

E-Scooters and Electric Skateboards In Eugene

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Research Question:

Should UO and The City of Eugene allow E-scooters and electric skateboards in Eugene and on the UO campus? If so, how will UO students use e-scooters and electric skateboards on the current infrastructure, how can that infrastructure change to their benefit, and in what ways can students be informed on state and local laws about their usage?

Introduction:

In recent years, E-scooters and electric skateboards have grown in popularity hugely. Multiple companies across the country provide E-scooters particularly as a ride-sharing service, with varying success. Although they are particularly popular with university towns due to their quick, easy navigation, and relatively low cost, their arrival is not always welcome or well planned. While a formal E-scooter program has not been introduced in the city of Eugene, the purpose of our project is to examine how the city code can be altered to better address E-scooters and electric skateboards before their inevitable arrival, with a particular focus on the perspective of students.

In order to plan for the arrival of E-scooters and better serve already existing electric skateboards effectively, we needed to understand how the public felt about these modes of transportation. We created a survey that focused on users' experience with E-scooters and electric skateboards, and how they felt about them coming to Eugene. We also conducting behavior mapping and observed different modes of transportation in high traffic areas on campus. While doing this, we were particularly interested in watching electric skateboards around the university, and where they were riding and how they interact with the already existing infrastructure. Lastly, we researched other cities that had undergone the transition of allowing E-scooters, and considered how their methods would work in Eugene.

Methodology:

1. Survey
 - a. Our survey was done on Qualtrics. The survey had 16 questions about users' experience with E-scooters and electric skateboards, and their opinions on their potential usage in Eugene
 - b. We had 294 results
 - i. 144 University of Oregon affiliates (students and faculty)
 - ii. 113 community members
2. Behavior Mapping

- a. We observed 13th and Kincaid and 13th and University for one hour and counted the number of bikes, skateboards, electric skateboards, and scooters, and recorded where they were riding.
3. Case Studies
- a. Denver, CO
 - b. Minneapolis, MN

Findings:

Infrastructure

From our behavior mapping, it is clear that, when provided with large bike lanes, students use them with all multiple forms of transportation in large quantities. 13th Avenue, which stretches across campus, is used by bikers, skateboarders, and even some scooters as it stands. It serves as an example of a very successful multi-modal road where student riders are relatively safe from cars and interactions with pedestrians.

However, not every road on or around campus is as accessible as 13th Avenue. Many of the paths on campus are narrow and the paths that surround campus have narrow bike lanes. Because E-scooters, electric skateboards, bikes, and all other modes of transportation have such varying speeds, a wider bike path would allow for riders to pass one another in a safe way. As seen in the graph below, students seem very interested in this infrastructure change. They are also interested in protected bike lanes. Unfortunately, as of now, Alder is the only street on or around campus with this form of a safety barrier.

Figure 1. What Form of Infrastructure Would Make You Feel Safe Riding an E-scooter or Electric Skateboard?



Recommendations for infrastructure:

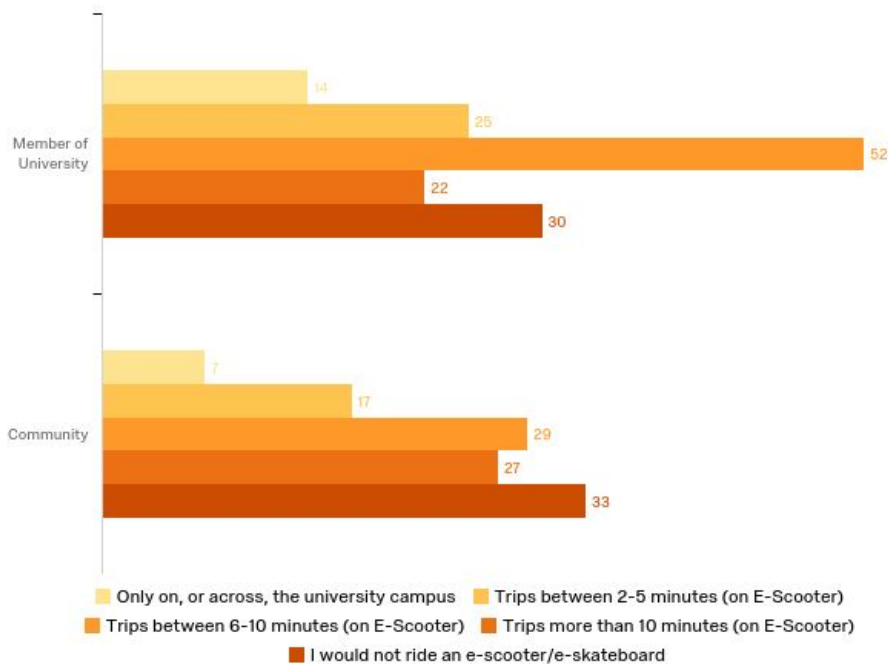
Short Term (1-2 years):

- Create pop-up separated lanes
- Designate temporary E -scooter parking areas

Long Term (3-5 years):

- Eliminate parking spots for more bike lanes
- Create more protected bike lanes
- Designate lanes for micro-vehicles
- Re-design alleys into thoroughfares

Figure 2. How Long Would You Typically Ride an E-scooter or Electric Skateboard?



As seen in our survey results above, students are most interested in riding E-scooters for 6-10 minutes. This was surprising to us, because we expected students to want to ride them on or across campus, which was actually the least popular answer. The 6-10 minute answer, however, suggests that students want to ride E-scooters and electric skateboards to and from campus from their homes. Knowing from our previous data that students want wider and protected bike lanes, this data shows where that change can be implemented. This data suggests that the surrounding neighborhoods need this change in infrastructure, as that is where students intend to ride E-scooter and electric skateboards most frequently.

Recommendations for the location of infrastructure improvements:

- Prioritize improvements within 1.5 miles from campus
- Create E-scooter parking at EMU, Global Scholars Hall, Knight Library, and Lillis
 - These areas are hot spots on campus, the majority of which are on the outskirts of the area. Creating parking spots will encourage riders to park on the edges of campus and walking to their classes, simplifying foot traffic.
 - Within these parking spots, install charging areas to encourage riders to use them
- Improve rideability of 11th and 13th Ave.
 - These two streets serve as connectors between the university and downtown, and all of the neighborhoods in between
 - As of now, they lack non-threatening, safe bike lanes

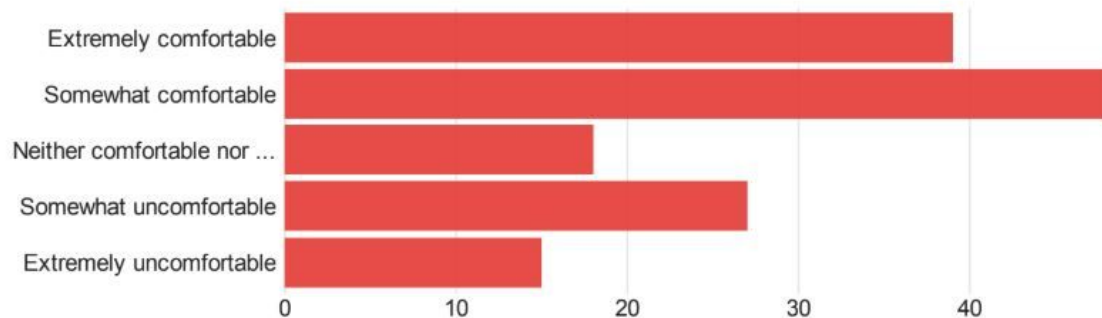
Safety

The laws that govern the usage of E-scooters are still being formulated on both state and local levels. Much of the state laws on E-Scooter usage are in the administrative code ORS 814.510-814.536, these statutes govern proper usage:

- Must be 16 years of age, and may not travel in excess of 15 mph.
 - If a bike lane is available on the road traveled, it must be used by alternative transportation modes.
 - E-Scooters may not drive along roadways with speed limits greater than 25 mph, unless traveling within available bike lane
 - Hand Signals are required when signifying a stop, turn, or lane change 100 feet prior to action--unless both hands are necessary for safe conduct of E-scooter.
 - E-Scooters may not be driven on sidewalks
- 46% of students respondents find both wider bike lanes and protected bike lanes to be the most important infrastructure
 - According to our survey results below, most respondents seemed fairly comfortable with having E-scooters and bikes sharing a lane

Figure 3

As A Cyclist, How Comfortable Would You Feel Sharing a Bike Lane With E-Scooters?



Recommendations for safety:

- UOPD/EPD prioritize enforcement of ORS laws
 - Ticketing students without helmets, riding on sidewalks when there is a viable bike lane, etc.
- Require E-scooter share companies to include mandatory in-app safety education training for riders

Parking

The Mineta Transportation Institute at San Jose State University recorded 530 parked scooters in downtown San Jose and saw that “the vast majority of scooters—72%—were parked on sidewalks. Most of the rest (23%) were parked off the streetscape on adjacent properties. These scooters tended to be just off the sidewalk, in the setback between sidewalks and buildings. More than half of these scooters (15% of the overall total) were parked on off-street private property (e.g., business and residential properties or off-street parking lots for private properties). Five percent of observed scooters were on a pedestrian street running through part of downtown. Fewer than 1% were parked on the vehicular right-of-way of streets. Of the scooters parked on sidewalks, 90% did not overtly disrupt pedestrian traffic. For a majority of these, some portion of the scooter was within a foot of the edge of the sidewalk. The rest were in the “street furniture zone,” along with objects such as benches, newspaper racks, and planter boxes. Since the street furniture zone is already filled with obstacles, scooters parked here do not create a new obstacle to pedestrian through-flow along the sidewalk, although the scooters could obstruct cross-flow, such as for people exiting parked cars. Even among the 10% of sidewalk-parked scooters that failed to be tidily parked on the sidewalk edge or in the street furniture zone, most

did not actually impede pedestrian traffic. An extremely small number of scooters—just 11—were observed blocking pedestrian travel in any way.”

Considering students will be riding them shorter distances (when riding to/from campus) they will most likely want to ride as close to the entrance of their destination as possible. This might leave to students inclined to park scooters at/around entrances/main accesses of buildings, but since most buildings on campus have bike racks in proximity to their entrances- designated areas for e-scooters might fit appropriately. There could also be designated parking areas adjacent to building entrances (closer than the bike racks). These options can all be tested through tactical urbanism to gather user preference and make more informed decisions based on inexpensive, yet effective and experimental methods.

Recommendations for parking:

- Create parking spots in strategic areas
 - Using a tactical urbanism approach, create temporary spots and transition to permanent status based on success
- Encourage businesses to create parking for E-scooters
 - Opportunity for placemaking
 - Encourages users to travel to local businesses they would not otherwise visit
- Create scooter locks, similar to bike racks and vertical skateboard holders

Education

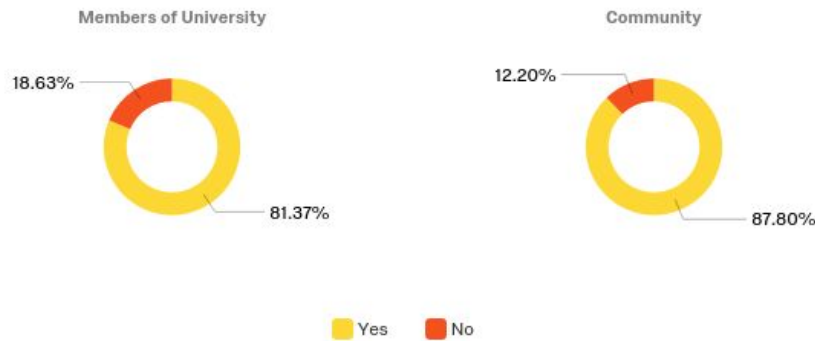
After completing several case studies it was found that the City of Denver is not responsible for rider education. Instead, the operating companies are tasked with informing riders how to stay compliant. Lime is taking various steps to educate potential riders. First, when users activate a scooter, an in-app alert will instruct them that in Denver they must ride on sidewalks and park the scooters at bus stations. Bird scooters also provide an in-app tutorial on how to ride the scooter and how to park it. Moreover, Bird riders must upload a driver’s license to confirm they are 18 or older.

Most cities don’t require riders to use a helmet, as is the case in Washington, but companies encourage their use. This is different in Oregon where it is required by law. Bird and Skip will mail helmets to users who request them. For safety reasons, only one person is allowed on a scooter at a time. Riders are urged to follow all traffic laws, including signs and signals. Use both hands while riding, and don’t wear headphones so you can pay attention to your surroundings without distraction.

According to our survey question, Do you use hand signals when you bicycle/e-scooter? It was gathered that of the members of the university that have used an e-scooter, 81.37% of them have used hand signals. Where as the community was a bit higher at 87.80%. After looking

at what other cities have implemented it is concluded that this percentage would be higher if the student population was informed on the laws.

Figure 4. **As a Bicyclist/E-scooter do you use hand signals?**



A recommendation to sharing education about laws and safety is by making users watch a mandatory video supplied from the e-scooter company in collaboration with the City of Eugene. Before using a e-scooter would be the solution that we found would be the best way of informing the student population. The e-scooter would not be operable until the whole video has run, this would make people stop and have to wait. As well as posting the rules at the proposed parking stations around the perimeter of campus and parts of the community.

Recommendations for education:

- Place safety reminder signs in E-scooter parking areas (such as legal requirements, speed limits, etc.)
- Encourage UO to emphasize safety education (i.e., articles in the Daily Emerald, during orientations, such as IntroDucktion, encouraging professors to discuss issues, etc.)

Conclusion:

E-scooters and electric skateboards should be embraced by the City of Eugene and the University of Oregon. Our survey results show that although only half of students and less than half of community members are interested, with improved infrastructure and focusing the marketing of E-scooters for use around the university, those numbers could easily improve. Our survey shows that the majority of students would feel more comfortable riding an E-scooter or electric skateboard with wider bike lanes and protected bike lanes. These are tangible changes that the Eugene community has supported in the past, and would likely support again. Given that the majority of students seem interested in riding not on campus, but in the surrounding area, we

have a good understanding of where these infrastructure changes can be made. Our data suggests that students want to ride E-scooters to and from the university. This means that these wider and protected bike lanes do not need to be on the campus itself, but rather in the surrounding areas where students live.

Given this data, we believe that E-scooters and electric skateboards should be allowed on the University of Oregon campus and in the City of Eugene, with the condition that current infrastructure is changed. Wider and protected bike lanes are manageable tasks for the City of Eugene that would increase usage and the safety of E-scooters and electric skateboards.

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