

Micromobility



Northeast



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SAFETY TEAM

Bringing you home safely.

Topics Covered

- Definitions of Micromobility
- Micromobility Trends and Use in Northeast Florida
- Safety Challenges and Strategies



Micromobility

Definitions

- Generic Industry
- Florida Statutes
- Regulatory Summary



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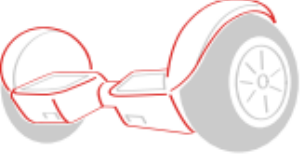
Industry Definitions: Micromobility

According to SAE International a Micromobility device is any wheeled vehicle that must be:

- Fully or partially electrically powered
- Have a curb weight under 500 lbs
- Have a top speed under 30 mph



Micromobility Device Examples

Micromobility Devices ¹	Powered Bicycle	Powered Standing Scooter	Powered Seated Scooter	Powered Self-Balancing Board	Powered Non-Self-Balancing Board	Powered Skates
						
Center column	Y	Y	Y	Possible	N	N
Seat	Y	N	Y	N	N	N
Operable pedals	Y	N	N	N	N	N
Floorboard / foot pegs	Possible	Y	Y	Y	Y	Y
Self-balancing ²	N	N	N	Y	N	Possible

¹All vehicles typically designed for one person, except for those specifically designed to accommodate additional passenger(s)

²Self-balancing refers to dynamic stabilization achieved via a combination of sensors and gyroscopes contained in/on the vehicle

Examples of what is NOT Micromobility

- Golf Carts & Neighborhood Electric Vehicles: Over 500 lbs
- Bicycle: Not powered
- Kick scooter: Not powered
- Skateboard: Not powered



Florida Statutes

Over 100 definitions under 316.003 relating to motor vehicles and roadway infrastructure, including:

- **Electric Bicycle 316.003 (23)**
- Electric Personal Assistive Mobility Device (24)
- Golf Cart (29)
- **Micromobility Device (41)**
- Moped 316.003(44)
- Motorized Scooter 316.003 (48)

Florida Statutes

Motor Vehicle 316.003(46):

*...a self-propelled vehicle not operated upon rails or guideway, but **not including** any bicycle, electric bicycle, motorized scooter, electric personal assistive mobility device, mobile carrier, personal delivery device, swamp buggy, or moped.*

Florida Statutes

Motor Vehicle 316.003(41):

- “For Hire” (rental) devices
- Includes e-bikes and e-scooters
- Hailed by app or website
- Used for point-to-point trips
- Max speed of 20 MPH



Florida Statutes

Electric Bicycle 316.003 (23)

- Establishes guidelines for E-Bike Classifications, following People for Bikes model regulations

Electric Bicycle 316.20655

- Considered bicycles
- Follow rules for cyclists
- Includes sidewalk and trail use

	 CLASS 1	 CLASS 2	 CLASS 3
Pedal Assist	✓	✓	✓
Throttle		✓	
Max Speed	20 mph	20 mph	28 mph

Source: Juiced Bikes

Florida Statutes

Motorized Scooter 316.003 (48)

- With or without a seat
- No more than 3 wheels
- Maximum 20 MPH speed
- Excludes e-bikes



Florida Statutes

Micromobility device and motorized scooter requirements per 316.2128

- Essentially the same as a bicycle
- Insurance and registration are NOT required
- Driver does not need to have a driver's license
- For-hire vehicles may be regulated by local governments per 316.008



Local Regulation

Statutory “home rule” authority is maintained under “Micromobility Devices”

- May prohibit use of micromobility devices, e-scooters, and e-bikes, on trails, sidewalks, or sidewalk areas
- May regulate aspects of a for-hire model, including full prohibition
- May not require a valid driver’s license
- May not require a helmet for 16+
- May not require registration and insurance



Micromobility Definition Key Take-Aways:

- **Generically**, “micromobility device” refers to low-speed, electrically-powered devices primarily designed for one person
- In **Florida Statutes**, “micromobility device” refers explicitly to shared, for-hire vehicles
- Local government regulation
 - Same as bicycles for privately-owned devices
 - Additional powers include the prohibition of commercial services

Micromobility

Trends and Use in Northeast Florida

- General trends
- Infrastructure needs
- Use in Northeast Florida



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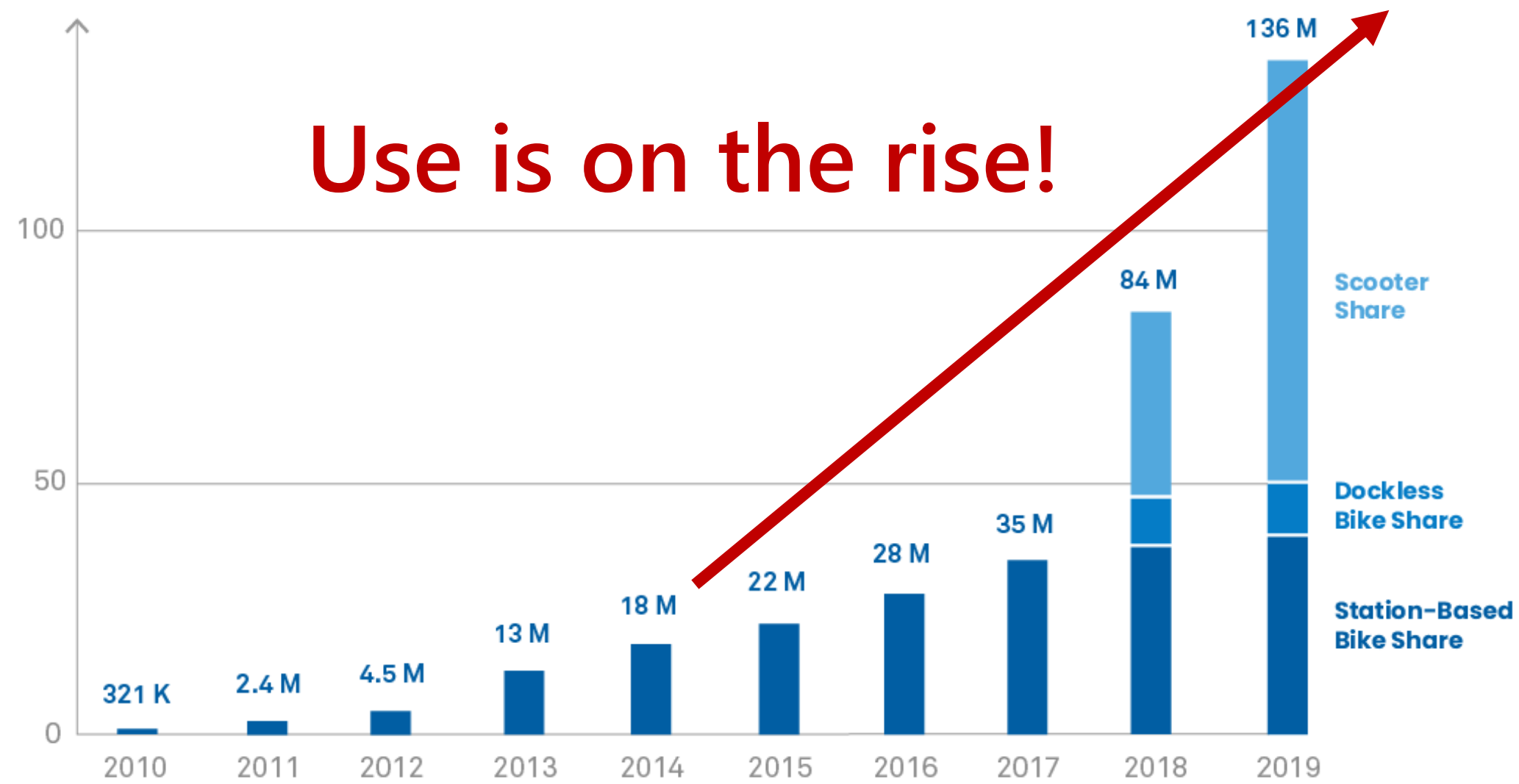


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SHARED MICROMOBILITY RIDERSHIP GROWTH FROM 2010-2019,
IN MILLIONS OF TRIPS

Source: NACTO



Micromobility and Active Transportation

“Allied” modes with similar needs

- Infrastructure
- Safety concerns (vulnerable road users)
- Trip purposes

Similar distances traveled

- Micromobility extends comfortable commuting range beyond Active Transportation modes



Sum of miles (bn)

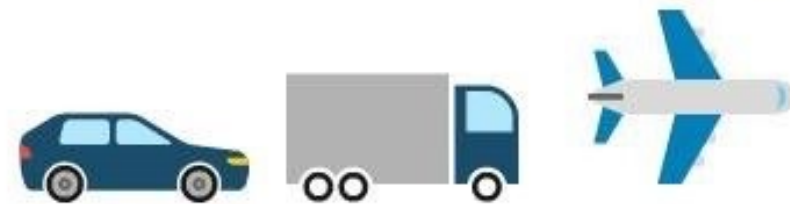
100

60% of all
journeys are
less than
5 miles

50

0

**Micromobility can serve
daily needs for many users
at a lower per-mile cost**



0–5 miles

5–15 miles

15+ miles

Micromobility
\$1.40/mile

Medium distance
>\$5.00/mile

Long distance

Trip distance (miles)

Infrastructure Needs

Conveyance

- Comfortable, safe, separated facilities
- Bike lanes, cycle tracks trails, shared paths, etc.
- Wide adoption requires low-stress facilities



Infrastructure Needs

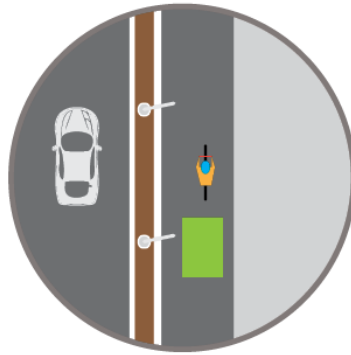
Higher-stress ← → Lower-stress



Bike Lane



**Buffered
Bike Lane**



**Protected
Bike Lane**



**Neighborhood
Bikeway**



Multi-use Trail

Source: City of Denver

Infrastructure Needs



Docks



Source: The Coastal

Corrals



Dockless

Micromobility in Northeast Florida

St Augustine

- One operator, 110 docked, electric bikes
- 18+ to ride
- Helmets not required, per Florida Statutes

St. Augustine launches app-based bike-share program to increase mobility citywide

Anyone 18 and up can use the electric-assist bikes in the city



Sheldon Gardner
St. Augustine Record

Published 10:11 p.m. ET Aug. 5, 2021

[View Comments](#)



Micromobility in Northeast Florida

Jacksonville

- Four operators, initial fleet of 400 e-scooters
- Must be corral-docked
- 18+ to ride
- Helmets not required, per Florida Statutes

LOCAL

Electric scooters have arrived in downtown Jacksonville. Here's how you can use them.



Dan Scanlan
Florida Times-Union

Published 9:29 a.m. ET March 5, 2021 | Updated 10:52 a.m. ET March 5, 2021

[View Comments](#)



JSO: Issues with e-scooters in downtown Jacksonville

Expand



Scooters in Downtown Jacksonville

Micromobility in Northeast Florida

Gainesville

- Three operators, all dockless e-scooters
- 18+ to ride
- Helmet not required, per Florida Statutes

Home / Law and public safety / E-Scooters Raise Traffic Safety Concerns



WUFT
E-Scooters Raise Traffic Concerns

SOUNDCLOUD
Share

1:25

25

Privacy policy

E-Scooters Raise Traffic Safety Concerns

By Taylor Burr

September 10, 2021 Law and public safety



Riders can locate, unlock, rent and return the scooters by using an app on their smart phones.

Home / Transportation / Rentable E-Scooters Arrive As New Form Of Transportation In Gainesville

Rentable E-Scooters Arrive As New Form Of Transportation In Gainesville

By Jessica James

June 7, 2021 Transportation

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Safety Challenges and Strategies



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Safety Challenges – Similar to Bicycles

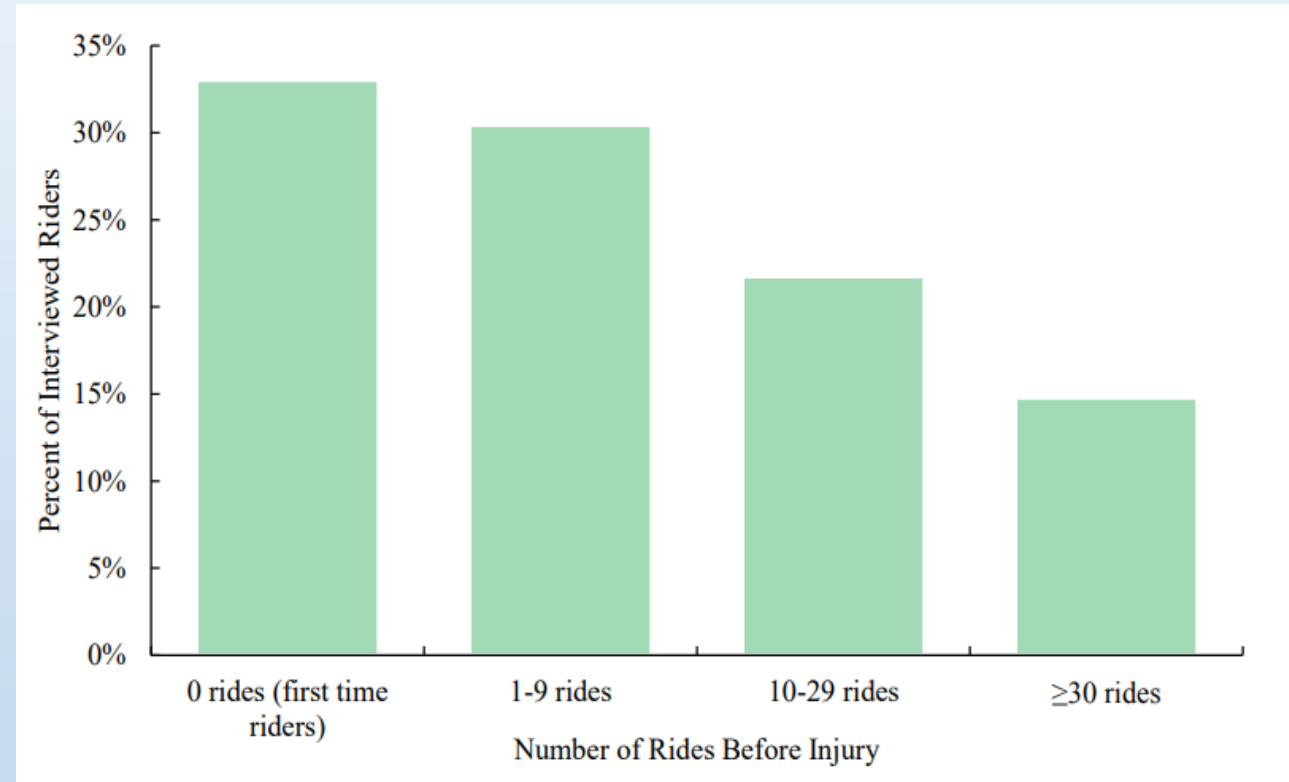
- Similar crashes, but different users
- Micromobility devices can achieve high “bicycle speeds” without effort/active participation from the driver
- Compared to bikes...
 - Identical fatality rates, higher injury rates
 - More likely at intersections
 - Users likely to be inexperienced or tourists
 - Transitions between sidewalks and roads



Source: "Comparison of motor vehicle-involved e-scooter and bicycle crashes using standardized crash typology," 6/2021, Shah et al, Journal of Safety Research

Safety Challenges – New Riders

- Crashes most likely for new riders
- Over 30% of injuries reported on first ride



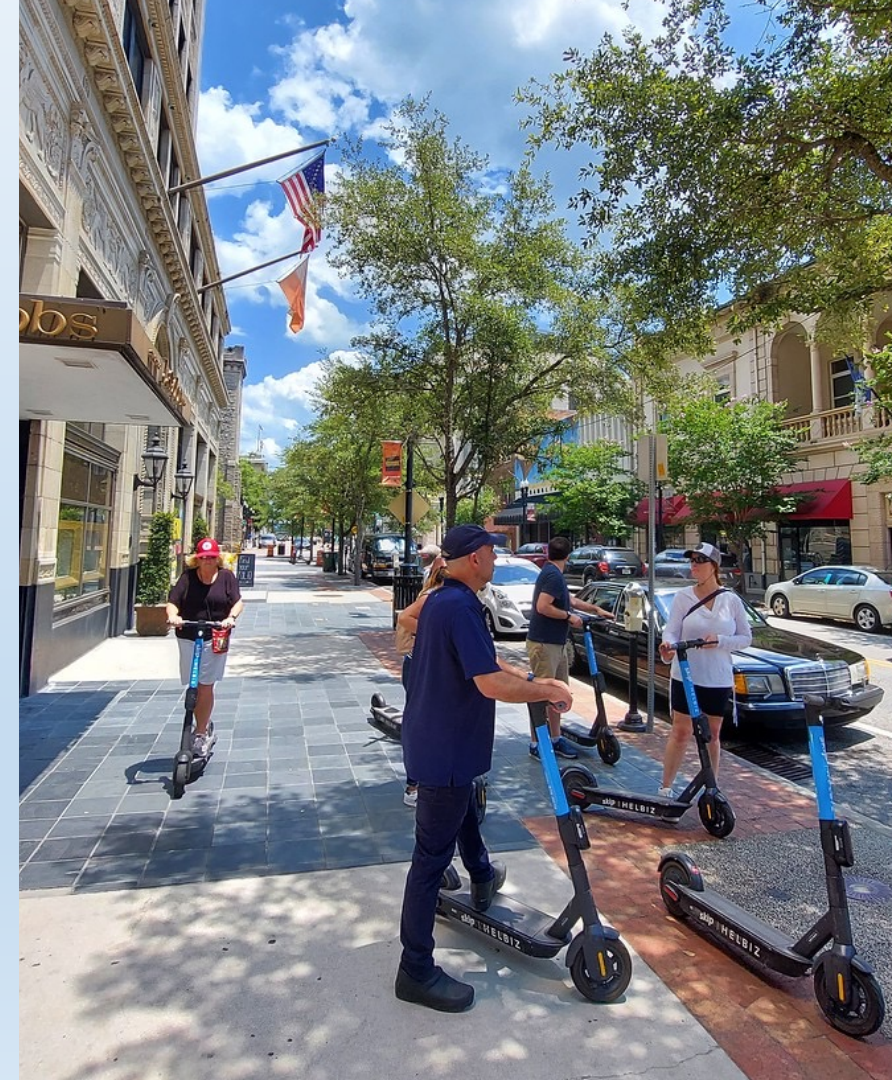
Source: City of Austin

Safety Challenges – Sidewalk Riding

- Similar to bicyclists, micromobility users may perceive sidewalks to be safer – especially along busier streets that lack adequate bicycle infrastructure.
- Crash risks similar to bicyclists
 - Pedestrian crash
 - Fixed object (street furniture, curb, utility guy wire, etc.)

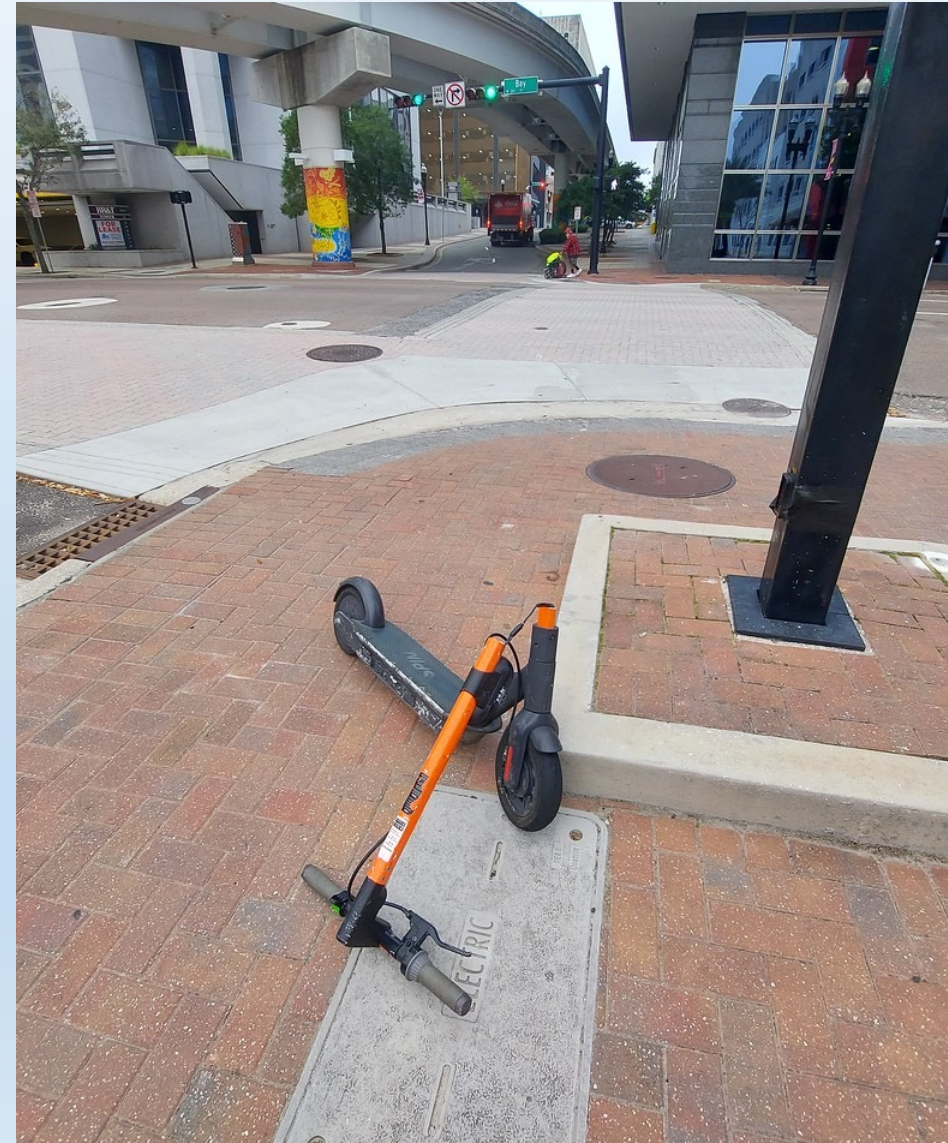
Safety Challenges – Sidewalk Riding

- Regulatory Prohibition: Difficult to enforce
- Software Prohibition:
 - Use of machine-learning/AI: unproven technology, but with rapid gains being attained
 - Use of geofences: Accuracy of GPS precludes effective use, 5G deployment may help in future



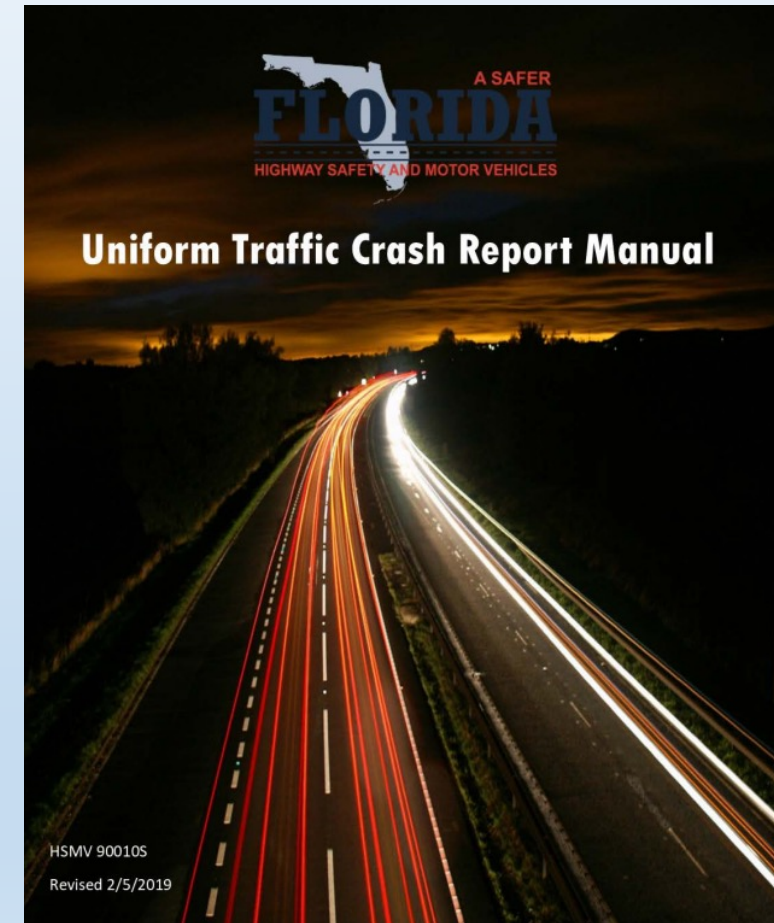
Safety Challenges – Dockless Parking

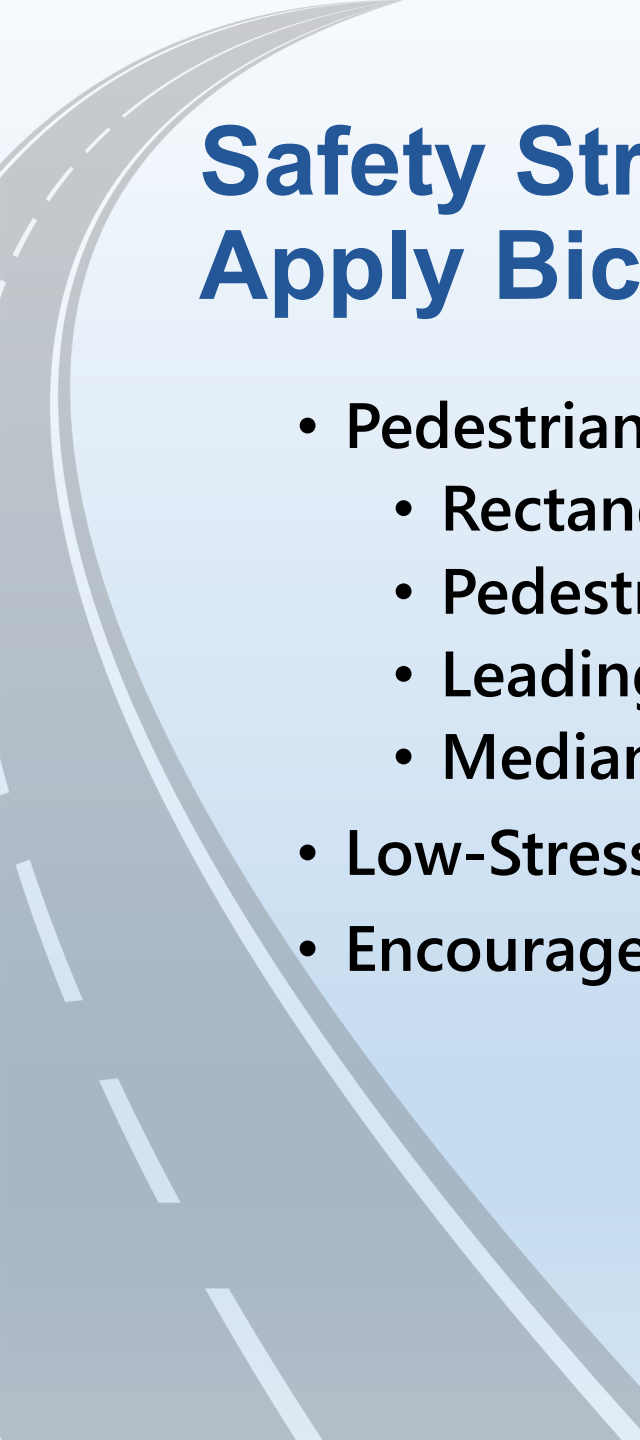
- Trip hazards for pedestrians
- May block accessible paths for people with disabilities
- May block bike lanes or other infrastructure for other vulnerable users



Safety Challenges – Data

- New technology since 2011 crash report update
 - Harmful Event (coded as “other”)
 - Vehicle Body Type (not applicable)
 - Vehicle Style (obscure, not searchable in databases)
- Pedestrian vs. Micromobility Crashes often NOT reported to HSMV (no legal requirement)





Safety Strategies – Apply Bicycle & Pedestrian Countermeasures

- Pedestrian Safe Crossings
 - Rectangular Rapid Flashing Beacons (RRFBs)
 - Pedestrian Hybrid Beacons
 - Leading Pedestrian Intervals
 - Medians and Refuge Islands
- Low-Stress Bike Infrastructure
- Encourage Helmets and Safety Equipment

Micromobility: Questions & Answers



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