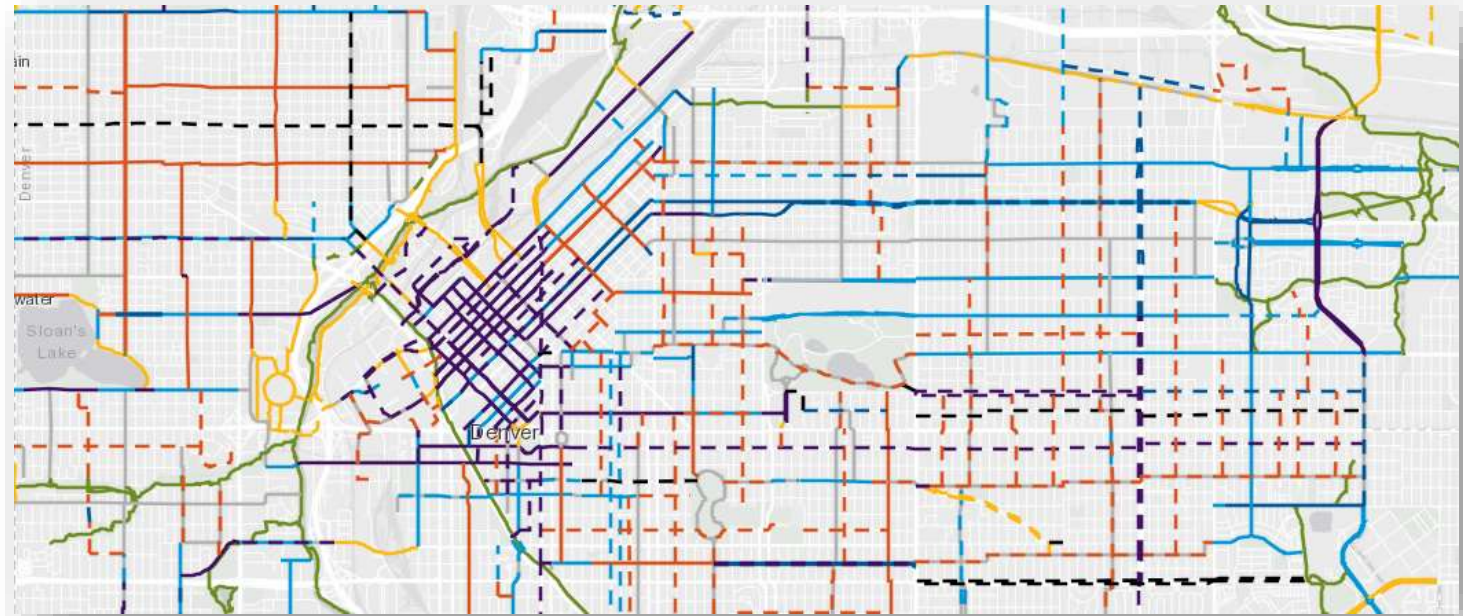
What's Next

Denver Shared Micromobility Program

What's Next

Infrastructure Upgrades

- Building & upgrading Bike+ network
- Parking corral density

Bikeway Upgrades
Increase comfort & safety of existing bikeways

Spot Improvements
Improve safety of difficult intersections & specific sections of bikeway that lack comfort

EVERYONE | Goods & Services

Thank You!

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