

City of Cambridge
Transportation and Public Utilities Committee

Micromobility Hearing

June 25, 2024



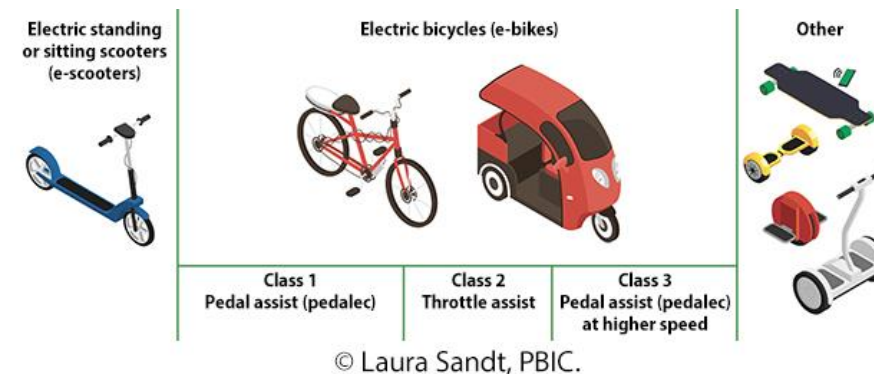
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Attachment: Micromobility - Council Hearing 062524 (COF 2024 #94 : A communication

What is Micromobility?

The **Federal Highway Administration** broadly defines micromobility as:

“any small, low-speed, human- or electric-powered transportation device, including bicycles, scooters, electric-assist bicycles, electric scooters (e-scooters), and other small, lightweight, wheeled conveyances.”



Other definitions of micromobility focus primarily on **powered** micromobility devices and characterize these devices as:

- partially or fully motorized
- low-speed (typically less than 30 miles [48 kilometers] per hour),
- and small size (typically less than 500 pounds [230 kilograms])
- and less than 3 feet [1 meter] wide).

In many areas, the growth of micromobility has been primarily driven by shared micromobility services. In Cambridge, bike share is highly utilized, but we have not had any additional shared mobility services. Growth of non-bicycle micromobility is driven by privately owned devices here in Cambridge.

Benefits of Electric Micromobility Devices

Electric bicycles (e-bikes), electric scooters (e-scooters), electric sit-on scooters, electric skateboards (e-skateboards), electric unicycles, and other emerging mobility devices have the potential to significantly improve the transportation ecosystem in Cambridge.

- ☐ Provide more mobility options for Cambridge residents, workers, and visitors
- ☐ Offer affordable, low-carbon ways to travel

E-bikes are particularly important for people who may struggle to use non-motorized pedal bikes, such as people who experience chronic pain or fatigue or other physical limitations and depend on e-bikes to be able to exercise and live with the freedom of mobility.

Cambridge Transportation Policies and Plans



The overall goal is to support a healthy, livable community that enables people of all ages and abilities to get around easily and safely

Federal Highway Administration

Promotes micromobility, including e-bikes and e-scooters, to support overall goals for transportation equity, active transportation for health, and environmental sustainability.

“Micromobility is an important component of a safe, equitable, healthy, accessible, connected, and reliable multi-modal transportation system.”



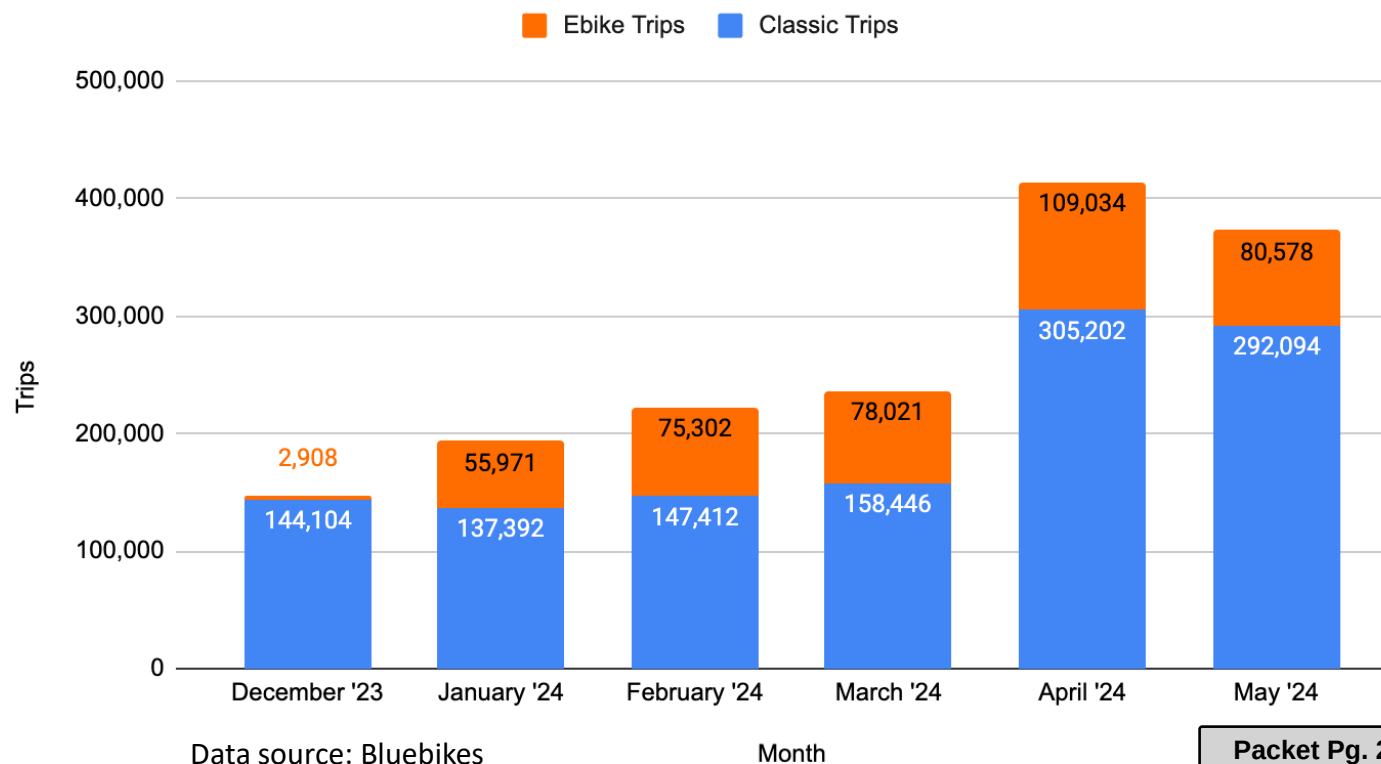
Popularity of Micromobility

The popularity of micromobility – and in particular e-bikes and e-scooters – has grown tremendously over the past few years, locally, nationally, and internationally.

E-bikes added to Bluebikes in mid-December 2023...

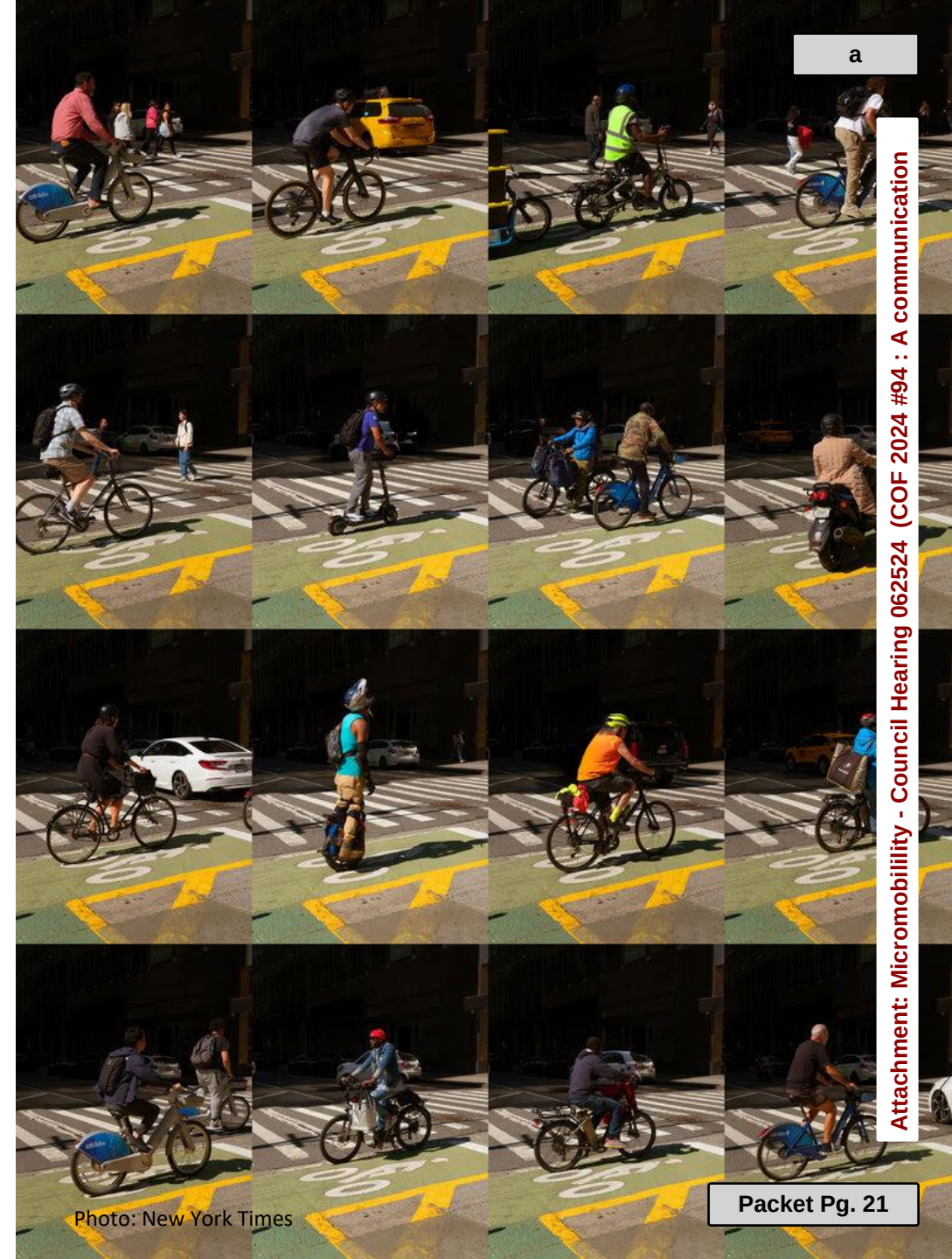
- Current data shows that e-bike trips represent 30% of all trips taken (but make up only about 18% of the bicycle fleet)

Trips Since Ebike Launch



Addressing Environmental and Climate Change Issues

- 12% reduction in carbon dioxide (CO₂) emissions from passenger transportation after accounting for e-bike emissions from electricity generation and induced e-bike trips.
- 225 average kg CO₂ reduction for each individual e-bike per year.



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Photo: New York Times

Supporting People of All Ages, Abilities, and Identities

E-bikes



Adaptive bikes



Cargo bikes



More Equitable and Affordable Transportation

- E-bikes and e-scooters are more flexible than transit,
 - significantly less expensive to own and operate than cars,
 - and easier to park/store.
- Incentive programs for e-bikes purchases available to people with low incomes
- And e-bikes are now available for both short and longer distance trips through the Bluebikes bikeshare system.
- E-bikes and e-scooters provide additional sustainable mobility options for people who do not or cannot drive.
- This includes people who are too young to drive, who cannot afford a car or cannot afford the cost of parking, or who have physical limitations that disallow automobile driving but do allow for micromobility vehicle use.

Supporting Businesses and Providing Delivery Options



Nimble, flexible, and less impactful to the city and the environment than traditional trucks and other delivery vehicles, including cars

Road design affects safety

- Vision Zero Policy: Eliminate transportation-related fatalities and serious injuries
- How do we get there?
 - Reduce the speed and volume of motor vehicle traffic
 - 20 MPH or 25 MPH speed limits in Cambridge
 - Traffic calming – designs that naturally enforce speed limits
 - Create safe places for people to walk/cross the street
 - Raised crosswalks
 - Appropriate traffic signals
 - Create safe places for people to travel by bike and other micromobility devices
 - Separated bike lanes on major streets
 - Multi-use paths that are sufficiently wide



Micromobility Speeds



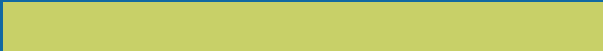
Photo: Harvard Gazette

- Massachusetts: E-bike speed limit of 20 mph
- Bluebikes e-bikes currently capped at 18 mph
- E-scooters' average speeds range from 15 to 30 mph
- Evidence shows that when speed restrictions are unreasonably low, more people will ride on sidewalks, whether or not there are sidewalks bans in place.

Operational Consistency

- Laws and regulations should be as consistent as possible for everyone's safety and understanding
- People cross jurisdictional lines constantly, often without realizing it
- This is why Cambridge Traffic Regulations closely mirror state regulations





Legal Definitions

State Law – “Motorized scooter law”

- In November 2004, this Law was passed which defined and regulated the operation of a “motorized scooter”.
- The Law states that definition of “motorized scooter” shall not include a motorcycle, electric bicycle or motorized bicycle or a 3 wheeled motorized wheelchair.
- Before the Law’s enactment, so-called mini-bikes, or mini-motorcycles, had not been defined or contemplated under the state’s statutory and regulatory schemes.
- The Law also made other changes to G.L. c. 90, §1E, including:
 - prohibiting motorized scooter usage after sunset or before sunrise
 - limiting speeds to 20 MPH
 - requiring a person to have a valid driver's license or permit, abide by traffic laws
 - wear protective headgear
 - not operate with a passenger; and
 - allowing operation of motorized scooters on public roadways (absent limited access express state highways).

State Law - “Electronic bike law”

- In August 2022 this Law was passed adding new definitions for e-bikes (class 1 and class 2) and amending the definitions of “motorized bicycle,” “motorcycle,” and “motor vehicle” to exclude e-bikes from those terms.
- Before the Law’s enactment, municipalities had no mechanism to regulate e-bikes, as e-bikes were included in the definition of “motorized bicycle.” Motorized bicycle riders were treated similarly to street-legal mopeds and motorcycles: riders needed to be licensed and were prohibited from off-street pathways.
- The Law:
 - prohibits riders from operating e-bikes on sidewalks and granted municipalities the authority to regulate e-bikes over Bike Paths within its jurisdiction, including setting speed limits.
 - Doesn’t include authority for the City to prohibit e-bikes on public ways, Bikes Lanes, or Bike Routes.
 - Prohibits e-bike usage and operation on trails unless the municipality with jurisdiction over it after public notice and a public hearing adopts ordinances or regulations permitting such use.
 - Granted the Massachusetts Secretary of Transportation authority to promulgate regulations for e-bikes in the Commonwealth.

Types of Surfaces

- **“Bikeway”** is defined as **“Bike Paths** (a route for the exclusive use of bicycles separated by grade or other physical barrier from motor traffic), **Bike Lanes** (a lane on a street restricted to bicycles and so designated by means of painted lines, pavement coloring or other appropriate markings), and **Bike Routes** (a roadway shared by both bicycles and other forms of transportation designated by the means of signs or pavement markings).” G.L. c. 90E §1
- **“Bike Path”** is defined as “a route for the exclusive use of bicycles separated by grade or other physical barrier from motor traffic.” G.L. c. 90E §1
- **“Trail”** is defined as “[T]rail designated for nonmotorized traffic...if such [T]rail has a natural surface tread made by clearing and grading the soil and no surfacing materials have been added.” G.L. c.85 §11B $\frac{3}{4}$
- **“Sidewalk”** Not defined in relevant state law, but colloquially means a pedestrian zone adjacent to a street, separated by some barrier or marking.
- **“Public ways”** In Massachusetts consists of state highways, highways/county ways, town ways and statutory private ways, each of which is governed by statute. G.L. c. 81 & c. 82. “Way” includes any public highway, private way laid out under authority of statute, way dedicated to public use, or way under the control of park commissioners or body having like powers. G.L. c. 90 §1

“Electronic Bicycle”

- “**Electric bicycle**” is a bicycle or tricycle equipped with fully operable pedals and an electric motor of 750 watts or less that meets the requirements of a class 1 electric bicycle or a class 2 electric bicycle. G.L. c. 90E §1
- E-bikes prohibited from sidewalks.
- E-bike users have the right to use all Bike Lanes, Bike Routes, and public ways in Massachusetts, including those public ways without bikeway designations, except limited access or express state highways, where signs specifically prohibiting bicycles have been posted. (Must obey traffic laws/regs. applicable to bicycles.)
- State law explicitly allows the City to regulate e-bikes on Bike Paths and Trails.
- State law likely does not explicitly preempt the City from regulating e-bikes on Bike Lanes, Bike Routes, Trails and Public Ways (except state highways).

“Motorized Bicycle”

- **“Motorized bicycle”** is a pedal bicycle which has a helper motor, or a non-pedal bicycle which has a motor, with a cylinder capacity not exceeding fifty cubic centimeters, an automatic transmission, and which is capable of a maximum speed of no more than thirty miles per hour. G.L. c. 90E §1
- A motorized bicycle shall not be operated upon any way, as defined in section one of c. 90E, within the Commonwealth by any person under sixteen years of age, nor at a speed in excess of twenty-five miles per hour. A motorized bicycle shall not be operated on any way by any person not possessing a valid driver's license or learner's permit. Passenger and rider must wear protective headgear. G.L. c. 90 §1E
- Distinct from “Electronic Bikes” per the 2022 E-bike law.
- City is likely preempted from permitting these Motorized Bicycles on Bike Paths and Bike Lanes as these areas are restricted to bicycles and e-bicycles. G.L. c. 90E §1
- City likely not preempted from regulating these devices on other surfaces they are otherwise allowed to operate on, absent express prohibition including: Bike Routes, Trails, and Public Ways (except state highways).
- Motorized bicycles may be operated on “bicycle lanes” adjacent to various ways, but shall be excluded from “off-street recreational bicycle paths”. (It is unclear whether this “bicycle lanes” (c. 90 §1E) term is the same as the “Bike Lane” definition in c. 90E §1, and similarly whether the “off-street recreational bicycle path (c. 90 §1E) is the same as the “Bike Path definition in c. 90E §1.

“Motorized-Scooters”

- **“Motorized Scooter”** is “any 2 wheeled tandem or 3 wheeled device, that has handlebars, designed to be stood or sat upon by the operator, powered by an electric or gas powered motor that is capable of propelling the device with or without human propulsion. The definition of ‘motorized scooter’ shall not include a motorcycle, electric bicycle or motorized bicycle or a 3 wheeled motorized wheelchair.”
- A motorized scooter shall not be operated on any way by a person not possessing a valid driver's license or learner's permit, nor at a speed in excess of 20 miles per hour.
- City is likely preempted from permitting these Motorized Scooters on Bike Paths and Bike Lanes as these areas are restricted to bicycles and e-bicycles.
- City can regulate these scooters on Public Ways (except state highways). City likely not preempted from regulating these devices on other surfaces they are otherwise allowed to operate on, absent express prohibition including: Bike Routes, and Trails.

Other Micromobility Devices

- These devices include e-skateboards, and other e-micromobility devices.
- E-skateboards and other e-micromobility devices are not defined in state law.
- City is likely preempted from permitting these e-skateboards and other e-micromobility devices on Bike Paths and Bike Lanes as these areas are restricted to bicycles and e-bicycles.
- City likely not preempted from regulating these devices on other surfaces they are otherwise allowed to operate on, absent express prohibition including: Bike Routes, Trails, and Public Ways.

Massachusetts and Cambridge Facility Names

State Name	Cambridge Traffic Regulations	Cambridge Name	Examples in Cambridge
Bike Path , a type of “Bikeway”	Same as state definition	Separated Bike Lane, Grade-Separated Bike Lane	Western Avenue Inman Square Brattle Street
Bike Lane , a type of “Bikeway”	Same as state definition	Bike Lane, Buffered Bike Lane	Ellery Street Huron Avenue
Bike Route , a type of “Bikeway”	A bicycle symbol marked on the pavement intended to remind motorists that bicyclists share the road. Used when there is insufficient space for bicycle lanes and specific bicycle markings are desired.	Shared Lane Pavement Marking, Sharrow	Linnaean Street Oxford Street
	A bike or multi-use path is an off-road facility, physically separated from motor vehicle traffic by an open space or barrier.	Bike Path, Multi-Use Path Off-Street Path	Linear Park Memorial Drive