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Working Paper

Scooters are here, but where do they go? Aligning scooter regulations with city goals

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Scooters Are Here, But Where Do They Go?

Aligning Scooter
Regulations with City Goals

Discussion Paper

185

Roundtable

Anne Brown

University of Oregon,
Eugene

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Introduction

Dockless electric scooters (“scooters”) are on streets and sidewalks in hundreds of cities worldwide. As scooters have grown more popular, cities have struggled to both understand and regulate this new mode. Concerned with ensuring that sidewalks remain clear for other travellers, cities are particularly focused on scooter parking behaviours. Scooter riders are widely accused in the media of improper parking (e.g., Bendix (2018)), and mis-parking is a common source of public complaint (Portland Bureau of Transportation, 2018). Yet as communities grapple with how to best plan for and regulate scooters, they lack both a comprehensive understanding of how cities currently regulate scooters, and evidence of scooter parking behaviours. To fill this gap, this paper examines how US cities have regulated scooter parking, analyses rates of improper scooter parking, and synthesises the evidence to discuss how cities can employ scooter regulations, in conjunction with other policies, to realise broader goals such as promoting car-alternative travel, access, and mobility for all.

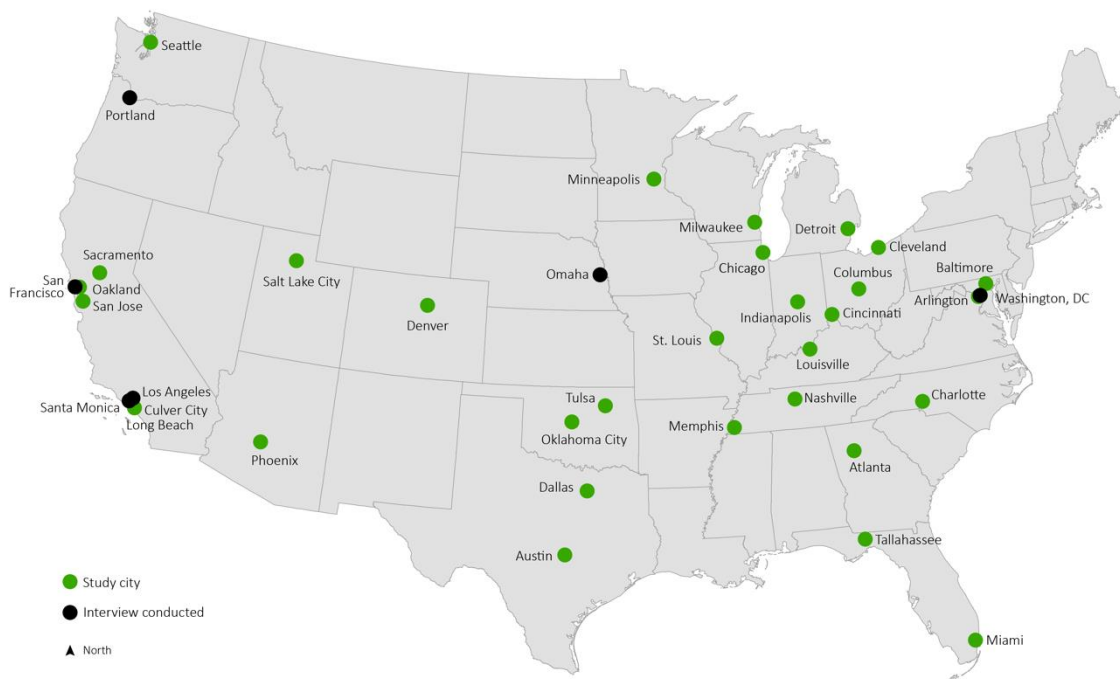
The promise and challenge of scooters

Scooters first hit city streets in Santa Monica, CA in Fall 2017; since then, their explosive growth has been a source of both delight and consternation for travellers and cities alike. On one hand, scooters offer a potential new mode to entice people out of cars and reduce emissions (see for example PBOT (2020)). Scooters clearly meet a mobility demand among travellers, who in 2019 took over 86 million scooter trips in the United States alone—more than docked (40 million) and dockless (10 million) bikeshare trips combined (NACTO, 2020). Despite a clear penchant for scooter rides by some travellers, vehement opposition to scooters also exists, particularly in response to perceptions that parked scooters “clutter” public space and may pose trip hazards or block access by other travellers. Opposition takes many forms including media reports (see for example Gössling (2020)) and publicly-logged complaints; up to 75% of public micromobility (both scooters and docked and dockless bikeshare) complaints are for improperly parked vehicles (Portland Bureau of Transportation, 2018; NACTO, 2020). City citations reflect a similar trend: the majority of scooter violations cite improper parking, including scooters that are tipped over, block pedestrian access, and are locked to impermissible objects (City of Santa Monica, 2019b; SFMTA, 2019b; PBOT, 2020). At the most extreme, cities have ended pilot programmes citing scooter “clutter” (Livingston, 2020). With scooter (mis)parking at the forefront of micromobility public debates, parking regulation and enforcement is a cornerstone of many US scooter programmes.

How do US cities regulate scooters?

While scooter parking regulations are often discussed, no two cities regulate scooters the same way. To better understand how scooter regulations vary across US cities, regulations were catalogued across the 37 US cities shown in Figure 1. While cities regulate any number of additional scooter programme elements—such as vehicle design, fees, equity plans, and data sharing requirements—the regulations collected for this research focus specifically on scooter parking regulations as well as fleet size and operator regulations, two areas which may be shaped by city concerns about parking oversight and enforcement. Included cities were selected from among the 50 most populous in the United States that both (1) permit scooters and (2) publish publicly available municipal code or other documents pertaining to scooter parking requirements. Given the varied regulations across cities, this research also examines city staff motivations behind different parking requirements, such as why some cities allow parking against buildings while others do not. To better understand the motivations underlying scooter regulations, interviews were conducted with staff from six cities, shown in black in Figure 1. City staff were asked about how city goals related to scooter parking requirements, scooter parking enforcement practices, and if or how other scooter programme requirements such as fleet caps related to parking concerns. Annex A details regulations by city.

Figure 1. Scooter regulations examined in 37 US cities



City staff were interviewed from the following six cities: Los Angeles, CA; Omaha, NE; Portland, OR; San Francisco, CA; Santa Monica, CA; and Washington, DC.

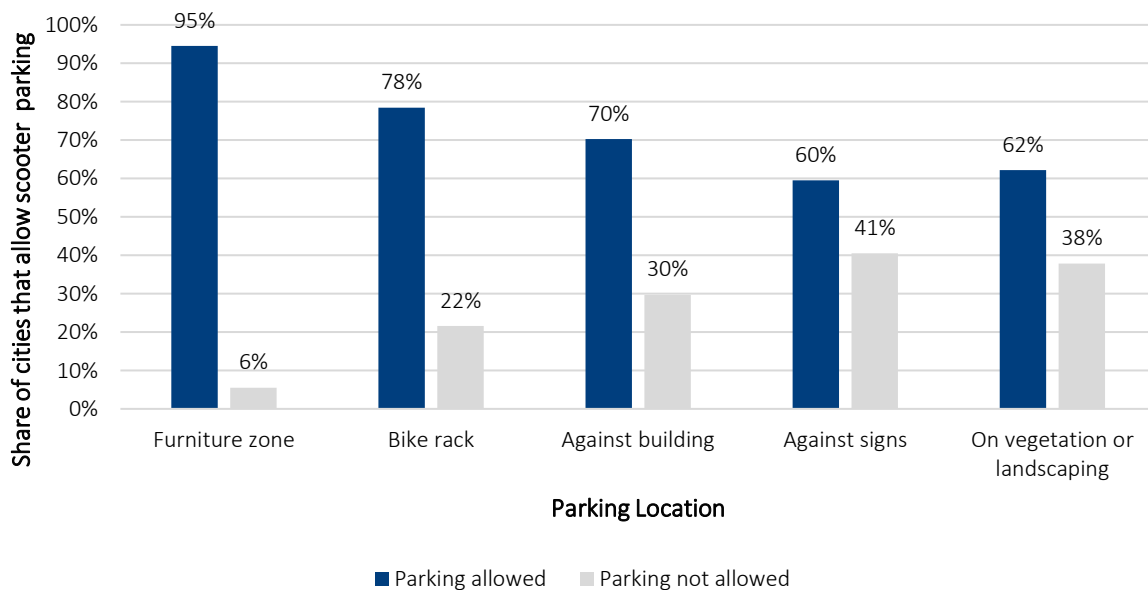
US scooter parking regulations

Parking regulations vary enormously across US cities, although areas of widespread agreement also exist (see Figure 2). Most regulations focus clearly on keeping sidewalks accessible and clear for all travellers; however, nuances across cities—or even within the same city—creates labyrinthine regulations that may challenge cities to communicate to the public or enforce. In many cases, scooters legally parked in one city would violate another’s parking regulations. The numerous, and often subtle, distinctions between and within city scooter regulations may explain why many riders express confusion over parking requirements, particularly those with a more tenuous connection to accessibility (Brown, Klein and Thigpen, 2021).

Nearly all (95%) cities allow scooters to park in the space adjacent to the curb, often called the street furniture or curb zone (see NACTO (2013) for examples and definitions). The only cities that do not allow scooters to park in the furniture zone are Phoenix, AZ and Sacramento, CA, both of which require that scooters park only in corrals, drop zones, or at bike racks (i.e., not free-standing or parked elsewhere in on the sidewalk). While most residents can accurately identify the furniture zone (PBOT, 2020), some cities have launched information campaigns to help clarify proper and improper scooter parking locations.

Many cities first introduce scooters via short-term pilot programmes. Best practices observed from other cities, as well as prior experiences with bikeshare station or bike rack siting guidelines, typically inform initial scooter pilot regulations. Los Angeles, for example, does not site bikeshare stations within 15 feet of a corner in order to maintain clear sightlines for travellers; the city applied this same rule to scooters, and prohibit scooters to park within 15 feet of a corner (LADOT, 2020). Multiple city staff acknowledged that while bikeshare guidelines offered a helpful starting place for scooter regulations, pilot programmes provided valuable observations and lessons to inform subsequent revised regulations.

Figure 2. Share of cities allowing scooter parking across five locations



Note: Data for 37 US cities. For detailed regulations and sources by city, see Annex A.

On some regulations, cities are in full agreement. Cities universally prohibit scooters to park near safety features such as fire hydrants; in bus stops, or loading zones; or to block curb cuts, crosswalks, street furniture, public drinking fountains, driveways, doorways, or wheelchair access ramps. All cities

additionally require that scooters park upright and in a manner that does not impede pedestrian travel or violate access guaranteed under the Americans with Disabilities Act (ADA); ADA Accessible Design Guidelines require an accessible sidewalk to have at least 32 inches (0.81 m) of passable space (Department of Justice, 2010).

While most cities allow scooters to park in the furniture zone, considerable variation exists regarding where scooters may park within the furniture zone. While no cities permit scooters to block pedestrian travel, they range in how much passable space they require scooters to leave (typically 3- 6 feet or 0.9-1.8 m). Similarly, some cities stipulate minimum sidewalk widths for scooter parking and prohibit any parking on sidewalks narrower than the stated minimum. Los Angeles, CA, for example, requires scooters park on sidewalks that are at least three feet (0.9 m) wide while San Francisco, CA only allows scooters to park on sidewalks at least nine feet (2.7 m) wide (SFMTA, 2020; LADOT, 2021). The contrasting minimum sidewalk widths again highlight both how variable regulations are—San Francisco requires sidewalks three times wider than Los Angeles—and how scooter parking allowed in one city may be prohibited in another. Some cities explain how minimum sidewalk widths can bar scooter parking from large swaths of a city, especially in historically underinvested and underserved areas (PBOT, 2020). Locating proper parking spaces where sidewalks are narrower than regulations allow may prove challenging as sidewalk-alternative parking options such as in-street drop zones or corrals are often limited.

More than two-thirds (70%) of studied cities allow scooters to park against buildings. Two sampled cities (Memphis, TN; Miami, FL) allow scooters to park against buildings, but not in front of commercial windows or window displays. In some cities, regulations that prohibit building-adjacent parking were motivated by a desire to keep scooters off private property; in others, regulations were informed by discussions with disability rights groups who advocated to keep scooters contained solely within the furniture zone. Disability rights advocates noted that some low-vision and vision-impaired travellers use the sides of buildings to help navigate sidewalks and that scooters pose a safety and tripping hazard when parked outside of the furniture zone. Previous research suggests that scooters are just one sidewalk object that may impede access among travellers with disabilities: objects such as restaurant sandwich boards and construction equipment can also pose unexpected obstacles and hazards for travellers with disabilities (Brown et al., 2020).

Most cities (78%) permit scooters to park at bike racks, although some, such as San Francisco, CA, require that 50% of rack space be left free for bikes; others, such as Atlanta, GA, permit scooters to park at public bike racks but not within five feet (1.5 m) of bikeshare stations. Cities that allow scooters to park at bike racks cited consistency across micromobility modes and a desire to limit public confusion about conflicting policies for bikes and scooters. Cities that do not allow scooters to park at bike racks voiced concerns about insufficient parking for bikes if bikes were forced to compete with scooters for rack space.

Sixty percent of cities allow scooters to park leaning against or locked-to poles or signs. Again, however, considerable regulatory nuance exists; cities such as Austin, TX, and Minneapolis, MN, for example, allow scooters to lean against some poles, such as light posts, but not regulatory or informational signs. Communicating to the public which posts scooters can lean against and which they cannot likely presents challenges. If the goal is to ensure regulatory signs remain unobstructed easy to read, it is unclear if a three-foot tall scooter is any more likely to block information on a sign than it is to block light from a light post. Nor does it seem that parking a scooter against one type of pole would be more likely to block sidewalk access than another type.

A majority (62%) of cities allow scooters to park on vegetated or landscaped portions of the right-of-way, although multiple cities clarified that scooters may park on grassy areas but not landscaped areas with flowers or other plantings (Charlotte, NC; Indianapolis, IN; Washington, DC). In cities that do not allow

scooters parked on any vegetated surface including grass (for example, some cities require scooters to park on “solid” surfaces (Dallas, TX)), staff cited concerns that scooters would tip over if parked on uneven or soft surfaces.

With numerous restrictions on where scooters can park, many cities have made concerted efforts to provide additional designated parking for dockless micromobility vehicles—both scooters and bikes—on streets and sidewalks. Designated parking ranges from painted sidewalk corrals to designated on-street drop zones. Los Angeles, for example, experimented with sidewalk decals to direct users to dockless parking zones; while decals were fast and easy to deploy, they also proved less durable compared to paint. City staff noted that they often coordinated with scooter companies to geofence designated corrals and drop zones so that travellers could identify these spaces on apps in addition to on the street.

Less common parking regulations include requiring riders to take a photo of the parked scooter at the end of a trip (Indianapolis, IN; Omaha, NE) and not permitting scooters to park within a specified distance of bridges or water features such as lakes or rivers (e.g., Austin, TX; Portland, OR).

Just three (8%) American cities currently require riders to lock parked scooters to a stationary object: Chicago, Minneapolis, and San Francisco (although Washington, DC will add a lock-to requirement in October 2021 and Portland, OR will prioritize companies offering integrated lock-to mechanisms during its next permitting process). Cities cite ADA accessibility concerns and a need to keep sidewalks clear and scooters parked in an orderly manner as primary motivators for lock-to mandates; in some cities, lock-to requirements are spurred by transportation staff, in others, they are required by city council. Some cities view lock-to requirements as a way to ensure consistent parking behaviours across micromobility vehicles (scooters and bikes) and as a policy mechanism to fund new bike racks throughout the city. While San Francisco, CA sees the lock-to system as a “key” programme feature and responsible for both a decline in parking violations and public complaints (SFMTA, 2019b, p. 2; NACTO, 2020), lock-to requirements do not, by default, prevent parking violations. Scooters may be locked to unpermitted infrastructure (e.g., parking meters, light posts), or “free locked”—left free-standing unattached to a stationary object despite locking capability. Indeed, research finds similarly low rates of scooters blocking sidewalk access in cities both with and without lock-to requirements (Brown et al., 2020), suggesting that lock-to requirements are not a precondition for keeping sidewalks clear.

Some city staff say that they are able to manage scooter parking adequately without lock-to requirements by providing additional scooter parking (e.g., painted corrals) and incentives (e.g., added cost for parking outside of a corral or geofenced drop zone). Other cities without lock-to requirements cite challenges to provide sufficient infrastructure—typically bike racks—to accommodate all parked scooters. Similar to city concerns motivating bans against scooters parking at bike racks, some bicycle advocates oppose scooter lock-to requirements fearing competition for existing bike rack capacity. In response to concerns from cyclists, and to provide additional parking spaces for scooters, cities with lock-to requirements have sought to install additional bike racks. In recent years, for example, San Francisco has installed more than 1 225 new bike racks paid for in large part by charging scooter operators USD 75 per vehicle.

Fleet requirements as parking management

Fleet requirements, including the number of operators and fleet sizes are regulatory tools that some cities see as linked to parking management and enforcement. Most (55%) cities do not stipulate the number of allowed operators in scooter regulations, and instead award licenses based on the quality of applications received. Even where regulations do set the number of allowable operators, cities may issue fewer permits. For example, a city whose regulations allow up to four companies may only have three operating,

whether due to the contracting process or because individual companies exited the market. On average cities issue permits to 2.8 mobility operators (range 1 to 8). Some city staff remarked that too many operators or scooters can undermine enforcement efforts or limit city staff's ability to build high-quality relationships with each operator. Portland Bureau of Transportation echoed similar sentiments in their latest scooter report, recommending that the city permit between one and three operators in a longer-term programme to balance user choice with city management capacity (PBOT, 2020). Multiple cities noted that fewer operators—in the range of two to four—allowed for more collaborative relationships between city staff and operators, which helped align scooter operations and deployment with city goals and regulations. Some staff mentioned that permitting at least two operators was ideal from both a system redundancy perspective (in case an operator unexpectedly exited the market, as many did during COVID-19 shutdowns) as well as to promote competitive prices for travellers as US cities do not currently regulate scooter prices. More operators, however, may not necessarily yield additional public benefits if they provide similar services and therefore simply require travellers to juggle multiple apps.

All cities set fleet size limits, although sizes ranged widely (between 200 and 3 000 per operator depending on the city). Many cities set minimum as well as maximum fleet sizes, and two-thirds (67%) included performance-based fleet caps to increase or decrease maximum fleet sizes based on daily use.

While cities weigh staff capacity, local conditions and needs, and enforcement capabilities when setting scooter fleet limits, research also shows no clear correlation in parking compliance across cities with divergent numbers of permitted companies or fleet sizes (Brown et al., 2020).

Do scooters park improperly?

Public perceptions of scooter parking

Public perceptions and complaints about scooter parking largely echo the media narrative that scooters frequently mis-park. City reporting suggests that the public is more likely to notice bad scooter behaviours—including mis-parked scooters—than they are good behaviours (e.g., parking within the designated areas). Improper scooter parking also raises more complaints than improper riding behaviours such as riding on the sidewalk (City of Santa Monica, 2019a). Responses from a 2019 public survey in Santa Monica, CA showed that non-users believe, on average, that scooter users “never” to “sometimes” park responsibly. Even habitual scooter riders rated scooter parking relatively poorly, saying that scooters were “sometimes” to “mostly” parked responsibly (City of Santa Monica, 2019a). While many scooter riders (about 70%) believe scooter users park and ride more responsibly today compared to a year ago, just 26% of non-riders share this view (City of Santa Monica, 2019a; City of Atlanta, 2020).

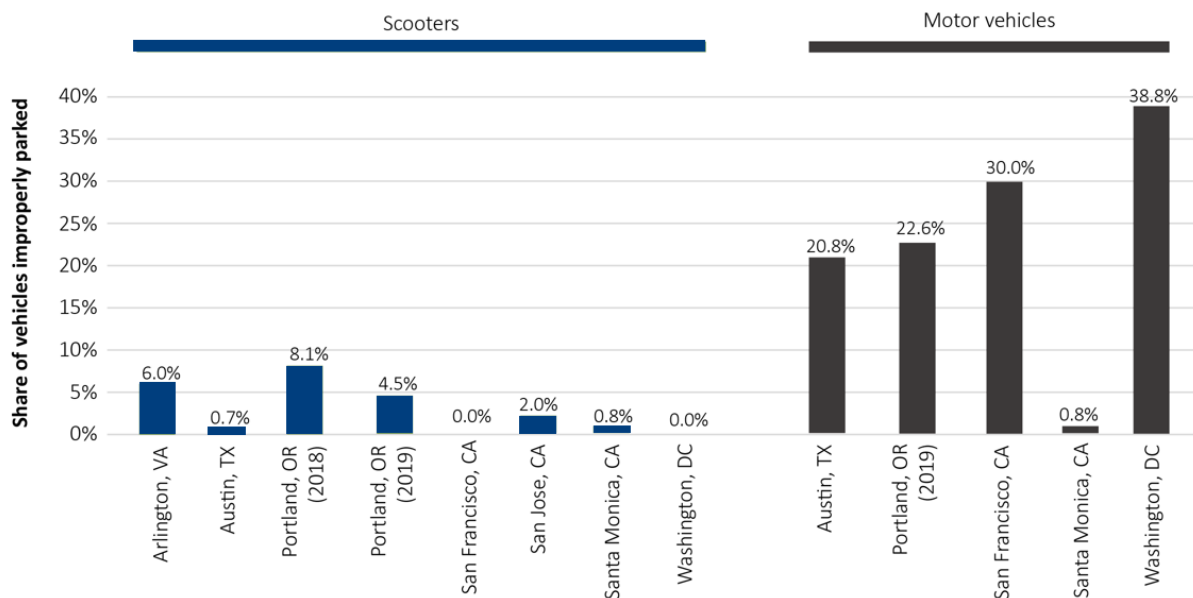
Research from five international cities suggests that scooter users have an intuitive understanding that scooters should not block access by other travellers: nearly all surveyed riders agreed that scooters should park upright, not block a curb cut or door, and not park in the middle of the sidewalk. Correspondingly, most riders (61%) said that caring “how my parking might affect other travellers” was the most important factor motivating their parking behaviour (Brown, Klein and Thigpen, 2021).

However, riders' intuitions about where to park may not align with city regulations; for example, a city may prohibit parking next to a signpost, but a scooter parked there may not impede access by other travellers and accordingly be viewed as appropriately parked by the public. Indeed, research suggests that many scooter riders view scooters as mis-parked only when they impede others' access; they are less likely to see a scooter that does not clearly block access as a parking violation (Brown, Klein and Thigpen, 2021).

Observed scooter parking behaviours and citation rates

While the public narrative around scooter parking often focuses on mis-parking, observational research shows that scooters impede access relatively infrequently. Figure 3 shows that on average across eight US cities, 2.8% (between 0% and 8.1%) of scooters impeded other traveller access, meaning that they reduced passable sidewalk below about 32 inches as required by the ADA (Brown et al., 2020). While even one mis-parked vehicle—of any mode—could impede access, fewer than three out of 100 parked scooters is far from the cluttered narrative portrayed by media and feared by cities.

Figure 3. Share of scooters impeding access across eight US cities



Sources: Brown et al. (2020), Fang et al. (2018), James et al. (2019), Portland Bureau of Transportation (2018).

Cities are powerfully—and justly—motivated to ensure that all travellers enjoy unimpeded access to the city rights-of-way. Yet as Figure 3 shows, scooters are only part of the story about access on city sidewalks and streets; motor vehicles park improperly at far higher rates compared to scooters across observed cities; Washington, DC offered the largest contrast between scooters and cars, with 0% of scooters parked improperly and more than one-third (39%) of cars (Brown et al., 2020). Not pictured in Figure 3 are quotidian objects like restaurant sandwich boards, telephone poles, and construction equipment among other things, that can also block sidewalk access (Brown et al., 2020). In other words, while scooters can impede access, focusing only on scooters may miss a broader landscape of impedance and challenges for active travellers.

Aligning scooter regulations with city goals

How cities regulate scooters, including parking and dedicated space for micromobility vehicles, can go a long way towards realising broader city goals such as sustainability and mobility. While scooter parking regulations are an important piece, they should be just one element in a broader city agenda of reclaiming city streets for people and promoting mobility and access by all.

Micromobility, macro goals

Many micromobility programmes themselves espouse broad city goals such as diversifying mobility options, promoting public health and safety, and reducing emissions (see for example Santa Monica (2019b)). Scooter goals, however, are rarely issued in isolation. Instead, they often mirror concerted city efforts to promote non-auto modes—including transit, walking, and micromobility—to realise a less car dependent and more environmentally-conscious future. For years cities have sought to shift travel behaviours through policies such as dynamically priced car parking (Millard-Ball, Weinberger and Hampshire, 2014), free transit (see for example Keblowski (2020)), and sweeping zoning reforms and lower parking requirements to encourage compact, mixed-use development. More recently cities have turned to the street and sidewalk, two powerful city assets that can be programmed to support alternatives to cars and align public space with city priorities.

City programming of the street and sidewalk often begins where the two meet: at the curb. Curb management policies frequently acknowledge micromobility—both travel lanes and parking for bikes and scooters—as potential uses for finite and valuable curb space. But these policies also reflect cities’ understanding that micromobility is just one option from a long menu of possible, and often competing, curb uses. Two US cities offer clear examples for how cities can integrate and prioritize micromobility at the curb to reorient streets from prioritising cars to favouring more space-efficient modes. First, Seattle, WA explicitly connects curb management with goals outlined in the City Comprehensive Plan including moving people and goods. The city brands the curb as a “flex zone,” adaptable to local land uses and needs. The city highlights curb space as essential to supporting modal plan priorities, including the reduction of single occupancy vehicles, and across land uses Seattle prioritises access for people and goods over storing vehicles in long-term parking (Seattle Department of Transportation, 2021). Second, San Francisco’s Curb Management Strategy highlights that 90% of curbs currently provide parking for cars, and that “this outdated curb allocation is increasingly at odds with San Francisco’s current transportation landscape” (SFMTA, 2019a, p. 16). Instead, like Seattle, San Francisco now recommends implementing varied curb use priorities depending on adjacent land uses prioritising to movement and access by people; the city explicitly identifies both micromobility travel lanes and parking as fulfilling these latter priorities (SFMTA, 2019a).

Prioritising street and sidewalk space

In many ways, current scooter regulations pit scooters against pedestrians, each vying for a place on city streets and sidewalks. This tension, however, fails to recognize that on most US city streets, sidewalks make up only a small fraction of the public right-of-way that can be programmed to meet city goals. In other words, scooters and pedestrians are fighting over crumbs when they should be eyeing the whole

cake. To realise broad goals of sustainability and mobility, cities should look beyond the curb and consider how street space, too, can be part of the solution to promote sustainability, mobility, and a safely accessible city for all.

Scooters and other micromobility vehicles provide car-alternatives and scooter user surveys show that between one-third and one-half of scooter trips replace private cars or ride-hailing, although the exact share depends on context and quality of other modes (City of Santa Monica, 2019b; City of Atlanta, 2020; PBOT, 2020). This then raises the question, how can cities encourage more people to get out of their cars and onto more space-efficient and lower-emitting micromobility vehicles?

Cities can support micromobility travel by investing in supportive infrastructure. While micromobility vehicles comprise a growing share of vehicles on the street, little formal space is dedicated to their parking or use; Brown et al. (2020) find that across five US cities, bikes and scooters accounted for about one-quarter (24.7%) of vehicles despite limited parking infrastructure. In line with curb management strategies, cities can reallocate street space to dedicated micromobility travel lanes and parking. Research repeatedly finds that people feel more comfortable actively traveling when protected infrastructure like buffered bike lanes separate them from higher-speed car traffic (Buehler and Dill, 2016). Scooter parking can be used in tandem with dockless bikeshare and research suggests that a single converted car parking space can store up to 12 micromobility vehicles (Litman, 2013). Another way for cities to consider reorienting their curb space is in terms of how many people use each foot of the curb: 80 feet of curb can serve five people in four private cars, 32 shared bikes, or 63 people in a bus (SFMTA, 2019a). Such a comparison reinforces direct implications of policy on broader city objectives to move people; it also highlights the existing inequities of reserving curb space for few while limiting use for more efficient modes, which are disproportionately used by low-income travellers (NHTS, 2017). The 2021 Transportation for America Shared Mobility Playbook provides examples of dedicated micromobility parking corrals and drop zones from different US cities (Transportation For America, 2021).

Demarcated street and sidewalk scooter parking can also help cities manage their scooter fleets. In interviews, city staff noted the importance of communicating designated scooter parking both through on-the-ground signage and via in-app geofencing. The latter can be particularly useful for travellers unfamiliar with the area or who may be just out of sight or around the corner from a dedicated parking zone. Evidence from a number of cities also suggests that, when provided, users do park at designated micromobility parking corrals and infrastructure; more than one-third of observed micromobility vehicles were parked at bike racks or scooter corrals across five cities (Brown et al., 2020). Surveys of international scooter users also suggests that some scooter users mis-park because they cannot find micromobility parking or this parking is too far away from their final destination (Brown, Klein and Thigpen, 2021); providing additional designated spaces may ameliorate both of these concerns. Finally, designated parking can be implemented in conjunction with other parking-supportive policies. Some cities require operators to deploy scooters directly to designated parking zones as part of both a parking management and distribution operations. And a number of micromobility companies use fee-based incentive structures to encourage people to park within designated zones, by providing small rebates for parking within a designated parking zone. For example, Lyft operates scooters in Santa Monica, CA, and provides the option to “Earn \$ with Preferred Parking”, directing riders in-app to “Please park your scooter in a painted box on the sidewalk”. The app directs riders to geofenced zones, highlighted in green on the Lyft app.

Strategic additions of designated micromobility parking spaces could advance broader city goals. For example, removing street corner parking spaces and replacing these spaces with scooter corrals or racks could also improve travellers’ sightlines and improve safety (FHWA, 2018). Cities could also add bulb-outs

to create additional space for micromobility parking, which would not only add to the parking supply but also slow vehicle traffic and reduce crossing distances for pedestrians.

Access for all

City streets and sidewalks should be accessible by all. Access means both being able to travel safely—such as using designated and separated travel infrastructure as discussed above—and freely without being blocked by other objects or travellers. Scooters are certainly part of this objective. City scooter parking regulations aim to ensure safety and accessibility by all travellers. Yet research suggests that not all parking regulations may be equally important to achieving this goal. Fleet sizes and the number of operators may have very real effects on city staffing capacity and city-operator relationship building, but have no link to observed rates of scooter mis-parking; in a study of five US cities, Austin, TX, which had the largest scooter fleet, had the second-lowest rate of mis-parking (0.6%) (Brown et al., 2020). Similarly, cities achieve very low-rates of scooter mis-parking with and without lock-to requirements, suggesting that lock-to alternatives such as incentives and/or providing additional parking can deliver similar results (Brown et al., 2020). Most scooter users accurately identify mis-parked vehicles that impede access, and state that when they do mis-park it is due to confusion over parking regulations or a lack of available parking (Brown, Klein and Thigpen, 2021); cities can capitalise on both the impulses to park properly and identified need for additional parking locations by providing more designated micromobility parking, a move that would also align with broader city goals of providing access and movement to people. At the same time, it will remain critical for cities to continue to enforce regulations that do guarantee unimpeded travel by others, such as the timely removal of scooters that are blocking crosswalks, curb ramps, and crosswalk push buttons, which are universally prohibited by current US scooter regulations. Regulations could be extended to consider additional needs by travellers with disabilities and vision impairments, including prohibiting parking on tactile pavers. Conversations with disability groups also suggest that more cities should consider prohibiting parking next to buildings given their role in helping vision-impaired travellers navigate sidewalks.

Efforts to ensure that scooters do not block access by other travellers are important, and cities should regulate scooters within a broader agenda of promoting access by all travellers. Three percent of scooters impede access on average (Brown et al., 2020), but they are far from the only impediment that active travellers face. Sidewalk users must also routinely navigate restaurant sandwich boards, construction equipment, advertisements, and other objects; research finds that a similar share of objects impede access (2%) compared to scooters (3%). Ensuring that sidewalks remain free of all obstructions, including but not limited to scooters, can help ensure more predictable and safe travel for sidewalk users.

In addition to objects blocking travellers' ways, cities should consider how the state of sidewalks themselves may inhibit access. Although US courts have ruled that sidewalks must be kept clear and well-maintained to ensure accessibility under the ADA, informal car parking and broken sidewalks commonly bar access (Shoup, 2010, 2015). Both sidewalk quality and curb cuts (or lack thereof) can effectively stymie access for travellers, particularly travellers with mobility devices like wheelchairs or walkers for whom a six-inch curb or broken sidewalk cannot be circumvented or require travellers to divert into the street (Peterson, 2015). Because US cities must only provide curb cuts and ramps when streets are resurfaced, some sidewalks remain entirely inaccessible to travellers with mobility devices (USDOT, 2013). In other cities or neighbourhoods, the sidewalk network may be incomplete or patchwork. Concerted city efforts to invest in high-quality accessible sidewalks is an important step towards universal access and to promote active travel (Thornton et al., 2016; Gharebaghi et al., 2018).

If cities regulate scooters with the ultimate aim of luring people out of cars into safe and appealing alternatives, they should also consider how cars impede access for both scooters and bikes. Research finds that 23% of cars mis-park in studied commercial districts; the majority (68%) of these violations are short—less than five minutes—but their effect can be to divert scooters and bikes from the relative safety of bike lanes into general traffic lanes (Brown et al., 2020). Studies from other locations find similar rates of mis- and double-parking for ride-hail vehicles that often lack designated loading spaces (Lu, 2018). Cities seeking to promote space-efficient modes should therefore seek to enforce not only how micromobility can block pedestrian travel, but also how cars can obstruct bike, scooter, and pedestrian travel by blocking bike lanes or parking across sidewalks. Cities could test how designated short-term loading spaces may provide alternatives for vehicles delivering goods and people so that they are not tempted to block a bike lane. Because parking behaviours and travel behaviours may vary block-by-block or even by time of day, cities may also consider adopting dynamic parking practices that either vary curb priorities by land use (SFMTA, 2019a; Seattle Department of Transportation, 2021), time of day, or even allowing delivery companies to reserve spaces ahead of time (Shaver, 2019).

Ensuring universal access to city streets and sidewalks can support broad city aims. While scooter parking regulations are an important piece of ensuring access, they should be just one element in a broader city agenda of reclaiming city streets for people and promoting mobility, sustainability, and access by all.

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Annex A. City-based scooter regulations

Table A1. Scooter regulations in 37 US cities, fleet caps and operators

	City Population 2019	Fleet cap (yes/no)	Dynamic or performance-based cap (yes/no)	Number of permitted scooters (fleet or per operator) ¹	Regulated limit on number of operators (yes/no)	Number of permitted operators
Arlington, VA		yes	no	2 000 (fleet)	yes	4
Atlanta, GA		yes	yes	500 (operator)	yes	4
Austin, TX		yes	yes	500 (operator)	no	-
Baltimore, MD		yes	no	1 000 (operator)	yes	4
Charlotte, NC		yes	yes	400 (operator)	no	-
Chicago, IL		yes	no	3 333 (operator)	yes	3
Cincinnati, OH		yes	no	200 (operator)	no	-
Cleveland, OH		yes	no	Minimum 100 (operator)	yes	4
Columbus, OH		yes	no	500 (operator)	no	-
Culver City, CA		yes	yes	50 - 200 (operator)	yes	2
Dallas, TX		yes	no	500 (operator)	no	-
Denver, CO		yes	no	250 (operator)	yes	5
Detroit, MI		yes	no	400 (operator)	no	-
Indianapolis, IN		yes	yes	1 000 (operator)	yes	6
Long Beach, CA		yes	yes	500 – 1 000 (operator)	yes	6
Los Angeles, CA		yes	yes	500 – 3 000 (operator)	no	-
Louisville, KY		yes	yes	150 – 1 050 (operator)	yes	8
Memphis, TN		yes	no	3 300 (operator)	no	-

Miami, FL		yes	yes	100 (operator)	yes	9
Milwaukee, WI		yes	yes	350 - 750 (operator)	no	-
Minneapolis, MN		yes	yes	2 500 (fleet)	no	-
Nashville, TN		yes	yes	500 (operator)	no	-
Oakland, CA		yes	yes	Case by case (operator)	yes	4
Oklahoma City, OK		yes	yes	75 - 250 (operator)	no	-
Omaha, NE		yes	no	750 (operator)	yes	3
Phoenix, AZ		yes	yes	300 - 900 (operator)	no	-
Portland, OR		yes	yes	250 – 1 250 (operator)	no	-
Sacramento, CA		yes	yes	250 – 1 000 (operator)	no	-
Salt Lake City, UT		-	-	-	-	-
San Francisco, CA		yes	yes	1 000 (operator)	no	-
San Jose, CA		yes	yes	50 – 1 000 (operator)	yes	3
Santa Monica, CA		yes	yes	2 500 (fleet)	yes	4
Seattle, WA		yes	yes	Minimum 2 000 (operator)	yes	3
St. Louis, MO		yes	yes	500 - 750 (operator)	no	-
Tallahassee, FL		yes	no	200 – 750 (operator)	no	-
Tulsa, OK		yes	yes	50 - 400 (operator)	no	-
Washington, DC		yes	yes	400 per ward (operator)	no	-

¹Ranges indicates minimums and maximum operators are permitted to deploy.

Source: See Source for Table A.2.

Table A2. Scooter regulations in 37 US cities, parking¹

	Lock-to requirement (yes/no)	In furniture zones or at the curb (yes/no)	At bike racks (yes/no)	Next to buildings or back edge of sidewalk (yes/no)	Tipped over allowed (yes/no)	Against sign or light or utility poles (yes/no)	On vegetation & landscaping (yes/no)	Marked parking boxes or corrals (yes/no)
Arlington, VA	no	yes	yes	yes	no	yes	no ²	yes
Atlanta, GA	no	yes	yes ³	yes	no	yes	no	yes
Austin, TX	no	yes	yes	yes	-	yes ⁴	yes	yes
Baltimore, MD	no	yes	yes	yes	no	yes	yes	yes
Charlotte, NC	no	yes	no	yes	no	yes	yes ⁵	yes
Chicago, IL	yes	yes	yes	no	no	no	yes	yes
Cincinnati, OH	no	yes	yes	yes	no	yes	yes	yes
Cleveland, OH	no	yes	yes	yes	no	yes	yes	yes
Columbus, OH	no	yes	yes	yes	no	yes	yes	yes
Culver City, CA	no	yes	yes	yes	no	yes	yes	yes
Dallas, TX	no	yes	yes	yes	no	yes	no	yes
Denver, CO	no	yes	yes	yes	no	yes	yes	yes (required)
Detroit, MI	no	yes	no	yes	no	no	no	yes
Indianapolis, IN	no	yes	yes	yes	no	yes	yes ⁵	yes
Long Beach, CA	no	yes	yes	yes	no	yes	yes	yes
Los Angeles, CA	no	yes	yes	no	no	no	no	yes
Louisville, KY	no	yes	no	yes	no	yes	yes	yes
Memphis, TN	no	yes	yes	yes ⁶	no	no	yes	yes
Miami, FL	no	yes	no	yes ⁶	no	no	no	yes
Milwaukee, WI	no	yes	yes	yes	no	yes	yes	yes
Minneapolis, MN	yes	yes	yes	no	no	yes ⁷	no	yes

Nashville, TN	no	yes	yes	yes	no	yes	yes	yes
Oakland, CA	no	yes	yes	yes	no	no	yes	yes
Oklahoma City, OK	no	yes	yes	yes	-	yes	yes	yes
Omaha, NE	no	yes	no	yes	no	yes	yes	yes
Phoenix, AZ	no	no	no	no	no	no	no	yes (required)
Portland, OR	no ⁸	yes	no ⁹	no	-	no	no	yes
Sacramento, CA	no	no	yes (required)	no	no	no	no	yes (required)
Salt Lake City, UT	no	yes	no	no	-	no	yes	yes
San Francisco, CA	yes	yes	yes ¹⁰	no	no	no	no	yes
San Jose, CA	no	yes	yes	yes	no	no	no	yes
Santa Monica, CA	no	yes	yes	yes	no	yes	yes	yes
Seattle, WA	no	yes	yes	no	no	no	yes	yes
St. Louis, MO	no	yes	yes	yes	no	yes	yes	yes
Tallahassee, FL	no	yes	yes	yes	-	yes	no	yes
Tulsa, OK	no	yes	yes	no	no	no	no	yes
Washington, DC	no ¹¹	yes	yes	yes	no	yes	yes ⁵	yes

Note: ¹-¹¹ in table indicates the parking behaviour or position is not specified in regulation. ²Unless specifically designated by sign. ³May not park at or within 5 feet of bikeshare station. ⁴May not park at a regulatory or informational sign. ⁵May park in green zone (e.g., grassy area, grassplot) next to sidewalk, but not if landscaped. ⁶May not park next to commercial windows or window displays. ⁷May only park against signposts. ⁸Will favour companies offering integrated lock-to capabilities during future permitted processes. ⁹Unless scooter includes a lock-to mechanism that requires fastening to a bike rack. ¹⁰Shared mobility devices may only use up to 50% of bike rack space. ¹¹Washington, DC will be introducing a lock-to requirement in October 2021.

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Scooters Are Here, But Where Do They Go?

This paper examines how 37 US cities regulate scooter parking. It analyses rates of improper scooter parking and discusses how cities can employ scooter regulations, in conjunction with other policies, to realise broader goals such as promoting sustainability and mobility.

All resources from the Roundtable on Micromobility, Equity and Sustainability are available at:
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