

**PRESCRIBE
A BIKE PDX**



PILOT REPORT

2021-2024



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Introduction

Summary

In 2021, the Portland Bureau of Transportation (PBOT) launched the “Prescribe a Bike PDX” pilot program to address major public health concerns—such as heart disease, hypertension, and diabetes—by promoting cycling. The program provided a free one-year membership to BIKETOWN, Portland’s fully electric bike-share system, which offers e-bikes for urban transportation through the BIKETOWN or Lyft app. This initiative was a collaboration between PBOT and the Multnomah County Health Department’s Racial and Ethnic Approaches to Community Health (REACH) program, supported by a three-year Living Lab grant from People for Bikes/Better Bike Share Partnership.

Because Multnomah County operates several health clinics within the BIKETOWN service area, PBOT partnered with these trusted medical facilities to “prescribe” e-bike memberships to patients. Launched during the height of the COVID-19 pandemic, the program faced significant implementation challenges that affected its rollout, outreach, and daily operations. Clinic staff had to shift priorities during the first year, limiting early engagement. In response, PBOT adapted by working directly with patients and expanding enrollment through county student health partners to include high school students aged 16 and older.

Participants received free BIKETOWN memberships, biking and bike-share education, helmet access, and opportunities to increase physical activity and social connection. The program was grounded in the understanding that transportation and public health are

closely linked. Reliable transportation enables access to employment, housing, healthcare, and recreation, while active modes like cycling also promote physical health.

The pilot had two primary goals. First, it aimed to distribute free annual BIKETOWN memberships to individuals in communities with high rates of chronic disease and encourage cycling as an accessible form of transportation and exercise. PBOT and REACH collaborated with clinic leaders and community health workers to ensure participants had the knowledge and resources needed to use the service effectively. Second, the program sought to evaluate its effectiveness and develop recommendations for future improvements.

Throughout implementation, the team encountered challenges typical of cross-sector initiatives connecting public health and transportation agencies. These included pandemic-related disruptions, data collection and sharing concerns, limited staffing capacity at PBOT and the Health Department, complex enrollment steps, recruitment and communication barriers, and leadership transitions.

Based on these experiences, the team developed recommendations to guide future efforts in Portland and other cities seeking to replicate the model. Key suggestions include dedicating program staff, cultivating strong partnerships and champions, using varied communication methods, improving and connecting data collection systems, ensuring accessibility, simplifying processes, planning for financial barriers, building on local culture, creating an online education portal, and maintaining flexibility to adapt to changing conditions.





**The
Need**

The Need

Recognizing the critical role of transportation in shaping health outcomes, the State of Oregon, Multnomah County, and the Portland Bureau of Transportation have prioritized equitable access to mobility in their health improvement plans and consistently highlight the need to address transportation barriers. Portland's increased commitment to health equity began in the 1990s with the public health department's recognition of disparities among marginalized communities, leading to the Multnomah County Health Equity Initiative in 2004 and the adoption of the Culturally Competent Care Standard by local hospitals in 2006, which ensures that healthcare providers receive training in cultural competence to improve access and quality of care for diverse populations. From 2016 through 2022, Oregon State and Multnomah County Health Improvement Plans implemented by the Oregon Health Authority Equity Alliance (OHEA) and the Healthy Columbia Willamette Collaborative The 2020-2024 Oregon State Health Improvement Plan and the Multnomah County Community Health Improvement Plans for 2016 and 2022 all identified transportation as a priority area in addressing social determinants of health within the Portland Metro Area.^{1 2}

The 2016 Oregon Health Equity Alliance (OHEA) Multnomah County Community Health Improvement Plan identified one key area as "elevating interconnected systems and issues related to food, transportation, education, and jobs", with a high-level goal established to "provide equitable transportation access for all community members".

During the 2022 Community Health Assessment process, community members reported that "access to transportation,

including both motor and non-motor transportation options, presents a day-to-day challenge." Participants shared that they lacked transportation options, including opportunities to walk or bike, due to pedestrian and neighborhood safety concerns. (HCWC CHNA Community Engagement Survey). Forty-five percent (45%) of the Multnomah County participants reported needing better access to non-emergency transport for medical care, with people living with a disability as well as older adults experiencing the highest level of need.

Economic drivers of health include housing, a living wage, food security, and transportation. Multnomah County, located in the NW corner of Oregon, is home to the state's largest and fourth largest cities, Portland and Gresham. At the time of program launch, it was the state's most populous (815,428 residents) and diverse (28% persons of color) county; 57,337 residents were Black/African American (AA).³ This number includes the sizable local African immigrant/refugee (I/R) community: up to one-third of refugees resettled in Oregon each year originate from African countries, and the local Black/AA and African immigrant and refugee communities face life-course health inequities from infancy through death.⁴ Chronic disease morbidity and mortality are driving forces of these disparities.

Regular cycling can improve cardiovascular health, muscle strength, lung function, flexibility, and joint mobility while reducing the risk of chronic conditions like heart disease, type two diabetes, osteoporosis, and certain cancers.^{5 6} Outdoor cycling has been shown to positively impact mental well-being and lower stress levels.⁷ As a low-impact exercise, it is ideal for individuals with joint problems or injuries. Research indicates that cycling can also yield beneficial outcomes for community connectedness and social cohesion.





THE HISTORY OF PRESCRIBE A BIKE PROGRAMS

The history and successes of other prescription bike share programs across the United States helped lay the groundwork for the launch of Prescribe a Bike PDX, including programs in Boston and New York City. In 2014, Boston Bikes collaborated with Boston Medical for a one-year pilot to introduce an equity program named 'Prescribe a Bike'. This initiative encourages preventive healthcare by providing subsidized, \$5 annual Hubway vouchers to patients residing on public assistance or earning less than four times the federal poverty level. In Boston, these subsidized memberships extended the reach of bike-share to residents of neighborhoods with higher health and socioeconomic risk. Between 2013-2015, 27 BMC providers completed 72 referrals to RxBike, and 7.17% of trips analyzed during the program period were completed by subsidized members.⁸ A survey of primary care providers (PCPs) referring patients to RXBike found that some chose not to refer patients to the program, highlighting the need for an integrated provider education and outreach method within the healthcare referral model to increase community impact.

In New York City, the NYC Department of Health and Mental Hygiene allocated New York State funding through the Center for Health Equity for the initiation of a Prescribe a Bike program in 2016. This pilot initiative, implemented at Woodhull and Interfaith Hospitals in Central Brooklyn, involved healthcare professionals "prescribing" Citi Bike memberships to patients with chronic conditions, including hypertension and diabetes. Out of the 90 participants that enrolled in the program between August 2016 and October 2017, 72% rode Citi Bike at least once as a participant, and cumulatively participants took 4,097 bike

share rides, with 13% riding 30 minutes or more per week over their 12-month membership.⁹ Program participants reported better mood, weight loss, increased energy and endurance, and better sleep. The program manager from the New York program noted that the one-year pilot in New York City required more time to develop sustainable relationships and programming.

When awarded the Living Labs Grant in 2021, Prescribe a Bike PDX aimed to address these learnings from Boston and Brooklyn by extending the time needed to program and funding for staff for a three-year pilot and the program was led by the same program coordinator from the pilot program in Brooklyn.



The Intervention

The Intervention

The Prescribe a Bike PDX pilot program aimed to connect transportation to physical and mental health in the form of an annual membership for e-bike share access. The program coordinator described it as “physical activity as medicine, with bike share as the prescription.”

PAB PDX was grant-funded from the Better Bike Share Living Lab program and piloted for the Portland Bureau of Transportation (PBOT). Using the citywide BIKETOWN e-bike share system, the program sought to harness the powers of this physical activity to combat some of the leading causes of death and health inequity, including heart disease, hypertension, and diabetes in the Portland Metro Area, in addition to promoting community connectedness. Prescribe a Bike PDX was envisioned as a partnership between PBOT and the Multnomah County Health Centers and highlighting the Centers for Disease Control’s grant-funded program - Racial and Ethnic Approaches to Community Health (REACH). Multnomah County Health administers several health clinics in the BIKETOWN service area. PBOT worked with our trusted partners at Multnomah Health Health Centers and their providers to “prescribe” BIKETOWN memberships to clients to increase physical activity.

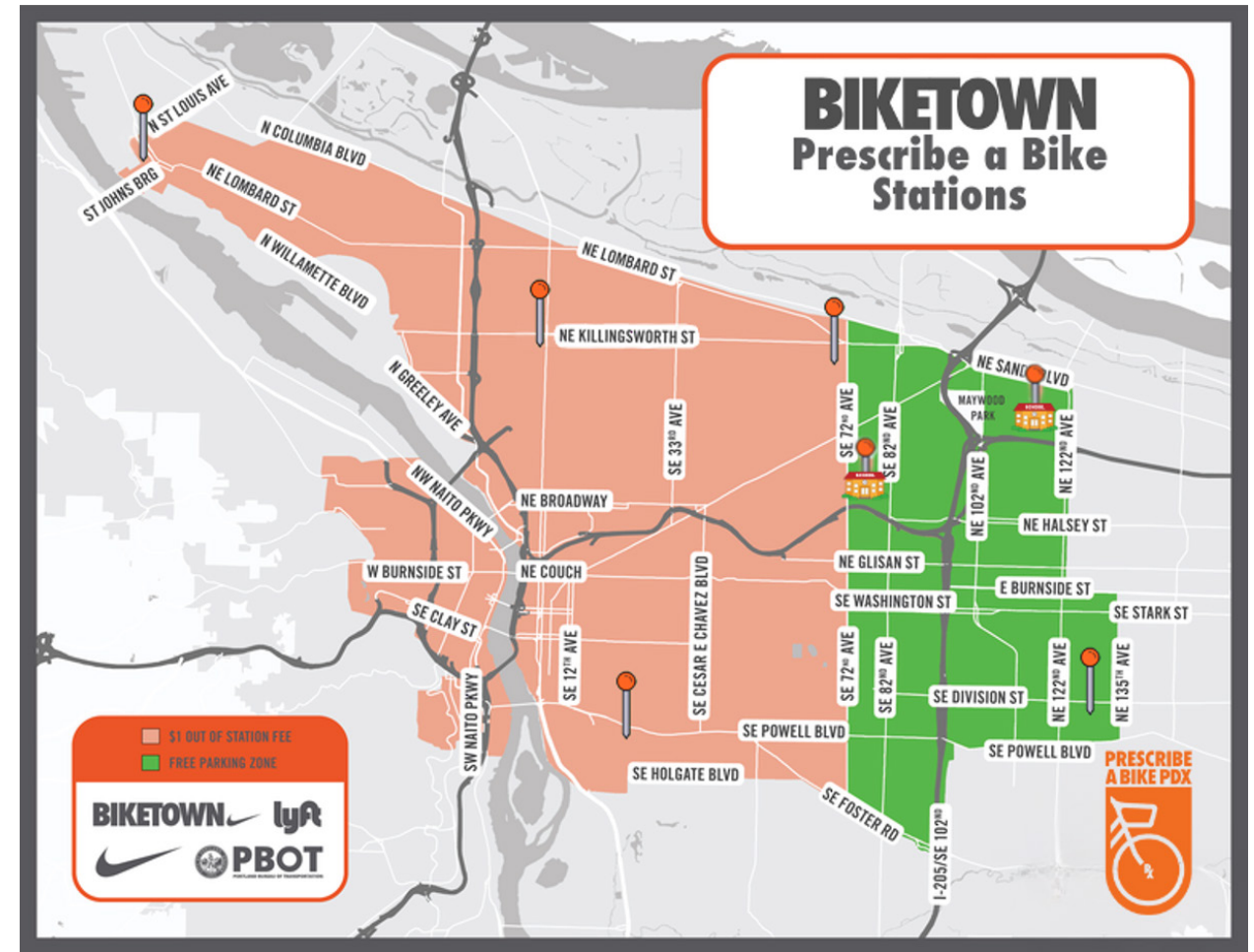
The pilot locations of Prescribe a Bike PDX were Multnomah County federally qualified health centers, located in areas impacted by gentrification and underinvestment. Patients of these two clinics are Medicaid recipients and qualify for the BIKETOWN for All - low-income program. Through our existing efforts in growing the BIKETOWN for All program, PBOT identified the following barriers

that center around access to bike share experienced by Black, Indigenous, People of Color and immigrant communities living on low incomes that will be further addressed as we work to be more inclusive:

- Difficulty establishing credit/banking to sign up for memberships
- Distance from city resources/outside of the bike share system area due to displacement and gentrification
- Lack of trust in government programs
- Language barriers
- Lack of access to mobile devices and/or connectivity needed to unlock bikes.

The first year of Prescribe a Bike PDX launched at two Multnomah County Health Centers: Northeast Health Center PDX and La Clinica de Buena Salud, expanding to the North Portland Health Center in the program’s second year, and then Southeast Health Center and Mid-County Health Center locations in the third year.

In 2021, at the launch of the program, PBOT was able to connect directly with patients at these clinics and enroll new members in free BIKETOWN memberships, provide educational sessions regarding bike safety and skills, and facilitate group rides. Over the three years of the pilot program (2021-2024), the program expanded to engage local high school students. PBOT worked with REACH and participating high school program partners to provide free BIKETOWN memberships, education, and support around biking and bike share. Through surveys and ride data, PBOT sought to assess participation and physical activity.



The Prescribe a Bike PDX Prescription included:

- A free annual BIKETOWN membership that included unlimited 60-minute rides using a bike share e-bike for exercise time and currently
- A prepaid card loaded with \$10-\$20 to help decrease the barrier of sign-up related to being unbanked/underbanked
- Orientation to BIKETOWN, including e-bike safety class and helmet access
- Seasonal Prescribe a Bike PDX rides and connections to existing BIPOC-led ride groups
- Marketing, education, and materials including BIKETOWN incentives for reaching health targets



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PHYSICAL AND MENTAL HEALTH CONNECTION

Prescribe a Bike PDX connected e-bike access through Portland's bike-share program with the aim to contribute meaningfully to overall physical fitness while also supporting mental well-being through regular outdoor activity. We have learned that e-bikes are often seen as a convenient alternative to traditional cycling, but research shows they can also offer substantial physical and mental health benefits. According to a 2021 study, riding e-bikes can indeed be considered a form of cardiovascular exercise.¹⁰ Researchers who compared the physiological effects of e-bikes and traditional road bikes during a simulated commute found that e-bike

riders experienced sufficiently increased breathing and heart rates to qualify as a significant workout. Similarly, a 2017 study found that e-bikes deliver moderate physical activity on flat and downhill terrain, and vigorous physical activity on uphill terrain.¹¹ Patients of Multnomah County Health Centers and high school students were connected to BIKETOWN for All through targeted outreach, sign-up support and opportunities to gain comfort in utilizing the e-bike program.

SOCIAL CONNECTION

Social connectivity plays a vital role in promoting overall well-being and longevity, as evidenced by research demonstrating its positive impact on preventing serious illnesses including

stroke and heart disease and enhancing mental and physical health outcomes.¹² Research consistently demonstrates that individuals with strong social connections tend to have better health outcomes and longer lifespans compared to those with weaker social connections. This pilot highlights the importance of prioritizing social connection and building strong relationships for overall health and well-being.

Cycling activities are a promising intervention to promote social cohesion. For instance, one study from the Cycling Connecting Communities project in Sydney, Australia revealed that cycling has the potential to enhance awareness of local businesses and events, fostering social interactions and a sense of community among residents.¹³ Moreover, cycling facilitates connections between individuals from diverse neighborhoods, promoting cultural exchange. A meta-analytic review of social relationships found that strong social connections increase the likelihood of survival by 50%.¹⁴ CDC indicates that strong social connections lead to the development of healthy habits, improved mental health, and reduced risk of depression, anxiety, and various serious illnesses.¹⁵

Prescribe a Bike PDX promoted social connectedness through numerous community cycling opportunities and free access to BIKETOWN for participants, centering on the pivotal role that relationships and a sense of social cohesion play in individual and community health outcomes. In Year 1, there were a series of official Prescribe a Bike PDX group rides, partner rides with Community Cycling Center's Andando en Bicicletas y Caminando (ABC) program as well as rides hosted for the photovoice evaluation

activity by We All Rise consultant group. In Year 2, social connectedness was promoted in expanded high school outreach including group rides, Portland Sunday Parkways events, and additional group and partner rides. Moving into year 3, the program continued to grow as riders from previous years continued their memberships and participated in group rides, connecting with new participants. The program's presence in the community also grew through presentations within Portland and to other cities, monthly group rides with the Diabetes Prevention Program's Men's Health group, Adaptive BIKETOWN, Transportation Academy, Sunday Parkways, the Street Trust and Community Cycling Center. The Prescribe a Bike team not only partnered with community organizers, but ensured their time was compensated for, providing more accountability and reliability in our activities. Outside of community partnerships, the outreach team aimed to have a table or group ride presence at many PBOT and Multnomah County REACH events.

TRANSPORTATION EQUITY CONNECTION

The intersection of transportation equity and community health is critical, as access to safe and reliable transportation options can significantly impact residents' ability to access healthcare services, healthy food options, and recreational spaces. In communities with limited public transportation options or the lack of bike and pedestrian infrastructure, residents face barriers to accessing essential health resources, leading to health disparities.¹⁶ Moreover, transportation options impact air quality and physical activity levels, further influencing community health outcomes.¹⁷ Ensuring equitable

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transportation options that prioritize the needs of marginalized communities addresses health disparities and promotes community well-being.

With a focus on fulfilling its mission to shape a liveable city, PBOT has recently worked to articulate and institutionalize a commitment to transportation justice and creating the reality of “access-for-all” for its residents. These steps towards bike share equity include the growth of partnerships, like with Multnomah County - REACH, who recognize racism as a public health threat, holding a deep understanding of barriers to access services and how to address them.

The pilot program was designed to build upon existing transit options and improve transportation equity in the Portland metro area. Equity in transportation and public health is crucial as it ensures everyone has access to healthy and safe transportation options, regardless of race, income, age, or ability. This includes affordable and accessible transportation, pedestrian-friendly infrastructure, and addressing systemic barriers. It requires considering diverse perspectives and

addressing structural inequalities to create more just and equitable systems that benefit all individuals and communities.

Prescribe a Bike PDX addressed the following transportation equity issues:

- Income and affordability: Limited access to affordable transportation options for low-income individuals.
- Racial and ethnic disparities: Historically marginalized communities facing transportation infrastructure and service disparities.
- Age and disability: Inadequate accessible transportation options for seniors and individuals with disabilities.
- Geographic location: Rural areas with limited public transportation services.
- Language barriers: Limited access to transportation information and services for non-English speakers.
- Gender and safety: Safety concerns for women and non-binary individuals using transportation, especially at night.

Addressing these barriers requires a comprehensive approach considering affordability, accessibility, and inclusivity in transportation systems.





The Landscape

Landscape

Bike share programs in the emerging and ever-changing shared micromobility environment have increased cycling access across the world. According to a 2023 National Association of City Transportation Officials NACTO report, bike share programs have seen a 20% increase in ridership over the past three years, with over 100 cities in North America now offering bike share systems for riders.¹⁸ Many bike share systems across the world have implemented electric bikes into their fleets due to the surge of popularity in recent years. This popularity is partly due to being less physically demanding than traditional bikes and conducive to riding longer distances for individuals across a range of physical activity levels. Research at Portland State University found that electric bicycles (e-bikes) encourage new people to ride while increasing the frequency of rides for regular riders.¹⁹ Many respondents from the same survey reported feeling safer riding e-bikes compared to traditional bicycles. One 2020 study in Norway found that people who buy an e-bike have more than a twofold increase in bike use for daily travel.²⁰

While limited studies of the health impact of bikeshare have been conducted, a 2015-2018 study of bike share users in Philadelphia found that the bike share program contributed to an increase in cycling, a modest rise in moderate-to-vigorous physical activity (MVPA) other than walking, and demonstrated potential for engaging previously inactive adults.²¹

The cost of purchasing an e-bike for individual use has proven still prohibitive to many individuals, but the rise of e-bike bike share programs and e-bike

incentive programs aims to make e-bikes more accessible to all. Additionally, as cities invest in bike infrastructure and technology, the trend towards bike share use is expected to further accelerate, promoting healthier and more sustainable urban environments.^{22 23 24} As cities invest in bike infrastructure and technology, the trend towards bike share use is expected to further accelerate, promoting healthier and more sustainable urban environments.^{25 26 27}

MICROMOBILITY LANDSCAPE OF PORTLAND

At the start of the Prescribe a Bike PDX pilot, the micromobility landscape in Portland consisted of various transportation modes like e-scooters and e-bikes. In 2022, Portland saw a record number of micromobility trips, mostly from the City of Portland's BIKETOWN and e-scooter programs. Oregon has since implemented several policies and initiatives promoting micromobility adoption, including:

- Portland's E-Bike Incentive program, including rebates and subsidies for residents to purchase e-bikes (ref)
- Oregon's Statewide Micromobility Strategy (ref)
- Infrastructure investments in dedicated and protected bike lanes and bike parking, improved street signage, and bike share stations
- Regulations of e-scooters designed to promote safe use (ref)
- Partnerships with micromobility providers in urban areas
- Integration with public transit systems
- Safe Route to School educational campaigns
- Station siting for BIKETOWN accessible stations across the service area



Within Portland, the bike network includes a collection of bike lanes, protected bike lanes, gravel streets, neighborhood greenways, low-stress residential streets, and off-street trails. The connectivity and BIKETOWN service area allows Portland residents an easy connection to schools, work centers, health care, and shopping within a 20-minute bike trip. The accessibility provided by the BIKETOWN service area enhances transportation options and encourages physical activity as part of daily routines, helping residents incorporate exercise into their lifestyle and gain physical and mental health benefits.

PORTLAND'S BIKE SHARE PROGRAM

Through the BIKETOWN bike share program, PBOT aims to increase access to biking for all Portlanders. PBOT launched BIKETOWN in July 2016 with 1,000 bikes and Nike as the title sponsor and the system expanded in July 2020 with City Council approval of a five-year extension

of the Nike title sponsorship agreement as well as a new five-year operating agreement with Lyft Bikes and Scooters. This provided the financial and operational support needed to add e-bikes and service to East Portland. In September 2021, BIKETOWN rebooted the conventional bike system with 1,500 electric pedal-assist bicycles and new stations in areas without prior access and historic disinvestment, and lowered the minimum age to 16 years. More service area expansions and fleet increases have happened since - there are more than 3000 e-bikes now - and for the next several years the program is continuing to expand to serve more of Portland, including many of our underrepresented communities. PBOT has designated staff time to ensure that programs work collaboratively to maximize budget opportunities and achieve Portland's climate and racial equity goals. Community outreach and engagement for BIKETOWN is managed by PBOT and has been informed through the standards of the City of Portland's Equity Toolkit from



the Bureau of Planning and Sustainability (BPS), as well as the lens of Racial Equity-Centered Results-Based Accountability and NABSA's Diversity, Equity, Inclusion, and Belonging Toolkit.^{28 29}

Portland, Oregon has the largest percentage of equity riders in the micromobility landscape utilizing BIKETOWN for All, which provides reduced-cost memberships for Portland's bike share system. Equity riders include individuals living on low incomes, eligible through a connection to social programs and high school students 16 and older.³⁰ In 2022, in the second year of the pilot, overall equity riders comprised 35.75% of all trips in Portland.³¹ From the last BIKETOWN Snapshot in 2024, equity ridership went up to 53% of all trips in Portland, the highest seen from bike share systems to date³², showcasing the impact of investment in BIKETOWN for All programming like Prescribe a Bike PDX.

THE PARTNERSHIPS

BIKETOWN is the Portland Bureau of Transportation's (PBOT) bike-share system operated by Lyft and sponsored by NIKE, Inc.

Lyft

In July 2020, The Portland City Council authorized PBOT to enter into a five-year operating agreement with Lyft Bikes and Scooters. This partnership enabled BIKETOWN to streamline bike share operations and expand BIKETOWN stations, increasing access to the system.

Nike

As the title sponsor, Nike's support was pivotal to the launch of BIKETOWN in July 2016 with 1,000 bikes. In 2020, PBOT's five-year sponsorship extension with Nike facilitated the system's expansion, enhancing biking accessibility throughout

the city. Nike funds the operations of BIKETOWN, including the support of BIKETOWN for All that supports Prescribe a Bike PDX.

Prescribe a Bike PDX Partnerships included a combination of Multnomah County Health, community contracts, and Portland's bike-share program.

Multnomah County REACH

In 2014, Multnomah County was awarded a three-year, \$3 million CDC REACH grant from the Centers for Disease Control and Prevention to address health concerns within the county's African-American/Black communities. The Prescribe a Bike PDX program partnered with Multnomah County REACH to meet the unmet needs of the local population and to best collaborate with trusted partner clinics.

The Racial and Ethnic Approaches to Community Health (REACH) program, in partnership with the ACHIEVE Coalition and its multisectoral collaborators, implements primary strategies centered on Nutrition, Community Clinical Linkage, and Physical Activity/Build Environment, alongside cross-cutting approaches in Communications and Economic Development. Through strategies like Nutrition, Community Clinical Linkage, and Physical Activity/Build Environment, along with approaches in Communications and Economic Development, REACH aims to reduce chronic disease burden and disparities across all age groups. The REACH program encourages physical activity by improving infrastructure and supporting national health campaigns. Today, Portland addresses health equity through initiatives like the Portland Health Equity Action Plan (PHEAP), launched in 2020. PHEAP focuses on addressing systemic barriers and structural inequalities that contribute to health



disparities. The city also partners with community organizations to advance health equity, including programs promoting healthy food access, physical activity, and mental health support.

Multnomah County's Community Health Centers

Clinic leads from Multnomah County's Community Health Centers from Northeast, North, La Clinica de Buena Salud, Mid-county, and Southeast championed Prescribe a Bike in the clinic setting. During the pandemic, they communicated their needs around staffing support for a program outside of

pandemic-related needs, and the Prescribe a Bike PDX team was able to adjust and accommodate in order to reach patients.

Community Contracts

The Prescribe a Bike PDX program team was conscious and intentional with their support of community contracts. They worked to contract with LGBTQIA+/women/BIPOC identified consultants, including every Project Manager year-to-year, We All Rise, Defensive Drivers Institute, Community Cycling Center/ Andando en Bicicleta y Caminando, and the Street Trust for recruitment and ride support.





The Process and Numbers

The Process and Numbers

Over the course of three years of the program, 287 participants enrolled. Total enrollments by year and outreach location are detailed in Figure A. In the second and third years of the program, program staff shifted outreach activities to community enrollment events and high schools, with ongoing partnership and communications with the clinics about how to refer potential participants to enrollment events. A total of 139 youth participants (<18 years old) joined, including many who heard about the program through targeted high school outreach activities at McDaniel High School and Parkrose High school. Out of those 139 youth participants 22 joined in Year 1, 56 joined in Year 2, and 61 joined in Year 3. The outreach strategy focused extensively on high school outreach in the second and third year of the pilot due to efficacy and the lower enrollment rate at clinic sites, although Multnomah County clinics continued to engage with the program and refer new participants for enrollment.

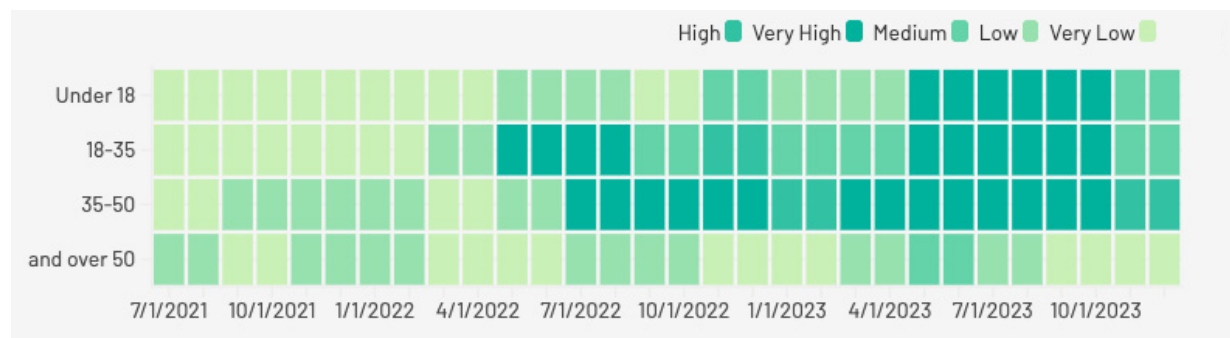


RIDERSHIP FINDINGS

The evaluation team analyzed ridership data provided by Lyft spanning the three years. Participants rode 20,504 total miles and 189,548 minutes, with ridership data analyzed alongside demographic information and participant survey responses.

YEAR 1

To better understand our participants and their ridership behaviors, the Prescribe a Bike team worked with partners at Lyft to obtain ridership data for participants in the program's first year. To ensure we captured all rides, Lyft set the start date at June 1, 2021 and end date for Year 1 at December 31, 2021. During that time period, Prescribe A Bike participants rode a total of 745 times, 1311 miles and 16183 minutes. Participants over the age of 35 accounted for the vast majority of total rides; at 563 rides, those over 35 took 75% of all rides during Year 1. However, this group only accounted for about 68% of total miles and total minutes ridden, indicating that the younger groups are taking longer rides in terms of both distance and time.



Preparation: To inform the process for collecting data and outreach, the Prescribe a Bike team from PBOT worked with Multnomah County Health REACH program staff, clinic staff, centralized communications, and evaluators from the Program Design and Evaluation Services. The initial goals for evaluation included collecting clinical health data as well as self-reported pre- and post- survey data.

Outreach in Year 1 leveraged partnership with the clinic staff at Multnomah County Health Clinics at NE Health Center and La Clinica de Buena Salud. Clinic staff utilized marketing materials and filled out an interest form with patients interested in joining the program. Program staff tabled at the clinics, with not much success. Patients were focused on the pandemic and getting in and out of the healthcare setting. There was a need to pivot.

Marketing materials included a two-page brochure, FAQ, one-pager, group ride and event flyers, and clinic screen ads in English and Spanish. A participant welcome packet was developed in addition to the BIKETOWN and safety orientation for participants, which was provided with bike maps and other PBOT materials. Participants were provided with helmets. The evaluation included key informant interviews from program staff across PBOT and Multnomah County, ridership data, PhotoVoice ride activities, and participant pre-surveys and post-surveys at enrollment and after one year. It aimed to assess the impact on physical and mental health, exercise, well-being, and analyze participants' program satisfaction and feedback.

As part of a robust evaluation process, the program evaluation sought to collect the following:

- Number of participants signed up (goal to sign up at least 225 people with prescriptions)
- Participant Outreach
- Ridership data from BIKETOWN (data provided by Lyft).
- Participant Survey: Pre and Post Survey (knowledge, skills, attitudes)
- Self-reported mood/mental health
- Self-reported activity levels (i.e., increase physical activity, increase awareness about the health benefits of biking, sustained positive health behavior)
- Self-reported confidence levels - riding a bike, navigating Portland, feeling safe in the right-of-way
- Demographic information from participants
- Health Indicators (REACH Program support will allow for this)

Surveys were administered primarily through SurveyMonkey, with paper survey versions utilized as needed. While the expectation was to continue collecting these measures for the evaluation, the lack of access to clinical health data originally anticipated, led to the removal of most health-related questions in years 2 and 3 of the program. Despite this shift, the responses to health questions collected from year one provide an interesting snapshot of that moment in time for participants in 2021.

The Year 1 pre-survey was composed of 19 questions that asked participants about four broad topics:

- **Overall health**, including nutrition, tobacco use, mood, stress levels, and sleeping habits/fatigue
- **Physical activity**, including daily amount of physical activity, different modes of physical activity, and favorite way to be active



- **Cycling**, including riding frequency, bike ownership, and comfort level of riding in Portland
- **Community connection**, including where participants find community and level of connection participants feel to their communities

Several of the key interviews mentioned successes around developing champions and recruitment including

- BIKETOWN swag (free incentives) caught the attention of patients and got them interested in the program.
- Presentations at community meetings and REACH groups (such as Achievement Coalition) were appreciated by REACH team members.
- Prescribe a Bike program, staff and clinic staff felt tabling as a recruitment strategy went well.
- Tabling at clinics strengthened partnerships between program staff and clinic staff.

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The original evaluation plan included gathering clinical data for participants through the partnering health clinics, including health indicators such as blood pressure and A1C (a blood test that measures your average blood sugar (glucose) level). We found that collecting clinical data was not possible due to the lack of a uniform medical system across the partnering clinics and holes in data collection which made it difficult to create a method during the pilot period. Due to this, the pre-survey and post-survey responses could not be compared to participant health data. Despite the health data sharing challenge, the survey responses and qualitative components of the evaluation plan do provide valuable information about participants and their perceptions of the program. These insights can be utilized to improve the program

and inform other transportation equity initiatives.

To inform the process evaluation, the program evaluator conducted key informant interviews with eight members of the Prescribe a Bike team, including staff from partnering health clinics, Prescribe a Bike program staff and staff from REACH program. The evaluator analyzed the transcripts for common themes including: goal of Prescribe a Bike program, Year 1 challenges, Year 1 successes, and recommendations for Year 2.

Qualitative information obtained from the PhotoVoice activities informed outreach and participant engagement strategies in Year 2 and Year 3. Participants reflected on safety concerns and areas of the city they liked riding and did not feel comfortable riding, prompting the development of a process to site stations at all partner sites, and highlighted successes in the program pilot thus far.

YEAR 2

To adapt to low recruitment yield at the clinics and focus outreach efforts, the Prescribe a Bike team shifted to focus on in-person recruiting of participants at McDaniel High School through a Multnomah County Student Health connection and champion. The team held pop-up sign-up events after school and during lunch periods. We worked with teacher champions to connect students to focus our transportation, e-bike safety education efforts. Sign-up posters placed at the Multnomah County Health Clinics from Year 1 continued to serve as a recruitment tool in Year 2. Collecting data between the Clinics and the partnering high schools.

The interest form was combined with the pre-survey in Year 2 to address participant feedback about the lengthy enrollment process. Surveys were administered through SurveyMonkey using mobile phones, tablets, and the SlickText platform, and paper surveys were discontinued.

In the second year, Prescribe A Bike participants rode a total of 4,393 times, 8046 miles, and 84,822 minutes, with 59 participants riding actively.

YEAR 3

Outreach in year 3 continued to focus on high school participants from the schools engaged in years 1 and 2 - McDaniel HS and Parkrose HS. Participant recruitment also expanded to the Multnomah County Mid-County and Southeast Health Centers. We continued our weekly check-ins with our clinic partners and REACH staff to ensure that the program was continuing in the health care spaces where there was staff support. A Men's Health group from the REACH Diabetes Prevention program emerged at the end of the pilot period that commuted on a monthly basis to engage in physical activity. This group would do various activities throughout the year and expressed interest in going on bike rides. This group has since been going on monthly group rides through the three out of four seasons to date.

To improve onboarding, sign-up, and educational components of the program, an online learning module system (LMS) was created, contracting with a local developer who has created similar learning modules for DMVs. The BIKETOWN team was able to create a series of separate e-bike education classes that have since been incorporated into the Safe Routes to School programming, in addition to

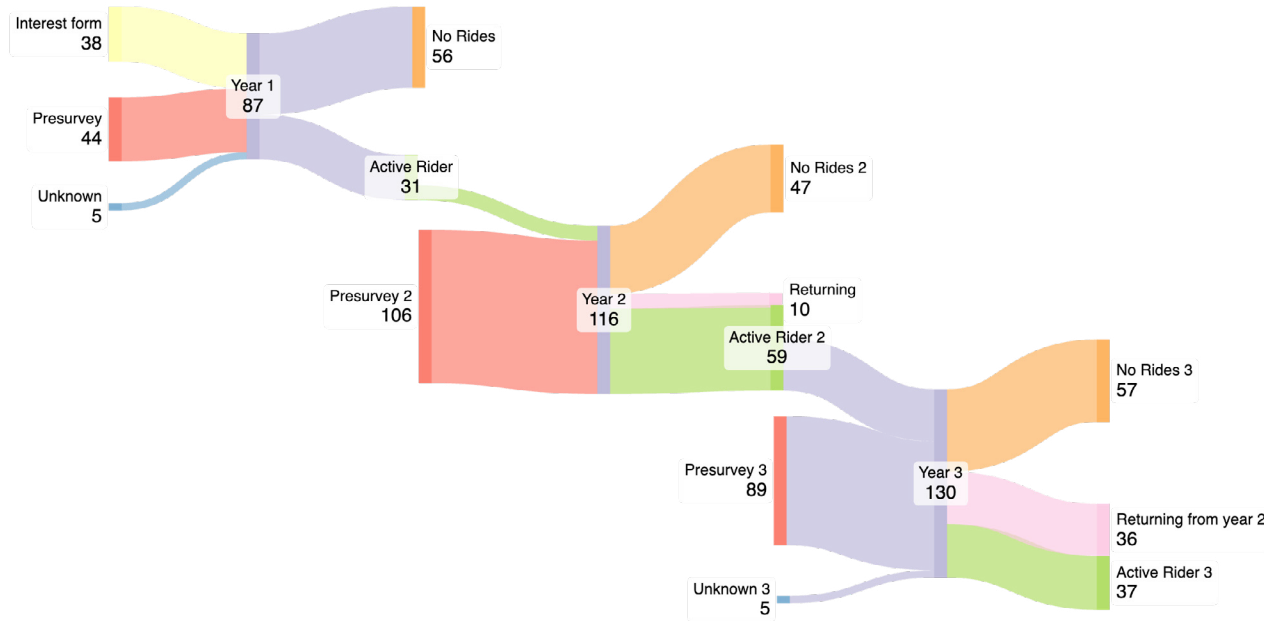
their high-school-focused Transportation Academy that was available in selected partner schools. The team incorporated BIKETOWN and safety education into the online learning module and connected how e-biking can benefit your physical and mental health. The LMS was created to accommodate those high school students who could not attend the more in-depth Transportation Academy that focuses on all modes, but includes a connection to BIKETOWN for All, and includes access to free helmets, bike maps, and educates on how to use the e-bikes properly without incurring additional fees. The LMS also allows for shared micromobility education, paired with automating the sign-up process with a promo code to unlock BIKETOWN for All access and access to a prepaid card number to accommodate many unbanked or underbanked students.

Each informant shared how they felt the Prescribe a Bike program developed a successful partnership between organizations. Partnering clinics felt like the partnership was fruitful and mutually beneficial; some interviewees shared that past partnerships with other organizations became burdensome for clinics because they ended up taking on the majority of the responsibilities for program implementation – but they appreciated how Prescribe a Bike was managed, including the weekly check ins that felt really valuable in keeping partners engaged. Finally, some interviewees were excited by staff turnout for community rides and felt these gatherings helped boost morale and build community among partners.

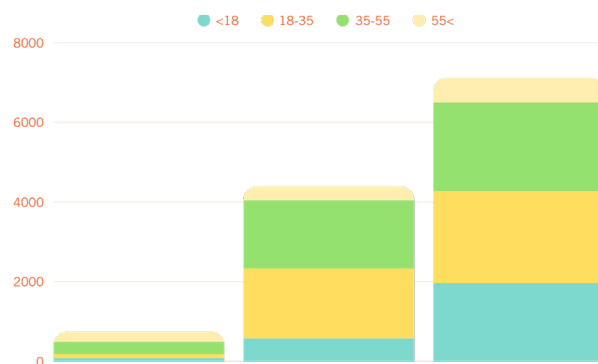
During the final year of the pilot, the program reached the highest number of participants (130) who rode a total of 7,120 times, 11,147 miles, and 88,543 minutes.

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The following figure demonstrates the application steps and participant enrollment for each year of the pilot, including active ridership and the number of participants that continued riding by renewing their "prescription" for the BIKETOWN membership in the next year of the program.

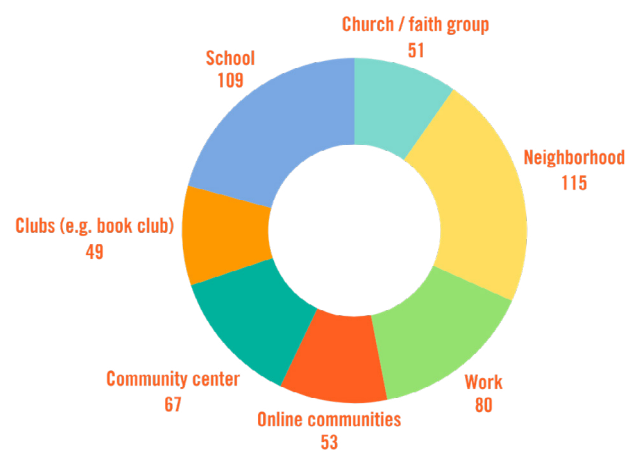


Ridership per year by age



In the first two years of the pilot the participation rate was highest among the age groups 18-35 and 35-55, and between year two and year 3 there was a marked increase in ridership among participants under 18 years of age.

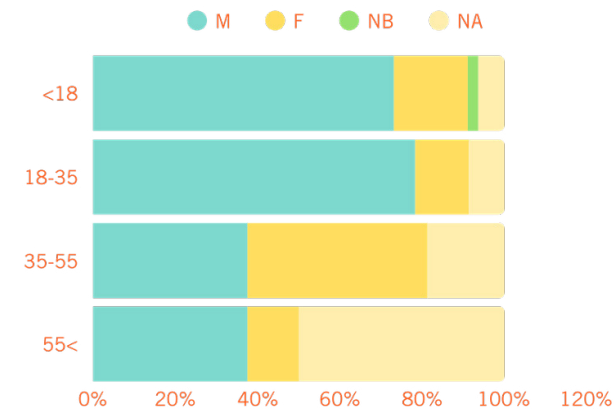
Enrollment by Outreach Technique



Of the 133 participants who rode, 78 of the 133 participants who rode, 78 were under the age of 35, making up 67% of individuals in the pilot program. Most

participants over the age of 35 joined the program through clinic outreach, the text-in service, word of mouth or referrals, as some participants encouraged family and friends to join. The majority of active participants between the ages of 16-35 were male (74.26%) compared to individuals 35 and older, which had a higher percentage of female participants (33.33%). A significant number of participants (14.28%) did not identify their gender, while non-binary individuals made up (1.50%) of the group.

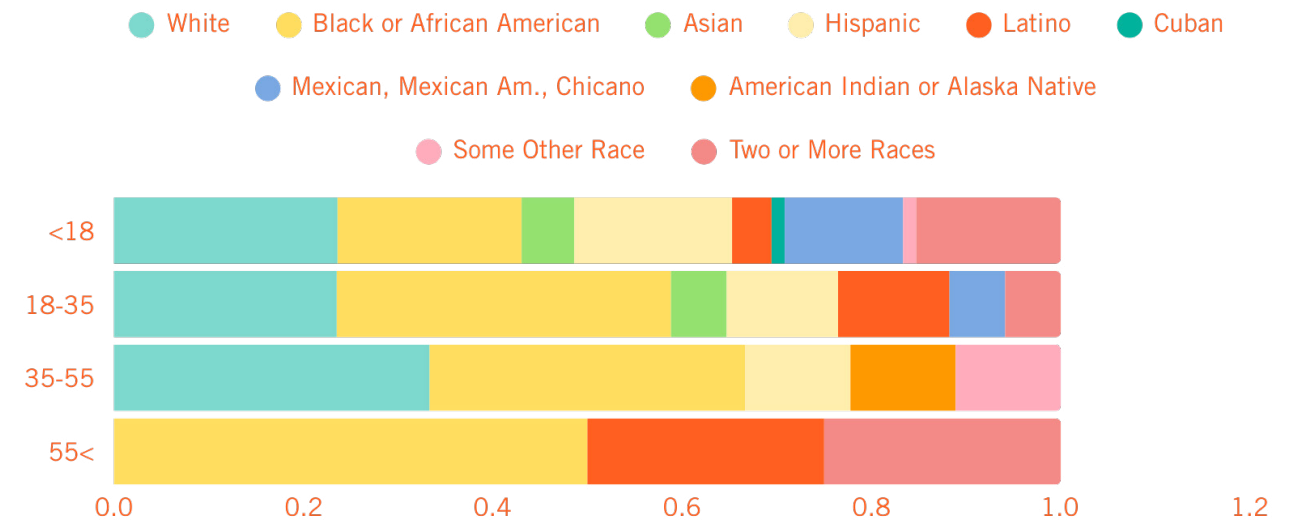
Age Group vs. Gender



The program hosted official Prescribe a Bike PDX rides on a monthly basis throughout the ride season with participants and connected to riding opportunities with partners throughout the city including Street Trust, Community Cycling Center, Pedal Palooza and official PBOT events and fairs.

The youngest age group (<18) shows the greatest racial diversity, with significant representation including Hispanic, Asian, and multiracial participants. White and Black or African American participants make up the largest shares overall, though the balance shifts across age groups, with Black or African American representation increasing in older cohorts. The oldest group (55+) displayed a concentration in Black or African American, Hispanic, and Latino categories.

Census Ethnicity vs Age Range



SURVEYS OF PRESCRIBE A BIKE PDX

Participants were asked to complete a pre-survey and post-survey. These surveys were designed in partnership with Multnomah County REACH with the clinical outreach model centering physical health, mental health, diet, exercise, and well-being. Staff administered a pre-survey at the point of enrollment, and the post-survey was completed through the SlickText platform, phone calls, and emails to participants one year after their enrollment date.

The survey responses provide many insights on participant behavior, perceived health status, social connectedness, ridership, and mental health. In Year 1 of the program, participants filled out an interest form as the initial enrollment step, followed by the pre-survey and enrollment in BIKETOWN. The original Prescribe a Bike PDX evaluation plan in Year 1 sought to analyze pre and post survey data with participant health data including indicators for blood pressure, diabetes (A1C), BMI, and patient medications taken. The original plan to compare pre- and post- health data for participants was not possible due to EHR data barriers.

Over three years, 249 participants completed surveys. 96.8% of survey respondents reported the program helped them get more exercise, improved mental health (96%) and connected more to the community (92%). 93.3% expressed easier travel and 89.5% noted an easy program enrollment experience, while only 76.32% reported the program taught bike safety effectively.

After receiving feedback and witnessing the length of time needed to complete

enrollment, program management streamlined by combining the interest form with the pre-survey. To meet the evolving demands of the COVID-19 public health landscape and to ensure that the Prescribe a Bike PDX program could continue to prioritize the safety of its participants while providing opportunities to ride, program enrollment and evaluation methods were adapted. In Years 1, 2, and 3 post surveys were conducted and completed by 249 participants for a total of 243 pre surveys and 33 post surveys across the three years.

PHYSICAL ACTIVITY

Pre survey data suggests Year 1 participants were already fairly active before joining the Prescribe a Bike program. For example, one question on the pre survey asked participants an open ended question about their average daily physical activity, the most common responses were between 30 and 60 minutes of physical activity each day (n=24); 20 participants responded they get an average of over 60 minutes of physical activity in each day, and only seven of the 53 respondents reported getting an average of less than 30 minutes of physical activity every day.





Challenges

Challenges

The evaluation demonstrated high participant satisfaction and highlighted lessons learned in participant recruitment, data collection, adaptability, and the importance of collaborative partnerships in physical activity interventions with bike share memberships. In addition to offering meaningful insights and opportunities for learning, the following challenges encountered during the pilot phase enabled the team to develop targeted solutions and recommendations across multiple aspects of the program. These challenges shaped program delivery during the pilot and will continue to shape the future direction of Prescribe a Bike PDX and serve as a valuable resource for other organizations seeking to implement similar program models.

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1. COVID-19 Pandemic

Starting a pilot program focused on the participation of county clinics at the height of the pandemic was an unforeseen challenge, forcing staff to rapidly adapt to implement the pilot safely. Staff followed guidance closely with regard to gathering in person, and as expected, recruitment and engagement efforts were affected. Despite the challenges presented by COVID and data collection, there were many successes to celebrate for the Prescribe a Bike program, and the team was still able to successfully enroll the target number of patients for Year 1 and see ridership. During the key informant interviews in year 1, one respondent commended Prescribe a Bike program staff for their flexibility and agility in pivoting recruitment efforts quickly when it was clear the original plan was not going to work.

"I think the team was creative and came up with different ways to engage with the Community, you know, by providing signups as well as bike rides at the same time, but then also evolving to look into the school system and to see if it's an opportunity to connect with the students there; I think it evolved into some great opportunities to connect further with the Community." - Prescribe a Bike PDX key informant

Due to the challenges around safety and general logistical barriers that providers, clinical staff, and community health workers faced (e.g., not having time during patient visits), recruitment efforts shifted to the Prescribe a Bike program staff, who began tabling at clinics and conducting outreach at schools.

2. Data collection and sharing concerns

Ridership data: There were several challenges in obtaining useful ridership data for participants across the three years of the pilot. PBOT staff and the evaluation team had limited access to ridership data, relying on Lyft and including discrepancies in the participant lists. This created a difficult data analysis process and presented challenges in gathering clean ridership data, limiting the team's ability to complete aspects of the original evaluation plan.

Health data: The original evaluation plan intended to collect clinical health data from

partnering clinics; however, inconsistent electronic medical record systems, and infrequent patient updates during the pilot period made this unfeasible. As a result, health metrics could not be compared to survey responses, limiting the outcome analysis as originally planned. Despite this challenge, survey and qualitative data still provided meaningful insights to inform program improvements and guide future transportation equity initiatives.

3. Limited staff capacity

The Prescribe a Bike PDX project was managed by one person at PBOT and relied on consultants and dedicated partners. As consultants are difficult to pay directly through city contracts processes, the program coordinator asked Living Labs grantors to directly pay our contracts in a timely fashion - creating a more ethical and timely process to ensure participation. However, competing demands during the COVID-19 pandemic and staff changes limited the staff's ability to consistently dedicate the ideal number of hours needed to support seamless operations. Similarly, clinic staff at Multnomah County faced capacity constraints that impacted their capacity in enrollment and outreach efforts.

4. Enrollment process

Recruitment presented several challenges, beginning with a multi-step enrollment process—including completing an interest form, survey, and BIKETOWN registration—which some participants found confusing, time-consuming, and frustrating. This complexity also made it difficult for program staff to manage group sign-ups efficiently, especially when more than two or three people wanted to register at the same time. Confidentiality was another concern, particularly when participants were asked to complete

surveys verbally with staff members for clarity and language challenges, rather than independently. Additionally, the inability to track interest form and survey submissions in real time created coordination difficulties and limited timely follow-up.

From partner interviews, several people mentioned successes around creating champions and developing effective recruitment strategies when enrollment had to be adapted, including:

- Offering BIKETOWN swag (free incentives)
- Presentations at community meetings, all-staff meetings, and to REACH groups (such as Achievement Coalition) were appreciated by REACH team members
- Prescribe a Bike PDX program staff and clinic staff felt tabling was successful even if only a few members were reached
- Tabling at clinics strengthened partnerships between program staff and clinic staff

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5. Participant Recruitment and Communications

Several challenges occurred during participant recruitment and communication efforts. One important aspect of the Prescribe a Bike program was to stay engaged with participants and encourage them to go on more rides, and this effort was somewhat limited in the first year because program staff were unable to do the targeted engagement with riders who signed up but were not utilizing their membership. As one healthcare worker noted in the first year, there was no process in place to follow up with participants that did not complete any rides. Staff then began utilizing the SlickText platform for mass



communications to participants without knowing their ridership status early in the program. In years 2 and 3, SlickText was used for mass communications to connect participants to programs and events as well as used as a customer service tool to resolve sign up and account issues.

While utilizing the SlickText platform provided a consistent method for informing participants of events and providing enrollment support, a long-term engagement plan was never formalized for SlickText communications due to staff capacity issues. A long-term communications and participant monitoring platform could improve ongoing participant engagement efforts.

Inexperience with bike riding was another challenge to recruitment and continued engagement efforts. Some patients shared with clinic staff that they were not comfortable riding bikes and felt scared to ride on Portland streets, especially amongst our older participants or those who had not ridden an e-bike or bike since younger years. Prescribe a Bike activities sought to make the riding experience accessible through the onboarding process with bikes on site during outreach and enrollment events, and staff focused on easing fears of potential participants while equipping them with the support and education needed to ride safely in Portland. Group ride opportunities also presented an additional space for people to grow in their e-bike riding experience in a safe, comfortable learning environment. This educational component proved critical to engaging participants, some of whom preferred to ride in a group initially after joining the program.

6. Turnover/ transitions in program management

The project was overseen by three different program managers over the course of the pilot, along with changes in evaluation personnel. These staff transitions occasionally created operational and communication challenges; however, the team remained diligent in preserving institutional knowledge and ensuring continuity in implementation.

7. Lack of BIKETOWN around county clinics

At program launch, the only existing BIKETOWN station near a Multnomah County clinic outreach site was at La Clinica de Buena Salud in the Cully neighborhood. As a result of the pilot, stations were added to NE, SE, and North Portland Multnomah Health clinic sites.





Recommendations

Recommendations for the future of Prescribe a Bike

1. Think outside of the box to promote program adaptability.

Whether it's COVID-19, any other emergency, or disruption of funding, the best way to connect Prescribe a Bike is through its ability to be flexible based on its environment. Based off your environment and partnerships, Prescribe a Bike can be a marketing campaign, it can be an embedded program tracking chronic disease health markers as well as ridership, it can be a way for health care partners or insurance companies to assist with funding joint goals, it can be an employee program, it can be a way for practitioners to connect the message of health and recreation to bike share within populations that don't consider options outside of cars as a transportation.

2. Dedicate program staff.

If you're trying to replicate a similar program to Prescribe a Bike PDX, dedicate at least 1.0 FTE program coordinator or project manager with public health, shared micromobility transportation, or practitioner knowledge to oversee program operations and continuity, providing overall direction for the pilot.

3. Identify champions and collaborative partnerships.

Develop or involve the program in existing collaborative partnerships with local health care programming and outreach efforts to reach more patients (e.g., chronic disease prevention programs such as diabetes and stroke prevention programs). Utilize the systems and programs in place that connect patients directly to health

care staff to promote the concept of "prescribing physical activity (e-bike access) as medicine".

4. Consider different forms of communication.

Assuming one email will serve everyone can keep people uninformed. Maintain open lines of communication with participants via a texting platform or similar service. Use this data to analyze the effect of communication on participation and ridership.

5. Connect data collection across partners.

As part of a robust evaluation process, implement accessible survey development compatible across transportation and health programs for multi-purpose use for overlapping goals (e.g., Multco Health Community Impact Survey and national or local transportation behavior surveys). Working with university partners or other health entities could help collect more detailed data under human subjects/IRB program could prove beneficial.

6. Gather ridership data.

Utilize standardized processes to obtain ridership data, potentially setting up a data share agreement with the city's bike-share operator at the onset of the program that reflects all evaluation objectives. Individualized data would be preferred over aggregate data in order to track more effectively. For those whose operator is Lyft, a potential way to create that agreement and track users for government agencies and other partners

in the community alike could include the use of programs like Lyft Pass, which allow organizations or businesses to pay directly to Lyft for ride credits and track users through a back end admin account.

7. Ensure accessibility.

Focus on accessibility through all levels of program design and implementation

1. Translate outreach materials, provide interpretation services as needed
2. Ensure financial and tech access - provide prepaid cards and/or ways to unlock bikes that don't involve a phone
3. Create a clear path for individuals from disability community to benefit from programming
4. If your city has an Adaptive program, ensure that information is front-and-center for all participants

8. Keep it simple.

Create streamlined and simple enrollment steps that allow participants to ride soon after enrollment. Multiple steps and long surveys hinder participants from getting from the sign-up stage to the riding stage. If possible, create one touch point that connects interested folks to taking that first ride.

9. Plan for financial barriers.

Plan for and promptly address financial barriers faced by participants (e.g., unbanked, account balances or additional credit needed). Provide a prepaid card with a minimum of \$10 to unlock financial access. Moving forward, teach participants that if they don't feel comfortable setting up their banking to these operators due to limited funds, they can budget and purchase additional prepaid cards to monitor their bike-share/transportation spending. If possible, connect to universal mobility programs like the Transportation Wallet.

10. Build around the existing culture.

Create opportunities to ride at program-specific events while also connecting participants to the broader cycling community. Culture and buy-in is key, especially working within communities that exist outside of the male, white-dominated bike culture in many cities across the US. If there is a connection to a specific community, a series of group rides, calendars of events, or creating a bike buddy, take advantage. (ex. BikePOCPNW, Pedalpalooza, PBOT Mobility and Safety Programs events, Bike Buddy)

11. Create an education portal.

Create a program landing web site or interactive online space with evergreen information that is updated as the program evolves. Provide educational components and safety information beginning at first engagement. If online is not the best way for the specific community, go back to basics. Create paper forms of orientation materials, training flipbooks, or do orientations in-person to assist and educate.





The Impact/ Conclusion

The Impact/ Conclusion

The Prescribe a Bike PDX pilot demonstrated the potential of innovative, equity-centered transportation programs to address public health disparities and expand mobility access. Despite the challenges of launching during the COVID-19 pandemic, the program successfully provided participants with free access to e-bikes, safety gear, and educational resources. Participant feedback, survey responses, and ridership data revealed increased physical activity, improved confidence in cycling, and a stronger sense of social connection as benefits of the program. The pilot not only offered immediate health and transportation benefits, but also laid the groundwork to build upon sustainable, community-informed approaches to active transportation in Portland.

Throughout the pilot’s implementation and evaluation, the team assessed program impact using multiple data sources, including participant surveys, qualitative feedback from participants and program partners, and ridership data. These insights provided a strong understanding of how the program was received, areas of success, and opportunities for improvement, which now guides the current program.

A total of 287 participants were enrolled, with notable increases in enrollment during Years 2 and 3 following expanded outreach efforts at local high schools. Of these participants, 139 were youth under the age of 18, with enrollment rising from 22 in Year 1 to 56 in Year 2, and to 61 participants in Year 3. Participants collectively logged 20,504 miles and

189,548 minutes of riding, with trip volume growing each year: 745 rides in Year 1, 4,393 in Year 2, and 7,120 in Year 3. Of the 133 active riders, 78 were under the age of 35; while older participants took more trips overall, younger participants tended to complete longer rides in terms of both distance and duration. Survey responses from 249 participants indicated strong positive outcomes: 96.8% reported increased physical activity, 96% noted improved mental health, 92% experienced enhanced social connectedness, and 93.3% cited easier travel.

To summarize, the evaluation team found that:

- Participating in Prescribe a Bike PDX: helped me get more exercise- 96.55% Agreed
- Prescribe a Bike PDX: taught me about the importance of physical activity to overall physical and mental health - 94.74% Agreed
- It was easy to find a BIKETOWN station/ bike when I wanted to ride - 92.11% Agreed
- Participating in Prescribe a Bike PDX helped me feel more connected to my community - 92.00% Agreed
- Participating in Prescribe a Bike PDX improved my mental health - 96.30% Agreed

Currently, funding for Prescribe a Bike participants has been integrated into the BIKETOWN for All program, which is supported by Nike and the Portland Clean Energy Fund. Youth-focused programming in high schools have been made possible through PBOT Safe Routes to School grants, funded by ODOT and Metro, with continued outreach facilitated through the Transportation Academy and partnerships with high school staff. Multnomah County Health Centers are providing spaces to connect transportation and health through

their chronic disease prevention programs. Ongoing programs with coordinated care teams including providers and health care staff that offer diabetes management classes that focus on nutrition and physical activity to manage their health, amongst other lessons in the class. PBOT staff has been providing sign up support and access to Biketown for All/e-bike access as part of the class while training up champions within the care team to provide the same support. Additionally, groups like the Diabetes Prevention Men’s Health group hold monthly group rides amongst their weekly schedule of physical activities as a group. To ensure the program’s long-term viability, PBOT is actively developing

a sustainability plan focused on securing stable funding sources and expanding strategic partnerships.

The Prescribe a Bike PDX team developed this report to offer valuable insights and lessons learned for practitioners, policymakers, and community partners interested in implementing similar transportation equity initiatives. The aim is also to contribute to the broader conversation on inclusive transportation planning in Portland, Oregon, connecting transportation with health initiatives and funding while further advancing equitable transportation solutions within the Portland area and beyond.





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