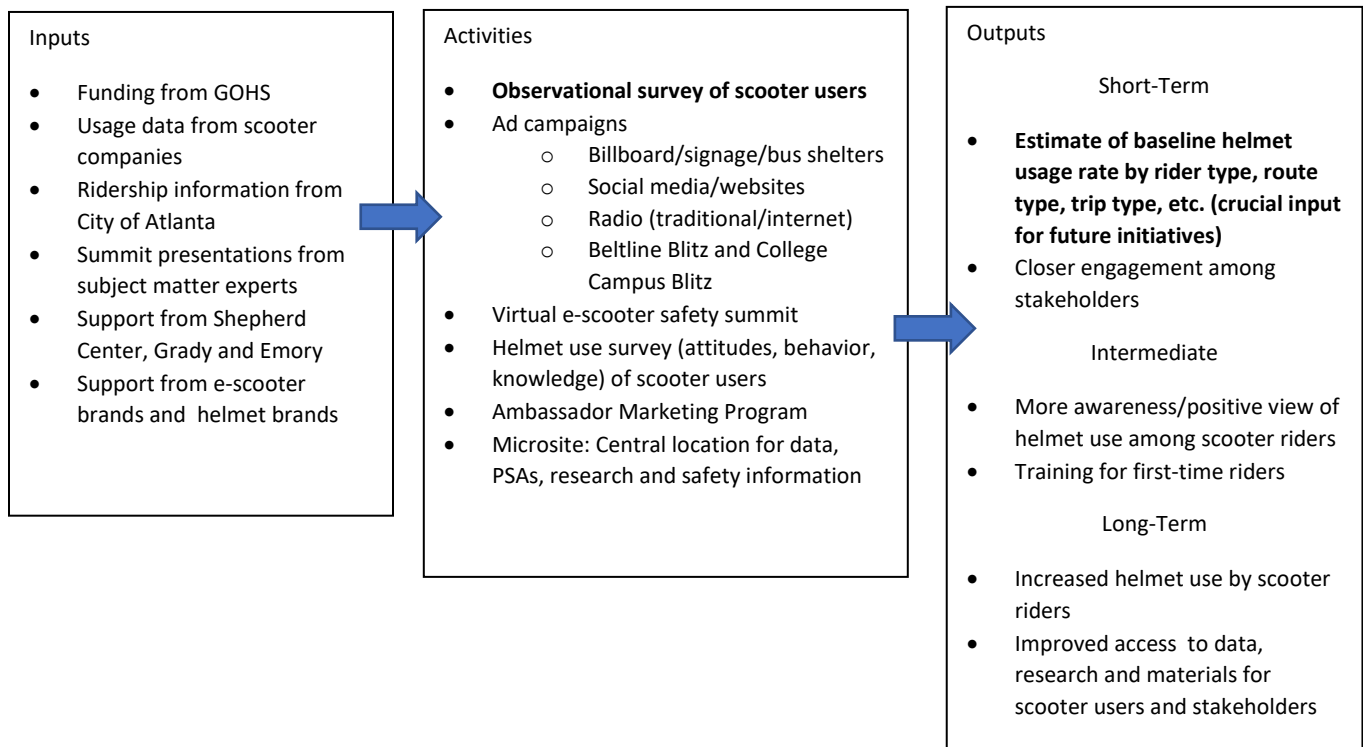


Shepherd Center E-Scooter Study: Report on Observational Survey

Logic Model



Observational Survey of Scooter Users

We performed before-intervention and after-intervention observations of scooter users at sites in Atlanta (intervention) and Statesboro (control). In the event of a noticeable behavior change following the intervention, observations of a control population not exposed to the intervention would help us account for secular effects and other possible confounders.

Survey instrument

Shepherd Center E-Scooter Observational Survey

Instructions:

1. **SAFETY FIRST.** Missed observations can be replaced. **YOU CAN'T.** Select your observation site carefully; choose a location where you'll be safe from traffic, and be sure you have a place nearby to retreat from bad weather, harassment, or other threats. Dress for the weather and take water and sunscreen with you.
2. **Be courteous.** If you'll be on private property, secure permission ahead of time. Even on public property, it's courteous to inform those working or living nearby of what you'll be doing ahead of time.
3. **Don't obstruct the sidewalk, curb cuts, driveways or building entrances.**
4. **Practice using the form before you start observation, until you get comfortable with the codes. This will avoid miscoding or delay while you look up what the codes mean.**
5. **Select your site ahead of time and determine which side of the road or path you'll observe. Observe only one side per observer per session. Determine your start & stop times before you begin.**
6. **Observation site, if on a road, should be mid-block, not at an intersection or crosswalk.**
7. **Choose a landmark such as a light pole or pavement marking, or create your own with chalk, tape or a similar easily removable marking. You'll observe each scooter as it passes that mark.**
8. **Count only scooters that are being ridden (not walked, pushed or carried).**
9. **Only include scooters on the study -do not count razor scooters, seated scooters or electric bikes.**
10. **Notify your teammates of approaching scooters, communicate which one you will document to avoid double counting.**
11. **Codes are as follows:**
 - a. **Operator Gender = M (male), F (female), or X (can't tell, or androgynous/nonbinary)**
 - b. **Operator Age = Y (younger than 16), A (16-25), B (26-35), C (36-50), O (older than 50), X (can't tell)**
 - c. **Operator Helmet Use = HC (helmet worn correctly), HI (helmet worn incorrectly or carried), HX (helmet, can't tell whether correctly or incorrectly worn), NH (no helmet), X (can't tell whether or not wearing helmet, e.g., can't see rider's head)**
 - d. **Riding Location = RW (road, with traffic), RA (road, against traffic), BP (bike lane, protected), BU (bike lane, unprotected), SW (sidewalk), Beltline (BL) or O (other)**
 - e. **Number of Riders on Scooter = 1, 2, or + (more than 2) If multiple riders record both genders, ages and helmet use.**
 - f. **Conflict Observed = MV (conflict with motor vehicle), B (conflict with bicycle), P (conflict with pedestrian), S (conflict with another scooter), O (other conflict) or N (no conflict). "Conflict" means sharp braking, swerving, actual collision, or either party honking/shouting/hostile-gesturing at the other.**
 - g. **Fall=OF (observed fall), ON (observed near-fall), N (no fall or near-fall observed)**
 - h. **Obvious excessive speed = yes/ no**

Assessing correct helmet use: For the purposes of this survey, count helmet as worn correctly if:

- A. **Chin strap is fastened**
- B. **Helmet protects forehead (not tilted back, not too high)**
- C. **Helmet fits snugly (not obviously loose)**

Data Collection Sites:

Atlanta

<i>Survey Location</i>	<i>Zone</i>	<i>Number Observed (Pre)</i>	<i>Number Observed (Post)</i>
<i>Beltline Kroger (Pilot)</i>	<i>Beltline</i>	<i>20</i>	<i>N/A</i>
<i>Beltline at Kroger PCM</i>	<i>Beltline</i>	<i>70</i>	<i>125</i>
<i>Krog St BL</i>	<i>Beltline</i>	<i>40</i>	<i>41</i>
<i>Peachtree & 10th St</i>	<i>Beltline</i>	<i>N/A</i>	<i>3</i>
<i>Baker/Park Ave W by Aquarium</i>	<i>Downtown</i>	<i>93</i>	<i>90</i>
<i>Ellis & Peachtree at Ritz</i>	<i>Downtown</i>	<i>66</i>	<i>5</i>
<i>Hard Rock</i>	<i>Downtown</i>	<i>2</i>	<i>14</i>
<i>Marietta & Olympic</i>	<i>Downtown</i>	<i>36</i>	<i>67</i>
<i>Sheraton & Ellis & Courtland*</i>	<i>Downtown</i>	<i>13</i>	<i>0</i>
<i>Highland Bakery Park Pl & Auburn Ave</i>	<i>GA State</i>	<i>12</i>	<i>6</i>
<i>Moe's & Flatiron Building at Peachtree</i>	<i>GA State</i>	<i>13</i>	<i>7</i>
<i>Tech Square 75 5th St & Spring</i>	<i>GA Tech</i>	<i>33</i>	<i>41</i>
<i>Tech Square & 10th intersection-across from 999 Peachtree</i>	<i>GA Tech</i>	<i>10</i>	<i>61</i>
<i>10th & Monroe at Piedmont Park</i>	<i>Midtown</i>	<i>70</i>	<i>116</i>
<i>10th & Piedmont (rainbow crosswalk)</i>	<i>Midtown</i>	<i>18</i>	<i>12</i>
<i>Atlanta Total (Pilot included)</i>		<i>496</i>	<i>588</i>

*Sheraton & Ellis & Courtland: Observations were conducted in the post-intervention period, but no scooter riders were observed.

Statesboro

<i>Survey Location</i>	<i>Zone</i>	Number Observed (Pre)	Number Observed (Post)
<i>Bookstore</i>	GA Southern	53	100
<i>Carrol Building</i>	GA Southern	9	22
<i>Gazebo</i>	GA Southern	23	11
<i>Greek Row</i>	GA Southern	1	3
<i>Library</i>	GA Southern	7	18
<i>Nursing & Ed</i>	GA Southern	15	9
<i>Statesboro Total</i>		108	163

Demographics (Age Group and Gender)

Total Sample

Rider Age Group	Pre-intervention Count	Pre-intervention Percentage	Post-intervention Count	Post-intervention Percentage
Younger than 16 (Y)	109	18.0%	121	16.1%
16-25 (A)	329	54.5%	314	41.8%
26-35 (B)	94	15.6%	196	26.1%
36-50 (C)	46	7.6%	83	11.0%
Older than 50 (O)	13	2.2%	25	3.3%
Can't tell (X)	13	2.2%	12	1.6%
Not recorded	0	0.0%	1	0.1%
Total	604	100.0%	752	100.0%

Atlanta (Total and by Zone)

All Atlanta Sites Combined

Age Group	Pre-intervention Count	Pre-intervention Percentage	Post-intervention Count	Post-intervention Percentage
Younger than 16 (Y)	102	20.6%	88	15.0%
16-25 (A)	230	46.4%	189	32.1%
26-35 (B)	92	18.5%	191	32.5%
36-50 (C)	46	9.3%	83	14.1%
Older than 50 (O)	13	2.6%	25	4.3%
Can't tell (X)	13	2.6%	12	2.0%
Total	496	100.0%	588	100.0%

Beltline

Age Group	Pre-intervention Count	Pre-intervention Percentage	Post-intervention Count	Post-intervention Percentage
Younger than 16 (Y)	39	30.0%	6	3.6%
16-25 (A)	33	25.4%	50	29.6%
26-35 (B)	37	28.5%	68	40.2%
36-50 (C)	10	7.7%	29	17.2%
Older than 50 (O)	7	5.4%	15	8.9%
Can't tell (X)	4	3.1%	1	0.6%
Total	130	100.0%	169	100.0%

Downtown

Age Group	Pre-intervention Count	Pre-intervention Percentage	Post-intervention Count	Post-intervention Percentage
Younger than 16 (Y)	44	21.0%	35	19.9%
16-25 (A)	112	53.3%	61	34.7%
26-35 (B)	27	12.9%	51	29.0%
36-50 (C)	22	10.5%	23	13.1%
Older than 50 (O)	3	1.4%	4	2.3%
Can't tell (X)	2	1.0%	2	1.1%
Total	210	100.0%	176	100.0%

GA State

Age Group	Pre-intervention Count	Pre-intervention Percentage	Post-intervention Count	Post-intervention Percentage
Younger than 16 (Y)	5	20.0%	0	0.0%
16-25 (A)	14	56.0%	7	53.8%
26-35 (B)	3	12.0%	6	46.2%
36-50 (C)	2	8.0%	0	0.0%
Older than 50 (O)	1	4.0%	0	0.0%
Can't tell (X)	0	0.0%	0	0.0%
Total	25	100.0%	13	100.0%

GA Tech

Age Group	Pre-intervention Count	Pre-intervention Percentage	Post-intervention Count	Post-intervention Percentage
Younger than 16 (Y)	3	7.0%	1	2.4%
16-25 (A)	27	62.8%	25	61.0%
26-35 (B)	5	11.6%	11	26.8%
36-50 (C)	2	4.7%	0	0.0%
Older than 50 (O)	0	0.0%	0	0.0%
Can't tell (X)	6	14.0%	4	9.8%
Total	43	100.0%	41	100.0%

Midtown

Age Group	Pre-intervention Count	Pre-intervention Percentage	Post-intervention Count	Post-intervention Percentage
Younger than 16 (Y)	11	12.5%	46	24.3%
16-25 (A)	44	50.0%	46	24.3%
26-35 (B)	20	22.7%	55	29.1%
36-50 (C)	10	11.4%	31	16.4%
Older than 50 (O)	2	2.3%	6	3.2%
Can't tell (X)	1	1.1%	5	2.6%
Total	88	100.0%	189	100.0%

Statesboro

Age Group	Pre-intervention Count	Pre-intervention Percentage	Post-intervention Count	Post-intervention Percentage
Younger than 16 (Y)	7	6.5%	33	20.2%
16-25 (A)	99	91.7%	125	76.7%
26-35 (B)	2	1.9%	5	3.1%
36-50 (C)	0	0.0%	0	0.0%
Older than 50 (O)	0	0.0%	0	0.0%
Can't tell (X)	0	0.0%	0	0.0%
Total	108	100.0%	163	100.0%

Ride Location

Atlanta (by Zone)

Beltline

Ride Location	Pre-intervention Count	Pre-intervention Percentage	Post-intervention Count	Post-intervention Percentage
Not recorded	0	0.0%	1	0.6%
Beltline (BL)	130	100.0%	164	97.0%
Sidewalk (SW)	0	0.0%	4	2.4%
Total	130	100.0%	169	100.0%

Downtown

Ride Location	Pre-intervention Count	Pre-intervention Percentage	Post-intervention Count	Post-intervention Percentage
Bike lane, protected (BP)	8	3.8%	6	3.4%
Road, against traffic (RA)	11	5.2%	2	1.1%
Road, against traffic (RA), Bike lane, protected (BP)*	1	0.5%	0	0.0%
Road, with traffic (RW)	16	7.6%	38	21.6%
Sidewalk (SW)	174	82.9%	130	73.9%
Total	210	100.0%	176	100.0%

*Rider changed locations during observation

GA State

Ride Location	Pre-intervention Count	Pre-intervention Percentage	Post-intervention Count	Post-intervention Percentage
Road, with traffic (RW)	9	36.0%	10	76.9%
Sidewalk (SW)	16	64.0%	3	23.1%
Total	25	100.0%	13	100.0%

GA Tech

Ride Location	Pre-intervention Count	Pre-intervention Percentage	Post-intervention Count	Post-intervention Percentage
Bike lane, protected (BP)	0	0.0%	13	31.7%
Bike lane, unprotected (BU)	7	16.3%	17	41.5%
Road, against traffic (RA), Bike lane, unprotected (BU)*	1	2.3%	0	0.0%
Road, with traffic (RW)	3	7.0%	3	7.3%
Road, with traffic (RW), Bike lane, unprotected (BU)*	9	20.9%	0	0.0%
Sidewalk (SW)	23	53.5%	8	19.5%
Total	43	100.0%	41	100.0%

*Rider changed locations during observation

Midtown

Ride Location	Pre-intervention Count	Pre-intervention Percentage	Post-intervention Count	Post-intervention Percentage
Beltline (BL)	23	26.1%	90	47.6%
Bike lane, protected (BP)	23	26.1%	20	10.6%
Bike lane, unprotected (BU)	0	0.0%	44	23.3%
Road, against traffic (RA)	0	0.0%	2	1.1%
Road, against traffic (RA), Sidewalk (SW)*	4	4.5%	0	0.0%
Road, with traffic (RW)	6	6.8%	3	1.6%
Road, with traffic (RW), Bike lane, unprotected (BU)*	2	2.3%	0	0.0%
Sidewalk (SW)	30	34.1%	30	15.9%
Total	88	100.0%	189	100.0%

*Rider changed locations during observation

Ride Location	Pre-intervention Count	Pre-intervention Percentage	Post-intervention Count	Post-intervention Percentage
Bike lane, unprotected (BU)	0	0.0%	4	2.5%
Road, against traffic (RA)	0	0.0%	4	2.5%
Road, with traffic (RW)	9	8.3%	12	7.4%
Sidewalk (SW)	99	91.7%	143	87.7%
Total	108	100.0%	163	100.0%

Helmet Use

Pre-intervention

During pre-intervention observations, only 14 riders (out of a total of 604, i.e. 2.3% of riders) were observed wearing or carrying helmets. One rider was marked “Helmet worn incorrectly or carried (HI)”, 2 were marked “Helmet, can't tell whether worn correctly or incorrectly (HX)”, and in two cases the observer could not see whether or not the rider was wearing a helmet. The remaining 11 were wearing helmets correctly. No conflict, fall or near-fall, or excessive speed was noted for any of these riders. Distribution was as follows:

Survey Location	Rider Gender	Age Group	Helmet Use	Ride Location	Riding Double? (Driver/ Passenger)	Zone
Tech Square 75 5th St & Spring	Male (M)	16-25 (A)	Can't tell whether or not operator is wearing helmet (X)	Road, with traffic (RW), Bike lane, unprotected (BU)*	N	GA Tech
GSU Bookstore	Male (M)	16-25 (A)	Can't tell whether or not operator is wearing helmet (X)	Sidewalk (SW)	N	GA Southern
Beltline Kroger (Pilot)	Male (M)	Younger than 16 (Y)	Helmet worn correctly (HC)	Beltline (BL)	N	Beltline
Tech Square 75 5th St & Spring	Female (F)	Younger than 16 (Y)	Helmet worn correctly (HC)	Sidewalk (SW)	N	GA Tech
Tech Square 75 5th St & Spring	Male (M)	36-50 (C)	Helmet worn correctly (HC)	Sidewalk (SW)	N	GA Tech
Tech Square 75 5th St & Spring	Female (F)	Younger than 16 (Y)	Helmet worn correctly (HC)	Sidewalk (SW)	N	GA Tech
Beltline at Kroger PCM	Male (M)	16-25 (A)	Helmet worn correctly (HC)	Beltline (BL)	N	Beltline

Survey Location	Rider Gender	Age Group	Helmet Use	Ride Location	Riding Double? (Driver/ Passenger)	Zone
Beltline Kroger (Pilot)	Male (M)	Younger than 16 (Y)	Helmet worn correctly (HC)	Beltline (BL)	Y (P)	Beltline
Beltline Kroger (Pilot)	Male (M)	16-25 (A)	Helmet worn correctly (HC)	Beltline (BL)	N	Beltline
Beltline Kroger (Pilot)	Male (M)	Younger than 16 (Y)	Helmet worn correctly (HC)	Beltline (BL)	N	Beltline
Krog St BL	Male (M)	Younger than 16 (Y)	Helmet worn correctly (HC)	Beltline (BL)	N	Beltline
10th & Monroe at Piedmont Park	Female (F)	36-50 (C)	Helmet worn correctly (HC)	Bike lane, protected (BP)	N	Midtown
10th & Monroe at Piedmont Park	Female (F)	Younger than 16 (Y)	Helmet worn correctly (HC)	Bike lane, protected (BP)	N	Midtown
Beltline Kroger (Pilot)	Male (M)	26-35 (B)	Helmet worn incorrectly or carried (HI)	Beltline (BL)	N	Beltline
Beltline at Kroger PCM	Male (M)	26-35 (B)	Helmet, can't tell whether worn correctly or incorrectly (HX)	Beltline (BL)	N	Beltline
10th & Piedmont (rainbow crosswalk)	Female (F)	36-50 (C)	Helmet, can't tell whether worn correctly or incorrectly (HX)	Sidewalk (SW)	Y (P)	Midtown

*Rider changed locations during observation

Post-intervention

During post-intervention observations, only 12 riders (out of a total of 752, i.e. 1.6%) were observed wearing or carrying helmets. Of these, 11 were wearing helmets correctly and one was marked "Helmet worn incorrectly or carried (HI)." No conflict, fall or near-fall, or excessive speed was noted for any of these riders. Distribution was as follows:

Survey Location	Rider Gender	Age Group	Helmet Use	Ride Location	Riding Double? (Driver/ Passenger)	Zone
Beltline at Kroger PCM	Female (F)	16-25 (A)	Helmet worn correctly (HC)	Beltline (BL)	Y (P)	Beltline
Tech Square & 10th intersection-across from 999 Peachtree	Female (F)	Younger than 16 (Y)	Helmet worn correctly (HC)	Bike lane, unprotected (BU)	N	Midtown

Survey Location	Rider Gender	Age Group	Helmet Use	Ride Location	Riding Double? (Driver/ Passenger)	Zone
Tech Square & 10th intersection-across from 999 Peachtree	Male (M)	26-35 (B)	Helmet worn correctly (HC)	Bike lane, unprotected (BU)	N	Midtown
Tech Square & 10th intersection-across from 999 Peachtree	Female (F)	Younger than 16 (Y)	Helmet worn correctly (HC)	Bike lane, unprotected (BU)	N	Midtown
Tech Square & 10th intersection-across from 999 Peachtree	Male (M)	36-50 (C)	Helmet worn correctly (HC)	Bike lane, unprotected (BU)	N	Midtown
Tech Square & 10th intersection-across from 999 Peachtree	Male (M)	36-50 (C)	Helmet worn correctly (HC)	Bike lane, protected (BP)	N	Midtown
Tech Square & 10th intersection-across from 999 Peachtree	Male (M)	16-25 (A)	Helmet worn correctly (HC)	Bike lane, protected (BP)	N	Midtown
10th & Piedmont (rainbow crosswalk)	Male (M)	36-50 (C)	Helmet worn correctly (HC)	Sidewalk (SW)	N	Midtown
10th & Piedmont (rainbow crosswalk)	Male (M)	36-50 (C)	Helmet worn correctly (HC)	Road, with traffic (RW)	N	Midtown
10th & Piedmont (rainbow crosswalk)	Male (M)	Older than 50 (O)	Helmet worn correctly (HC)	Sidewalk (SW)	N	Midtown
Tech Square 75 5th St & Spring	Male (M)	16-25 (A)	Helmet worn correctly (HC)	Bike lane, protected (BP)	N	GA Tech
Tech Square & 10th intersection-across from 999 Peachtree	Male (M)	Younger than 16 (Y)	Helmet worn incorrectly or carried (HI)	Bike lane, unprotected (BU)	N	Midtown

Note on Statesboro: In the first 1st observation period, one rider was marked “Can't tell whether or not operator is wearing helmet (X)”; all remaining riders were marked “No helmet (NH)”. In the second observation period, all riders were marked “No helmet (NH)”.

Helmet Use by Gender

Male (M)

Helmet Use	Pre-intervention Count	Pre-intervention Percentage	Post-intervention Count	Post-intervention Percentage
Can't tell whether or not operator is wearing helmet (X)	2	0.5%	0	0.0%
Helmet worn correctly (HC)	7	1.9%	8	1.6%
Helmet worn incorrectly or carried (HI)	1	0.3%	1	0.2%
Helmet, can't tell whether worn correctly or incorrectly (HX)	1	0.3%	0	0.0%
No helmet (NH)	359	97.0%	485	98.0%
Not recorded	0	0.0%	1	0.2%
Total	370	100.0%	495	100.0%

Female (F)

Helmet Use	Pre-intervention Count	Pre-intervention Percentage	Post-intervention Count	Post-intervention Percentage
Helmet worn correctly (HC)	4	1.8%	3	1.2%
Helmet, can't tell whether worn correctly or incorrectly (HX)	1	0.4%	0	0.0%
No helmet (NH)	218	97.8%	241	98.8%
Total	223	100.0%	244	100.0%

Can't tell OR androgynous/nonbinary (X)

Helmet Use	Pre-intervention Count	Pre-intervention Percentage	Post-intervention Count	Post-intervention Percentage
No helmet (NH)	11	100.0%	12	100.0%
Total	11	100.0%	12	100.0%

Helmet Use by Age Group

Younger than 16 (Y)

Helmet Use	Pre-intervention Count	Pre-intervention Percentage	Post-intervention Count	Post-intervention Percentage
Helmet worn correctly (HC)	7	6.4%	2	1.7%
Helmet worn incorrectly or carried (HI)	0	0.0%	1	0.8%
No helmet (NH)	102	93.6%	118	97.5%
Total	109	100.0%	121	100.0%

16-25 (A)

Helmet Use	Pre-intervention Count	Pre-intervention Percentage	Post-intervention Count	Post-intervention Percentage
Not recorded	0	0.0%	1	0.3%
Can't tell whether or not operator is wearing helmet (X)	2	0.6%	0	0.0%
Helmet worn correctly (HC)	2	0.6%	3	1.0%
No helmet (NH)	325	98.8%	310	98.7%
Total	329	100.0%	314	100.0%

26-35 (B)

Helmet Use	Pre-intervention Count	Pre-intervention Percentage	Post-intervention Count	Post-intervention Percentage
Helmet worn correctly (HC)	0	0.0%	1	0.5%
Helmet worn incorrectly or carried (HI)	1	1.1%	0	0.0%
Helmet, can't tell whether worn correctly or incorrectly (HX)	1	1.1%	0	0.0%
No helmet (NH)	92	97.9%	195	99.5%
Total	94	100.0%	196	100.0%

36-50 (C)

Helmet Use	Pre-intervention Count	Pre-intervention Percentage	Post-intervention Count	Post-intervention Percentage
Helmet worn correctly (HC)	2	4.3%	4	4.8%
Helmet, can't tell whether worn correctly or incorrectly (HX)	1	2.2%	0	0.0%
No helmet (NH)	43	93.5%	79	95.2%
Total	46	100.0%	83	100.0%

Older than 50 (O)

Helmet Use	Pre-intervention Count	Pre-intervention Percentage	Post-intervention Count	Post-intervention Percentage
Helmet worn correctly (HC)	0	0.0%	1	4.0%
No helmet (NH)	13	100.0%	24	96.0%
Total	13	100.0%	25	100.0%

Can't tell (X)

Helmet Use	Pre-intervention Count	Pre-intervention Percentage	Post-intervention Count	Post-intervention Percentage
No helmet (NH)	13	100.0%	12	100.0%
Total	13	100.0%	12	100.0%

Overall, male riders had higher rates of helmet use than female riders: 1.9% pre-intervention and 1.6% post-intervention for male riders vs. 1.8% pre-intervention and 1.2% post-intervention for female riders. The age group with the most consistent helmet use was 36-50 year olds (4.3% pre-intervention and 4.8% post-intervention). Numbers of riders wearing helmets were too small for reliable statistical analysis.

Other High-Risk Behavior (wrong-way in road, riding double, conflict, excessive speed)

Riding in roadway against traffic

In all, 17 of 604 riders in the 1st observation period (1.2%) were recorded riding against traffic in the roadway. Six of these riders were observed alternating between the roadway and the sidewalk, and two between the roadway and a bike lane (one protected, one unprotected). Three of these riders were marked "Younger than 16", twelve were marked "16-25" and for two the age was "Can't tell". In the 2nd observation period, 8 riders of 752 were recorded riding against traffic in the roadway, none of whom changed to another location. One of these was marked "Younger than 16", five "16-25", one "26-35" and one "Can't tell".

Riding double

For the first observation period, 55 of 604 riders (8.6%) were marked as riding double (for one of these riders, information was only recorded for one of the two riders on the scooter). For the second observation period, 40 of 752 riders (5.3%) were marked as riding double. Interestingly, the rate of helmet use for riders riding double (2 out of 55, or 3.6%, in the 1st observation period, 1 out of 40, or 2.5%, in the 2nd observation period) was higher than the rate of helmet use in the total sample. In all three cases where a person riding double was wearing a helmet, the passenger was wearing a helmet but the driver was not.

Conflict with other vehicles or pedestrians

Observed conflict was rare, comprising only 6 of 604 observations (1%) in the 1st period (five of which were conflict with a motor vehicle and one conflict with another scooter) and 6 of 752 observations (0.8%) in the 2nd period (two of which were conflict with a pedestrian, two with another scooter, and two "other").

Excessive speed

Observed excessive speed was also rare, with only 11 of 604 observations (1.8%) in the 1st period and 7 of 752 (0.9%) in the 2nd. In one case in the 2nd observation period, excessive speed was accompanied by an observed near-fall.

Observed fall or near-fall

No falls were observed during either observation period, but six near-falls were observed in the 1st period and four in the 2nd observation period.

Results

The primary information provided by this observational study is the abysmally low rate of helmet use among e-scooter users, across all sites, both genders, all age groups, and all riding locations (sidewalk, road, beltline, bike lanes). This rate did not improve in the intervention group as a whole, but may have improved in some locations or zones while decreasing in others (number of observations was too small to demonstrate statistically significant changes in specific locations). In addition, wrong-way riding in the roadway is a problem for younger riders, and riding double is common despite scooter providers' prohibitions. These observations point to obvious targets for future interventions, as well as providing baseline data for comparison and future programming.