Small Wheels, Big Potential

A Summary of the Final Report of the Special Commission on Micromobility

Winter 2026

Key Takeaways

The Commission's work offers an opportunity: to re-envision mobility in Massachusetts; to integrate micromobility thoughtfully and safely; to expand access to clean, affordable, efficient transportation; to design streets, sidewalks, and trails that accommodate riders alongside pedestrians, drivers, and transit users; and to lay the groundwork for responsible micromobility usage not just for today, but for decades to come.

Here are three key takeaways from the commission's full report.

01. Micromobility usage is increasing.

Ridership on bikeshare systems in Massachusetts is growing annually. The Bluebikes system in Greater Boston saw over 4.7 million trips in 2024. E-bike imports are quickly outpacing those of traditional pedal bikes. MassCEC's e-bike subsidy program received four times more applications than the number of vouchers available.

> "The gold standard is always: Can you connect people to destinations, population centers and transportation options."
>
> - Commission Member

02. Current terms are confusing and data on crashes is lacking.

The current state of micromobility is confusing for users, law enforcement, buyers, and local leaders. Data on micromobility-related crashes is sparse and unreliable at present. We need better crash data collection so we can get a clearer understanding of the impact micromobility devices have on public health to enable safer use.

03. Better education is needed.

The Commission recommends public education campaigns on safe riding, battery safety, and respectful behavior around pedestrians and other road users. Broad education programs are needed to address safe operation practices for all micromobility devices. Educational materials about micromobility should also be incorporated into the driver's manual.

What is Micromobility?

In line with a national trend, Massachusetts has seen a dramatic surge in the use of electric-assisted bicycles, scooters, mopeds, and other micromobility devices. Micromobility has become increasingly visible on our roads and paths: commuters riding to work, students gliding across campus, moped-riding delivery drivers shuttling meals down local streets, and urban or suburban residents opting for e-bikes over cars for daily trips.

At its best, micromobility delivers significant benefits: reduced traffic congestion, lower emissions, more equitable access to transit, a flexible alternative to cars, and improved physical and mental health. But without careful analysis and action, those benefits risk being overshadowed by mounting human costs in injuries, deaths, and public distrust. The choices we make on this topic matter.

Photo Credit: Darren Cole

Micromobility devices unlock mobility for many people in the Commonwealth at a price point that they can afford.
E-bikes, e-scooters, and other powered devices can help people access work, school, and social activities that keep our economy thriving and the population connected. There are many positive benefits to micromobility, including significant emission reduction potential.[1]

The potential of these devices to improve the lives of people in the Commonwealth with access to opportunity or improved health is significant. However, as with any new technology, micromobility brings with it the need for better regulations, new societal norms, changes to infrastructure, more education, and well-constructed laws that foster safe use.

[1] McQueen, Michael, et al. "The E-Bike Potential: Estimating Regional E-Bike Impacts on Greenhouse Gas Emissions." Transportation Research Part D: Transport and Environment, vol. 87, Oct. 2020, p. 102482, https://doi.org/10.1016/j.trd.2020.102482.

Speed-Based Classification

How do we think about current and future devices?

The Commission recommends the following speed-based classification for devices because it is simple, intuitive, risk-based, future-proof, field-ready, action-oriented, legally grounded, and clear.

Tier 0 0-20 MPH	**A.**	Human-powered Micromobility Devices
	B.	Powered Micromobility Devices
	C.	Mobility Aid Devices
Tier 1 21-30 MPH	**A.**	Class 3 E-bikes
	B.	Powered Micromobility Devices
	C.	Mopeds with 2 or 3 wheels
Tier 2 31-40 MPH	**A.**	Limited Use Motorcycles
	B.	Powered Micromobility Devices
Tier 3 41+ MPH	**A.**	Motorcycles
	B.	Powered Micromobility Devices

What does the device need to be street-legal?

The Commission recommends several device standards be put in place to protect consumers and enable safe operation on public ways.

		UL Electrical Standard	UL Battery Standard	Lights, Brakes, Horn	Motorcycle Equipment	Speed-ometer	Stop & Turn Signals
Tier 0 (0-20 MPH)	**0.A**	N/A	N/A	■			
	0.B	UL 2849 or UL 2272	UL 2271	■			
	0.C						
Tier 1 (21-30 MPH)	**1.A**	UL 2849	UL 2271	■ *		■	
	1.B	UL 2272	UL 2271	■		■	
	1.C	UL 2849	UL 2271	■ **		■	■
Tier 2 (31-40 MPH)	**2.A**	UL 2849	UL 2271	■ **	■	■	■
	2.B	UL 2272	UL 2271			■	■
Tier 3 (41+ MPH)	**3.A**	UL 2849	UL 2271	■ **	■	■	■
	3.B #	UL 2272	UL 2271			■	■

* Follow the federal motor vehicle guidelines for bicycles (see 16 CFR Part 1512)
** Follow FMVSS standards (see 49 CFR part 571)
\# Need to follow the motorcycle pathway i.e. FMVSS, VIN etc. else illegal on public roadways

Operational Requirements

What does the user need to do?

This table describes what requirements the Commission recommends for a micromobility user to operate a micromobility device based on the tier system.

		Helmet	Age 16+	License/ Education	Insurance	RMV Registration	MA Micro ID
Tier 0 (0–20 MPH)	**0.A**	■ ‡					
	0.B	■ ‡					
	0.C						
Tier 1 (21–30 MPH)	**1.A**	■	■	Education			■
	1.B	■	■	Education			■
	1.C	■	■	■ Class D	■	■	
Tier 2 (31–40 MPH)	**2.A**	■	■	■ Class M	■	■	
	2.B	■	■	■ Type TBD	■		■
Tier 3 (41+ MPH)	**3.A**	■	■	■ Class M	■	■	
	3.B #	■	■	■ Type TBD	■		■

‡ Bicycle Helmet Law applies to riders ages 16 and younger

Where can the device be used?

This table describes the recommendations of the Commission for which types of devices to allow on various types of infrastructure.

		Sidewalks	Bike Lanes	Shared Use Paths	Roadways	Limited Access Highways (>40 MPH)
Tier 0 (0–20 MPH)	**0.A**	■ ¶	■ ¶	■ ¶	■ ¶	
	0.B		■ ¶	■ ¶	■ ¶	
	0.C	■	■	■	■	
Tier 1 (21–30 MPH)	**1.A**		■ ¶		■	
	1.B		■ ¶		■	
	1.C				■	
Tier 2 (31–40 MPH)	**2.A**				■	
	2.B				■	
Tier 3 (41+ MPH)	**3.A**				■	■
	3.B				■	

¶ Follow local bicycling rules

Spotlight: E-bikes

If the commission's recommendations are passed into law, this is how the rules for certain e-bikes would change.

Aventon Soltera 3 ADV

Motor Power **250W**
Top Speed **20 MPH**

Status Quo

Class 1 E-bike

- Helmet required for riders 16 years old and under
- Any age can operate
- Not allowed on sidewalks
- No battery safety requirement

Proposed

Tier 0.A
Class 1 E-bike

- ✓ Helmet required for riders 16 years old and under
- ✓ Any age can operate
- ✓ Allowed in Bike Lanes, Shared Use Paths, DCR unimproved trails
- ✗ Not allowed on sidewalks
- ✓ UL2271 battery
- ✓ UL2849 electrical system

Lectric XP4

Motor Power **500W**
Top Speed **28 MPH**

Status Quo

UNDEFINED

- Helmet required for riders 16 years old and under
- Any age can operate
- Not allowed on sidewalks
- No battery safety requirement
- Follow CSPC requirements for bicycles

Proposed

Tier 1.A
Class 3 E-bike

- ✓ Helmet required for all riders
- ✓ Must be 16+ years old to operate
- ✓ Allowed in Bike Lanes
- ✗ Not allowed on Shared Use Paths, DCR unimproved trails, or sidewalks
- ✓ UL2271 battery
- ✓ UL2849 electrical system

Sur-Ron LightBee X

Motor Power **8000W**
Top Speed **47 MPH**

Status Quo

Off-Highway Vehicle (OHV)

- Helmet required for riders 18 years old and under
- 18+ can operate unsupervised
- Allowed off-road and private property
- No battery safety requirement

Proposed

Off-Highway Vehicle (OHV)

Maximum speed pushes it out of Tiers 0, 1, and 2 (beyond 39 MPH).

Does not have a VIN to follow FMVSS requirements for a Motorcycle registration, which is required to qualify as a Tier 3.A.

PIN required to register as an Off-Highway Vehicle with the Massachusetts Environmental Police.

If the commission's recommendations are passed into law, this is how the rules for certain e-scooters would change.

GoTrax GXL 2

Motor Power **250W**
Top Speed **16 MPH**

Status Quo

Motorized Scooter

- Cannot operate over 20 MPH, must equip with stop and turn signals
- Need a driver's license or learner's permit
- Allowed on public ways with speed limit 30 MPH or less
- Not allowed between sunset and sunrise
- No battery safety requirement

Proposed

Tier 0.B

- 16 years old and under must wear a helmet
- Any age can operate
- Allowed in Bike Lanes, Shared Use Paths
- No turn signals needed
- UL 2271 battery
- UL 2272 electrical system

Segway ZT3 Pro

Motor Power **650W**
Top Speed **25 MPH**

Status Quo

Motorized Scooter

- Cannot operate over 20 MPH, must equip with stop and turn signals
- Need a driver's license or learner's permit
- Allowed on public ways with speed limit 30 MPH or less
- Not allowed between sunset and sunrise
- No battery safety requirement

Proposed

Tier 1.B

- Helmet Required
- 16+ years old to operate
- Allowed in Bike Lanes
- Not allowed on Shared Use Paths
- State MicroID required
- Education Requirement
- UL 2271 battery
- UL 2272 electrical system

Segway GT3 Pro Scooter

Motor Power **1700Wx2**
Top Speed **50 MPH**

Status Quo

Motorized Scooter

- Cannot operate over 20 MPH, must equip with stop and turn signals
- Need a driver's license or learner's permit
- Allowed on public ways with speed limit 30 MPH or less
- Not allowed between sunset and sunrise
- No battery safety requirement

Proposed

Out of Class Device

Maximum speed pushes it out of Tiers 0, 1, and 2 (beyond 39 MPH).

Does not have a VIN to follow FMVSS requirements for a Motorcycle registration, which is required to qualify as a Tier 3.B.

PIN required to register as an Off-Highway Vehicle with the Massachusetts Environmental Police.

Recommendations

Enforcement & Safety

Police Training

The Massachusetts State Police Academy and the Massachusetts Police Training Committee should develop and deliver training for law enforcement officers, consistent with new and current micromobility laws, regulations and guidelines.

Crash Report & Vulnerable User Data

The legislature should amend state law to enable the inclusion within MassDOT's crash data system of micromobility-involved crashes that don't also involve an operated motor vehicle.

Default Maximum Speed on Paths

The legislature should establish a default maximum speed of 20 MPH on shared use paths, applicable statewide, unless otherwise posted. Path-operating entities retain the authority to lower the limit based on context-specific factors such as user volume, path width, crossings, geometry, adjacent land uses.

> "Unless we address the speed, I think everything else kind of falls by the wayside."
>
> - Commission Member

Enforcement & Safety

> "Active transportation doesn't cost much, but the benefits are huge."
>
> - Commission Member

Education Campaign

Law enforcement and state and local stakeholders, such as Safe Routes to School, should collaborate with relevant community partners, such as local bike shops, to develop and deliver an educational campaign to inform micromobility users about laws, regulations, local ordinances, & safety practices.

Automated Enforcement

The legislature should authorize automated enforcement on infractions that impact vulnerable users, such as speeding, the improper use of bus and bike lanes, and red light running.

Model Municipal Traffic Control Ordinance

MassDOT should include model micromobility traffic control regulations and prohibitions on obstructing bicycle lanes in its Sample Regulation for a Standard Municipal Traffic Code.

Recommendations

Infrastructure

> “Can we come up with ways of unifying all the different modes of transportation?”
>
> - Commission Member

Design Guidance

MassDOT and DCR should develop context-sensitive design guidance for state and municipal trails and shared use paths that establishes recommended design parameters: addressing the separation of pedestrian and wheeled modes, design speed, signage, and emerging micromobility, incorporating variations appropriate to urban, suburban, and rural contexts.

Micromobility Integration

The MBTA and other RTAs should adopt and implement a micromobility integration plan.

Funding For Upgrades

The legislature should increase appropriations for existing state programs, particularly the Complete Streets Funding Program and the Shared Streets & Spaces Program, to further assist municipalities in expanding their networks and transitioning from interim infrastructure treatments.

Recommendations

Expand Bikeshare

The legislature should establish a reliable and sustainable funding mechanism to support publicly owned, docked micromobility share systems. A combination of formula-based operating support and competitive grants for system expansion should be explored.

Fund More E-Bike Subsidies

The legislature should fund, and MassCEC should expand, the statewide e-bike rebate program.

Commercial Use Micromobility Study

The legislature should allocate funds for MassDOT to commission a study from an academic partner to understand how micromobility is used in commercial settings, particularly in the package delivery and food delivery industries.

Presumed Liability Study

MassDOT should work with an academic partner to study the hierarchy of responsibility in a crash and the potential effects of introducing a "Presumed Liability" law.

> "If we're going to make bikeshare equitable, or micromobility equitable, we need to invest state dollars in a sustainable way."
>
> - Commission Member

Acknowledgements

Commission Members

Phil Eng	Chair, Interim Secretary, MassDOT
Leonardi Aray	President, Consulting Planners of Massachusetts
Rep. James Arciero	2nd Middlesex; Chairperson, Joint Committee on Transportation
Gerald Autler	Director of Trails and Greenways, DCR
Naroa Coretti Sánchez	Researcher, MIT Media Lab
Sen. Brendan Crighton	Third Essex; Chairperson, Joint Committee on Transportation
Dorothy Fennell	Co-Founder & CEO, Cargo-B
Nick Gove	Deputy Chief of Transportation, City of Boston
Chief John G. LeLacheur	Chief, City of Beverly Police Department
Nathaniel Malloy	Senior Planner, Town of Amherst
Galen Mook	Executive Director, MassBike
Scott Mullen	TDM Director, A Better City
Kara Oberg	Owner, The Ride Cafe
Alicia Rebello-Pradas	Senior Advisor, Executive Office of Public Safety and Security
Stefanie Seskin	Board Member, WalkMassachusetts

Alternate Members

Alex Chilton	Legislative Director, Sen. Crighton's Office
Brendan Kearney	Executive Director, WalkMassachusetts
Craig Kelley	Founder, Urban Core Strategies
Jonathan Gulliver	Undersecretary, MassDOT
Stella Lensing	Trails & Greenways Planner, DCR
Susan Terrey	Deputy Secretary, Executive Office of Public Safety and Security

Support Cast

Kris Carter	Chief Innovation Officer, The Lab @ MassDOT
Caroline DeMarco	Graduate Co-op, The Lab @ MassDOT
Jaclyn Youngblood	Deputy Chief Innovation Officer, The Lab @ MassDOT

Special thanks to Niren Sirohi, Bonnie Polin, Monica Tibbits-Nutt, Hayes Morrison, Kevin Galligan, Mike Knodler, Angelina Caggiano, Pete Sutton, Faisa Sharif, Matt Warfield, Kunthea Ly, Elijah Sinclair, Miller Nuttle, Tejus Shankar, Laura Kavanagh, Mike Carpentier, Derek Krevat, Meghan Haggerty, Ha Nguyen, Rebecca Yao, Amélie Clark and everyone else who gave comments, lent their expertise, and helped make the Commission's work possible.

Resources

Full Micromobility Commission Report

https://www.mass.gov/info-details/special-commission-on-micromobility

MassDOT

Design Guides and Manuals

https://www.mass.gov/lists/design-guides-and-manuals

MassCEC

Bikeshare Options in Massachusetts

https://goclean.masscec.com/bike-share-programs/

Federal Highway Administration

Proven Safety Countermeasures

https://highways.dot.gov/safety/proven-safety-countermeasures

NABSA

2024 State of the Industry Report

https://nabsa.net/about/industry/

Consumer Product Safety Commission

Micromobility Information Center

https://www.cpsc.gov/Safety-Education/Safety-Education-Centers/Micromobility-Information-Center

NACTO

Shared Micromobility

https://nacto.org/topic/shared-micromobility/

Get Involved

The Commission's work represents the beginning of a conversation, not the end. We encourage you to participate in future discussion opportunities at the state and local level.

View Upcoming Legislative Hearings

https://malegislature.gov/Events

Contact Your Elected Officials

https://www.sec.state.ma.us/WhereDoIVoteMA/WhereDoIVote/

Attend a Bicycle and Pedestrian Advisory Board (MABPAB) Meeting

https://www.mass.gov/info-details/bicycle-and-pedestrian-advisory-board

Participate in Safe Routes to School (SRTS)

https://www.mass.gov/safe-routes-to-school

Extra Credit

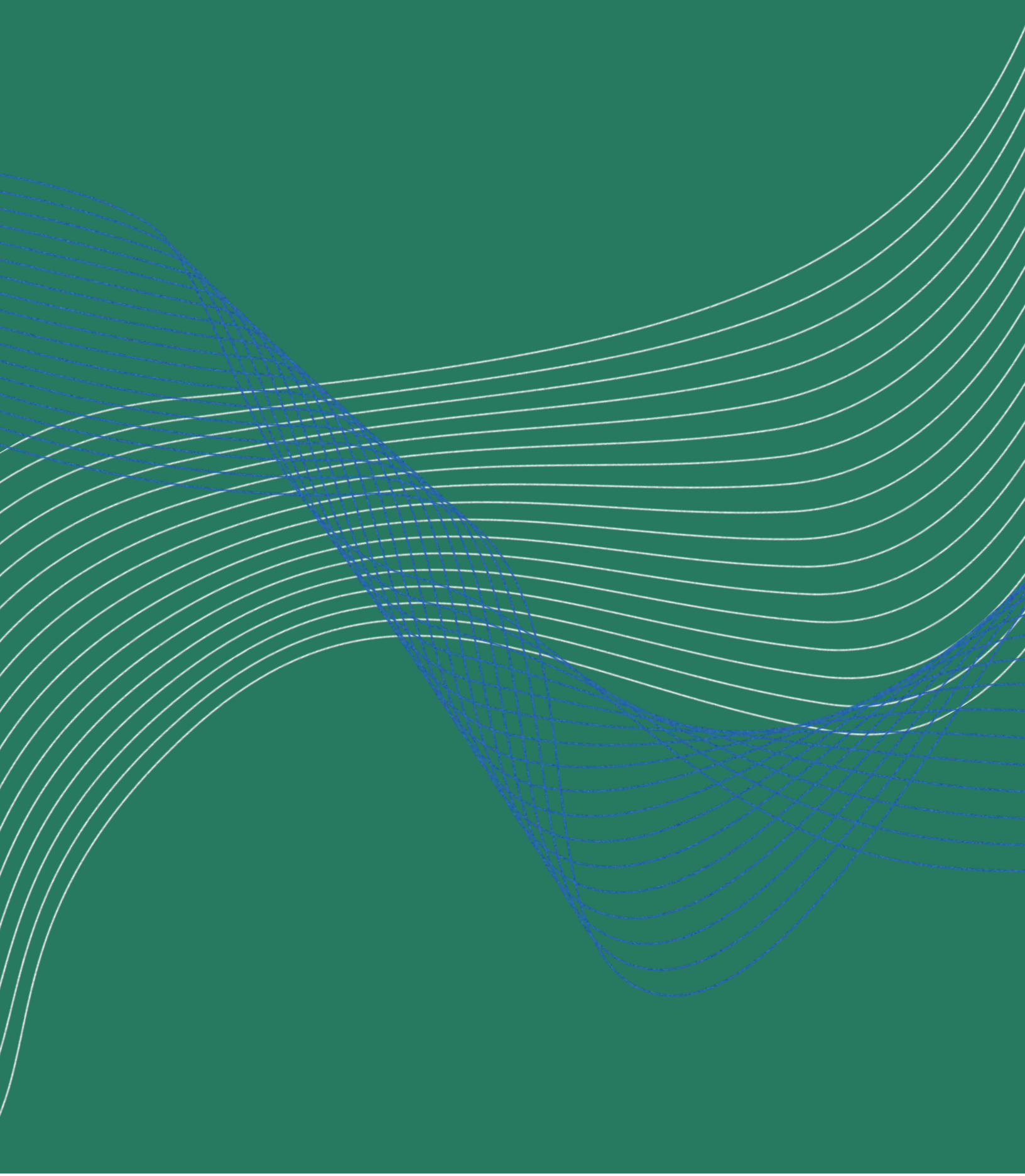
Check out the homework assignments Commission members completed as part of their charge and consider doing them yourself, or with a friend or family member. The second one is particularly good to invite a young person to do with you.

Visit a bike shop near you

Ask what (e-)micromobility devices they sell. Ask if you can test ride one or multiple, particularly if they have recumbent or adaptive devices.

Observe micromobility usage in 2 contexts

Spend 10 minutes watching for micromobility usage in two locations, ideally of different infrastructure types (i.e., on-street lane versus shared use path). Reflect on or discuss what you've observed.



massDOT

Massachusetts Department of Transportation