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

Agency Case Studies

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Nathan Pope  City and County of Denver
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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

2016
- BIKETOWN launch, 1000 smart bikes

2017
- Adaptive BIKETOWN launch

2018
- E-Scooter Pilot July-November
- Phase 2 E-Scooter Pilot (2019 – present)

2019
- BIKETOWN 2.0 1500 e-bikes East Portland expansion

2020
- BIKETOWN Expansion into North Portland and further East

2022
- Lime + Lyft chosen for long-term E-Scooter program
- BIKETOWN increases size of e-bike fleet to 2,000

2023
- BIKETOWN 2.0 1500 e-bikes East Portland expansion

Portland.gov/transportation
E-Scooter Basics

2023 OPERATORS:

• Bird
• Lime
• Spin
### E-Scooters by the Numbers in 2023

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of e-scooters permitted to operate</td>
<td>3,400</td>
</tr>
<tr>
<td>Service area <em>(citywide)</em></td>
<td>145 mi²</td>
</tr>
<tr>
<td>Number of trips in 2023</td>
<td>1,165,400</td>
</tr>
<tr>
<td>All-time E-Scooter system trips <em>(since July 2018)</em></td>
<td>5,307,000</td>
</tr>
</tbody>
</table>
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
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 **requiring discounted equity program** for e-scooter users
- **Budget neutral** through fee generated revenues
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
Thank You

Bryan.Nguyen@portlandoregon.gov
PBIC E-Scooter Safety Webinar, DDOT Shared Fleet Devices

Ted Randell, Micromobility Coordinator
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
DDOT’s Role in Shared Fleet Devices: Enforce, Plan, Analyze

• 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

Public Space Permits (2-year cycle)
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.
Built Environment, Safe Systems Approach
Fiscal Years 20 Through 24
Proposed
Protected Bikeways

LEGEND
- Completed (2020 and 2021)
- 2022 Lane
- 2022 Trail
- 2023 Lane
- 2023 Trail
- 2024 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
SCOOTING IN DC

SHARED ELECTRIC SCOOTERS ARE A SUSTAINABLE MOBILITY OPTION IN THE DISTRICT. FOLLOW THE TIPS BELOW TO ENSURE A SAFE CITY FOR EVERYONE.

- Follow all traffic laws
- Wear a helmet
- Use bike lanes when available
- Lock scooter to a bike rack, in-street corral, parking signpost, or stop sign
- Children are not allowed to ride
- Limit 1 person per scooter
- Yield to pedestrians

RULES AND SAFETY TIPS

Sidewalk riding is illegal in downtown DC (Central Business District); if on sidewalk, you must walk the scooter.

Be mindful of parked cars; doors may open unexpectedly.

Be aware and predictable.

Ride with traffic.

Do not weave between parked cars.

How to report a problem:
Contact information for each scooter company is available on the device.

Where to park a scooter:
Scooter corrals are located in the street. Per DC law, please lock scooters in these designated spaces or at a bike rack or signpost.

Scan for more information.
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!
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.

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

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


-Chicago
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.
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
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)
PBIC E-Scooter/Micromobility Safety Webinar

Shared Scooting in Denver

Nathan Pope – Senior City Planner

March 13th 2024
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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
2023: Over 5.2 Million Bike & Scooter Trips

Denver Scooter & Bike Share
Annual Ridership

- B-cycle
- Shared Micromobility Program
- Total Trips

Nearing 2 Million Driving Trips Reduced in 2023

37% of shared micromobility trips replace a car trip
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
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
Safe Riders & Sidewalks

- Why not just geofence the sidewalk?

Lawrence St. Downtown Pilot

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Safe Riders & Sidewalks

Findings: “Consistently inconsistent”

- Test-riders were surprised by sudden stops and “late” stops
- Sidewalk riders were only stopped ~28% of the time
- 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

Stopped 18%

Never Stopped 82%
Safe Riders & Sidewalks

Protected Bike Lanes

- Build Safe Places to Ride
- Reduce Sidewalk Riding

Using Shared Micromobility Data

- Ride Report
- Using trip data to help justify and prioritize projects
- “Rideshed” visualization
Safe Riders & Sidewalks

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

Denver Shared Micromobility Program
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
Parking Corrals

Example: 15th & Wynkoop Intersection

• Trip Ends 2022 vs 2023
• With Corral: ~44% within the corral
What’s Next

Denver Shared Micromobility Program
What's Next

Infrastructure Upgrades

- Building & upgrading Bike+ network
- Parking corral density
Thank You!

www.denvergov.org
public.ridereport.com/Denver
micromobility@denvergov.org
DENVER MOVES EVERYONE 2050

Our Vision to Move People, Goods & Services
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Inside Sidewalk “No-ride” Geofence
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Parking Corrals

Example: 15th & Wynkoop Intersection

- Trip Ends 2022 vs 2023
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Summer 2022 Before Corral
~2,600 trip ends

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

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public.ridereport.com/Denver

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