



The Power of Electric Bike Libraries

Climate-friendly e-bikes are a key part of plans to decarbonize urban transportation. To speed adoption, more cities are offering lending programs that can expose more riders to this new mode.

By [Laura Bliss](#) +Follow

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Customers wearing protective masks try out an electric bike outside Motion Makers Bicycle Shop in Asheville,

North Carolina, in May 2020. The pandemic helped spur a boom in e-bike purchases, but the vehicles remain too costly for many consumers. *Photographer: Logan Cyrus/Bloomberg*

Kate McCarthy had no problem biking downtown from her home in Montpelier, Vermont. It was the ride back – and the steep quarter-mile climb up Franklin Street – that killed her enthusiasm. When it came time to pick up her son from school or go shopping, taking the car was easiest. She mostly walked to work.

But when McCarthy and her husband decided to expand their family, they knew they'd need a second option to move everyone around. She didn't want to have to buy a second car. So when a lending library for battery-boosted e-bikes came to their local outdoors shop in summer 2019, the couple jumped at the opportunity to borrow one for free. For four days, they experimented with a cargo e-bike with a child's seat to see how it handled the hills for errands and commutes. They liked it so much that they bought a used Yuba Mundo off Craigslist a year later.

“We're really pleased with how well we've been able to make the cargo bike a piece of our mobility puzzle,” McCarthy said. “It's easy to have two cars, but sometimes you really just need a little extra bit of mobility a few times a week.”

It probably wouldn't have happened without the earlier trial, she said, which was made possible by Local Motion, a Vermont-based nonprofit that advocates for cycling and bike infrastructure. Since 2017, the organization has been lending e-bikes from its Burlington headquarters during the warm months, and for the past three years has sent a traveling fleet of loaners to other towns around the state. The goal of the program is to expose more riders to the relatively nascent mode, and nudge some toward potentially purchasing a two-wheeler of their own.



The Vermont nonprofit Local Motion lets members borrow e-bikes for free. *Photo: Local Motion*

With U.S. sales growing 145% in 2020 – boosted in part by Covid-19 shutdowns and an explosion in outdoor recreation – e-bikes are steadily becoming more familiar sights on the streets. Policy leaders are eyeing the vehicles as key agents in the battle to reduce carbon emissions from transportation: Research has shown that e-bikes can substitute for car trips more readily than regular bikes, with riders traveling longer distances and more frequently. Their overall carbon impact is a fraction of that of electric cars.

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But the cargo-style e-bikes that are most useful as replacements for gas-powered vehicles can cost \$2,000 or more, a daunting barrier for many would-be buyers. While federal lawmakers have proposed tax breaks to boost adoption and defray some of the purchasing costs, for now, grassroots efforts like Local Motion's have emerged as another way to let riders experience what e-bike ownership might be like.

The free loaner approach has signs of success: In a 2019 survey of 52 Local Motion participants, 17% of respondents said they purchased their own e-bike within 12 months. (Others, like the McCarthys, bought theirs outside of that window.) Interest in the loaner bikes has exceeded the program's capacity, with some of the heaviest demand coming from rural communities outside of Burlington, said Eliana Fox, a program coordinator at Local Motion. "Given how spread-out Vermont is, e-bikes are providing a type of transportation that wouldn't otherwise be possible in many of these places," she said.

The lending library model is spreading. Local Motion has expanded its program to other parts of New England, while the city of Denver launched an e-bike library for low-income residents this summer. Western New York nonprofit Shared Mobility Inc. piloted an e-bike library in Buffalo, using vehicles donated by Uber. In the U.K., Wales has plans to put cargo and commuter e-bikes on trial, and a library that launched last year in Canberra, Australia, saw 39% of borrowers bought their own e-bike within 12 months, said Zuleka Chan, project officer for See Change, the nonprofit managing the program.

"Perhaps those people had already made their decision to buy and this pushed them over," she said. "But we've had insanely positive feedback."



Since last year, Canberra residents can borrow e-bikes via a lending library run by the nonprofit See Change. *Photo courtesy See Change*

Officials in Oakland, California, recently announced plans to spend a \$1 million grant on a fleet of 500 e-bikes – including cargo bikes, folding bikes and adaptive bikes for riders with disabilities – that will be available for multi-day loans through local bike shops. The five-year pilot is set to launch in 2022, more than two years after e-bikes were removed from Oakland’s Bay Wheels bikeshare stations, which are commercially operated by Lyft.

The loss of those shared e-bikes from the area was part of the reason the city advanced the program, said Kerby Olsen, new mobility supervisor at the Oakland Department of Transportation. With the volatility of the micromobility industry, a city-funded program could secure greater public access to shared bikes. Oakland’s 2019 bike plan also included input that community members wanted to see more local companies and nonprofits benefiting from bikeshare.

“The idea really came out of that,” Olsen said. “Subsequently, our efforts and negotiations to

bring e-bikes to Oakland through Bay Wheels failed post-pandemic. We would have gone for both ideas, but this is one that is still standing.” He also noted that, unlike many similar programs, the city’s e-bike library will not be free (though it will be deeply discounted for low-income residents), so as not to out-compete any company that wants to operate shared e-bikes in the future. Revenues will be reinvested into the program.



An attendee tests rides an e-bike during the Electrify Expo in Irvine, California, in September. *Photographer: Jill Connelly/Bloomberg*

Plenty of local bike shops, especially in tourist-heavy towns, also offer daily or hourly e-bike rentals. But an extended loan fulfills something different than an afternoon rental: It gives users a brief taste of e-bike ownership, often with a wider choice of models, without the financial plunge. Some e-bike operators and manufacturers such as Van Moof and Revel offer monthly lease programs for similar reasons. “The government decided to set this up as a library to show people that e-cargo bikes are a thing and are a legitimate car replacement,” said Chan in Canberra. “But they’re a massive financial commitment.”

John MacArthur, the sustainable transportation program manager at Transportation Research and Education Center at Portland State University, said that e-bike lending library schemes may be most effective in tandem with a financial incentive to temper the high costs. Such

programs are just starting to come online at the local level in the U.S.: Cash rebates for e-bikes are available through the [electric utility in Burlington, Vermont](#), and in California's [Contra Costa county](#), which is east of Oakland. A [statewide e-bike rebate program](#) is in the works in California, and a [federal e-bike tax credit](#) is under consideration in U.S. Congress.

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It's hard to say what combination of programs or pilots would drive more e-bike purchases. There hasn't been any research about how long-term test rides or loaner programs change decision-making, nor about the precise financial incentives that might move more consumers. But adoption trends for other technologies, such as cellphones or electric vehicles, suggest that many different kinds of exposures are needed to move e-bikes further from the grips of early adopters into a wider pool of users, MacArthur said.

"It's not just one ride or drive or lending library that is going to be the big thing that shifts someone's behavior," he said. "You need to provide that awareness and familiarity from multiple platforms."

One such platform is hearing about e-bikes from family and friends. In Montpelier, McCarthy said that her 70-year-old father in southern Maine was so inspired by her experience with the Local Motion loans that he traded in his motorcycle for a cargo bike that he now takes to the grocery store. Seeing how much their own son loved riding in the backseat with his grandpa, she and her husband decided to make their purchase.

"I think that was really the tipping point," she said. "He had so much fun riding in it that that made it more fun for us too."

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