

TAMING AND TAPPING THE BIKESHARE EXPLOSION

Review of Shared Micro-mobility Laws

FINAL PROJECT REPORT

by

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16. Abstract This project analyzed the various laws pertaining to shared micro-mobility systems, such as bike-share and scooter-share. In order to examine the relevant laws in all 50 states, the research team developed a list of questions related to sharing platforms. Data were collected in nine categories—Definitions, Age Restrictions, Safety Equipment, Licensing Requirements, Where to Ride, Riding Under the Influence, Insurance Requirements, Sidewalk Clutter, and Shared Micro-Mobility Regulations—and were recorded in a searchable database that could be made available for cities, researchers, service providers, and the general public. The study uncovered many inconsistencies among micro-mobility laws across the country. Currently, many states lack clear definitions for these emerging forms of transportation, which don't otherwise fit neatly into the categories contemplated by existing law. In turn, users are left confused as to the law, and this may discourage them from riding. A number of states are attempting to remedy inconsistencies and legislative silence by proposing and passing laws that regulate the use of e-bikes and e-scooters, but even these efforts are unlikely to achieve the consistency that is needed. Federal authorities should act to create uniform laws and work with states to adopt them; otherwise, the lack of a legal infrastructure may threaten to stifle the innovation and undermine the promised returns of shared micro-mobility systems.			
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APPROXIMATE CONVERSIONS TO SI UNITS				
Symbol	When You Know	Multiply By	To Find	Symbol
LENGTH				
in	inches	25.4	millimeters	mm
ft	feet	0.305	meters	m
yd	yards	0.914	meters	m
mi	miles	1.61	kilometers	km
AREA				
in ²	square inches	645.2	square millimeters	mm ²
ft ²	square feet	0.093	square meters	m ²
yd ²	square yard	0.836	square meters	m ²
ac	acres	0.405	hectares	ha
mi ²	square miles	2.59	square kilometers	km ²
VOLUME				
fl oz	fluid ounces	29.57	milliliters	mL
gal	gallons	3.785	liters	L
ft ³	cubic feet	0.028	cubic meters	m ³
yd ³	cubic yards	0.765	cubic meters	m ³
NOTE: volumes greater than 1000 L shall be shown in m ³				
MASS				
oz	ounces	28.35	grams	g
lb	pounds	0.454	kilograms	kg
T	short tons (2000 lb)	0.907	megagrams (or "metric ton")	Mg (or "t")
TEMPERATURE (exact degrees)				
°F	Fahrenheit	5 (F-32)/9 or (F-32)/1.8	Celsius	°C
ILLUMINATION				
fc	foot-candles	10.76	lux	lx
fl	foot-Lamberts	3.426	candela/m ²	cd/m ²
FORCE and PRESSURE or STRESS				
lbf	poundforce	4.45	newtons	N
lbf/in ²	poundforce per square inch	6.89	kilopascals	kPa
APPROXIMATE CONVERSIONS FROM SI UNITS				
Symbol	When You Know	Multiply By	To Find	Symbol
LENGTH				
mm	millimeters	0.039	inches	in
m	meters	3.28	feet	ft
m	meters	1.09	yards	yd
km	kilometers	0.621	miles	mi
AREA				
mm ²	square millimeters	0.0016	square inches	in ²
m ²	square meters	10.764	square feet	ft ²
m ²	square meters	1.195	square yards	yd ²
ha	hectares	2.47	acres	ac
km ²	square kilometers	0.386	square miles	mi ²
VOLUME				
mL	milliliters	0.034	fluid ounces	fl oz
L	liters	0.264	gallons	gal
m ³	cubic meters	35.314	cubic feet	ft ³
m ³	cubic meters	1.307	cubic yards	yd ³
MASS				
g	grams	0.035	ounces	oz
kg	kilograms	2.202	pounds	lb
Mg (or "t")	megagrams (or "metric ton")	1.103	short tons (2000 lb)	T
TEMPERATURE (exact degrees)				
°C	Celsius	1.8C+32	Fahrenheit	°F
ILLUMINATION				
lx	lux	0.0929	foot-candles	fc
cd/m ²	candela/m ²	0.2919	foot-Lamberts	fl
FORCE and PRESSURE or STRESS				
N	newtons	0.225	poundforce	lbf
kPa	kilopascals	0.145	poundforce per square inch	lbf/in ²

*SI is the symbol for the International System of Units. Appropriate rounding should be made to comply with Section 4 of ASTM E380.
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Executive Summary

This project analyzed the various laws pertaining to shared micro-mobility systems, such as bike-share and scooter-share. In order to examine the relevant laws in all 50 states, the research team developed a list of questions related to sharing platforms. Data was collected in nine categories—Definitions, Age Restrictions, Safety Equipment, Licensing Requirements, Where to Ride, Riding Under the Influence, Insurance Requirements, Sidewalk Clutter, and Shared Micro-Mobility Regulations—and were recorded in searchable database that could be made available for cities, researchers, service providers, and the general public.

The study uncovered many inconsistencies among micro-mobility laws across the country. Currently, many states lack clear definitions for these emerging forms of transportation, which don't otherwise fit neatly into the categories contemplated by existing law. In turn, users are left confused as to the law, and this may discourage them from riding. A number of states are attempting to remedy inconsistencies and legislative silence by proposing and passing laws that regulate the use of e-bikes and e-scooters, but even these efforts are unlikely to achieve the consistency that is needed. Federal authorities should act to create uniform laws and work with states to adopt them; otherwise, the lack of a legal infrastructure may threaten to stifle the innovation and undermine the promised returns of shared micro-mobility systems.

CHAPTER 1. Introduction

The first bike-share programs in the United States appeared in 2010 (Baca, 2018) and since then micro-mobility sharing of e-bikes and e-scooters has greatly expanded. However, the legal environment has been slow to embrace these innovations, or even to address them. The success or failure of micro-mobility sharing systems may turn on the legal environment in which they attempt to operate. This study surveyed the laws governing bicycles, e-bikes (bicycles equipped with electric motors to assist in propulsion), and e-scooters (stand-up kick scooters powered by an electric motor) in all 50 states and the District of Columbia, and created a searchable database summarizing these laws as they may affect shared micro-mobility systems. The survey revealed serious issues and challenges, as the development of the legal landscape has failed to keep pace with shared micro-mobility innovations.

1.1. Background

1.1.1. *Potential Benefits of Shared Micro-mobility*

Shared micro-mobility systems provide a wide variety of benefits, including flexible mobility, emissions reductions, individual financial savings, reduced traffic congestion, reduced fuel use, health benefits, improved multimodal transport connections, “last mile” connections to public transport, and equity (better accessibility for minority and lower-income communities) (Midgley, 2019; Schneider, 2017; Woodcock, 2014). Most of these objectives—with the exception of health benefits—are served equally well by e-bike and e-scooter sharing systems.

But while e-bikes and e-scooters cannot deliver the health benefits that would come from getting users to travel under their own power, they offer other benefits that traditional bicycles do not. These include (1) the ability to travel with minimal physical effort, (2) the ability to use them without getting sweaty, (3) the capacity to travel longer distances or hillier terrain, (4) the ability to use them in all types of clothing (at least for e-scooters—which are compatible with

dresses in a way that bicycles are not) and, (5) the promise of an entirely different level of fun. To the extent that these attractions lure people out of their cars when traditional bicycles would not, these new micro-mobility sharing systems have the potential to generate societal benefits well beyond the promise of basic bike-share.

1.1.2. Structure of the Sharing Systems

Bike-share systems have emerged as two separate models. Some systems have docking stations where bicycles are picked up and returned. Other systems are “dockless” and use GPS systems and cell phone apps to help users locate available bicycles. A user can leave a bicycle in almost any location when a trip has been completed, and the next user can find and claim it for its next use. While bike-share systems have been implemented with both docking and dockless systems, e-bike and e-scooter systems have overwhelmingly favored the dockless approach. It is common to see multiple systems for different mobility devices in operation side-by-side in the same municipality, essentially competing with each other (Shaheen, 2019; DuPuis 2019).

There is also variation in who owns, operates, and funds the sharing systems. Funding and ownership can be public or private. Sometimes a municipality chooses to administer the system itself, even if it ends up contracting with a bike-share company to assist in implementing the system.

Regardless of how the shared micro-mobility system is structured, the legal regime that governs the use of the mobility – rules governing who can ride, where they can ride, and how riders must be equipped, etc., as well as riders’ perception of those laws – can have an outsized impact on the success of the system. This project was aimed at ascertaining and analyzing these various laws across the country.

CHAPTER 2. Methods

In order to examine the relevant laws in all 50 states and the District of Columbia, the research team developed a list of questions related to sharing platforms. Questions fell into nine categories: Definitions, Age Restrictions, Safety Equipment, Licensing Requirements, Where to Ride, Riding Under the Influence, Insurance Requirements, Sidewalk Clutter, and Shared Micro-Mobility Regulations. The research team then developed a database in Microsoft Access to facilitate the collection, storage, and analysis of the state laws, and employed graduate students from the University of Idaho College of Law for the summer of 2019 to research the laws in each state and input them into the database.

The researchers used the LEXIS/NEXIS legal database, WESTLAW, and state-operated websites in each assigned jurisdiction to find the relevant laws. Because this is an emerging field of law, many states had legislation pending at various stages of the legislative cycle. For the purposes of this study, any laws that had been fully enacted by the state government were included as the relevant law, even if they had not yet gone into effect. Any laws that were pending in the state legislature or were awaiting the governor's signature were not considered for this study.

The research team met weekly to discuss any unclear laws and to ensure that similar situations were logged in a consistent manner. After the states had been completed, researchers checked a sampling of each other's work to ensure that the data collection had been done in a consistent manner. Any and all discrepancies that were identified were raised for discussion, clarification, and ultimately harmonization.

CHAPTER 3. Results and Discussion

Even the most cursory review of the data collected revealed some compelling issues and gaps in the legal and regulatory regime that governs micro-mobility-sharing systems in the United States. These legal deficiencies threaten the success of such ventures and limit society's ability to achieve the myriad benefits that such innovations promise.

3.1. Internal Inconsistency in the Laws

The more obvious problem of consistency is “external” consistency (discussed below) but even within a single state, sharp differences and even conflicts exist in the applicable laws.

3.1.1. *Intrastate Law Inconsistencies*

The problem is most acute when the laws within a particular state may actually conflict. E-scooters in Oregon, for example, are banned from sidewalks and prohibited from traveling faster than 15 mph. However, simultaneously, mobility devices street are prohibited from traveling in the roadway at less than the normal speed of traffic (ORS §§ 814.512-524). Thus, if traffic flows at 25 mph, the scooter is required by law to travel no faster than 15 mph, but no slower than 25 mph (although ORS § 814.520 suggests that a rider may avoid liability for driving too slowly if she keeps as close to the right edge of the roadway as possible).

Issues can arise when a state does not clearly define electric bicycles or electric scooters. Even when an e-bike or e-scooter is not defined by statute, it may fall within another statutory definition, such as motorcycle, moped, or more broadly, motor vehicle. This categorization can lead to more restrictive regulations of electric bicycles and electric scooters, such as requiring driver's licenses, registration, or insurance.

For example, New York does not define electric bicycle or electric scooter. Because motor vehicles are defined as “every vehicle operated or driven upon a public highway which is propelled by any power other than muscular power,” e-bikes and e-scooters both fall within this

category (N.Y. Veh. & Tr. § 125). New York state law also requires that every motor vehicle be registered in order to drive on public highways (N.Y. Veh. & Tr. § 401). However, the Department of Motor Vehicles does not currently allow the registration of e-scooters or e-bikes, which appears to render riding these devices in public illegal (New York State Department of Motor Vehicles, 2019).

3.1.2. Inconsistencies between State Law and Municipal Ordinances

Additionally, state laws can conflict with the laws of the state's own municipalities. In an emerging field such as shared micro-mobility, some city ordinances conflict directly with their state's law. Direct conflicts likely occur when a city chooses a position quickly and the state subsequently adopts a contrary position that is incompatible with the local law, without allowing for local variation of the matter. While the state law presumably supersedes the local ordinance, the conflicting local law remains on the books.

Sometimes a local law is more restrictive than a state law, so the discrepancy does not create a direct conflict. California state law, for example, identifies three classes of e-bikes and allows all to be ridden on sidewalks (Cal. Veh. Code § 21207.5). West Hollywood, California, however, recently banned the use of all classes of e-bikes from being ridden on sidewalks (West Hollywood, California, Municipal Code § 10.04.030). In this situation, it is possible for both laws to be valid, depending on whether the state law is read to pre-empt local variation or not. If not pre-empted, the local, more restrictive law simply imposes higher standards than required by the state.

Nonetheless, the inconsistency can create difficulties for riders. In King County, Washington, for example, adult users of bicycles are required to wear helmets, but elsewhere in

the state they are not (King County, Washington, Bd. of Health Code § 9.10). When a bicycle (or e-scooter) rider crosses county lines, the applicable law can change mid-ride.

Finally, state and local laws may define or classify mobility devices differently. For example, the city of Seattle, Washington, defines e-bikes in a manner that does not mirror the three-category classification system for e-bikes adopted by the State of Washington (Seattle, Washington, Municipal Code §11.14.055; RCW 46.04.169). The definition provided by Seattle only encompasses what would be Class 1 and Class 2 e-bikes according to Washington State law, leaving Class 3 e-bikes outside of the city's definition. (See the discussion of e-bike classification systems below.) This creates the potential for regulatory issues if Class 3 e-bikes are not considered e-bikes at all in Seattle, affecting riders' abilities to ride on bicycle paths or to be subject to other restrictions of or protections offered to e-bike riders.

3.2. Externally Inconsistent Laws

Even if one understands the laws in a given state, the patchwork of legal requirements in other states may sow confusion. One example is the use of the Chipman Trail, a rails-to-trails bike path that connects Washington State University (WSU) in Pullman, Washington, with the University of Idaho in Moscow, Idaho, eight miles east. At the beginning of a recent community-organized 100K ride that started on the WSU campus, the riders had to be cautioned that they were in Washington and so needed to stop at stop signs, signs they would be authorized to treat as "yield" signs when they were in Idaho (Tekle, 2017).

Similar problems emerged in the early days of automobiles, and the need for consistent laws governing motor vehicle transportation became apparent. A special committee was appointed at the federal level to draw up a uniform code, and pressure was put on the state legislatures across the country to adopt it. This eliminated idiosyncratic rules that may have

existed in different cities and states and allowed manufacturers to produce vehicles that were legal in every state (Davis, 1963). Drivers could then have some confidence in the rules of the road when crossing state lines. While traffic laws are not entirely uniform in the U.S. (e.g., some states—including Washington, Oregon, and Idaho—allow left turns on red lights when the driver is turning onto a one-way street), the exceptions are very few and largely minor. Even traffic signals and signage have been made standard across jurisdictions (McShane, 1999). However, efforts to bring uniformity to the laws governing cycling—much less to the laws governing the use of e-bikes, e-scooters, or shared micro-mobility in general—have yet to bear fruit.

Inconsistency persists, therefore, among the laws that apply to bicycle use, and even more so as they apply to e-bike and e-scooter use. This is a particular concern because a significant number of users of such systems are travelers and tourists – people from outside the relevant jurisdiction and therefore ill-equipped to know local laws (Virginia Tech, 2012).

The “instructions” commonly provided by the micro-mobility sharing services are unhelpful on this score, as they may simply tell the user to wear a helmet, without indicating whether the helmet is required by law. (For example, the instruction video for Bird scooters, inside the Bird app, includes a “Bring your own helmet” instruction, without further elaboration to clarify whether this is a legal requirement or just a prudent recommendation.) The uncertainty serves as a deterrent to would-be riders (Pimentel, R., 2019).

3.2.1. E-bike Classification Systems

A number of states have created classification systems that sort e-bikes into categories, with different rules applied to each category. The predominant trend in e-bike classification—now embraced in 18 states, albeit with minor differences in language—is a three-class system separating these devices on the basis of maximum speed and the type of assistance provided by

the electric motor: (1) Class 1 provides assistance via an electric motor while the rider is pedaling up to a maximum speed of 20 miles per hour; (2) Class 2 can either assist while the rider is pedaling or propel the e-bike independently up to a maximum speed of 20 miles per hour; (3) Class 3 provides assistance while the rider is pedaling via the electric motor up to a maximum speed of 28 miles per hour. Once the maximum speed has been reached in each class, the electric motor ceases to function and relies solely on human power.

Other states have adopted alternative classification systems, or have simply grouped all e-bikes under one definition. For example, New Jersey divides electric bicycles into the first two classifications described above, and any electric bicycle with a motor capable of propelling the bicycle between 20 and 28 miles per hour (a Class 3 e-bike) is classified as a “motorized bicycle,” and subject to stricter rules that are more similar to those followed by motorcycles (N.J.S.A. § 39:1-1). Oregon, on the other hand, does not follow a classification system at all and defines “electric-assisted bicycles” as e-bikes with a motor incapable of propelling the bicycle faster than 20 miles per hour (ORS § 801.258). See figure 3-1, which shows the number of states that follow each system.

Among the states that follow the three-tier classification system, there are differences in how each class is regulated. For example, in Illinois, several restrictions exist for riders and manufacturers, depending on what classification of e-bike is at issue: Class 3 e-bikes, but not Class 1 or 2 e-bikes, are required to have a speedometer and may not be ridden by any person under the age of 16 (625 ILCS5/11-1517). In contrast, Indiana requires Class 3 e-bike riders to be at least 15 years old, requires a helmet to be worn by riders of Class 3 e-bikes who are under 18, and prohibits Class 3 e-bikes from riding on bicycle paths unless it has been authorized by the local authority or the bicycle path is within or adjacent to the highway (I.C. § 9-21-11-13.1).

Thus, the classification of e-bike will determine restrictions on age, required equipment, and where e-bikes may be ridden.

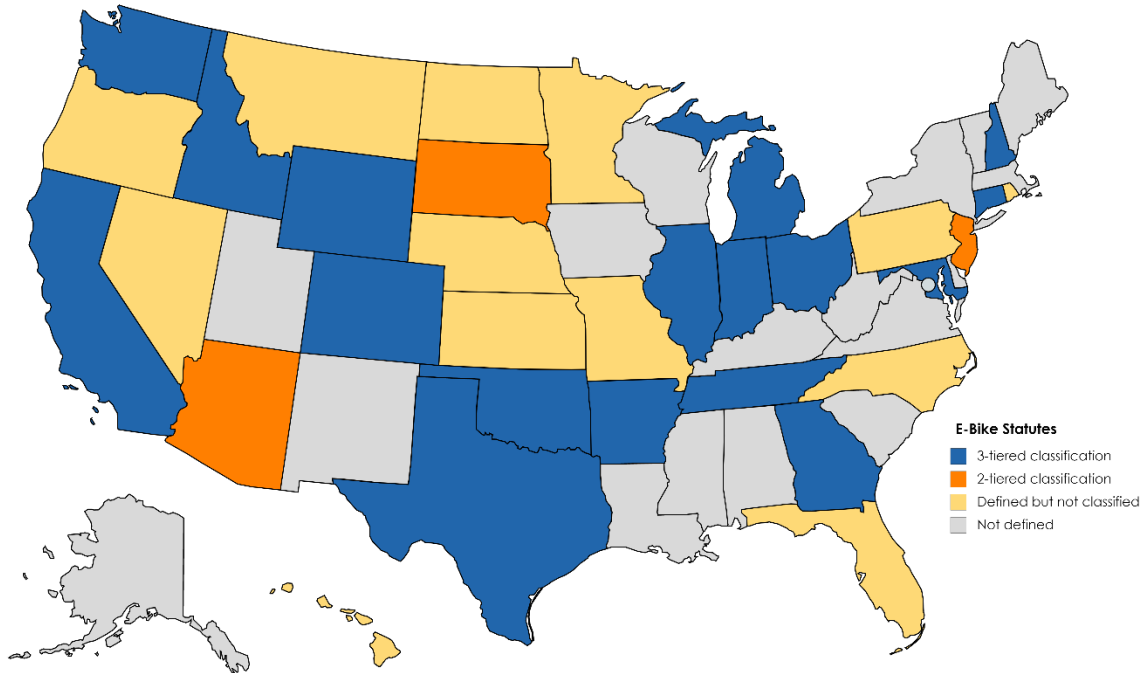


Figure 3-1 E-bike classification systems

Fifteen states have no laws defining or addressing e-bikes. This is a serious problem, discussed further below.

3.2.2. *Helmet Inconsistency*

Helmet laws vary dramatically in various states (see table 3-1). In over 20 states, there is no requirement that anyone wear a helmet when using a bicycle, an e-bike, or an e-scooter. Many states impose helmet requirements on bicycle riders under a certain age. Six states require helmets for all users of e-bikes.

Table 3-1 Mandatory helmet laws

	All	Children Under...	All	Children Under...	All	Children Under...
	Bicycles		E-Bikes		E-scooters	
AK						
AL		16	Y			19
AR				21		
AZ						
CA		18	Y			18
CO				18		
CT		15				
DC		16				
DE		18		18		18
FL		16				
GA		16	Y			
HI		16		16		
IA						
ID						
IL						
IN				18		
KS						
KY						
LA		12	Y			17
MA		16	Y		Y	
MD		16		16		16
ME		16				
MI				18		19
MN						18
MO						
MS						
MT						
NC		16			Y	
ND				18		
NE						
NH		16		18		
NJ		17		17		17
NM						
NV						
NY		14				
OH			Y			
OK						
OR		16		16	Y	
PA		12		12		
RI		16		16		
SC						
SD				18		18
TN		16	Y			
TX						
UT				21		
VA						
VT						
WA						
WI						
WV		15				
WY						

Laws requiring helmet use can be particularly burdensome for bike-sharing systems, because the typical user does not carry a helmet with her/him (Douban, 2015; Gutman, 2016; CBC, 2013). Attempts to share helmets along with bikes have not been well received by the

public, presumably because of concerns about the cleanliness of shared helmets (Gutman, 2016). Some speculate that the failure of Seattle’s first bike-share venture was due to the strictures of the mandatory helmet law there (Gutman, 2016); more recent success with shared micro-mobility in Seattle may be due to local police’s decision to relax their enforcement of mandatory helmet laws (Gutman, 2017) (“Seattle police issued only 12 helmet citations through the first half of 2017, down from more than 600 in 2011.”). Mandatory helmet laws have been sharply criticized as counter-productive, both from a safety perspective (Turner, 2012; Baird, 2017; Knaup, 2015) and for the implicit message that bicycling is very dangerous and therefore something to be avoided (Rosenthal, 2012; Knaup, 2015). That message, as well as the victim-blaming message that responsibility for cyclist safety lies solely with the cyclist, rather than with the drivers who hit them, can only discourage ridership (Walker, 2017; Pimentel, 2018).

3.2.3. Riding while Intoxicated

E-bike and e-scooter riders also face uncertainty about the application of driving under the influence (DUI) laws. In many states, it is not at all clear whether e-bikes and e-scooters qualify as “motor vehicles” for purposes of DUI statutes.

A small handful of states have attempted to clarify this by passing separate laws governing riding under the influence (RUI), which explicitly apply to micro-mobility users. These laws typically impose lesser punishments for RUI than the state imposes for DUI violations, which makes sense because an intoxicated driver endangers the lives of others (pedestrians, car passengers, etc.) at a level far beyond the dangers posed by an intoxicated e-scooter rider. A general breakdown of state law treatment of these issues is shown in figure 3-2.

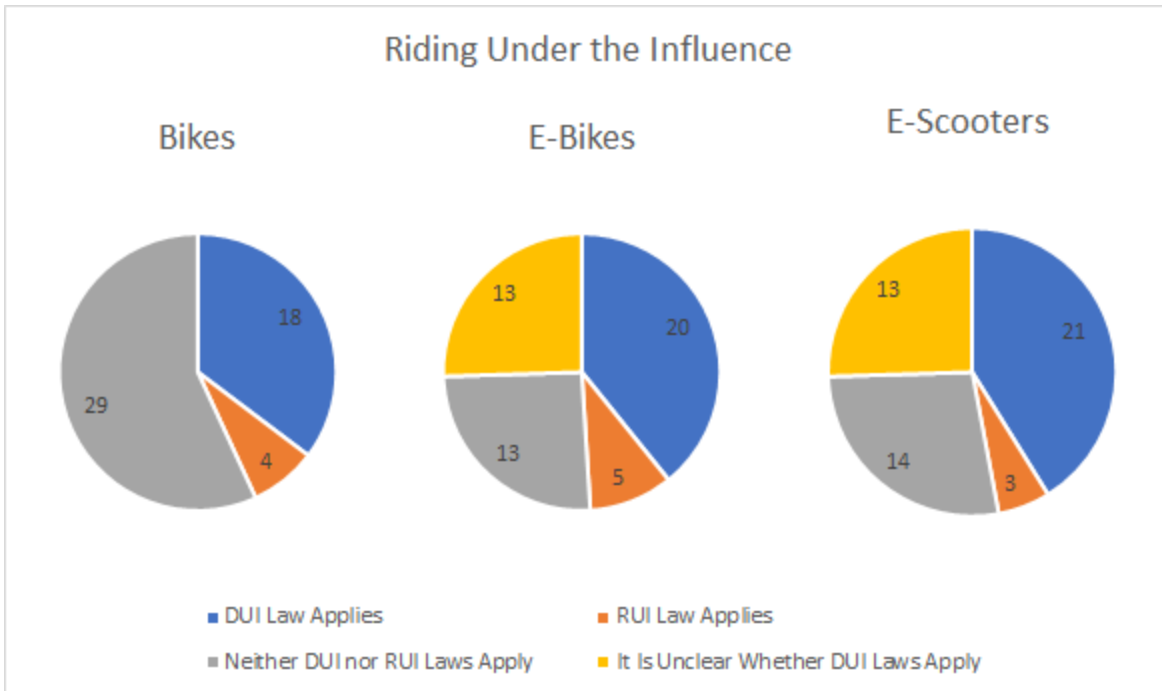


Figure 3-2 “Riding under the influence” legislation

(Note: A few states have both RUI laws that apply specifically to micro-mobility modes, and separate DUI laws that apply equally to micro-mobility modes, introducing potential for contradiction and inconsistency (see the discussion of such issues above). The states that fall into both the DUI and the RUI categories are depicted in the “RUI Law Applies” section of the pie charts in figure 3-2.)

3.3. Awareness of the Law

Even if inconsistent laws were aligned, micro-mobility users still might not know what the laws were. Someone who is unaware of the law will have difficulty complying with it, and as noted above, the uncertainty may scare off riders altogether.

3.3.1. Uncertainty about What Laws Apply

It is far from clear, even for a lawyer trained to interpret statutes, which existing laws may apply to a particular mode of micro-mobility. In some states, the term “pedestrian” is

interpreted to include bicyclists on sidewalks, so laws that give pedestrians the right-of-way simultaneously give bicyclists the right-of-way (Michigan Compiled Laws § 257.660c). In 35 states, the word “vehicle” is interpreted to include bicycles, which lumps bicycles in with other vehicles and subjects them to the laws governing vehicular traffic (e.g. Oregon Revised Statutes § 814.400).

As for e-bikes and e-scooters, the problem is even more difficult. Because most of these laws were passed before e-bikes and e-scooters arrived on the market, laws cannot reflect the jurisdiction’s intention concerning them. For example, Pullman, Washington, requires that all scooters be equipped with a “muffler” by an ordinance that must have been drafted during an era of gas-powered scooters; it is, of course, a ridiculous requirement to impose on virtually silent e-scooters (Pullman, Washington, Municipal Code § 12.11.020(8)). Even the most well-informed user is left to wonder whether an e-bike is a “motor-driven cycle” within the meaning of the statute, for example, or whether an e-scooter is a “motor vehicle.” Exacerbating the problem, there does not appear to be any consensus or consistency, state by state, on the meanings of these terms.

3.3.2. Ignorance and (Mis)perception of the Applicable Laws

The fact that potential users of shared micro-mobility may be unaware of the laws governing the mobility mode presents two separate problems. The first is that users may unwittingly violate the law. They may assume that e-scooters are legal on sidewalks and ride them there, subjecting themselves to legal liability. The second concern is that the uncertainty itself will be a deterrent to use of the mobility system. A potential user may be tempted to rent a scooter or a bike but may err on the side of caution and avoid using the device altogether when unsure of whether it’s legal to ride without a helmet, or without a driver’s license, or on the

running path through the park or along the river. A July 2019 survey of users and non-users in the Northwest suggested that uncertainty about the law can significantly discourage use of micro-mobility sharing (Pimentel, R., 2019). Uncertainty about where it is legal to ride provides at least a slight deterrent effect for 74 percent of potential users (see figure 3-3).

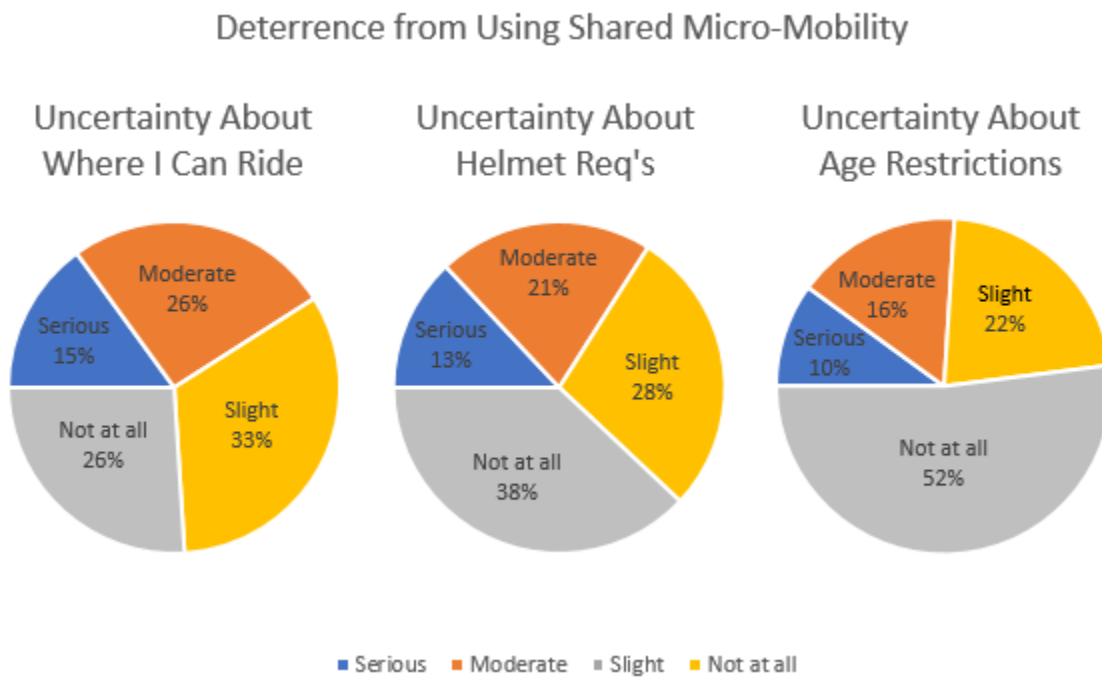


Figure 3-3 Deterrent effect of legal uncertainty

3.4. Statutory Silence

The lack of legislation in many jurisdictions leaves both the purveyors of shared micro-mobility and their customers in the dark about what is legal and what is not. See, for example, table 3-2, which lists state regulations on where it is legal and illegal to operate these mobility devices. The laws are reasonably complete as they apply to bicycles, but significant gaps exist for newer technologies, particularly e-scooters, which do not fit so easily into pre-existing categories. While some states are already working to get laws on the books that govern the use of

such mobility, many more legislatures either have failed to perceive a need or have been unwilling or unable to muster the political will or material resources to respond to it.

Table 3-1 Where it's legal to ride

	Sidewalks	Shoulder	Traffic lane	Bike path	Sidewalks	Shoulder	Traffic lane	Bike path	Sidewalks	Shoulder	Traffic lane	Bike path
	Bicycles				E-Bikes				E-scooters			
AL	N	Y	Y	Y	Y	Y	Y	N	N			
AK	Y	Y	Y	Y			Y				Y	
AZ		Y	Y	Y		Y	Y	Y	Y	Y		Y
AR	Y	Y	Y	Y	Y	Y	Y	Y				
CA	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
CO	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
CT	Y		Y	Y	N		Y	Y				
DC	Y		Y	Y	N		Y	N	Y			
DE	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	
FL	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N
GA	N	Y	Y	Y	N	Y	Y	Y				
HI	Y	Y	Y	Y	Y	Y	Y	Y				
ID		Y	Y	Y	Y	Y	Y	Y				
IL	Y	Y	Y	Y	N	Y	Y	Y				
IN		Y	Y	Y		Y	Y	Y		Y	Y	Y
IA		Y	Y			Y	Y					
KS	N	Y	Y	Y	N	Y	Y	Y	N	Y	N	Y
KY	Y	Y	Y	Y						Y	Y	Y
LA	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y
ME		Y	Y	Y		Y	Y			Y	Y	
MD	N	Y	Y	Y	N	Y	Y	Y	N	Y	Y	Y
MA	Y		Y	Y	N		Y	N	N		Y	Y
MI	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
MN	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
MS	Y	Y	Y	Y								
MO	Y	Y	Y		N	Y	Y					
MT	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N
NE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NV	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NH	N		Y	Y	N		Y	Y	N		Y	N
NJ		Y	Y	Y	N	Y	Y	Y	N	Y	Y	Y
NM		Y	Y	Y								
NY	N	Y	Y	Y	N	N	N	N	N	N	N	N
NC			Y	Y	N		Y				Y	
ND	Y	Y	Y	Y	Y	Y	Y	Y				
OH	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
OK		Y	Y	Y		Y	Y	Y		Y	Y	Y
OR	Y	Y	Y	Y	N	Y	Y	Y	N	Y	Y	Y
PA	Y	Y	Y	Y	Y	Y	Y	Y				
RI	Y	Y	Y	Y		Y	Y	Y				
SC	Y	Y	Y	Y								
SD	Y	Y	Y	Y	N	Y	Y	Y	N	N	Y	
TN	Y	Y	Y	Y	N	Y	Y	Y				
TX	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
UT	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
VT	Y	Y	Y	Y	N	Y	Y	N				
VA	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y	Y
WA	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
WV		Y	Y	Y								
WI	Y	Y	Y	Y		Y	Y	N				
WY		Y	Y	Y	N	Y	Y	Y				

3.4.1. Emerging Legislation

New laws are in the works in a few states. New York’s legislature has introduced a bill that defines “bicycles with electric assist” and “electric scooters,” stipulating that e-bikes are subject to the same regulations as bicycles while e-scooters are subject to new regulations laid out in the bill (2019 New York Senate Bill No. 5294). Hawaii’s legislature has introduced two separate bills to govern the use of these devices. The first sets a minimum age of 15 for e-bike riders and includes e-bikes within the definition of bicycles, thus subjecting them to most of the same regulations that govern non-motorized bicycles. (2019 Hawaii House Bill No. 812), and the second defines electric foot scooters, sets a minimum riding age of 15, and subjects e-scooters to many of the same laws that govern bicycles (2019 Hawaii House Bill No. 754). Similarly, Alaska has introduced a bill that defines e-bikes without a classification system, and clarifies that they are not motor vehicles or subject to any registration requirements (2019 Alaska House Bill No. 123).

3.5. Overly Protective Laws

Another problem is that the legal regime is not always driven by good data. Perceptions, even grossly inaccurate ones, about the dangers of various types of micro-mobility may prompt state legislatures or municipalities to pass “safety-oriented” measures that can frustrate the success of the sharing systems. The actual safety impact of mandatory helmet laws, discussed above, has been called into question, for example; but as long as the overwhelming perception is that such laws do promote safety, they will be imposed nonetheless.

Another alarming perception is that micro-mobility modes may be so inherently unsafe that they should be banned altogether. The city of Nashville recently took such action, shutting down overnight seven scooter-sharing operations there (and taking 4,000 scooters out of

commission) (Hawkins, 2019). The action was taken after the driver of an SUV struck and killed a scooter rider, prompting a call to ban scooters (Renkl, 2019). The legal action was driven not by a considered study of safety issues, but as a reaction to a single death of a scooter rider—the first and only such death in Nashville. The blame was placed squarely on the scooter, not on the car that did the killing, nor on the fact that the scooter rider was seriously intoxicated at the time (Alund, 2019). Moreover, the city’s action ignored the fact that pedestrian deaths in Nashville were averaging about 20 a year and were “on the rise” (Weiner, 2018) and that cyclist deaths in Nashville had been averaging about eight per year, with no talk at all about banning bicycles (Day, 2018). Indeed, Nashville’s highways had been identified as one of the nation’s deadliest, with 59 fatal crashes per year over the five years from 2011 to 2015 (Garner, 2016). In a place where automobile fatalities are so high, it is remarkable that the micro-mobility mode was so quickly scapegoated for the death that was caused not so much by the scooter, but by the rider’s intoxication and the car that ran him down.

3.6. Laws Addressing Shared Micro-mobility Implementation and Use Directly

3.6.1. Laws Governing Shared Micro-mobility Systems

Some states have adopted laws that focus on sharing systems, recognizing the difference between regulating e-bike or e-scooter use and regulating the businesses or systems set up to share them. As of this writing, Alabama is the only state that has comprehensive shared micro-mobility law that covers bicycles, e-bikes, and e-scooters. Four other states, Arkansas, Nevada, Utah, and Washington, have enacted statewide regulations concerning e-scooter sharing systems exclusively. However, most states’ statutory schemes are either silent on this issue or leave the regulation of these systems to local governments.

With the emergence of these laws comes yet another issue: shared micro-mobility laws that differ from existing laws. For example, Alabama defines a “scooter” as “[a] device weighing less than 100 pounds that satisfies all of the following: (a) [h]as handlebars and an electric motor, (b) [i]s solely powered by the electric motor or human power, [and] (c) [h]as a maximum speed of no more than 20 mph on a paved level surface when powered solely by the electric motor” (Ala. Code 1975, § 32-1-1.1(60)). By this definition, an e-scooter would qualify as both a “scooter” and as a motor vehicle in the Alabama Code (Ala. Code 1975, § 32-1-1.1(33)). Conversely, the definition for a “shared micromobility device” is a type of transportation device, including a scooter, that is used in a shared micro-mobility device system (Ala. Code 1975, § 32-1-1.1(64)). The “shared micromobility device[s]” are subject to the same laws and regulations as a bicycle, and not a motor vehicle (Ala. Code 1975, § 32-19-2(d)). As a result, scooters that are privately owned are subject to rules and regulations pertaining to motor vehicles, such as licensing requirements, while scooters that are used within a micro-mobility device system are subject to a different set of rules and regulations, including an exemption from the licensing requirement.

3.6.2. Laws Minimizing the Negative Impacts of Shared Micro-mobility

One of the key complaints about dockless systems is the concern that bicycles, e-bikes, or e-scooters get left in inconvenient places. Part of the concern is one of untidy or unsightly clutter, but the greater concern is about obstructing sidewalks and other thoroughfares for pedestrian traffic, creating a nuisance and a safety-related tripping hazard, as well as limiting access to the sidewalk for people with disabilities. While this concern often prompts critics to call for banning shared micro-mobility programs (Reigstad, 2018), most states already have statutes that address the issues of clutter or obstruction, and the problem is simply a matter of finding a way to

enforce these laws in the context of shared bikes, e-bikes, and e-scooters. Alabama, the state with the most comprehensive statewide shared micro-mobility legislation, specifically prohibits shared micro-mobility devices from being parked in a manner that impedes normal pedestrian movement (Ala. Code 1975, § 32-19-2(c)). However, many other states that currently lack shared micro-mobility legislation already have laws that prohibit all vehicles or specific micro-mobility devices from impeding pedestrian and other traffic. Still others list specific locations where such vehicles can and cannot be parked or delegate such decisions to local authorities. In total, 30 states already have statutes preventing micro-mobility devices from being strewn about on the sidewalks.

This may be more a problem of perception than reality. People are more likely to remember the few times they were walking down the sidewalk and had to step around an obstructing scooter or bicycle than they are to remember the countless times that they walked down the street without any such obstruction. Or they may remember an inflammatory picture they have seen in the press of unwanted and unloved bike-share bikes heaped in huge piles, and perceive a problem in the U.S., even though those pictures were taken in China (see Gardner, 2008, for a discussion of the “availability heuristic”). Indeed, despite conspicuous complaints about the clutter associated with shared micro-mobility (Reigstad, 2018), a study in Spokane, Washington, found the problem to be at most minor (finding that 96 percent of e-scooters were parked in a “preferred area” and that 98 percent of them were parked upright) (Spokane Area, 2019).

3.7. Facilitating or Burdening the Mobility Itself

Laws that make bicycling easier will necessarily make bike-sharing more attractive to potential users; and laws that burden the cyclist will have the opposite effect. For example, in

Idaho, it is legal for a bicyclist to coast through a stop sign in the absence of cross-traffic, or to proceed against a red light after coming to a stop. Such rules make cycling vastly more efficient and attractive (Tekle, 2017). State laws that expect cyclists to adhere to the laws that govern motor vehicles, in contrast—failing to account for the fact that bicycles have different capabilities, needs, and safety concerns—impose heavier burdens on cyclists and place them at greater risk of harm (Pimentel, 2018).

Laws that permit or prohibit riding bicycles on sidewalks or off-road paths and trails may have an impact as well. If people know that they can be cited for riding where they feel safe to ride, they may opt not to ride at all. For example, in a busy urban center, someone may be happy to ride an e-scooter on the sidewalk, but if they know that e-scooters are legal only in the street (as is the case in the states of Washington and California (Cal. Veh. Code § 21235; RCW 46.61.710)), they may stay off the scooter altogether. Of course, the laws of states, such as Florida and South Dakota, that ban the use of scooters in the streets too, or of the 20 states that are silent on the subject, raise doubts as to whether they can be used legally anywhere in those states.

CHAPTER 4. Conclusions

The wheels of transportation innovation turn much faster than the wheels of legislation. The legal system struggles, playing catch-up with industry changes. That does not necessarily constitute a problem. However, the lack of a legal infrastructure may threaten to stifle the innovation and undermine the promised returns of shared micro-mobility systems. This comprehensive study of applicable laws exposed the gaps and inconsistencies in these laws and illustrated the impacts of these legal deficiencies. The hope is that federal authorities may intervene, promulgating standardized legal rules for shared micro-mobility, as they have for automobiles, which would clarify and harmonize the scattershot approach heretofore taken. At the same time, the searchable database created in this study can support future research. In the meantime, innovators should be aware of and sensitive to how the variegated legal landscape may affect the results and the future of shared micro-mobility.

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