

# The Future of Car Sharing: Electric, Affordable, and Community-Centered

## The Community Electric Vehicle Project



June 2018

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## ACKNOWLEDGEMENTS

The project team would like to acknowledge and thank all funders and supporters of the Community Electric Vehicle (CEV) Project.

First, thank you to Meyer Memorial Trust, The 11<sup>th</sup> Hour Project, a program of the Schmidt Family Foundation, and Pacific Power for their generous funding of CEV.

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This project would still only be a figment of our imaginations without everyone's support, leadership, and commitment to making transportation more accessible and equitable for all. We hope that this will encourage others to think about how they can improve their communities and make transportation a more fair and just system for everyone, but especially for communities that have long been forgotten, redlined, and deprived of much needed investment.

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## EXECUTIVE SUMMARY

In early 2016, Forth began conversations with community stakeholders and community-based organizations (CBOs) to learn more about transportation issues in Portland, Oregon. The intent of the discussions was to begin developing and scoping a project that could address some of the mobility issues in underserved communities. In collaboration with Hacienda Community Development Corporation (CDC), a Latino CDC, the Community Electric Vehicle (CEV) project sought to bring a new transportation option to the Cully neighborhood in Northeast Portland while also evaluating whether an electric vehicle (EV) car share could be a financially sustainable, convenient, affordable, and reliable mode of transport. Three Honda Fit EVs were placed at a Hacienda CDC site in Cully. One was available for use by staff during working hours through a simple check-out system, and two were available to Cully residents through a peer-to-peer car sharing platform. Cully residents and staff were made aware of the project through tabling efforts at local events, at community meetings, and through workshops hosted by Forth and Hacienda CDC.

The full-scale project started in March 2017 and ended in December 2017. A total of 66 community rides were completed and 12 Hacienda CDC employees drove almost 2,000 miles over the course of the project. Although the project encountered issues relating to insurance, software, technology barriers, banking, driver's licenses, organizational capacity, and outreach, every issue provided a learning opportunity for the team. Furthermore, the project had its share of successes and helped both residents and staff get around with a more affordable and cleaner form of transportation.

Forth hopes to take these project insights and apply them to future demonstration projects. We also hope that this case study will serve as a guiding document for others in their effort to improve access to clean and affordable transportation for everyone.



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## INTRODUCTION

In 2016, the United States Bureau of Labor Statistics estimated that the average American household annually spent over \$9,000 on transportation expenses.<sup>1</sup> As the second highest expense for households after housing, transportation sits at the crux of affordability for many families. CEV was designed and launched in response to the need for better access to transportation in places where varied, ample, and most importantly, affordable transportation options are glaringly absent. Many underserved and vulnerable communities lack access to safe, reliable, economical, and clean transportation and are more likely to face health burdens, such as asthma from poor air quality, and longer commutes because of their limited access to transportation options.<sup>2</sup> For many low income and underserved communities, improved transportation can lead to new economic opportunities and bolster existing opportunities. To address the myriad of issues these neighborhoods face in personal transportation, it is paramount that we intentionally invest in underserved areas to improve and diversify transportation access. Through critical and thoughtful investments, transportation equity aims to address the transportation needs of communities of color, low income communities, children, disabled individuals, and elderly individuals.<sup>3</sup>

Through discussions with community stakeholders and local nonprofits, Forth started to better understand and learn about the multitude of transportation inequity issues individuals were experiencing throughout Portland. It quickly became evident that many Portlanders could benefit from alternative transportation options not currently available to them. With the help of Forth's industry network, the team saw the potential for a collaborative project to develop a creative, affordable, and what we hoped would be a financially sustainable transportation option in the Cully neighborhood. Although electric cars are often perceived as almost exclusively available in affluent areas due to their significantly higher base prices, electric cars, and particularly used electric cars, are becoming more common and affordable, and therefore more accessible. According to Bloomberg New Energy Finance, almost 80 percent of battery electric vehicles and 55 percent of plug-in hybrids are leased compared to 30 percent of gasoline, hybrid, and diesel vehicles.<sup>4</sup> Due to the high rate at which electric cars are leased, two and three year old used plug-in cars are becoming more readily available at increasingly modest prices. As more used electric cars become available on the secondary market, access to electric cars grows for everyone.

After extensive outreach and meetings with various CDCs and affordable housing groups in the Portland area, Forth elected to work with Hacienda CDC for a number of reasons. First, Hacienda CDC is an engrained part of the Cully community. The Forth team knew that we could never be a part of the community as we are not located in Cully and are not constantly on the front lines advocating for Cully. Therefore it was critical to find a partner that was well-respected and more importantly, trusted by community members and who could help us meet their residents where they were. Second, Hacienda CDC was daring enough to try something new and untested that they believed might benefit both their employees and nearby residents. Forth also passed through \$10,000 in grant funding from Meyer Memorial Trust to Hacienda CDC to help cover staff time associated with hosting CEV. Other project costs included outreach materials, project materials, charging installation, insurance, and employee wages—the majority of which were covered by Forth. An approximate budget can be found in Appendix B.

With limited transit and transportation options, Cully residents often face longer travel times and higher transportation costs. Looking to provide a more flexible option, at a more reasonable cost, Forth made three used electric cars available to Cully residents and Hacienda CDC staff. The electric cars provided both community members and staff with an additional transportation option which they could use to travel to meetings, grocery stores, medical appointments, and recreation that might be difficult to access otherwise. In addition to providing a new and convenient transportation option in Cully, by using electric cars, this project also limited the amount of local greenhouse gases emitted and provided a relatively inexpensive mode of transport for the community. By using electricity instead of gasoline or diesel to power the car, carbon emissions, fuel costs, and maintenance costs were all reduced.

Forth and Hacienda CDC sought to try something relatively new and untested with CEV. Car sharing with electric cars, especially in underserved communities, is an endeavor few have attempted. As a result, there were very few projects—especially with as limited a budget as we had for this project—that Forth could look to as an example. Currently, there are two larger scale and well-funded electric car sharing pilots in California (Los Angeles and Sacramento.) Forth could not look to these programs as an example because CEV launched before both of these programs and would not have a similar enough budget or design. For context, the first of these programs is BlueLA. As of June 2018, the program consists of approximately 8 charging locations in and near downtown Los Angeles and about 12 cars. According to their website, a \$1.7 million grant through California Climate Investments, a program of the state’s cap-and-trade program, partially funds the project. The BlueLA website also notes that there will be 100 electric cars and 200 chargers for the cars also known as electric vehicle supply equipment (EVSE) available by

the end of 2018 in low-income communities.<sup>5</sup> The other project that launched after CEV is Our Community CarShare in Sacramento, California which makes electric cars available to community members through the car sharing operator, Zipcar. Much like BlueLA, Our Community CarShare is backed by significant funding including a grant through California Climate Investments.<sup>6</sup> Although these two projects are significant in size, there is one other, smaller, car sharing program in the Central Valley called Green Raiteros. This project shares similarities with CEV, but serves a rural community in the Central Valley—Huron—with a few electric cars. What makes Green Raiteros so unique is that it was largely community driven and serves an area that many mobility services do not cover. To attempt to compare any of these programs with CEV would do none of them justice as they each cater to communities with different needs. That being said, we believe putting our project into context with projects that may be considered its peers is important to better understanding CEV. Ultimately, we hoped to prove that community, electric, car shares were possible without significant budgets and therefore replicable in more communities that may not have access to significant capital.

This case study hopes to expand the industry's knowledge about transportation equity and affordable electric car sharing programs in addition to providing insight into a specific neighborhood in Portland with limited transportation options. While each community has its own mobility challenges, we believe there are many commonalities between neighborhoods and cities and that the lessons learned from this project can be applied elsewhere to advance transportation equity. CEV highlights how neighborhood car sharing projects and emerging vehicle technologies can be utilized to meet some, but not all, of the transportation needs of diverse communities. These ideas and potential solutions are worth exploring as a way of expanding the ways in which people travel from place to place in areas that are not traditionally the primary beneficiaries of these technologies.

Forth hopes to spark more conversations about existing and historic institutional barriers in transportation, transportation infrastructure, and disinvestment by being transparent with the outcomes of CEV. For example, the project highlighted the policy implications associated with restricting licensing to U.S. citizens and lawful permanent residents. Limited access to driver's licenses was a significant barrier for the project and is a larger issue impacting underserved communities across the United States. In many of these communities, regardless of whether or not someone has a license, individuals continue to drive, not because they want to, but because it is necessary for their employment and therefore survival. Furthermore, policymakers need to invest in expanding affordable and reliable public transportation in all communities, but specifically in underserved communities that historically, have seen the least investment.



Lastly, we believe it to be a categorical imperative of the industry to utilize innovative, emerging vehicle technologies to advance transportation for everyone, but especially for those in underserved communities as they stand to benefit or lose the most from industry advancements. It is critical that everyone keep underserved communities in mind when developing and implementing these technologies. This is the industry's moral obligation and one the project team fully stands behind. Throughout every project and program, everyone should consider how these technologies can and will benefit and hurt those who need them the most and we must strive to make choices that work to safeguard and lift our communities.

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## PROJECT PURPOSE

Forth and Hacienda CDC had four main objectives for this project. The first was to bring the economic and environmental benefits of electric cars to underserved populations in Cully. This project demonstrated how electric cars can offer affordable mobility solutions for a wide range of people, dispelling the widespread misperception that electric cars are luxury items and out of reach financially for many people. The second objective was to provide a new transportation choice in Cully. With fewer transportation options than other Portland neighborhoods, it was critical to increase access to more diverse alternatives. Additionally, for more transit-dependent residents, this project provided a quicker option when necessary. Third, CEV intended to increase exposure to and education about electric and shared transportation in an area that traditionally may not have access to this information. One element separating this project from others was that the cars used were fully electric. This afforded us the chance to use this project as a learning opportunity where we could teach people about electric transportation. Lastly, whatever solution we designed, we hoped it would not only be replicable by others, but also a financially sustainable solution for Cully and Hacienda CDC.

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## PROJECT SUMMARY

Hacienda CDC administered the program in collaboration with Forth. Hacienda CDC works to provide affordable housing, economic development and educational opportunities, and community support to a predominantly Latino and immigrant community in Cully. Hacienda

CDC has also developed communities in North Portland and Molalla, Oregon. In Cully, Hacienda CDC owns and manages nine residential buildings, however the program was open to all Cully residents, not just residents of their properties.<sup>7</sup>

One of the primary project goals was to introduce an additional, reasonably-priced, and convenient mode of transportation in the neighborhood while also demonstrating the economic and environmental benefits of electric cars. Limited transportation options in the neighborhood can make traveling to other parts of the city both difficult and time consuming without a personal vehicle. As of June 2018, transportation options in the Northeast neighborhood are limited to five bus lines and a few shared mobility options that do not serve the entire community.<sup>8</sup> Two of the Honda Fit EVs were available for community members to rent through the digital, peer-to-peer car sharing platform, Turo. Through the Turo website or smartphone applications, community members could access a low-cost, daily rental with car insurance and free onsite charging at the project site. The third Honda Fit EV was reserved for Hacienda CDC staff use only.

Both staff and community members expressed reservations about the program early on. Some grew more confident in the program, while others remained skeptical. Over the course of nine months, both staff and community members used the cars dozens of times saving Hacienda CDC money and generating funds which Hacienda CDC could use at their discretion to fund other work. Throughout the program, rental length for community members varied from daily rentals to multi-day rentals. While the project had success in educating more members of an underserved community about electric cars and providing a new transportation option in the area, there were several barriers that should be considered before replicating the project.

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## CULLY

The Cully neighborhood began as an unincorporated area of Multnomah County until its annexation into the City of Portland in 1985 and is now one of Portland's largest neighborhoods by both land area and population.<sup>9</sup> Many of Cully's early development characteristics can still be seen today; between 1910 and 1960, development in the area was at an all-time high and featured strong rural influences such as large lots and unpaved roads.<sup>10</sup> The neighborhood is mostly zoned for single family dwellings and is mostly residential with only two areas zoned for commercial activity.<sup>11</sup>

As of the 2010 Census, Cully's population was 13,209 people with approximately 21 percent of residents identifying as Hispanic or Latino.<sup>12</sup> A review about displacement occurring in the neighborhood found that 51 percent of residents identified as people of color whereas only 28 percent of the total population of Portland are people of color.<sup>13</sup> The neighborhood has also experienced economic disparities, with roughly 17 percent of the population in 2010 below the Portland poverty line compared to 13 percent citywide.<sup>14</sup> Cully is incredibly diverse, but the area is experiencing rapid gentrification and displacement which could stand to threaten the very fabric that makes the neighborhood stand apart from others.<sup>15</sup>

In the area, there are several CBOs serving residents and working to amplify their voices. Living Cully is a collaboration between Habitat for Humanity Portland/Metro East, Hacienda CDC, Native American Youth and Family Center, and Verde. Together, Living Cully and its associated CBOs are working to address poverty-related issues while also promoting and advancing sustainability in the area.<sup>16</sup> Specific goals of the collaborative group include community development, community engagement, increasing green infrastructure through the construction of Cully Park and an eco-cultural restoration area.<sup>17</sup>

Although transportation options throughout Portland have grown and diversified in recent years, Cully has rarely been the beneficiary of expanded transit or new and emerging transportation technologies. Portland's light rail service, also known as the MAX (Metropolitan Area Express), does not reach Cully nor does the Portland Streetcar which focuses on serving the city center. The neighborhood also lacks robust bicycle infrastructure, such as protected bike lanes and bike boxes, which raises concerns among residents about where they feel safe when travelling by bike. According to a study in May 2013, 36 percent of streets in the neighborhood are considered to be substandard, such as oil gravel streets which receive less maintenance, and 9 percent of streets are unimproved, meaning they receive no pavement maintenance from the City.<sup>18,19</sup> This is in stark contrast compared to 19 percent and 3 percent, respectively, citywide.<sup>20</sup> Finally, where car sharing and bike sharing is available in the neighborhood, it is still limited in reach, and therefore not a very familiar option among many Cully residents.



## PROJECT DESIGN

Forth worked extensively with three of Hacienda CDC's staff members to implement and execute the project. These three employees were responsible for managing reservations of the vehicles, maintaining the cars, and any onsite issues. Forth was responsible for securing funding, project design and evaluation, acquisition of the cars and charging, and troubleshooting any problems that arose and could be resolved remotely. Both organizations collaborated on outreach and education for the project. In March 2017, three Blink Charging Level 2 EVSE were installed by an electrician near Hacienda CDC's main office and centrally located by Hacienda CDC's nine multi-family housing units. At the project site, the Honda Fit EVs were parked near the EVSE and available to both employees and residents. This site was selected for the EVSE and cars because it was a previously empty, but paved lot, and would not take away any existing parking used by residents or staff. Additionally, the lot selected is located right next to a common laundry facility which had more than enough excess electrical capacity for the three EVSE.



*Image 1: One of the Fit EVs parked in front of the EVSE. The wall with the mural is the western-most wall of the communal laundry facility*

Each Honda Fit EV had a Forth logo and Hacienda CDC logo located on the rearview window. The cars were also named to easily distinguish them from each other since they otherwise looked exactly the same. To help build excitement for the project, Hacienda CDC staff were asked to submit potential names for the cars. The winning names for the three cars were Spanish translations of three of Hacienda CDC's six organizational values, Integridad (integrity), Colaboración (collaboration), and Respeto (respect). Forth and Hacienda CDC felt these three values also best fit the ideals of the project.



*Image 2: Colaboración's Hacienda CDC decal. There was also a smaller Forth decal on the left side of the back window of each car.*

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## RESPONSIBILITIES

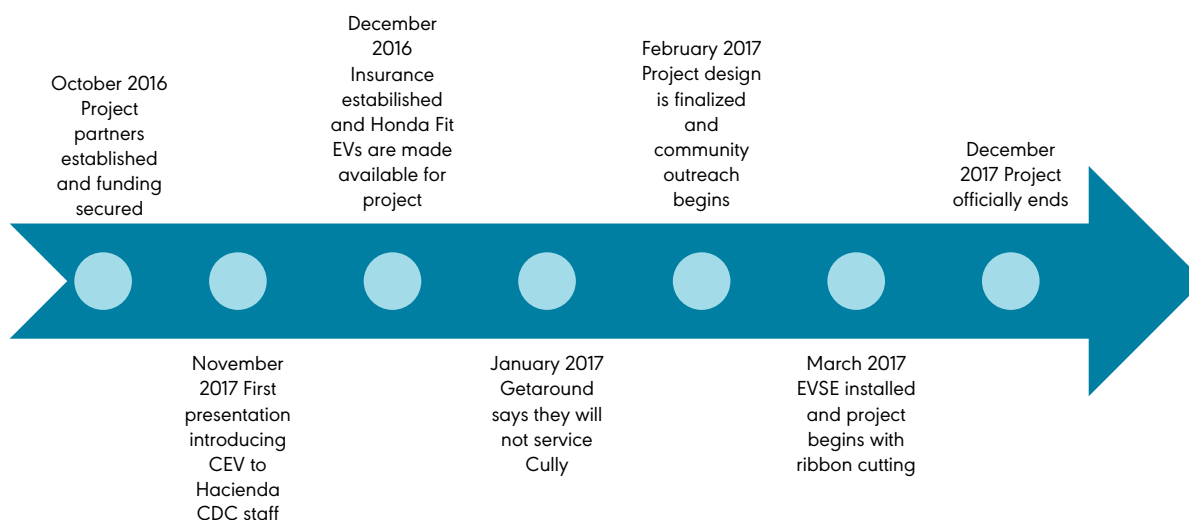
Forth	Hacienda CDC
Secure funding and project materials	Lead trainings
Design project	Community outreach
Lead trainings	Manage Turo account
Community outreach	Administer reservations
Create Turo account	
Car maintenance	
Trouble shoot project problems	

*Table 1: Responsibilities of each project partner*

In October 2016, Forth formally kicked off the project and began planning for a January 2017 start date. Above, in Table 1, are the various responsibilities of both Forth and Hacienda CDC. The project was designed to play to each organization's strengths and while also supporting cross-pollination to some extent so the partners each had the chance to learn from specialists in the respective fields.

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## PROJECT TIMELINE





However, the project was delayed by the need to switch software platforms. Forth originally anticipated using the peer-to-peer car sharing platform, Getaround. It was not until January 2017, when trying to register the vehicles on the platform, that Forth learned that Getaround refused to service Cully. Getaround's reasoning was that they would not list the Honda Fit EVs because not only do they not allow electric cars on their platform, with a notable exception for Teslas, but also because they refuse to list any vehicles in Hacienda CDC's ZIP code even though they operate in other Portland neighborhoods. This policy echoes decades of "redlining" that have limited mobility options in Cully, and is just one of the barriers the project faced.

After contracting a third party review of car sharing options, the project team decided to redesign the project around an application called Turo. The consultant warned that Turo would be less effective because it only allows for full day rentals (not hourly) and because it requires a face-to-face key handoff, rather than allowing less labor intensive remote access. Initially, the project intended to place five Honda Fit EVs at the project site. However, because the team had to facilitate the project using Turo, which requires more hands-on management, the team made the decision to only use two of the Fit EVs as community cars and to dedicate one car for use as a staff car rather than it being available for both staff and the community. Both project partners were concerned that Turo would be too labor intensive for Hacienda CDC to manage due to Turo requiring a staff member to facilitate reservations in person.



*Image 3: Ribbon cutting ceremony at Hacienda CDC to kick off the project on March 24, 2017 with Multnomah County Commissioner, Jessica Vega Pederson.*

In March 2017, CEV officially launched with both organizations collaborating on community outreach and workshops to help introduce the service starting in the spring and continuing into the summer. The project officially ended in December 2017 and a modified extension of the project has continued on with two Honda Fit EVs on loan from American Honda Motor Company through the end of 2018. Excited to continue the program, even with the knowledge that there was no additional funding to cover more of their staff time, Hacienda CDC has set aside one Fit EV for staff use and one for community member use through the end of 2018.

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## COMMUNITY MEMBER PROJECT DESIGN

It was important to the entire project team that CEV utilize a majority of the loaned cars as community cars in order to provide as many opportunities for Cully residents to access them as possible. CEV used Turo as the reservation management tool that approved all community members renting the vehicles and provided insurance for the duration of the rental. All drivers

created a free Turo account and received an insurance score during their driving background check before making a reservation. Turo was not without its own participation barriers; the platform requires a credit card, driver's license, and Social Security Number to create an account and participate on the platform. Of note, requiring a credit card was a barrier for many potential participants who cannot or choose not to participate in the traditional banking system. Feedback we received included the inability to obtain a credit card and distrust of banks, especially larger banks not rooted in the local community. Additionally, given that we were administering this project in early 2017, right after the 2016 presidential election, there were heightened concerns about personal security in a neighborhood with significant Latino, refugee, and immigrant populations. Due to this confluence of events, some potential participants expressed concern about having to provide their Social Security Number to Turo and we believe some Cully residents chose not to participate for this reason.

Hacienda CDC managed the Turo account for the duration of the project including all reservation requests. Additionally, their team prioritized requests from people living in Cully. It was important to Hacienda CDC that community members were given priority over individuals who were from outside of the community when it came to renting the vehicles. With Cully's proximity to the Portland International Airport, Hacienda CDC fielded frequent requests from tourists visiting Portland from out of town. Since a goal of the project was to increase mobility options in Cully, it was crucial to the project team that the project design supported limiting the number of outside renters. This was to ensure that cars would be available for community members. Prior to accepting a reservation on Turo, the project administrators would explain what the purpose of the project was to the potential renter and also asked them if they fit the parameters as defined in the project description provided to them. This screening process was important to Hacienda CDC, but certainly resulted in dramatically lower use of the vehicles and lower project revenue. Additionally, on Turo, the project description was translated into Spanish with the Spanish description listed before the English description for accessibility purposes.



TURO

OVERVIEW

FEATURES

REVIEWS

LOCATION

HONDA FIT EV 2013

Base

★★★★☆

• 21 trips

Electric

4 doors

5 seats

DESCRIPTION

See below for English.

\* Las solicitudes de alquiler sólo se contestarán de lunes a viernes de 9 am-5pm.\*

\*\* Este vehículo está designado para el Proyecto de Vehículo Eléctrico Comunitario que serán utilizados por los residentes de Hacienda CDC y la Comunidad de Cully. Sólo aceptaremos solicitudes externas cuando no haya solicitudes de la comunidad circundante\*\*

\*\*\* Los alquileres no se pueden recoger o dejar en un fin de semana\*\*\*

Hacienda CDC y Forth se están asociando para proporcionar un Honda Fit coche eléctrico en el vecindario de Cully. Los miembros de la comunidad pueden disfrutar de un alquiler sin

Trip start

05/31/2018

10:00 AM

Trip end

06/01/2018

10:00 AM

Pickup & return location

Portland, OR 97218

This car isn't available

Go to checkout

You won't be charged yet

DISTANCE INCLUDED

Day

200 mi

Week

1000 mi

Month

1500 mi

INSURANCE PROVIDED VIA

Liberty Mutual

Image 4: Snapshot of description on Turo for Respeto, one of the community cars.

Participants would make reservations anywhere between one month to one day in advance. When a reservation was approved, the renter met one of the Hacienda CDC staff by the vehicles at the designated check-in time. The renter was given the keys, a Blink charging card, and an opportunity to ask any questions about the vehicle and charging station. When renters returned the vehicle, a staff member would meet the driver in the parking lot where the vehicles were charged to collect the keys. The staff member would then verify the renter’s account information, check the car for any damage, and record the mileage on the odometer, much like the processes of a traditional rental car service. Initially, the project was designed to have participants complete a short survey after their reservation about their trip and their prior exposure to electric cars. However, due to the limited capacity of Hacienda CDC staff it became evident that this was not going to be possible and would only add undue burden to their already limited capacity. Furthermore, due to Turo’s terms and conditions, we were not allowed to email participants the survey. This lack of survey data reduced our ability to fully evaluate project impacts.

The project team wanted to ensure that the project would be able to accommodate families regardless of whether or not they had regular access to a car. To ensure access to these families, the project team provided access to a car seat for children during rentals. The car seat was available for free with any rental. Although the car seat was available for the duration of the

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project, it was never utilized by any renters. It is likely that families already had access to a car seat for their children or families with young children did not rent the vehicles.

At the beginning of the project, the Asset Manager and Resident Services Coordinator in the Housing Department at Hacienda CDC jointly managed CEV. Hacienda CDC had limited capacity at the time and therefore the Housing Department may not have been the best fit for managing this project. In the future, we would advise others to spend more time looking into not only the organizational capacity of partners, but to also evaluate where the program best fits within their existing work. Towards the end of the project, a change in department organization resulted in the Director of Youth and Family Services and the Resident Services Coordinator taking over the administration of CEV. This change occurred primarily because the Youth and Family Services Department is constantly in direct contact with residents and was better able to promote the project because of the department's broad reach among residents.

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## **EMPLOYEE PROJECT DESIGN**

Prior to CEV, if Hacienda CDC needed to attend offsite meetings, travel to other properties, or pick up supplies, they relied solely on personal vehicles (reimbursed at IRS rates) or transit for transportation. This not only resulted in high mileage costs for the organization, but also meant that many employees could not take alternative modes of transportation to work if they needed to get to other destinations throughout the day. CEV was designed to give staff the freedom to walk, bike, or take public transit to work, even if they needed to go offsite at some point in their day, while also reducing their transportation expenses. Reserving one of the three Honda Fit EVs for staff use only was key in demonstrating the effectiveness of a staff car in reducing mileage costs and allowing for more transportation flexibility for staff.

Forth introduced the project to Hacienda CDC staff on two occasions with an initial introduction at a staff meeting and an additional orientation for everyone who would be driving the cars. Employees wishing to participate needed to agree to project guidelines and be approved by Forth's insurance company. Employees agreed to maintain the car while using it, practice safe driving, and report all trip information including trip purpose, mileage, level of electrical charge, and car condition. Forth's insurance company checked the driving records of each individual before adding them to the insurance policy.

Once approved, staff members were able to reserve a car by making a request through the organization's Microsoft Outlook calendar. The project had a designated Hacienda CDC email and employees would create an event that specified the time they would need the car and invite the project email to complete the reservation. At the time of the reservation, all employees were required to meet one of the designated staff members, usually the Asset Manager or the Resident Services Coordinator, to pick up the keys and Blink charging card so they could plug the car into the EVSE upon their return to Hacienda CDC's offices. Before and after the reservation, everyone logged their drive on a sign-in sheet kept inside of the car. Data collected included the employee's name, time in and out, starting and ending mileage, starting and ending level of charge, and damage to the car, if any.

In the case of an accident, employees were required to follow accident procedures as defined in the project management plan. These procedures included notifying police and emergency vehicles as necessary, recording pictures of the scene, and collecting contact information from all parties involved. Employees involved in accidents were required to report them to Hacienda CDC immediately after the accident. FORTH handled and approved any repairs that needed to be completed.

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## PROJECT OUTCOMES

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### MARCH 2017-JULY 2017

From the beginning of the project in March 2017 through July 2017, there were 59 rental requests on Turo with 13 of the requests resulting in rentals. Over the course of the 13 rentals, the cars were used by community members for 43 days and Hacienda CDC kept all earnings from the rentals which was approximately \$300. Each reservation varied in length from one day to five days.

Another notable issue that the project team ran into with Turo was that rental requests expired if they went unanswered for eight hours or longer. This meant that if rental requests occurred outside of business hours, an employee was unlikely to be able to respond within the eight-hour window. The CEV Turo account notified renters that responses would not receive a response between 6pm and 8am but that did not discourage rental reservations from occurring outside

business hours. As a result, 37 reservation requests were missed by the project team. Below, in Table 2, are detailed numbers about reservations and reservation requests for the project cars through July 2017.

	Colaboración	Respeto	Total
Days Rented	31	12	43
Completed Rentals	10	3	13
Requested Days	132	49	181
Total Reservation Requests	46	13	59
Denied Reservations	5	4	9
Missed Reservation Requests	31	6	37

*Table 2: Data from community rentals through the mid-point (July) of the project.*

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## AUGUST 2017-DECEMBER 2017

From August 2017 to December 2017 there were 108 rental requests for the electric cars and Hacienda CDC earned approximately \$885. Of the reservations between August and December 2017, 17 requests were denied and 59 reservation requests went unanswered. Unfortunately, due to an organizational change at Hacienda CDC, there was limited organizational capacity between May and August which led to a higher rate of missed reservation requests.<sup>21</sup>

Throughout the entirety of the project, there were a total of 167 reservation requests with 96 requests missed (due to the eight-hour limit) and 26 requests denied due to the car either not being available or the potential renter not living within the Cully community.

In total, Hacienda CDC earned \$1252 from a total of 53 completed rentals between March 2017 and December 2017. Table 3 includes the final project numbers from March-December 2017.

	Colaboración	Respeto	Total
Days Rented	66	108	174
Completed Rentals	18	35	53
Requested Days	200	155	355
Total Reservation Requests	55	53	108
Denied Reservations	10	7	17
Missed Reservation Requests	27	32	59

*Table 3: Data from community rentals over the course of the second half of the project.*

At the end of the project, the team pulled key data points from Blink’s online charging management tool. The online tool recorded all of the charging sessions that occurred using the three EVSE installed at Hacienda CDC. According to the data provided by Blink, over the life of the project, CEV prevented over 1,200 pounds of carbon dioxide from entering the atmosphere. By using electric cars for this project, 213 fewer gallons of gasoline were used to move people and goods in and around and to and from Cully. Not only did Hacienda CDC generate a small amount of money through the community rental to help cover some project costs, but they also saved a significant amount of money compared to if they had had a staff vehicle and it had run on gasoline.

Compared to the cars available for community use, the Hacienda CDC employee car had greater and better sustained utilization throughout the project. Hacienda CDC had twenty employees approved as drivers and twelve of them participated in the project and completed over seventy rides with one vehicle. In interviews with Hacienda CDC employees involved in the project, they described that they wish more employees had taken advantage of having the car and that there were only a few employees who frequently used the vehicles. Initially, the project was met with some hesitation from some employees. This was in part due to their lack of familiarity with and confidence in the technology, but also due in part to not being accustomed to having a staff car. However, employee advocates Gena Scott and Ana Mendoza helped many employees overcome their initial reservations to some extent. Using the Fit EV, the organization saved \$1,023.99 on mileage reimbursements over the course of the project. Throughout the duration of CEV, they continued to spend approximately \$1,160 per month on mileage reimbursements. While the project did offer savings for Hacienda CDC, with dozens of



employees needing to travel throughout the region in the car, the Fit EV was not always available and did not always meet the needs of those traveling. Employees who were interviewed noted that at times there was a high demand for the vehicle, especially in the summer when more programming occurs, and therefore not all employees were able to use the car when they needed it. With only one car available for 20 approved drivers, there were times when more than one employee wanted to use the car. Additionally, with properties in Molalla, which is over thirty miles away from Hacienda CDC's Cully office, the car did not always have the range necessary to serve all employee needs. However, this project did provide more opportunities for staff to travel to various trainings and conferences that would have been previously difficult to access.

## FINAL OUTCOMES

### Community Vehicles

	Colaboración	Respeto	Total
Completed Rentals	28	38	66
Denied Reservations	15	11	26
Missed Reservation Requests	58	38	96
Total Reservation Requests	101	87	188

Table 4: Community Vehicle Rental Requests-Entire Project

	Colaboración	Respeto	Total
Days Rented	97	120	217
Requested Days	332	204	536

Table 5: Community Vehicle Days Rented-Entire Project

## Employee Vehicle

Number of Approved Employees	20
Final Number of Employee Participants	12
Miles Driven	1914
Reduction in Mileage Costs	\$1023.99

Table 6: Employee Vehicle Data-Entire Project

## PROJECT INSIGHTS

Throughout CEV, the project team encountered many barriers and hurdles. Nevertheless, the project was not without its successes and moments where everything fell into place as we had hoped. Although the project design and processes are important to understanding how one might replicate this project's model, the team believes that individual project insights will help others understand exactly which elements worked well and which could benefit from a modified approach.

## INSURANCE

Before the project started and while still in the design phase, the project team encountered a time-consuming complication when working to acquire insurance to cover both the cars and drivers. Forth was initially quoted costs of over \$12,000 for insurance. After thoroughly considering every option, the team determined that the best option for this project would be to use three different types of insurance coverage.

First, Hacienda CDC employees were covered by Forth's liability insurance which added about \$1,000 to the insurance costs for the project. Second, the primary insurance for when a renter was driving one of the cars was provided by Turo; the cost of that insurance is automatically included in the total rental cost. Lastly, Forth insured the vehicles themselves to account for the time when they were not covered by Turo. This insurance cost approximately \$2,040 per car for the duration of 2017.

**RECOMMENDATION: Start exploring creative insurance options early. It will take longer, and cost more, than expected. Having a good insurance agent is important, and some level of ‘self-insurance’ or willingness to absorb financial risk may be necessary.**

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## DIFFICULTY WITH SELECTED PLATFORM

There was consensus before, during, and after the demonstration project that Turo was a problematic platform. As noted by Asset Manager, Gena Scott, both Hacienda CDC staff and residents found the application difficult to use. Mysteriously, the cars would not always be visible on Turo to potential renters. When this would occur, a Hacienda CDC employee would then have to sit down with the community member interested in renting a Honda Fit EV to find the car on Turo which required more of their time. Furthermore, even when a staff member did sit down with residents to find the cars on Turo, they too, would sometimes struggle to find them. Unfortunately, we were never able to understand why the cars would occasionally not show up on Turo for those looking to rent the cars.

*Community Snapshot: “The limitations on Turo were mainly the reason why [I did not use the cars more.] There were limitations on weekends. The twenty-four hour [reservation requirement] prior [to the] rental and five day rental maximum were also a limitation. Another thing that was odd was that I could not find the link [to the cars on Turo], I had to get the link sent to me.”*

Not only did staff and residents struggle with the application working, but many Cully residents speak languages other than English like Spanish and Somali. Forth and Hacienda CDC attempted to reduce language barriers by including both a Spanish and an English project description on each car’s profile. However, this did not resolve the issue of access for many non-English and non-Spanish speakers who wanted to participate in the project. The language barrier exasperated difficulties with using an application for transportation and led to the unintentional exclusion of participants who could not navigate or access the application. Furthermore, we would have preferred an hourly rental option, and one that was less labor intensive for renters and staff alike.

**RECOMMENDATION: Future projects should consider emerging new software applications or even custom solutions that are more user friendly and available in more languages to meet the needs of users.**

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## TECHNOLOGY

While many residents had access to a smartphone, there was still a level of unfamiliarity with the concept of using an application or website to meet transportation needs. In a parallel project, Forth worked with the nonprofit OPAL (Organizing People/Activating Leaders) on a report that found similar issues. OPAL discovered that many participants had limited experience using smartphone applications to pay for and to access transportation, but the participants said that they hoped there would be opportunities to attend trainings or workshops guiding them through these applications in the future.<sup>22</sup>

The fact that the cars were electric presented an additional technological barrier for some people because for many people, this was their first experience with electric transportation. The cars are quiet and operate slightly differently compared to traditional gasoline vehicles, so there were a good deal of differences some participants had to become accustomed to. Both staff and community members became increasingly comfortable with the electric cars, but some did go into the project with occasional reservations and misconceptions about the cars. For example, through speaking with community members, the project team learned that many participants believed electric cars to be too small and unsafe on highways and freeways before the project. However, throughout outreach efforts, both Forth and Hacienda CDC were quick to dispel any rumors and assured everyone that these cars were completely safe and were quite similar to other cars.

*Employee snapshot: "A big challenge was not understanding how the electric car works...There was an instance where an employee got stranded because she drove so far and didn't understand electric miles."*

**RECOMMENDATION: Host multiple informal learning sessions about digital mobility applications, electric cars, and any new technologies used in demonstration projects. These learning sessions should be hosted by a trusted community organization at a public location that is easily accessible and located in the community. Translators, childcare, and food should also be provided. Thoroughly consider and explore options that would not require participants to use a digital platform.**

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## BANKING

One challenge that we struggled to fully account for, in part due to the lack of solutions at the time, was the lower banking participation rate in these communities. Regardless of which software solution we would ultimately use, all participants would need to have a credit or debit card to pay for rentals and the team knew that this would make the project less accessible in the community. After speaking with community members, it was confirmed that some people would not be eligible to participate because of this requirement.

Lacking access to traditional banking institutions in underserved communities is not a new problem or one that is isolated to Cully (although the issue is heightened in the neighborhood as there is only one bank branch.) In focus groups held by OPAL and PSU, some participants stated that they had access to a credit card and checking or savings account, but some did not. The consensus was that for some individuals, they simply did not have access to traditional financial institutions. For others, they chose not to participate in the banking system citing security concerns and a lack of trust between community members and the banking industry which has historically redlined communities of color and lower income communities.<sup>23</sup>

When the project launched, alternatives to traditional banking were still being developed and were not readily available. Now, in 2018, there are a myriad of increasingly innovative solutions that better fit the needs of these communities while also helping to build trust and credit within the community.

**RECOMMENDATION: If possible, provide alternative payment methods such as cash and explore new innovative financial solutions that help individuals build credit, like Lemando. Additionally, consider talking to local banks and credit unions in the community about working together to develop a solution.**

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## DRIVER'S LICENSES

Throughout the project, several community members expressed interest in participating, but explained that they were unable to participate because they did not have a driver's license. There are many reasons as to why someone may not have a driver's license, but one key reason



is that undocumented immigrants in Oregon cannot legally obtain a license, due to a ballot measure passed by voters in 2014.

Although the project team was aware that requiring a driver's license impacted participation, we were unable to determine exactly how much of a deterrent it was. Hacienda CDC does not collect information on how many Cully residents have a driver's license, nor did we survey the area about this. Additionally, due to the political climate in late 2016 and early 2017, few individuals felt comfortable admitting to not having access to a driver's license.

*Community Snapshot: "It [accessibility to the project] could have changed a whole lot if there was an option to [accessing] licensing. My neighbors know how to drive but the state doesn't give them option because of their legal status. If that wasn't a barrier then more people would have been able to participate. That was the limit for many residents and community members...We are in a state that won't provide driver's licenses to everybody."*

In response to learning about license-challenged community members and their inability to participate in the project, Forth created the Community Electric Bicycle (CEB) Project in partnership with the Community Cycling Center (CCC). CEB addressed the barriers of not having a driver's license by providing three cohorts of approximately ten participants (most of whom did not have licenses) with an electric bicycle for ten weeks to see if the bikes could be a viable alternative transportation option for the participants. One cohort consisted of Hacienda CDC residents from the biking advocacy group in Cully, *Andando en Bicicletas en Cully (ABC)*, which consists largely of Latina residents from Cully. Forth is currently working on producing a separate case study for this project which will be completed by September 2018.

**RECOMMENDATION: Organizations interested in executing a similar project should conduct a thorough needs assessment to determine if the community is interested, able to participate, and in need of a similar project. If not everyone can participate, then the project design team should look for alternatives that can complement the main project and broaden access to innovative transportation solutions.**

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## ORGANIZATIONAL CAPACITY

Between May and July, two of the three Hacienda CDC employees managing the project left the organization. For three months, only one employee was available to work on managing requests and managing all three of the vehicles. This, understandably, resulted in a higher rate of unanswered reservation requests because this was only a small part of this employee's workload. Furthermore, Hacienda CDC staff were only available to review requests Monday-Friday from 9-5, resulting in a high percentage of missed reservation requests.

At Forth, there were three employees overseeing the project and conducting outreach at community events, but they were unable to assist with reservations. Given that Forth employees were not working at Hacienda CDC's offices, it would have been difficult for them to help facilitate onsite work. Further, because the Forth employees were new to the Cully community, they did not have the relationships in or trust of the community yet. In August, a new Resident Services Coordinator, Veronica Cabrera, was hired and began managing reservation requests for the second half of project. Cabrera is fluent in Spanish and quickly established strong relationships within the community—helping to increase utilization of the vehicles. After Cabrera started, CEV saw increased communication on Turo and more reservations due to the increased organizational capacity and strong community relationships Hacienda CDC employees fostered.

**RECOMMENDATION: Ensure that there are dedicated project staff in all participating organizations, and ensure they are adequately funded. Acknowledge the role of organizational capacity has in influencing project outcomes. When possible, plan for project team turnover through cross-training and other strategies to reduce overall risks.**

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## OUTREACH

Throughout the project, there was an emphasis on outreach and education to help teach residents and employees about the economic and environmental benefits of electric transportation. From its inception, CEV intended to increase access to education about electric cars and advanced vehicle technologies in the community. To ensure that the community stayed at the forefront of the outreach, Forth and Hacienda CDC collaborated on all outreach efforts for both employees and Cully residents. All materials were created by Forth in English before being translated into Spanish for Spanish-speaking community members. These brochures, one-pagers,

and fliers explained how electric cars work, what the project was, how residents could access the cars, and who to talk to at Hacienda CDC or Forth to learn more about the project and electric transportation. One piece of literature provided to Hacienda CDC for renters and community members was Forth's EV101 in both English and Spanish. Now, Forth has EV101 in not only English and Spanish, but also Cantonese, Vietnamese, Somali, and Amharic which were translated by staff from the Environmental Coalition of South Seattle (ECOSS) for another project.

Outreach efforts included tabling at community events like farmer's markets, hosting a free event where people could test drive electric cars (also known as a ride and drive), and distributing materials door-to-door. Forth hosted four workshops over the course of the first four months of the project at Hacienda CDC, but there was low community attendance. Despite providing dinner, childcare, and translation services, only a total of four people came to the workshops. Workshop attendance was likely low because of short advertisement period prior to the events, Forth's limited social capital in Cully, and Hacienda CDC's limited staff capacity to promote the events. Several months into the project, on June 16, 2017, Forth hosted a ride and drive event with the Honda Fit EVs, Forth's Ford C-MAX Energi, and a used Nissan LEAF from a local dealership that only sells used electric cars, Platt Automotive. This event was open to both staff and the community and took place at the Living Cully Plaza across from Hacienda CDC's offices. About eight employees and one community member attended over the course of approximately two hours. One of the reasons for the low turnout may have been the weather which was cold and wet, but it also shows the ongoing challenges faced in promoting new mobility approaches.

Outreach efforts took place primarily at the launch of the project. The project likely could have benefited from ongoing outreach and events. Furthermore, if Hacienda CDC had had the capacity to lead or initiate more of the outreach, there may have been higher turnout at some events because of their presence in and trust from the community. Additionally, collaborating with other trusted CBOs in Cully could have helped increase awareness of the project.

*Employee Snapshot: "In hindsight, it would have been better to have a year to hype it up, tell people about the project, get them interested, and get people on board. When we launched there was just not enough interest even though there had been outreach." -Gena Scott*

In interviews with community members and employees, there was a consensus that there was a lack of awareness about the project throughout the neighborhood. Much of this feedback was specific to the first half of the project when Hacienda CDC was short-staffed and before Forth put

more effort into outreach and tabling. More specifically, some felt that Forth should have spent more time going door-to-door to talk to residents in the neighborhood and posting more fliers in the area. There was also confusion in the community about whether community members that did not live in Hacienda CDC owned properties, but lived in Cully could rent the cars. Others felt that the project's short timeline of about nine months, was not long enough for people to hear about and utilize the project. Still, as noted above, rental requests climbed significantly over the project period.

**RECOMMENDATION: Outreach efforts should be led by trusted and well-known community organizations, which need to have adequate resources to continue that work throughout a project. Additionally, projects of 12 months or longer are likely to be more effective. Lastly, engage as many and as diverse a group of CBOs as possible.**

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## SUCSESSES

Despite the many challenges of CEV, the project provided many learning opportunities that can be applied to future projects. Furthermore, CEV did in fact meet the needs of some community members and some of Hacienda CDC's staff. For example, one user used the service for three months while his personal vehicle was inoperable and awaiting repairs. Another community member used the service to help her get to jobsites for her household cleaning business when the car she shared was unavailable. Prior to CEV, the community member would take public transportation or more expensive options such as taxis or ride hailing options to get from place to place for work. In an interview with Gena Scott, Scott described the difficult and time-consuming process of the community member hauling her vacuum onto the bus. It was not ideal, but a much cheaper option than regular taxis or ride hailing rides. CEV served as an affordable, reliable, and convenient alternative when these participants were unable to use their own vehicles.

*Community Snapshot: "I was able to use the car during stressful times. I had a broken down vehicle so the system [the project] was reliable and helpful."*

Two goals central to the project were to first, increase exposure to electric cars in the community and second, to prove that used electric cars were a viable, inexpensive, and environmentally

friendly option for more drivers. Adriana Noesi, Hacienda CDC's Executive Assistant, exemplified the drivers we hoped to reach in our second goal. Noesi participated in the project and regularly used the dedicated staff car to pick up supplies for meetings. After learning more about electric cars through the project, Noesi purchased a used Nissan LEAF for her family as their second vehicle. She said that her experience with the project taught her about the many benefits of electric cars and ultimately influenced her decision to purchase the used Nissan LEAF. Furthermore, Noesi noted that she felt more confident at the dealership because she felt well-informed about topics like charging and range. As a new electric car driver, access to a charging station at Hacienda CDC was also a motivating factor in her purchase because it helped ease her range anxiety and gave her added confidence that she would have another place to charge her car if necessary. Noesi also expressed that owning an electric car has saved her family a significant amount of money and has overall, been an enjoyable experience.



*Image 5: Gena Scott and Adriana Noesi of Hacienda CDC*



An unexpected outcome of CEV was its positive impact on youth in the area. Hacienda CDC's Youth and Family Services used the electric cars on multiple occasions for field trips with the children they serve. Additionally, Forth staff met with and talked to the children about the benefits of electric cars and let them explore a Chevrolet Bolt EV and its components like the charging port and the motor. Ana Mendoza, an After School Program Coordinator with Hacienda CDC, expressed that one of the most impactful parts of the project was the opportunity for the children in the afterschool program to learn more about the cars and how they worked. Mendoza noted that many of her students were already somewhat familiar with the technology and the increased exposure to the cars made them excited about the prospect of potentially driving an electric car of their own one day.

*Employee snapshot: "[CEV] introduces new technology to our community that [it] might not have had access [to previously.] One example, is Ana—who has hosted Forth for a youth workshop—to open their [the youth] eyes to a new transportation technology." –Jaclyn Serna*

In addition to having another transportation option, Hacienda CDC employees expressed that they liked having the electric cars branded with Forth and Hacienda CDC logos because it was a sign of their commitment to the environment. The branding also promoted the partnership between the two organizations and highlighted Hacienda CDC's enthusiasm about trying a new program that might benefit their residents and neighbors. Jaclyn Sarna, Hacienda CDC's Youth and Family Services Director, expressed that this project demonstrated their awareness of the transportation challenges residents face and that, as an organization, they are always looking for creative solutions to help their residents.

Arguably, the biggest success from this project was the partnership between Forth and Hacienda CDC. This collaboration can be used as an example for how two seemingly disparate organizations can both bring something unique to the table to engage with the community and address community needs. The partnership between the two organizations has expanded beyond CEV with Forth and Hacienda CDC partnering on a new project, FUTURO, which aims to address some of the key barriers that were present in CEV. FUTURO utilizes Uber and their various software solutions to coordinate rides for community cohort members at Hacienda CDC without requiring them to provide licensing, social security, or banking information. Hacienda CDC's headquarters has also become the usual meeting place for Forth's quarterly transportation equity meetings that bring stakeholders together to discuss programs taking place in local underserved communities. Forth is also now partnering with Hacienda CDC and other

CBOs to incorporate clean mobility options into a major new housing development, Las Adelitas, currently in the planning stages.

*“We gained a major partnership with you all [Forth]. It has been great to have youth involved, working with ABC [Andando en Bicicletas en Cully], and the E-Bike project. The E-Bike project shows it’s a great viable transportation mode [in Cully.] A benefit was introducing new technology especially since we focus primarily on necessities. It shows Hacienda cares about sustainable transportation, sustainable energy, and that transportation is a challenge for our families and we are looking for creative solutions for that challenge.” –Jaclyn Sarna*

*“Working with Forth, they are all passionate about transportation equity and it really opened my eyes. I didn’t really think much about EVs. My perception of them [EVs] was sure they are great if you are going downtown, but I like to go to the beach a lot and now I know that it possible. But you know the exposure to EVs has opened my eyes. It brought the community and employees along with it. You can have one if you want. They can help you save costs.” –Gena Scott*

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## FOR NEXT TIME

This project intended to provide a model that would be both sustainable and replicable for future projects in other communities. Although we may not have perfected that model, we have learned a great deal and have identified many elements that can and should be used to inform similar projects. There are also a number of new technologies, software solutions, and business models that were not available 18 months ago, and that promise to make projects like this increasingly viable.

The community-oriented piece of the project did not generate enough earnings from Turo to justify purchasing or leasing a vehicle solely for community use and rental, certainly not at the \$10 per day rental price used in this project. However, the project team intentionally set rental prices to the lowest price possible in order to increase access to the community and knew that the revenues generated would likely not cover net expenses. Even with the cars on loan from American Honda, both the price of the rental and frequency of rentals would have had to increase in order to justify the purchase of a vehicle solely for community rentals.

One way the project team could have increased the number of rentals would have been by allowing people who did not live in Cully to rent one of the cars when it was available. However, Hacienda CDC was firm in their belief that that would compromise access for Cully residents. Additionally, Hacienda CDC has over thirty employees spanning across four different departments. With only one dedicated Honda Fit EV for staff, it was impossible for the car to meet all of the needs of all employees. However, even when the vehicle was available and met the needs of employees, it was not always utilized.

Finally, with an 82 mile range, the Honda Fit EVs did not have the range necessary for employees to comfortably travel from their office in Northeast Portland to Salem, OR and Molalla, OR. Despite these issues, Hacienda CDC is still interested in acquiring their own electric car for work travel around the City and possibly a hybrid or plug-in hybrid for longer trips like those to Salem and Molalla.

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## THE HORIZON

Forth hopes to continue building on the lessons learned from CEV through another community demonstration project. In late 2017, Forth began talking with Home Forward, an affordable housing authority which operates throughout Oregon, about how we might collaborate on a project to improve the transportation options for some of their residents. The Rockwood neighborhood in Gresham, OR includes one of Home Forward's properties, Rockwood Station. Residents in this community live in a food desert, as designated by the USDA, and often have no choice but to travel several miles to access fresh, affordable, and healthy food.<sup>24</sup> While public transportation serves the area, this form of mobility is not conducive to shopping at grocery stores several miles away especially when attempting to run other errands or shopping with one's family. In an effort to empower residents to dictate their own schedules when necessary and improve access to healthy and affordable food, Forth hopes to partner with Home Forward and Envoy, an on-demand car sharing platform. Through this project, we hope to further explore the potential electric cars and car sharing have to provide an affordable and convenient mobility solution to the community.

By partnering with another trusted organization in a new community, Forth is building upon parts of the CEV model that were the most successful. Additionally, armed with the lessons learned from this project, there are improvements our team hopes to make in an improved second

version. For example, when CEV was still simply an idea, there were only a few developed car sharing platforms. Today, there are many more options that are likely to be a better fit for the model we are working to improve of an electric, affordable, and community-centered car share. Envoy, for example, would allow our team to place almost any electric car of our choice on the platform. However, we believe that the biggest advantage Envoy offers is the software which would allow a program like this to be more hands-off. Staff at Rockwood Station would not have to respond to reservation requests as Envoy's software would be able to automatically approve or deny a request almost immediately. Not only would staff not have to worry about approving reservations, but there would also be no need for staff to hand-off or pick-up the keys because Envoy's vehicles use keyless entry systems. By taking the major successes and project insights from CEV and apply them to future projects, Forth believes that this model can be further refined and improved to help better guide other communities looking to replicate this project.

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## CONCLUSION

Though CEV officially ended on December 31, 2017, Hacienda CDC will continue to provide transportation options for employees and the community by continuing a modified version of the project with two Honda Fit EVs through the end of 2018. This was made possible by American Honda generously offering to extend the loan of the vehicles through December 31, 2018. One vehicle will remain listed on Turo for community members to access for the same rates as during the official project period. CEV has moved to the Youth and Family Services team where there will be continued outreach to promote community use of one of the cars. Furthermore, employees will continue to have access to one of the Fit EVs as an employee car as was available to them previously. By downsizing to two vehicles, one of the three Level 2 EVSE will always be available for employees and community members to charge their own electric vehicles.

Forth and Hacienda CDC will continue working with the Cully community by collaborating on a new project, FUTURO, which is funded by Uber Technologies Inc.'s Community Impact Initiative. From January 1st to December 31st of 2018, the FUTURO project will utilize Uber Central and U4B to provide fully subsidized rides for community members and employees. By using Uber Central, the project team hopes to eliminate some of the barriers encountered during CEV while still assisting people in reaching their destinations. Uber Central will allow community members to work with a member of Hacienda's Youth and Family Services team to order a ride without

having to have the Uber application on their phone, without a credit or debit card, without a driver's license, and without providing full personal information to additional parties. The member of the Youth and Family Services team will be able to order an Uber for the resident(s) to go to the grocery store, doctors appointments, parent-teacher conferences, and other vital errands. Thus far, the project has encountered some barriers with some participants encountering technological challenges and organizational capacity. The program will also utilize U4B to provide fully subsidized rides to Hacienda CDC employees. This will continue to reduce Hacienda CDC's mileage reimbursements which will allow them to continue to save money which can be used to support existing and future programs or save for a fleet vehicle to reduce future mileage costs.



## Appendix A: Approximate Budget

Approximate Budget	Description	Amount	Balance	Notes
Personnel	Year 1	\$30,000	\$30,000	2016-Scoping and Project Design Phases
	Year 2	\$60,000	\$90,000	2017-Ongoing Project Period
	Year 3	\$40,000	\$130,000	2018-Wrap-Up, Case Study Production, and Project Design for Continuation Projects
<b>Total Personnel</b>			<b>\$130,000</b>	Includes Personnel, Fringe, and Overhead
Contract Services	Tech Consultant	\$4,000	\$4,000	Fee for the consultant who evaluated different technologies options/platforms to facilitate the community rentals
	Electrician	\$5,200	\$9,200	Installation of 3 EVSE at Hacienda CDC
	1-Pager	\$10,000	\$19,200	Development of 1-Pager in both English and Spanish
	Other Marketing Needs	\$5,000	\$24,200	Development of other fliers, literature, and collateral
<b>Total Contract Services</b>			<b>\$24,200</b>	
<b>Travel and Meals</b>		<b>\$280</b>	<b>\$280</b>	\$20/mo for 14 months-includes travel (mileage and other transportation costs to and from Hacienda and other sites like the car dealership where the cars were serviced)
Event Expense	Project Ribbon Cutting	\$1,500	\$1,500	Pan Dulce, Photographer, A/V Equipment Rental
	4 Workshops	\$800	\$2,300	4 workshops at a cost of \$200/ea
	1 Ride and Drive	\$200	\$2,500	
<b>Total Event Expense</b>			<b>\$2,500</b>	

Equipment Lease, Insurance, and Maintenance	Vehicle Maintenance	\$1,350	\$1,350	\$50/mo/vehicle for 9 months
	Vehicle Insurance	\$7,120	\$8,470	
	3 Honda Fit EVs	\$0	\$8,470	*note that American Honda loaned the project team the cars for this program, but had we purchased 3 used electric cars we would estimate the cost to be approximately \$12,000/each for a total of \$36,000*
<b>Total Equipment</b>			<b>\$8,470</b>	
<b>Supplies and Materials</b>	<b>Tabling supplies, printing costs, etc.</b>	<b>\$2,000</b>	<b>\$2,000</b>	
<b>Total Cost of Project</b>				<b>\$165,550</b>

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- <sup>12</sup> "2000 and 2010 Census Profile-Cully," Office of Neighborhood Involvement, City of Portland, <https://www.portlandoregon.gov/oni/article/375860>.
- <sup>13</sup> "Not in Cully: Anti-Displacement Strategies for the Cully Neighborhood," Portland State University, June 2013, [https://www.pdx.edu/usp/sites/www.pdx.edu.usp/files/A\\_LivingCully\\_PrinterFriendly\\_0.pdf](https://www.pdx.edu/usp/sites/www.pdx.edu.usp/files/A_LivingCully_PrinterFriendly_0.pdf).
- <sup>14</sup> Office of Neighborhood Involvement, City of Portland, Ibid.
- <sup>15</sup> Portland State University, Ibid.
- <sup>16</sup> Living Cully, Ibid.
- <sup>17</sup> Ibid.
- <sup>18</sup> "Cully Neighborhood Fact Sheet," The Cully Association of Neighbors, May 2013, <http://www.cullyneighbors.org/cully-neighborhood-fact-sheet/>.
- <sup>19</sup> "Charter, Code and Policies-RN-1.08-Pavement Maintenance Policy & Practice," City of Portland, <https://www.portlandoregon.gov/citycode/article/41346>.
- <sup>20</sup> Office of Neighborhood Involvement, City of Portland, Ibid.
- <sup>21</sup> To learn more about the denied reservation requests refer to barriers section of case study.
- <sup>22</sup> "Community-based assessment of Smart Transportation needs in the City of Portland," Portland State University and Organizing People/Activating Leaders, April 2018, [https://forthmobility.org/storage/app/media/Documents/Community%20Assessment%20of%20Smart%20Mobility%20OPAL\\_PSU\\_Forth%20Final.pdf](https://forthmobility.org/storage/app/media/Documents/Community%20Assessment%20of%20Smart%20Mobility%20OPAL_PSU_Forth%20Final.pdf).
- <sup>23</sup> Ibid.
- <sup>24</sup> Economic Research Service (ERS), U.S. Department of Agriculture (USDA), [Food Access Research Atlas](https://www.ers.usda.gov/data-products/food-access-research-atlas/), <https://www.ers.usda.gov/data-products/food-access-research-atlas/>.