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Power to the Pedal: Assessing barriers to adoption of closed-access bike share in low-income communities

By

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An undergraduate honors thesis submitted in partial fulfillment of the requirements for the degree of

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ABSTRACT

Power to the Pedal is a fare-free, closed-access e-bike share program, operating more similarly to a lending library. The program aims to provide two low-income communities access to a reliable, low-emissions, electric assisted, active transportation option. The research conducted aimed to identify barriers faced by the community to adopting the bike sharing program. A survey and interviews conducted found that infrastructure, safety, cargo, financial ability, household structure, health, and culture all play a role when deciding when to use the program. Several recommendations are made to the program owner, operator, and other stakeholders both about improving the program directly, and further making it possible for more people to adopt electric micromobility as their transportation option of choice.

Keywords: Bike, Bike share, Micromobility, Low-income, Barriers

1 INTRODUCTION

2 Bike sharing, especially e-bike sharing, has become an increasingly popular solution for public
3 and private entities looking to promote increased access to transportation options, reduce household
4 transportation financial burden, and decrease drive-alone trips along with the greenhouse gas (GHG)
5 emissions associated with vehicle miles traveled (VMT). Power to the Pedal, the program subject of this
6 research, is structured more like a bike lending library rather than a traditional bike share scheme. Rather
7 than being shared with the public, this program is an exclusive amenity for the residents of the properties
8 where it is operated. The primary goal of this research is to identify additional barriers riders may face in
9 adopting this program since it overcomes barriers identified by previous research regarding membership,
10 fares, and availability by nature of its design.

11 LITERATURE REVIEW

13 Existing literature supports the case for active transportation options, especially bike share, for
14 their individual and societal benefits. American prioritization of, and therefore reliance on drive-alone
15 transportation options have had colossal impacts on cities, neighborhoods, communities, and individuals
16 (1). Wide roads built to sustain this status-quo contribute to ever worsening heat island effects, causing
17 disproportionate harm to low-income neighborhoods (2,3). The individual, and public health benefits of
18 active transportation options are well researched. Less sedentary time, and more utilitarian activity built
19 into daily routines whether through daily errands, or a commute to work, directly contribute to improving
20 health outcomes, even when considering increased exposure to pollutants, and traffic violence (1–6).
21 When more trips are being made with active transportation options, emissions are reduced (7).
22 Eventually, with enough mode shift, active transportation options could make a future possible where
23 transportation infrastructure takes up much less space, creating room for the return of tree canopy and
24 public amenities, and most daily needs can be reached conveniently, especially when paired with public
25 transportation options (8,9). Increasing access to active transportation options through bike sharing can
26 expand a community’s access to job opportunities (10,11). Though many of these examples use the
27 framing of Nordic, European, and Asian countries and cultures, most lessons can still be applied to North
28 American examples if increased adoption of active transportation options continues to contribute to
29 demand and eventually supply a robust network of comfortable infrastructure.

31 However, several authors identify a gap in planning and operating processes concerning equity.
32 Considering the opportunity to repair urban environments through active transportation infrastructure and
33 mode adoption, equity should be at the forefront of planning and decision making processes.
34 Unfortunately, the communities who stand to benefit most from these improvements are most sensitive to
35 existing barriers. Quality e-bikes can be just as, if not more expensive than a used vehicle, and low-
36 income neighborhoods are less likely to have infrastructure and amenities that make active transportation
37 trips possible, let alone convenient or safe (12,13). Users of more traditional, large-scale bike share
38 programs also indicate that membership costs, financial liability, the adjustability of one-size fits all
39 bikes, and a lack of convenient docking stations or bikes available to rent are barriers to adopting those
40 programs (13). For this reason, bike share cannot be deployed in these communities as a one-size fits all
41 solution for increasing access to active transportation options, without introducing additional measures to
42 address barriers (14).

43 BACKGROUND

44 Power to the Pedal is a fare-free, closed-access e-bike share program currently operating at two
45 privately-owned income-restricted multi-family communities in Tigard, Oregon. Power to the Pedal is
46 operated by Westside Transportation Alliance (WTA), a local Transportation Management Association
47 (TMA), and was funded by a Portland General Electric Drive Change Fund grant acquired by The City of
48 Tigard. The program aims to increase access to electric micromobility options in underserved
49 communities. The program opened to users during a soft launch phase in August, 2023, fully opening to
50 users one month later in September, 2023 One location where the program operates, Greenburg Oaks is
51

1 an 84 unit family-oriented complex, with
 2 units ranging from one to three bedrooms.
 3 The other location, Red Rock Creek
 4 Commons, has 48 units, with a mix of
 5 studio and one-bedroom units. The bikes are
 6 housed in a bike room on the ground floor
 7 of the Red Rock Creek Commons, and at
 8 Greenburg Oaks, the bikes are stored
 9 outside in a custom-built secured locker
 10 designed to fit inside a single parking spot,
 11 shown in Figure 1. Both storage solutions
 12 are locked with doors requiring codes to
 13 open. As the program operates in an area
 14 with no existing bike or scooter sharing
 15 programs, this program gives residents
 16 exclusive access to a micromobility option
 17 which they otherwise would not have been
 18 able to explore without incurring the cost of
 19 purchasing the bikes outright for
 20 themselves.



Figure 1. The custom-built storage locker at the community where there was previously no secure bike storage.



Figure 2. A Tern NBDP8i used as a Power to the Pedal bike.

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Program Development

This program was developed by The City of Tigard in collaboration with local affordable housing provider Community Partners for Affordable Housing (CPAH) as an equitable e-mobility access project. WTA was contracted to launch and operate the program. The City of Tigard procured a fleet of six Tern NBDP8i e-bikes to deploy as part of the program. These bikes have built-in head and tail lights, a foldable stem, small 20 inch wheels, a large rear rack, and a plethora of adjustable features, making them adaptable to riders of all shapes, sizes, and abilities. LINKA provided smart cafe-style locks which were installed on the bikes to restrict access to the bikes, and manage locking, unlocking, and ride tracking. To build relationships with the communities where the program was slated to

38 operate, several sign-up events were held where representatives of the program owner and operator
 39 educated the community about the program, answered questions, and helped sign residents up to be the
 40 first to ride when it launched. During these events, the operator solicited feedback from the community on
 41 how they planned to use the bikes, and what sorts of rules or regulations they would like to see imposed
 42 on users to ensure everyone could maintain access to the program. While these events did not manage to
 43 gather feedback from all residents, it offered very valuable insight to shape the program design and its
 44 rules of use. This dialogue began to foster a collaborative relationship between the program stakeholders,
 45 and the communities meant to benefit from the program.

Using the Program

46
 47
 48 In order for residents to access the program, they must first enroll. The operator maintains
 49 advertising material in the communities, and introductory fliers are supplied to the property managers so
 50 new residents have an opportunity to learn about the program when they move in. Users sign up through a
 51 website maintained by the operator, and on a generic app provided by the smart lock partner. Once their

1 enrollment is received, WTA staff communicate with the property manager of the corresponding
 2 community to verify the user is a resident of that community. If the property manager confirms, the user's
 3 account is authorized and they are approved to use the program. At this point, WTA staff communicate
 4 with the new user, letting them know their account has been activated, and offering a helmet, maps, and
 5 other free gear or tools to help the user get riding.

6
 7 The new user will also receive an automated email letting them know their account has been
 8 activated, and also provides the user with the appropriate code to access the bikes at their property. To
 9 unlock a bike and start riding, a user would use the white-label app to scan a QR code on a bike, which
 10 activates the smart lock, and unlocks the bike.

11 Users are permitted to ride the bike wherever they wish, including taking them on transit to reach
 12 destinations farther away than a comfortable bike ride. While users cannot end the ride anywhere but the
 13 property where the bike is housed, they can pause the ride anywhere. Users are instructed to always lock
 14 the bike when reaching their destination and leaving the bike unattended, even for short periods of time.
 15 A chain which plugs into the smart cafe lock is provided so the user can securely lock the bike to any bike
 16 rack, and not just rely on the cafe lock to secure the bike.

18 Program Data

19 According to data provided by Westside Transportation Alliance, the program has gained 38
 20 users since its launch in August, 2023. Of those 38 users, six use it very frequently, while the rest use it
 21 sporadically, or have only ridden once or twice during sign-up or engagement events. Users have taken a
 22 total of 494 trips, and accumulated 1,735 miles on the odometers of the Power to the Pedal bikes.
 23 Methods provided by GetThereOregon.org estimate that this has reduced 1,497 lbs of CO₂, saved users
 24 \$1,100, and burned over 87,000 calories.

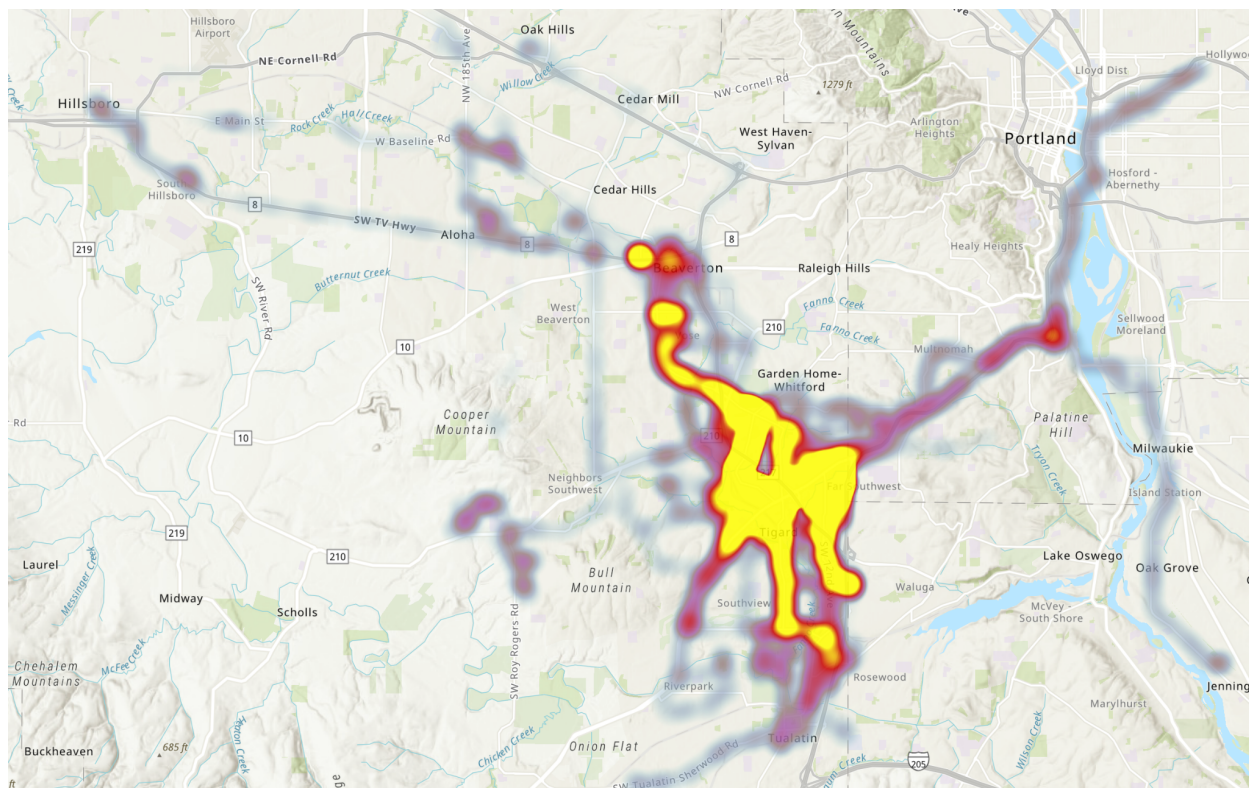
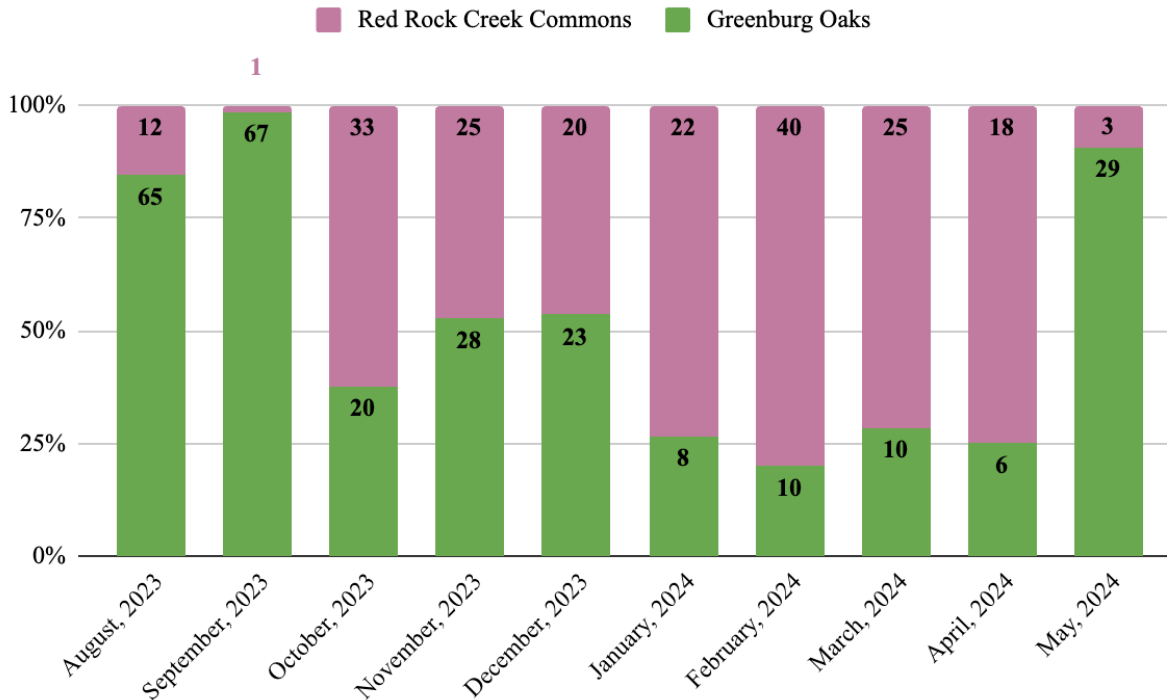


Figure 3. A heat map of GPS pings from the LINKA smart locks while the accelerometer state was "Riding," (15).

1 According to GPS data from the LINKA smart locks, users frequently ride on major streets such as
 2 Pacific Highway and Barbur Blvd. (OR 99W), Hall Blvd, and Tualatin Valley Highway (OR 8). Users
 3 also frequented the Fanno Creek Trail, a paved multi-use path connecting Beaverton and Tigard.
 4

5 **Figure 4. Share of Rides by Community Per Month**



6
 7 **METHODS**

8 This research was conducted on behalf of Portland State University's Transportation Research
 9 and Education Center (PSU, TREC) in close collaboration with the City of Tigard, the program owner;
 10 WTA, the operator; and CPAH, the organization which owns the properties the program is deployed in; as
 11 well as CPAH's property management company. The City and operator sought feedback from program
 12 participants, as well as non-participant community members to measure program success and improve the
 13 program to attract more participants.
 14

15 The survey conducted by this research was created in collaboration with The City and WTA, and
 16 was closely modeled after that used in *Breaking Barriers to Bike Share: Insights from Residents of*
 17 *Traditionally Underserved Neighborhoods*, as the desired feedback was similar between the research
 18 conducted for that study, and what the Power to the Pedal stakeholders wished to investigate (13).
 19 However, several questions were localized, changed, or omitted from the survey as part of this research in
 20 the interest of relevance and brevity, especially because the audience for this research is much smaller
 21 than that of the aforementioned report. This survey was open for two weeks, and was advertised to all
 22 residents of the communities where the bike sharing program was implemented, regardless of affiliation
 23 or experience with the program. Communication took the form of fliers in English and Spanish, e-mails,
 24 announcements in the bike sharing application, and a paper survey in both English and Spanish attached
 25 to the front door of each housing unit. Research participants had the option to claim a \$15 gift card
 26 incentive for completing the survey, and volunteer for a further one-on-one interview with a researcher
 27 for an additional \$25 gift card incentive. Six participants were interviewed. WTA also provided
 28 anonymized program usage data for each location, including number of program participants, total miles
 29 ridden, miles ridden by participant, and daily statistics.

RESULTS

Respondent Demographics

Respondents were asked to complete a series of optional demographic questions. Between 64 and 68 percent (16 or 17 of 25) respondents completed these questions. Respondents could choose to not answer, or answer “prefer not to say” to all of these questions.

When asked to describe their gender, 41 percent identified as male, 41 percent identified as female, and two respondents self-described: one as “Goddess,” and the other as “Bigender.” Despite the small sample size, this result implies that the survey reached a diverse group, representative of the population of the communities (Table 3).

Most survey respondents were under 45 years old—44 percent were 18-24 years of age, 38 percent were 35-44. 16 percent of respondents were 45-54, 11 percent were 55-64, and one respondent indicated they were 65 years old or older (Table 2). The percentage of respondents under 35 seems to be representative of the community based on demographics provided by CPAH, however residents over 55 appear to be underrepresented in this survey.

Respondents were asked to choose one or more races from a list that they considered themselves to be. Of the 17 respondents who answered this question, 72 percent identified as White or Caucasian, 11 percent of respondents identified as Black or African American, and 11 percent identified as American Indian / Native American or Alaska Native (Table 7). No respondents indicated that they were of Spanish, Hispanic, or Latino origin (Table 6). CPAH provided a demographic example of one of the communities which estimated it had over 40 percent of its community identifying as a person of color. With just 22 percent of respondents identifying themselves as people of color, this survey does not appear to have accurately reached an ethnically or racially representative sample of the population.

TABLE 9 Neighborhood & Housing Tenure

How long have you lived...	in your current neighborhood	at your current address
Less than one year	3	3
One to five years	8	11
Six to ten years	2	2
More than ten years	4	2

The average neighborhood tenure of respondents was 4.9 years. The average address tenure of respondents was 5.4 years (Table 9). Some respondents indicated that they had lived at their address longer than they had lived in their current neighborhood, which is contradictory. Respondents may have misunderstood this question.

All 14 respondents who indicated their total household income before taxes selected values under \$50,000, 85 percent of respondents indicated that they made less than \$25,000 (Table 11). Respondents were also asked about their ability to comfortably live on their household income. Of the 16 who responded, 69 percent said they have just enough, no more, 31 percent said they can’t make ends meet, and only one respondent indicated they have just enough with a little extra sometimes (Table 12). 58 percent of respondents to a question inquiring if they received a housing subsidy responded in the affirmative (Table 8). Considering the restricted income nature of these communities, these responses seem to match expectations.

1 When asked to describe their employment status, 18 responded. 33 percent indicated that they were
2 working at least part-time, 16 percent indicated they were unemployed, and 22 percent described
3 themselves as a homemaker or stay-at-home parent (Table 4). One respondent indicated that they were a
4 student, and another indicated that they were retired. When asked about household size, 75 percent of
5 respondents indicated they lived alone (Table 10).

6
7 Respondents were asked a question to identify their access to transportation options, 16 responded. 11
8 indicated they had a driver's license, 11 said they had a transit pass. Just 4 said they had a personal bike,
9 and only 4 said they had a car available for use (Table 1).

10
11 As part of a follow-up survey, respondents were asked to identify which community they resided in. Ten
12 participants indicated that they live at Red Rock Creek Commons, six live at Greenburg Oaks, and the
13 remaining nine did not respond. This suggests that the residents of Red Rock Creek Commons may be
14 overrepresented in the survey results.

15
16 Overall, the survey reached 25 residents out of 132 possible households between the two multi-family
17 properties. Assuming each respondent is from a separate household, the survey reached 19 percent of
18 households between the two communities.

19 20 **Transportation Options**

21 Respondents were asked how they got around town in the past week, and to indicate how often they used
22 a set of transportation options. Respondents most frequently indicated "public transportation" and
23 "walking or wheelchair" as a method of transportation regardless of how frequently they used it. Power to
24 the Pedal was most frequently identified as being used as an option "once a week" by six of the
25 respondents (Table 14).

26
27 When posed with a series of statements about their satisfaction with available transportation options,
28 around half of respondents (50-54 percent) indicated that they agreed TriMet, the local public
29 transportation authority, does a good job serving people like them, that they were satisfied with their
30 options, and that they can usually get to and from home and where they need to go easily. However, while
31 only 2-8 percent of respondents indicated they disagreed with the statement about TriMet and the ease of
32 getting where they needed to go, 25 percent of respondents indicated they were not satisfied with their
33 transportation options (Table 15).

34 35 **Familiarity with Power to the Pedal**

36 Survey respondents were asked how familiar they were with the program, with choices ranging from
37 being: signed up, and using it; signed up, and not using it; having heard of it, but not signed up; and never
38 having heard of it. Overall, most respondents had at least heard of Power to the Pedal, if they weren't

1 already signed up. However, nine of the
2 25 respondents indicated that they had
3 not heard of the program before (Table
4 13).

5
6 When respondents were asked how they
7 got information about the program, most
8 indicated that they had learned about it
9 from a mailer, something posted on their
10 door, or in a community area (Table 23).
11 In a follow up free response question,
12 some responses indicate that the
13 presence of the bikes alone, and their
14 storage solutions, were enough to
15 publicize the availability of the program.
16 Of the 20 respondents who answered a
17 further series of questions, 12 indicated
18 they had noticed the Power to the Pedal
19 station in their community (Table 25).
20 Some responses also mention learning
21 about the program through previous
22 engagement events at the communities
23 organized by the owner and operator of
24 the program to publicize the launch of
25 the bike share (Table 23, 25).

26
27 Regardless of whether the respondent had engaged with the program or not, they were asked a series of
28 true or false questions about aspects of the program. While 15 out of 20 respondents correctly indicated
29 that the program is completely free to use, respondents were less confident about the rest of the questions,
30 mostly regarding the rules of using the program (Figure 5), and many respondents incorrectly identified
31 rules as true or false when they were the inverse (Table 27).

32 **Engagement with Power to the Pedal**

33
34 Respondents were asked to answer “yes,” “no,” or “not sure,” to a list of questions about their
35 engagement with the program. While only 5 of the 20 respondents to this set of questions indicated that
36 they had not noticed the bike share station in their community, and only 6 said they were not signed up, 9
37 said they had never ridden (Table 13).

38
39 Respondents were asked how likely they were to engage with the program in the next six months,
40 including seeking more information about the program, telling someone they knew about it, or riding a
41 bike, with answers including, “likely,” “not sure,” and “unlikely.” Most respondents were unsure if they
42 would seek further information, but ten indicated they were likely to tell someone they knew about it, and
43 11 indicated they were likely to ride one of the program bikes.

44 **Sentiments about Power to the Pedal**

45
46 Whether the survey respondent had participated in the program or not, they were presented with a series
47 of statements and asked whether they agreed or disagreed. 17 of the 20 respondents agreed that using the
48 program was a good way to spend less on transportation (Table 28). 17 respondents indicated that they
49 agreed that the program is a good alternative to using public transportation, and 14 agreed it is a good way
50 to get to public transportation (Table 17, 28). 13 respondents indicated that they saw people like them
51 using Power to the Pedal, which, notably, is more than a previous question about bicycling in general

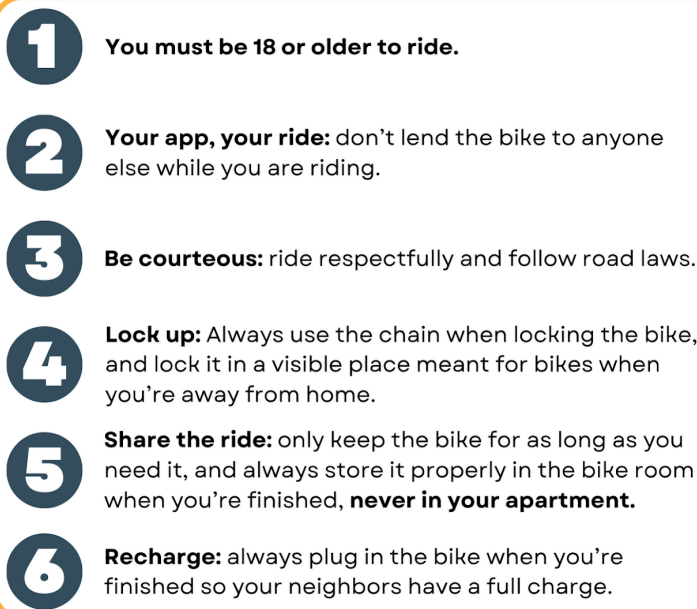
- 
- 1 **You must be 18 or older to ride.**
 - 2 **Your app, your ride:** don't lend the bike to anyone else while you are riding.
 - 3 **Be courteous:** ride respectfully and follow road laws.
 - 4 **Lock up:** Always use the chain when locking the bike, and lock it in a visible place meant for bikes when you're away from home.
 - 5 **Share the ride:** only keep the bike for as long as you need it, and always store it properly in the bike room when you're finished, **never in your apartment.**
 - 6 **Recharge:** always plug in the bike when you're finished so your neighbors have a full charge.

Figure 5. A graphic displaying the rules to ride with the Power to the Pedal program. This graphic is included on digital and physical materials, as well as on signage at the bike stations.

1 (Table 17, 28). 14 participants agreed that the program is useful for people like them, and 11 indicated
2 they would like to use the program more than they currently do (Table 28). Half of respondents indicated
3 that they considered the program to be a part of Tigard's public transportation system (Table 28). Most
4 respondents were unsure if the program would attract new residents to their community (Table 28). Ten
5 respondents disagreed with a statement that suggested that the program might make it more expensive to
6 live in their communities, seven were unsure, and only 3 agreed (Table 28).

7
8 When asked a more broad set of questions about biking in general, presented in a similar fashion, most
9 respondents felt that they were not bicycling more than they were a year prior, despite the program soft
10 launching in August 2023, and officially launching just a month later in September, more than six months
11 before this survey was conducted, (Table 17).

12 13 **Biking Ability**

14 17 of 22 respondents indicated that they knew how to ride a bike, and 19 indicated that they felt they were
15 at least physically able to ride a bike (Table 18, 19). In following interviews, some participants raised
16 concerns about issues balancing on a bike, and the weight of the specific e-bike used in the program.

17
18 When asked the last time they had ridden a bike, 13 respondents indicated that they had done so in the last
19 12 months, seven indicated it had been between one and five years. One respondent indicated it had been
20 more than five years since they had ridden a bike, and one more answered that they had never ridden a
21 bike before (Table 20).

22 23 **Sentiments About Biking**

24 Respondents were presented with a series of statements about biking, and asked to indicate whether they
25 agreed, disagreed, or were neutral about the statement. 16 of the 22 respondents to this series of
26 statements agreed that getting more people to ride bikes would be good for the environment, and 15
27 agreed that would help make the community healthier (Table 16). 14 agreed that riding a bike is a
28 convenient way for people to get places in Tigard, and 15 agreed that the city should invest in projects
29 that make riding bikes safer and easier (Table 16).

30
31 19 agreed with a statement indicating that they felt riding a bike would be a good way to get exercise, and
32 15 indicated that they are familiar with the bike lanes in their neighborhood (Table 16, 17). 14 agreed that
33 they plan to ride a bicycle more often in the next year, and 12 indicated that they would like to ride a
34 bicycle for transportation more than they currently do (Table 17). 12 agreed that riding a bike would help
35 them spend less on transportation (Table 17). 10 respondents indicated that riding a bike would be a good
36 way for them to spend time with friends and family (Table 17).

37
38 Only 2 respondents agreed with a statement that suggested people on bikes make roads less safe for others
39 (Table 16). This specific question received the most negative responses out of any others in the survey.
40 Furthermore, no interviewees raised concern with people on bikes or other micromobility options making
41 roads or sidewalks less safe for others.

42
43 Some respondents indicated they did not often see people like them riding bikes in their neighborhood.
44 This question was meant to cover all aspects of one's appearance or identity, including sex, gender,
45 ethnicity, race, and more. Unfortunately, recent counts from both The City of Tigard and the immediate
46 neighboring City of Portland, do not count any other demographic data other than whether a rider appears
47 to be male, female, or other/unknown. However, other surveys confirm that most people who utilize
48 bicycling as a transportation option identify as white (15). The 2023 summary of bicycle counts in SW
49 Portland (the closest quadrant to Tigard), performed by PBOT and volunteers, indicated that only 23.9%
50 of counted bicyclists were women (16). Counts performed by the City of Tigard in the same year
51 indicated that only 6% of bicyclists counted were women (17). Personal experience and these counts

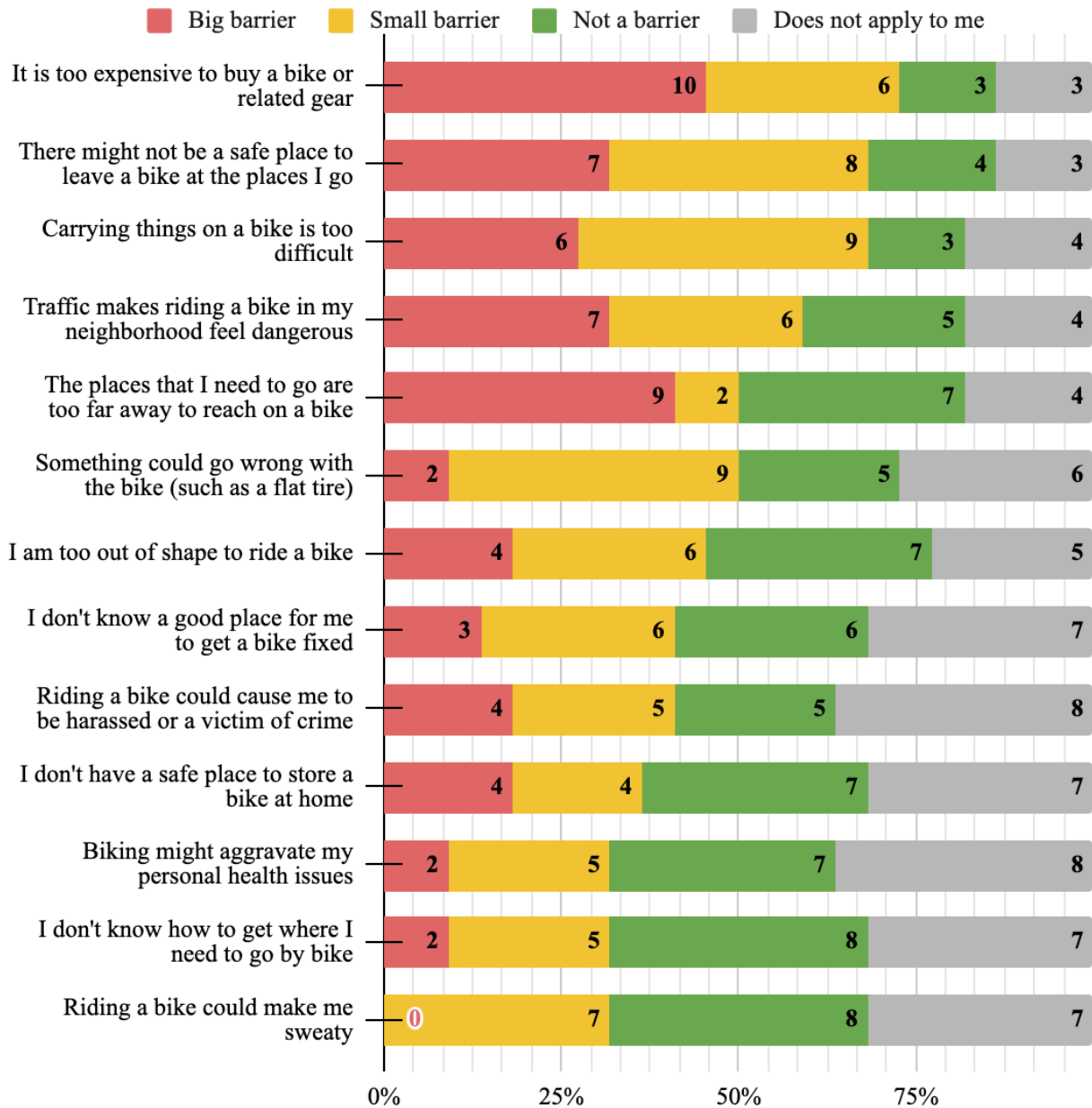
1 confirm that bicycling, a mode of transport that is already skewed towards white men, is skewed even
 2 further in Tigard. This could lead potential program participants to not personally identify with the act of
 3 cycling, and therefore choose to prioritize other modes of transportation.
 4

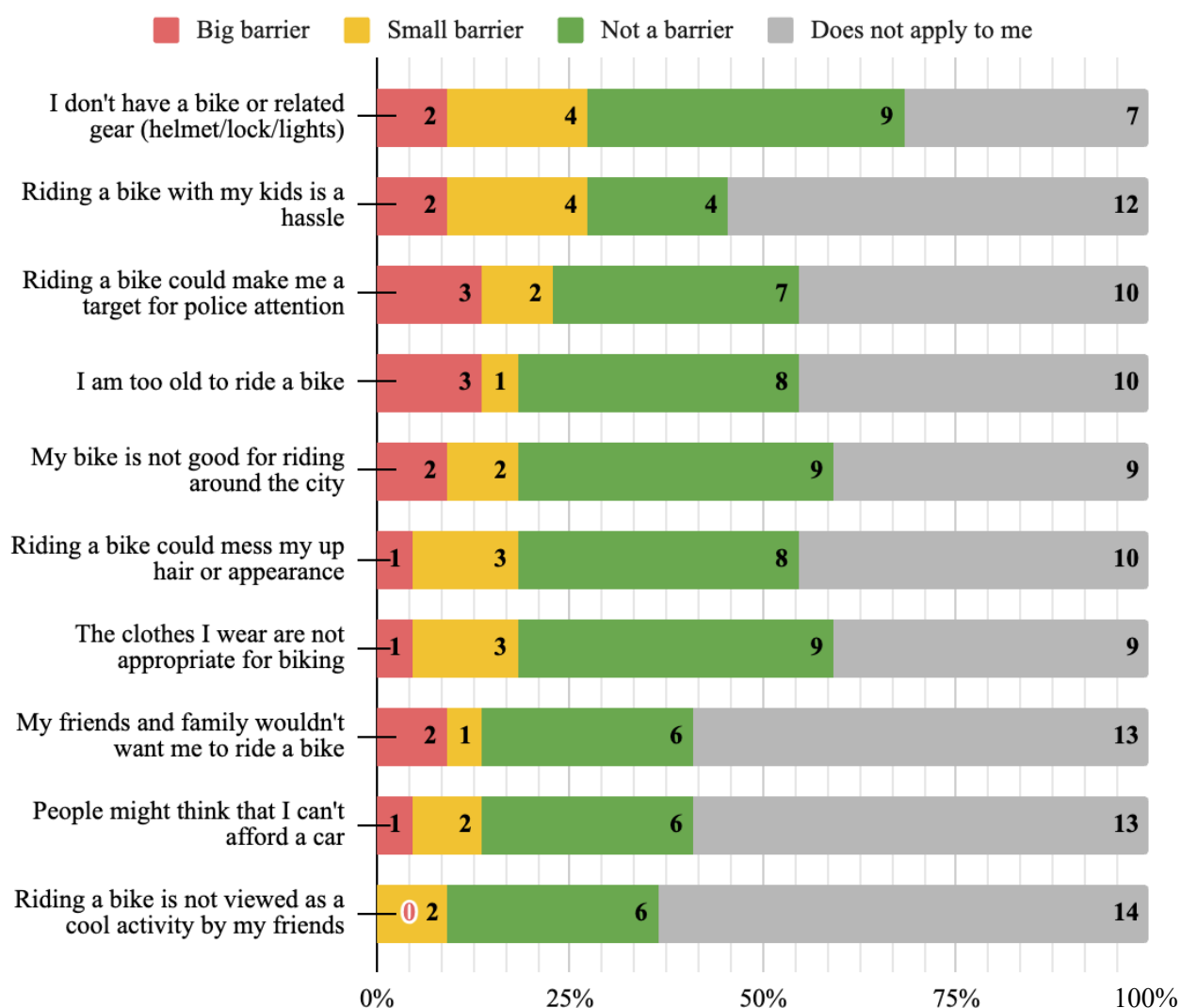
5 Responses were mixed regarding whether respondents felt that there were better ways to get around than
 6 by bike, and whether it would make them more independent (Table 17).
 7

8 **Barriers to Using Bicycle Transportation Options**

9 Respondents were presented with a series of statements associated with common barriers to bicycling and
 10 asked to identify the item as a big or small barrier, not a barrier for them, or not applicable to them (Table
 11 21). Figure 6 shows each statement in order of the average identified severity of the barrier.
 12

13 **Figure 6. Barriers to Riding**



1 **Figure 6 (Cont.). Barriers to Riding**

2
3 *General Barriers*

4 The most severe barrier to bicycling identified by respondents in this survey is the financial barrier to
5 entry. 10 of 22 respondents identified this as a big barrier, another 6 identified it as a small barrier (Chart
6 2). The program solves this problem by providing free access to e-bikes that are otherwise inaccessible
7 due to high purchase price.

8
9 15 respondents identified the lack of a safe place to leave a bike at typical destinations as at least a small
10 barrier. While this was not raised as an issue in any interviews, anecdotally bike racks are sparse in this
11 area. They are more common at newer developments, and where they exist at older developments, they
12 are located away from the main door to the destination, or in another less visible location. 13 respondents
13 identified traffic as a barrier which makes riding a bike in their neighborhood feel dangerous. One
14 respondent elaborated on this in their final free response question (Table 29).

15
16 *“Riding a bike in Tigard to run errands is like advanced mode. This is NOT an area friendly to*
17 *beginners. It's really not safe to take the highway, but sometimes it's the only way to get through.*

1 *I used to do sandwich delivery by bicycle for 2.5 years and I am extremely comfortable with*
2 *wearing a safety vest and a neon bike helmet and using bungees on the rack to carry things.”*
3

4 The feeling of safety on roadways (or lack thereof) was a common theme in the interviews conducted.

5
6 *“I prefer not to use the sidewalk because... I know that it's not just illegal- because people walk*
7 *on it and use their... walkers and electric scooters, things like that, they need... that space to be*
8 *able to get by. But yet, I'm afraid to go on the freeway out here or highway or whatever it's called*
9 *because it's so much construction and people do not look when they're more involved in listening*
10 *to music or trying to text. Sometimes, they don't see us.”*

11
12 *“I have almost been hit by a car three times on the bike here, but also more than that on foot.*
13 *...they need to just make the bike pass a little bit safer here, like family friendly. If they could.”*
14 *“Bike Lanes are pretty sketchy. I've noticed. I've been looking at bike lanes because I'm thinking*
15 *of doing the Power to the Pedal thing.”*
16

17 Distance to destinations being too far to reach by bike is another common barrier. 15 respondents
18 indicated this was at least a small barrier for them (Table 21). While the area that the bike shares are
19 located in are all well within a desirable biking distance to common destinations like grocers, employment
20 centers, restaurants, and more, it is unclear if this barrier has more to do with the availability of safe
21 infrastructure, or the physical distance to destinations since the survey did not ask respondents for specific
22 locations of desired destinations. Especially since people who live in less walkable areas such as where
23 this program is operating, and don't typically use active transportation options tend to overestimate the
24 distance and walk time to destinations (16).

25
26 Nine respondents indicated that the concern of being harassed or becoming a victim of crime because of
27 riding a bike is a barrier (Table 21). Five indicated that concerns over the act of riding a bike making
28 them a target for police attention was a barrier. However, one interviewee stated that they felt like riding
29 the bike would make them less likely to be a victim of a crime.

30
31 Eight respondents indicated that not having a safe place to store a bike at their home is a barrier (Table
32 21). While one location where the program operates has dedicated bike storage rooms on each floor of the
33 building, and an extra room on the ground floor where the program bikes are housed, the other location is
34 older, and does not have any secure bike storage aside from bike racks placed outside on the property.
35 The program provides secure storage for its equipment in the parking lot of this community.

36
37 Nine respondents indicated that not knowing of a good place to get their bike fixed is a barrier (Table 21).
38 The program solves this problem by being entirely responsible for the maintenance and repair of the
39 shared bikes, with a contracted partner who provides routine maintenance and emergency repairs. For
40 personal bikes, this is a valid concern. Around the time the survey was conducted, the only bike shop
41 nearby moved to another location in a different suburb several miles away, and at the time of writing,
42 there are no bike shops within easy walkable or bikeable distance of these communities.

43
44 Despite efforts by the program operator to disseminate bike maps produced by the City of Tigard, and
45 offering route planning services for program participants, six respondents indicated not knowing how to
46 get where they need to go by bike as a barrier (Table 21).

47
48 Only four respondents indicated that their bike not being “good for riding around the city” is a barrier
49 (Table 21). The program aims to overcome this barrier by providing access to high-quality, reliable,
50 routinely maintained e-bikes.

51

1 Very few respondents indicated that concerns over their appearance, their clothes, or becoming sweaty,
2 were big barriers (Table 21). Few also indicated that the wishes of their friends or family, the act of
3 biking not being viewed as “cool,” or others thinking they couldn’t afford a car, were barriers (Table 21).

4 *Barriers associated with Power to the Pedal*

5 A common barrier identified by respondents is the ability to carry cargo. 15 of 22 respondents identified
6 this as a barrier (Table 21). While the e-bikes used in the program were selected for their ability to carry
7 cargo, it is currently entirely the user’s responsibility to provide a way to securely attach any cargo.
8 Multiple interview participants asked for baskets to be added to the bikes to make running errands easier.
9 As of the time of publication, the City of Tigard requested and was awarded funds to purchase and install
10 baskets for all six Power to the Pedal bikes from the Oregon Department of Transportation (ODOT)
11 through their Innovative Mobility Program small grant initiative.

12 In a similar theme, the hassle of traveling with kids by bike is another barrier identified by 11
13 respondents. While the bikes used in the program are compatible with most child seats, trailers, and there
14 are no rules preventing a user from attaching such an accessory, there are no such accessories available to
15 use as a part of the program. Considering answers to the statement regarding financial barriers to entry,
16 and that six respondents identified a lack of personal gear as a barrier (Table 12, 21), the cost of such
17 accessories may disincentivize users from purchasing their own accessories to use with the program.
18

19 Respondents also noted that the possibility of something going wrong with the bike is a barrier (Table
20 21). One interviewee noted that they had to use their personal vehicle to rescue their partner who was
21 using one of the program’s bikes when it got a flat tire on his trip. The program dealt with a significant
22 amount of flat tires at one location during the soft launch phase due to debris from construction on the
23 property. The program operator responded by repairing the flats, and installing “cush-core” inserts in the
24 wheels of the bikes to prevent flats, and even allow the bikes to run on flat tires for short distances.
25

26 While less frequently identified as a barrier, 21 respondents indicated that age, personal fitness level,
27 ongoing personal health issues, and the fear of aggravating underlying health issues kept them from riding
28 a bike (Table 21). Interview participants also cited balance issues, and the weight of the e-bikes used in
29 the program as a barrier. While the e-bikes used in the program were selected for their low step-thru
30 design, one-size fits all adjustable ergonomic features, and low center of gravity to ensure they could be
31 accessible for most individuals, they still weigh about 20 more pounds than a typical non-electric assisted
32 bicycle, which could be off-putting for those with less experience cycling (4).
33

34 While 14 of 20 respondents agreed the program is a good way to get to public transportation (Table 28),
35 some interviewees raised concerns about bringing the program bikes onto public transportation. The bikes
36 are physically able to fit on to the racks affixed to the front of the buses which serve the program
37 communities; however, interviewees noted that their increased weight makes it difficult to load and
38 unload them.
39

40 **Open-ended Responses**

41 Respondents were given the opportunity to respond in free text at two separate occasions. First asking to
42 explain specifically where and how they first learned about the program, and also an open ended question
43 asking if there is anything the respondent would like to add or explain at the end of the survey.
44

45 Most respondents to the first question wrote narratives applicable to the question, explaining how they
46 learned about the program. A few respondents included information about what they thought the program
47 did, and who ran it. One submitted an additional narrative explaining how a current health condition
48 makes it difficult to ride the bikes.
49

50

1 *"I live at Red Rock Creek Commons and some gentleman came and I signed up for it and I rode*
2 *around on the bike in the parking lot and then they got on my phone and they put in my*
3 *information so I could ride the bike it's an IPM thing that that they set up for us I really like it it's*
4 *just that my health because I have a hip problem makes it hard for me to ride the bike right now"*
5

6 For the final open ended question, one respondent expressed gratitude for the engagement events
7 organized by the operator to sign residents up for the program, and for the program in general.
8

9 *"I appreciate the fact that somebody came to Red Rock Creek Commons and taught us how to*
10 *ride the bike and gave us helmets and bottles for water and they always come here and check on*
11 *the bikes to make sure that they're okay thank you so much for inviting us to use these bikes"*
12

13 Three respondents elaborated on barriers to using the program or riding bikes in general.
14

15 *"I'm deaf therefore I don't really use bike transportation much for that very reason"*
16

17 *"Considering that I am a single mother it makes it impossible to go anywhere with my child, on*
18 *the Power to the Pedal bike. If there was a way to take my child with me it would be more*
19 *convenient to use the system. I've noticed people in this complex have more than 1 child and it*
20 *would be more complicated to take more than 1 child along, considering there isn't a singlto (sic)*
21 *take a single child in the first place."*
22

23 *"Idk if this goes in this box or a later one. Riding a bike in Tigard to run errands is like advanced*
24 *mode. This is NOT an area friendly to beginners. It's really not safe to take the highway, but*
25 *sometimes it's the only way to get through. I used to do sandwich delivery by bicycle for 2.5 years*
26 *and I am extremely comfortable with wearing a safety vest and a neon bike helmet and using*
27 *bungees on the rack to carry things."*
28
29

1 **TABLE 30 Interviewees**

Interviewee	Program engagement level	Barriers	Other notes
A	Infrequent user	-Current injury -Traffic safety -Familiarity with bike -Biking confidence level -Topography of neighborhood	-Noticed others in the community using it, getting out and active more -Would consider purchasing their own e-trike, financial barrier
B	Not a user	-“Afraid” of the bikes -Biking confidence level -Traffic safety -Weight of bike	-Liked the idea of e-trikes -Enjoys that the program gives the community access to expensive bikes
C	Regular user	-Weight of bike -Carrying cargo -Riding with children -Traffic safety -Technology	-Uses bikes for all types of trips -Bikes give independence -No driver license -Feels safer riding a bike than walking
D	Not a user	-Ongoing health issue -Traffic safety -Technology	-Despite not participating, the program has motivated them to be more physically active -Would be more comfortable on a scooter -Has considered purchasing an e-scooter, financial barrier
E	Only rode once, at a sign up event	-Physical limitations -Topography of neighborhood -Weight of bike, ability to put on bus -Technology	-Seen others in the community using the program, being more active, and socializing because of it
F	Not a user, but a partner of a frequent user	-Biking with kids -Physical exertion -Carrying cargo	-The program offers an additional transportation option for their one-vehicle household -Independence

2
3 Table 30 defines the interviewees with a code name, and their level of engagement with the program. One
4 interviewee was a regular user of the program. Two interviewees were infrequent users, one of them had
5 only ridden the bike once, during the sign up events hosted the year prior. The remaining three
6 interviewees were not users of the program, but one is the partner of a frequent user.

8 **CONCLUSIONS**

9 Residents view Power to the Pedal as a valuable asset in their community. However, it appears to
10 be underutilized due to numerous barriers. While some of these barriers can be addressed by the program
11 owner and operators making it easier to use the bike share program, or easier to accomplish tasks using
12 the bike share equipment, some of these barriers require local departments of transportation to prioritize
13 the safety and comfort of cyclists of all abilities, as well as users of other modes of active transportation,
14 in order to see barriers reduced.

16 **Power to the Pedal Improvements**

1 Program stakeholders should consider the feedback from the communities and equip the bikes
2 with a better way to carry cargo, rather than relying on the user to provide baskets or panniers themselves.
3 To address the barrier riders face traveling with children, the program should consider implementing a
4 library of accessories, like child seats, or trailers. For older children, the program operator should consider
5 ensuring families have access to bikes for their children, as well as applicable accessories. Unfortunately,
6 due to recently passed state laws and insurance requirements, the program is restricted to riders over the
7 age of 18. As for barriers regarding age, personal fitness level, ongoing personal health issues, and the
8 fear of aggravating underlying health issues, the program stakeholders should cautiously encourage
9 concerned riders to try the program, especially considering that the bikes are Class 1 electric assist, but
10 discontinue use if riding bikes negatively interacts with health issues.
11

12 Though most respondents indicated that they were familiar with bike lanes in their neighborhood,
13 a non insignificant number of respondents indicated that they did not know how to get to where they
14 needed to go by bike, or that the places they needed to go are too far away to reach on a bike. Program
15 stakeholders should engage with prospective users who are concerned about common destinations being
16 too far. WTA should consider publicizing their “commute planning” services to users of the program to
17 further investigate whether in fact these destinations are too far to reach comfortably on a bike, or if there
18 are further infrastructural barriers. Program stakeholders could also host bike along events, or tours to
19 common destinations to showcase bikeable routes to residents.
20

21 To increase community awareness of the program and its accessibility, and to familiarize users
22 with the rules of the program, the operator should consider revising instructional and marketing materials.
23 Instructional materials should be simple, to the point, and ideally available in multiple languages or use
24 visual diagrams that do not require reading. Promotional materials should emphasize the electric assisted
25 equipment, one-size-fits-all ergonomics, and run-flat tires. More events with the goal of acquainting
26 community members with the program, the bikes, and the smart lock system should be conducted to
27 answer specific questions, and demonstrate use.
28

29 **Broad Improvements**

30 A significant barrier to using the program is the existing infrastructure. Despite the availability of
31 on-street bike lanes on the infrastructure surrounding these communities, residents still indicate they feel
32 like it is unsafe to ride a bike in their neighborhood, with many opting to use sidewalks instead. If local
33 municipalities are committed to increasing access to transportation options, using bike share
34 programming to reduce transportation cost burdens, and lowering emissions associated with traditional
35 VMT, local departments of transportation should prioritize building infrastructure that are designed for all
36 ages, abilities, and comfort levels (17,18). The local government should work with property owners and
37 businesses to ensure safe, accessible bike racks are available within vision of primary entrances to
38 buildings, amenities, and venues so that opportunities to safely secure a bike are visible to all visitors.
39

40 Some respondents indicated that with the weight of the program bikes, it was difficult to load
41 them onto racks affixed to the front of buses serving local bus routes. The only form of transportation in
42 the area with easy “roll-on” bike racks is TriMet’s WES. WES is a peak hour, weekday only, commuter
43 rail service serving from Beaverton to Wilsonville with intermediate stops in Tualatin and a nearby car-
44 oriented commercial district. To create a more accessible, seamless experience for people using bikes to
45 access transit as a first and last mile solution, TriMet should consider upgrading Line 12, the busiest line
46 near these communities, with onboard bike racks, like they did when upgrading Line 2 to “Frequent
47 Express.”
48

49 While the program solves the issue of not having a secure place to store a personal bike by
50 providing shared bikes in a secure locker, owners and managers of older multi-family properties with

1 limited or no secure bike storage should consider providing secure bike storage in a similar fashion to
2 how this program stores its own bikes.
3

4 While not registered as frequently or to the same severity as other items, a fear of being harassed,
5 becoming a victim of a crime, or a target for police attention was identified by several respondents as a
6 barrier to biking. However, one interviewee noted that they felt safer on a bike than walking when it came
7 to concerns of becoming the victim of a crime. This highlights the necessity that local municipalities
8 focus on ensuring that the basic needs of the larger community are being met to reduce crime rates, and
9 reduce police presence.
10

11 **Outlook**

12 Overall, programs like Power to the Pedal have potential to expand access to transportation
13 options with lower barriers to access, environmental impact, and cost for both the user and local
14 departments of transportation, especially in environments where traditional, large-scale bike share
15 programming may not be sustainable, or financially or politically feasible. At a smaller scale, they should
16 remain responsive to user-feedback and uphold reliability standards to ensure those who become
17 dependent upon these programs can continue to benefit from increased independence and access to
18 transportation options.
19

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3

4 **AUTHOR CONTRIBUTIONS**

5 The authors confirm contribution to the paper as follows: study conception and design: Del Valle
6 Tonoian, J. MacArthur, J; data collection: Del Valle Tonoian, J; analysis and interpretation of results: Del
7 Valle Tonoian, J. MacArthur, J; draft manuscript preparation: Del Valle Tonoian, J. MacArthur, J.

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Appendix A

1 **FULL SURVEY RESULTS**2 **TABLE 1 Transportation Options Availability**

Do you currently have a..?	Percent	Count
Driver's license	44.00%	11
Transit pass	40.00%	10
My own bicycle	16.00%	4
Car available for use	16.00%	4
Carshare membership (Zip Car, Free2Move, etc.)	0.00%	0
Smartphone	68.00%	17
Reliable internet access	52.00%	13
None of these	0.00%	0
Did not answer	36.00%	9

3

4 **TABLE 2 Age**

How old are you?	Percent	Count
Under 18	0.00%	0
18-24 years old	0.00%	0
25-34 years old	32.00%	8
35-44 years old	16.00%	4
45-54 years old	12.00%	3
55-64 years old	8.00%	2
65+ years old	4.00%	1
Did not answer	28.00%	7

5

6 **TABLE 3 Gender Description**

How do you describe yourself?	Percent	Count
Male	28.00%	7
Female	28.00%	7
Prefer to self-describe	8.00%	2 ¹
Prefer not to say	4.00%	1
Did not answer	32.00%	8

7 ¹ Bigender (1), Goddess (1).

8

9 **TABLE 4 Employment Status**

What best describes your employment status over the last three months?	Percent	Count
Working full-time	8.00%	2
Working part-time	16.00%	4
Unemployed	12.00%	3
A homemaker or stay-at-home parent	16.00%	4
Student	4.00%	1
Retired	4.00%	1
Other	12.00%	3
Did not answer	28.00%	7

10

1 **TABLE 5 Education**

What is the highest level of education you have completed?	Percent	Count
Some high school or less	8.00%	2
High school diploma or GED	20.00%	5
Some college, but no degree	20.00%	5
Associates or technical degree	0.00%	0
Bachelor's degree	12.00%	3
Graduate or professional degree (MA, MS, MBA, PhD, JD, MD, DDS etc.)	0.00%	0
Prefer not to say	12.00%	3
Did not answer	28.00%	7

2
3 **TABLE 6 Ethnicity**

Are you of Spanish, Hispanic, or Latino origin?	Percent	Count
Yes	0.00%	0
No	72.00%	18
Did not answer	28.00%	7

4
5 **TABLE 7 Ethnicity (Cont.)**

Choose one or more races that you consider yourself to be	Percent	Count
White or Caucasian	52.00%	13
Black or African American	8.00%	2
American Indian/Native American or Alaska Native	8.00%	2
Asian	0.00%	0
Native Hawaiian or Other Pacific Islander	0.00%	0
Other	0.00%	0
Prefer not to say	12.00%	3
Did not answer	28.00%	7

6
7 **TABLE 8 Housing Subsidy Status**

Are you receiving a housing subsidy or discount? (Such as Section 8, public housing, or subsidized housing [e.g., paying a set percentage of your income for rent])	Percent	Count
Yes	40.00%	10
No	28.00%	7
Did not answer	32.00%	8

8
9 **TABLE 9 Neighborhood & Housing Tenure**

How long have you lived...	in your current neighborhood	at your current address
Less than one year	3	3
One to five years	8	11
Six to ten years	2	2
More than ten years	4	2

10

1 **TABLE 10 Household Members**

How many people are there in your household?	Number of adults, including yourself	Number of children	Total number of people related to you living in your household not including yourself
0	0	13	12
1	14	2	2
2	3	1	3
3	1	1	0
4	0	1	0
5	0	0	0
6	0	0	1
7	0	0	0
8	0	0	0
9	0	0	0
10	0	0	0
Did not answer	9	9	9

2
3 **TABLE 11 Household Income**

What was your total household income before taxes during the past 12 months?	Percent	Count
Less than \$25,000	48.00%	12
\$25,000-\$49,999	8.00%	2
\$50,000-\$74,999	4.00%	1
\$75,000-\$99,999	0.00%	0
\$100,000-\$149,999	0.00%	0
\$150,000 or more	0.00%	0
Prefer not to say	12.00%	3
Did not answer	28.00%	7

4
5 **TABLE 12 Household Income Comfort**

Which one of the following four statements best describes your ability to get along on your household income?	Percent	Count
I/we can't make ends meet	20.00%	5
I/we have just enough, no more	44.00%	11
I/we have enough, with a little extra sometimes	4.00%	1
I/we always have money left over	0.00%	0
Did not answer	32.00%	8

6
7 **TABLE 13 Familiarity with Program**

How familiar are you with Power to the Pedal, the free shared e-bike program available to residents of your community?	Count
I am signed up for Power to the Pedal, and I use it	11
I am signed up for Power to the Pedal, but I have never used it	2
I have heard of Power to the Pedal, but I am not signed up	3
I have never heard of Power to the Pedal	9

8

In the past week, how did you get around town?	Daily	4-6 times a week	2-3 times a week	Once a week	Never
Drove a personal car	7	0	2	0	15
Got a ride from a friend or family member	1	0	1	10	12
Rideshare	2	0	1	5	16
Carshare	1	0	0	0	23
Public transit	6	1	1	6	10
Walking or wheelchair	7	4	7	1	5
Power to the Pedal	1	1	1	6	15
Personal bicycle	1	0	1	3	19

1 **TABLE 14 Transportation Options Usage & Frequency**

2

3 **TABLE 15 Transportation Options Sentiments**

Do you agree or disagree with the following statements?	Agree	Neutral	Disagree
I am satisfied with my options for getting where I need to go	12	6	6
I can usually get to and from home and where I need to go easily	13	10	1
TriMet does a good job serving people like me	12	10	2

4

5 **TABLE 16 Bicycling Sentiments**

Do you agree or disagree with the following statements about bicycling?	Agree	Neutral	Disagree
Getting more people to ride bikes is good for the environment	16	4	2
Getting more people to ride bikes will help make the community healthier	15	7	0
Tigard should invest in projects (such as bike lanes) that make riding bikes safer and easier	15	5	2
People on bikes make roads less safe for others	2	8	12
Riding a bike is a convenient way for people to get places in Tigard	14	5	3

6

7 **TABLE 17 Bicycling Sentiments (Cont.)**

Whether or not you ride a bicycle, do you agree or disagree with the following statements about bicycling?	Agree	Neutral	Disagree
I am familiar with the bike lanes in my neighborhood	15	6	1
I often see people like me riding bikes in my neighborhood	10	6	6
I would like to ride a bicycle for transportation more than I currently do	13	6	3
There are better ways for me to get around than by biking	8	9	5
Riding a bike would make me more independent in getting around	8	9	5
Riding a bike would help me spend less on transportation	12	8	2
Riding a bike would be a good way for me to get exercise	19	1	2
Riding a bike would be a good way for me to spend time with friends or family	10	7	5
I'm bicycling more now than I did a year ago	6	7	9
I plan to ride a bicycle more often in the next year	14	5	3
There is a bike shop that is convenient for me to go to	4	11	7

8

1 **TABLE 18** **Bicycling Skill Ability**

Do you know how to ride a bike?	Count
Yes	17
No	1
Not well	4

2
3 **TABLE 19** **Physical Bicycling Ability**

Are you physically able to ride a bike?	Count
Yes	19
No	2
Temporarily unable	1

4
5 **TABLE 20** **Last Ridden**

When did you last ride a bike?	Count
In the past 12 months	13
One to five years ago	7
More than five years ago	1
Never	1

6
7 **TABLE 21** **Barriers to Riding**

For each item below, please indicate whether it is something that keeps you from riding a bike (or from biking more)	Does not apply to me	Not a barrier	Small barrier	Big barrier
I don't have a bike or related gear (helmet/lock/lights)	7	9	4	2
It is too expensive to buy a bike or related gear	3	3	6	10
I don't know a good place for me to get a bike fixed	7	6	6	3
I don't have a safe place to store a bike at home	7	7	4	4
There might not be a safe place to leave a bike at the places I go	3	4	8	7
The places that I need to go are too far away to reach on a bike	4	7	2	9
I don't know how to get where I need to go by bike	7	8	5	2
Traffic makes riding a bike in my neighborhood feel dangerous	4	5	6	7
My bike is not good for riding around the city	9	9	2	2
I am too old to ride a bike	10	8	1	3
I am too out of shape to ride a bike	5	7	6	4
Biking might aggravate my personal health issues	8	7	5	2
Carrying things on a bike is too difficult	4	3	9	6
Riding a bike with my kids is a hassle	12	4	4	2
Something could go wrong with the bike (such as a flat tire)	6	5	9	2
My friends and family wouldn't want me to ride a bike	13	6	1	2
Riding a bike is not viewed as a cool activity by my friends	14	6	2	0
People might think that I can't afford a car	13	6	2	1
Riding a bike could make me a target for police attention	10	7	2	3
Riding a bike could cause me to be harassed or a victim of crime	8	5	5	4
Riding a bike could mess my up hair or appearance	10	8	3	1
The clothes I wear are not appropriate for biking	9	9	3	1
Riding a bike could make me sweaty	7	8	7	0

8

1 **TABLE 22 Program Knowledge**

How much would you say you know about Power to the Pedal?	Count
Know nothing about it	5
Know some things about it	8
Know quite a bit about it	3
Know a lot about it	4

2
3 **TABLE 23 Program Information Source**

Where have you gotten information about Power to the Pedal?	Count
Have not heard anything about it before	3
At a bike share station or room	2
Talked to someone at an event	2
Saw a flier in my community	0
Got something in the mail or on my door	6
Talked to someone from Westside Transportation Alliance	1
Talked to someone from City of Tigard	0
Talked to someone from Community Partners for Affordable Housing (CPAH)	1
Talked to someone from IPM (property management)	2
News	0
On the internet	0
Friends or family	0

4
5 **TABLE 24 Program Information Source (Free Response)**

Please explain specifically where and how you first learned about Power to the Pedal
Flyers in my apartment lobby and on my door about free use of bikes.
Flyer on board at apt building
I learned about power to the pedal at the beginning of the program they did an event at my apartments Red Rock Creek Commons.
I live at Red Rock Creek Commons and some gentleman came and I signed up for it and I rode around on the bike in the parking lot and then they got on my phone and they put in my information so I could ride the bike it's an IPM thing that that they set up for us I really like it it's just that my health because I have a hip problem makes it hard for me to ride the bike right now
That it's for the community— like community type of free bikes for people like us to use
Someone put a flyer on my door it's hard not to notice that
The program was brought to Red Rock Creek Commons
When they cam to my apartments and talked about thwm .redrock creek commons
From this survey flier left on my apartment door.
Idk
They are in my apartments
Greenburg apartments
The business donated them to our apartment complex
A saw a flyer for it posted on my door but I didn't really read it.
It's a motor bike like you don't have to use your legs to pedal it's automatic vehicle that can transfer u to places
Door flyer at red rock Creek Commons
At Red Rock Creek Commons

Found it in the apartment and use it to go to and from work

1

2 TABLE 25 Program Engagement

Tell us a little more about Power to the Pedal and you	Yes	Not sure	No
Have you noticed a Power to the Pedal station in your community?	12	3	5
Have you ridden a Power to the Pedal bike?	9	2	9
Are you currently signed up for Power to the Pedal?	11	3	6
Have any of your friends or family used Power to the Pedal?	7	5	8
Have you ever talked to someone who works with Power to the Pedal?	9	3	8
Have you attended any events related to Power to the Pedal?	9	2	9
Do you expect that you will be signed up to ride with Power to the Pedal 12 months from now?	9	9	2

3

4 TABLE 26 Program Engagement (Cont.)

In the next 6 months, how likely are you to...	Likely	Not sure	Unlikely
Seek more information about using Power to the Pedal?	6	9	5
Tell someone you know about Power to the Pedal?	10	6	4
Ride a Power to the Pedal bike?	11	6	3

5

6 TABLE 27 Program Knowledge Assessment

Please rate each statement from false to true:	True	Not sure	False
Power to the Pedal is completely free to use	15	1	4
Only residents of Red Rock Creek Commons and Greenburg Oaks Apartments can ride a Power to the Pedal bike	9	9	2
A helmet is required to ride a Power to the Pedal bike	8	10	2
You have to have a smartphone to ride a Power to the Pedal bike	8	10	2
You have to return the bike to the same station you check it out from	9	10	1
You must be 18 years old or older to ride a Power to the Pedal bike	6	13	1

7

8 TABLE 28 Program Sentiments

Whether or not you have used bike share, please indicate if you agree or disagree with each statement	Agree	Not sure	Disagree
Power to the Pedal is useful for people like me	14	3	3
I would like to use Power to the Pedal more than I currently do	11	6	3
Power to the Pedal will attract new residents to my community	4	15	1
Power to the Pedal will make it more expensive to live in my community	3	7	10
Using Power to the Pedal is a good way to spend less money on transportation	17	3	0
Using Power to the Pedal is a good alternative to using public transportation	17	3	0
Power to the Pedal is a good way to get to public transportation	14	4	2
I see people like me using Power to the Pedal	13	6	1
I consider Power to the Pedal to be part of the city's public transportation system	10	6	4
Concerns of people like me were addresses in decisions about Power to the Pedal in my community	6	13	1

9

1 **TABLE 29 Free Response**

Is there anything else you would like to add or explain?
Nothing
I appreciate the fact that somebody came to Red Rock Creek Commons and taught us how to ride the bike and gave us helmets and bottles for water and they always come here and check on the bikes to make sure that they're okay thank you so much for inviting us to use these bikes
I'm deaf therefore I don't really use bike transportation much for that very reason
Considering that i am a single mother it makes it impossible to go anywhere with my child, on the power to the pedal bike. If there was a way to take my child with me it would be more convenient to use the system. I've noticed people in this complex have more than 1 child and it would be more complicated to take more than 1 child along, considering there isn't asinglto take a single child in the first place.
Single mom with kids wot disability
No
Idk if this goes in this box or a later one. Riding a bike in Tigard to run errands is like advanced mode. This is NOT an area friendly to beginners. It's really not safe to take the highway, but sometimes it's the only way to get through. I used to do sandwich delivery by bicycle for 2.5 years and I am extremely comfortable with wearing a safety vest and a neon bike helmet and using bungees on the rack to carry things.

2