



Electric and Equitable

Learning from the BlueLA Carsharing Pilot

Electric Vehicle Carshare Case Study



SHARED-USE
MOBILITY CENTER

Acknowledgements

April 2019

As the leading public interest organization in the shared mobility sector, the Shared-Use Mobility Center (SUMC) has provided research, technical assistance, strategic planning & implementation, and public & private partnership facilitation to governments, transportation agencies, private sector companies, business and community leaders, and research organizations since 2014.

Knowledge creation and deployment are vital if we are to achieve a multi-modal, economically sound transportation system that works for all. To this end, we look forward to sharing lessons learned from pilots such as this that can help us reach our goal.

This report was made possible through support from The Hewlett Foundation, which advances ideas and supports institutions that promote a better world.

SUMC is grateful to the California Air Resources Board, the Office of Los Angeles Mayor Eric Garcetti, the Los Angeles Department of Transportation, the Los Angeles Department of Water and Power, BlueLA, the Salvadoran American Leadership and Education Fund, TRUST South LA, the Koreatown Immigrant Workers Alliance, and Mobility Development Partners, whose willingness to share their insights and operational data made this case study possible. The content and conclusions of this report are solely those of the contributors.

This report was written by Mary Ferguson and Brian Holland, edited by Leslie Gray, and designed by Derek Berardi.

© 2019 Shared-Use Mobility Center. All Rights Reserved.

Shared-Use Mobility Center
Chicago, IL
312.448.8083
Los Angeles, CA
818.489.8651
www.sharedusemobilitycenter.org



SHARED-USE
MOBILITY CENTER

Contents

Project Summary and Initial Results	01
<i>Clearing the Air in a Car Culture</i>	02
<i>Initial Outcomes</i>	03
<i>Membership and Utilization</i>	03
<i>Greenhouse Gas Emissions</i>	04
Concept and Partnership Development	05
<i>Leadership and Policy Context</i>	05
<i>Public Agency Partnerships</i>	07
<i>Steering Committee and Non-profit Partnerships</i>	07
<i>Public-Private Partnerships/Procurement</i>	08
Public-Private Partnership Business Model	11
<i>Services and Value Proposition</i>	12
<i>Cost and Ownership Structure</i>	13
<i>Revenue Model and Pricing</i>	14
Planning, Permitting and Construction	16
<i>Service Area and Station Site Selection</i>	17
<i>Community Engagement</i>	20
<i>Station Design, Permitting, and Construction</i>	22
Marketing and Operations	25
<i>Marketing</i>	25
<i>Operations</i>	26
<i>EV Charging and Rebalancing</i>	26
<i>Member Enrollment and User Experience</i>	27
Evaluation and Reporting	29
Next Steps	31



Project Summary and Initial Results

In 2016, the City of Los Angeles embarked on an electric vehicle (EV) carsharing pilot project through a grant from the California Air Resources Board (CARB). The city's grant proposal, "L.A. Leading by Example: Partnering to Pilot EV Carsharing in Disadvantaged Communities," was developed by the city with support from lead technical partner SUMC and submitted to CARB in April 2015. It emphasized serving low-income residents and reducing greenhouse gas emissions (GHGs). Implementing a progressive EV carshare pilot in a historically-steadfast car culture such as LA would prove to be challenging for a variety of reasons, but BlueLA EV Carshare (BlueLA) has already begun delivering results to Angelenos through reducing GHGs and providing a new mobility option. This case study evaluates lessons learned in Phase One of the BlueLA project, which concluded in spring 2019.

Clearing the Air in a Car Culture

For decades, cars have been synonymous with the LA lifestyle, despite the fact the region has been plagued by smog and subsequent health impacts such as asthma and cancer. Though air quality has improved with the introduction of vehicle emissions technologies, vehicle miles travelled (VMTs) and emissions are ticking back up since more people are buying cars. This situation has created an opportunity for city and regional leaders to rally support for massive investments in transportation options such as light rail and bus rapid transit.

BlueLA, a subsidiary of Paris-based Bolloré, offered a new and innovative transportation option with EV carshare. In Phase I, BlueLA is operating 100 shared battery electric vehicles (BEVs) in a one-way carsharing model in locations throughout central LA that include two parking spots with EV charging equipment (electric vehicle supply equipment or EVSE) for each vehicle. The service is based in “disadvantaged communities” as defined by the state model that accounts for income and air pollution exposure. Partners have engaged community stakeholders, residents, and businesses throughout the process. The overarching goal is to recruit at least 7,000 new users within three years of project launch, who are expected to sell or avoid purchase of 1,000 private vehicles, reducing an estimated 2,150 tons of GHGs annually.

The city’s bold initiative provides valuable insights that can inform expansion of the program locally and replication in cities nationwide. Even in a city where car ownership is the overwhelming standard, promising trends suggest a successful future for the program, leading one project partner to state: “If you can do it in LA, you can do it anywhere.”

As one project partner stated, "If you can do it in LA, you can do it anywhere."

Project timeline

- 04/08/15 - Project proposal submittal
- 10/30/15 - Grant agreement execution
- 12/09/15 - Project kickoff meeting with CARB, City of LA, SUMC
- 02/22/16 - RFQ solicitation issued
- 01/17/17 - BlueLA contract in effect
- 06/09/17 - Soft launch of demonstration site
- 04/20/18 - Commercial launch
- February 2019 - 22 sites completed and operational at time of publication

Initial Outcomes

BlueLA commenced operations in April 2018. As of this writing ten months later, just over half of the vehicles and associated stations that will ultimately be completed in Phase I have been deployed; there are currently 68 vehicles circulating among 110 charge points at 22 stations across the service area. Growth in membership, utilization, and GHG reductions are predicted to continue as network effects and multi-modal connections are further realized. Nevertheless, early data indicates that the program is performing well and is on track to reach the goals set out in the city’s early plans and proposals. Initial results are described in greater detail below.

Membership and Utilization

Key vehicle usage and membership statistics as of December 2018:

- 1,367 – BlueLA members
- 920 - Drivers using the vehicles
- 8,253 - Total trips
- 158,546 - Total VMTs

The service has seen rapid growth in membership and utilization since the April 2018 launch, as shown in Figure 1 below.

Figure 1: Station and Membership Growth 2018

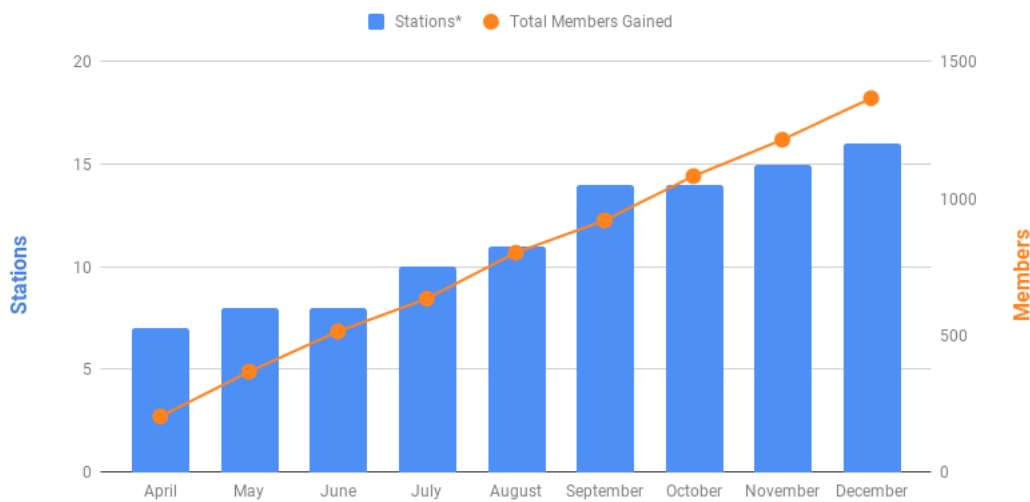
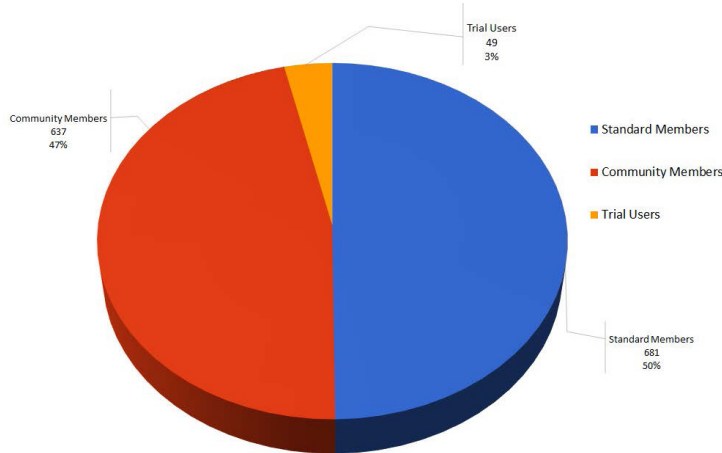
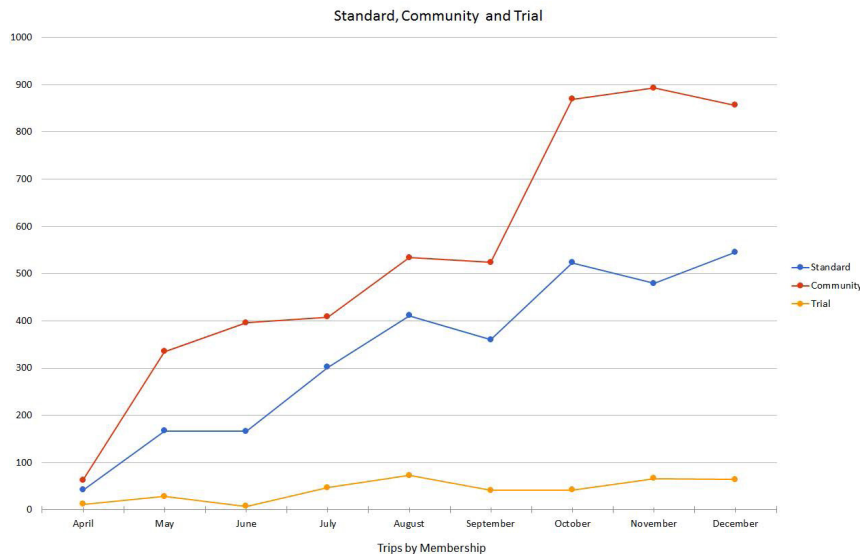


Figure 2: Memberships Types and Usage April - Dec 2018



The service has been effective in reaching low-income residents, who are able to utilize discounted pricing as “Community” members upon income verification. Community member and Standard member enrollments have been nearly evenly split (Fig. 2), but Community members have taken around 60% of all trips (Fig. 3).

Figure 3: Trips by Membership April - Dec 2018



Greenhouse Gas Emissions

Given that the BlueLA pilot is only in its early stages, it is difficult to fully measure its long-term effects on reducing GHG emissions in LA, particularly in regard to its impact on changing household travel behavior and reducing driving overall. With that said, the limited data that is available can be used to outline estimated emission reductions to date. As part of the city’s proposal to CARB, SUMC developed a methodology for calculating emission reductions; the methodology accounts for reductions from both the substitution of internal combustion engine vehicles with battery electric vehicles (a per-mile emissions factor) and from the impact of carshare on household travel patterns (total VMTs). Using the travel data described above, it is estimated that the BlueLA service has reduced annual GHG emissions by 260 metric tons since its launch ten months ago, equivalent to recycling more than 90 tons of municipal solid waste.



Concept and Partnership Development

The concept of BlueLA EV Carshare emerged from a series of discussions among local and statewide stakeholders in 2014, which focused on the need for more clean transportation options in California’s disadvantaged communities. Shared-Use Mobility Center and members of the Charge Ahead Coalition—including the Coalition for Clean Air, the Greenlining Institute, Environment California, and the Natural Resources Defense Council—engaged in dialogue with CARB that led to the creation of a funding program for piloting electric vehicle EV carshare within CARB’s Low Carbon Transportation program. This section describes how the project concept and partnerships were developed to advance the city’s ambitious policy goals through this funding opportunity.

Leadership and Policy Context

BlueLA was developed to address a number of city and state goals around transportation, climate change mitigation, and access for underserved communities. In February 2015, CARB released its grant solicitation for the Targeted Car Sharing and Mobility Options in Disadvantaged Communities Pilot Project.¹ CARB and other state agencies had been incentivizing transportation electrification as a means of meeting the state’s climate goal of a 40% reduction in GHG emissions by 2030, but EV carsharing had not yet been a part of the state’s climate change efforts. CARB’s leadership under Chair Mary Nichols has since enabled several other clean, shared mobility initiatives to spring forth, and the agency plans to invest \$32 million dollars in these clean mobility programs over the next several years.

Funding for the project is provided through CARB's Low Carbon Transportation Investments, which is funded out of the Greenhouse Gas Reduction Fund with proceeds from the state's cap-and-trade program. State law requires that these funds be directed to further reductions in GHG emissions. CARB was also seeking to reduce pollutant emissions in the state's most disadvantaged communities (DACs), geographic areas identified by the California Environmental Protection Agency's CalEnviroScreen tool², which assesses all census tracts in the state to identify low-income areas disproportionately burdened by and vulnerable to multiple sources of pollution.

The Office of Los Angeles Mayor Eric Garcetti was specifically interested in the project as it related to many city initiatives and plans including:

- The Sustainable City pLAN, which outlines a goal for GHG reductions (45% below 1990 levels by 2025) and includes strategies for addressing disproportionate environmental health impacts³.
- The LA Metro and the Southern California Association of Government's First/Last Mile Strategic Plan & Planning Guidelines for improving first and last mile connections to and from transit stations for public transit users⁴.
- The \$8.25 million integrated mobility hub project led by LADOT, which focuses on integrated, multi-modal transportation solutions for low-income residents.
- LA Mayor's Office commitment to lease 160 battery electric vehicles to replace aging city vehicles.

The Mayor's Office led the project, championing it to other city agencies until the city received the funds and LADOT took over to work on implementation after execution of the CARB grant. SUMC worked closely with the Mayor's Office on concept design and the grant proposal for the BlueLA project, drawing on SUMC staff's previous carshare experience with I-GO Carshare in Chicago⁵ and Buffalo Carshare in New York. Upon receiving the CARB grant, LADOT contracted with SUMC to provide intensive technical assistance, stakeholder engagement, and project management services. An LA non-profit organization, LA THRIVES, also provided leadership in the early stages of the project by convening a search for a Steering Committee made up of community organizations and advising on many aspects of the outreach effort.

¹ <https://www.arb.ca.gov/msprog/aqip/solicitations/msc1504solicit.pdf>

² <http://www.calepa.ca.gov/EnvJustice/GHGInvest/>

³ <http://plan.lamayor.org/>

⁴ http://media.metro.net/docs/sustainability_path_design_guidelines.pdf

⁵ SUSUMC's Executive Director Sharon Feigon was previously CEO of I-GO Carshare. Creighton Randall, SUMC Program Director at that time, previously led Buffalo Carshare.

Public Agency Partnerships

The Mayor's Office engaged city departments on relevant aspects of the BlueLA project. The "Tiger Team" was formed by the Mayor's Office to foster better communication among multiple city agencies including: the LADOT, the Bureau of Engineering, the Bureau of Contract Administration, the LA Department of Water and Power (LADWP), the Urban Forestry Division, and the Bureau of Street Lighting as well as contractors Cable Engineering Services, construction companies Vantage and Motive Energy, and Charter Communications. Tiger Team meetings took place weekly to coordinate technical aspects of planning and construction in order to streamline the permitting process.

Local council districts, including CD-1, CD-10, CD-13 and CD-14, provided feedback on community and business outreach strategies and have received regular updates on activities, utilization, and feedback from the community and local businesses.

LADWP has been a core partner to the project, providing in-kind project management support, station design services, and funding. As a municipal utility, LADWP had more flexibility over a private utility company through their familiarity with the Mayor's Office and other city agencies, as well as their leadership in sustainable practices and investment in EV's through the Charge Up LA! electric vehicle charger rebate program. LADWP is partially reimbursing BlueLA for 200 charge points under its EVSE rebate program and providing an installation fee credit for LADWP-related work. LADWP has also worked alongside LADOT and other city agencies to help streamline the permitting process.

Steering Committee and Non-Profit Partnerships

A Steering Committee was formed to include the perspective and guidance of community-based organizations and to generate culturally appropriate outreach and marketing materials targeted to the DAC neighborhoods within the project area.

In December 2015, the following organizations were involved in preliminary discussions about the formation of the Steering Committee: The Coalition for Clean Air, Communities for a Better Environment, the Koreatown Immigrant Workers Alliance (KIWA), LA Mas, the Salvadoran-American Leadership and Education Fund (SALEF), TRUST South LA, and PATH Ventures. The final three organizations, KIWA, SALEF, and TRUST South LA, were chosen for the committee for their proximity to the project area as well as their interest in leadership on the project. Each of the three organizations signed a letter of agreement with the city outlining their roles and responsibilities, and have continued on as Steering Committee members through Phase One. An outreach manager position was staffed by SALEF.

Public-Private Partnerships/Procurement

It was recognized early on that the service would be best provided through a public-private partnership in which vehicles, infrastructure, and operations would be provided by an experienced EV carshare operator.

LADOT issued a request for qualifications for the project in December 2015, following extensive internal review and feedback from the Steering Committee and CARB. A mandatory, in-person pre-bid meeting was well attended, and though the RFQ generated a tremendous amount of initial interest from vendors throughout the US and other countries, only two proposals were received.

A review panel composed of city agencies and Steering Committee members conducted an in-depth review of both responses, including interviews and site visits, and ultimately selected BlueSolutions (dba BlueCalifornia, eventually BlueLA), a subsidiary of Paris-based Bolloré, to build and operate the program.

Contract negotiations with BlueLA were extensive and complex mainly due to the unique nature of the intended public-private partnership and the limited availability of the city attorney's office. The negotiation occurred over the course of six months; several partners felt that this extended period was necessary to ensure that risks and exposure to city would be managed, while others saw opportunity to streamline the process, especially by ensuring consistent participation from all necessary parties.

The finalized contract terms were passed by city council and subsequently signed by Mayor Garcetti on December 15th, 2016 with an effective date of January 16th, 2017. Information on the council proceedings (record # 15-227) are located on the LACityClerk Connect website, and specific items and dates are as follows:

- December 12: [CAO report](#)
- December 12: [Transportation Committee report](#)
- December 13: [Council action](#)
- January 31: [Above Ground Facilities \(AGF\) Ordinance Exemption](#)



Lessons Learned

Local leadership is critical. A project with so much complexity and coordination benefits from early leadership by decision-makers such as mayors, councilmembers, and city managers. In the case of BlueLA, a clear commitment and lead role from the Mayor's Office ensured strong inter-departmental and inter-agency collaboration. Support from high-level project champions helps to ease skepticism from other departments, while ensuring that work on the project is prioritized.

The approach to procurement can affect private sector interest. Some mobility operators may have decided that the RFQ was too prescriptive in the way funds were supposed to be used, such as the requirement for vendors to contribute a substantial amount of resources while simultaneously limiting the project scope to DAC's. In retrospect, more diverse responses may have been received if the RFQ had been more open-ended. Some of the limitations in scoping the project were related to the specificity of eligible projects in the CARB solicitation and the Los Angeles proposal.

Engage all parties consistently in P3 contract negotiation. In negotiating a public-private partnership with no template to draw on, it was sensible to proceed deliberately in developing the operator's contract. In the future, identifying all players needed in the negotiation and engaging them consistently will help move negotiations forward more quickly.

blueLA
100% ELECTRIC CAR SHARING

A NEW WAY TO
GET AROUND LA

WWW.BLUELA.COM

03
blueLA

AV00340

blueLA
100% ELECTRIC CAR SHARING

California
7YOB723
dmv.ca.gov

Public-Private Partnership Business Model



The BlueLA program is a partnership-based business model in which the city and operator share in the costs, risks, and rewards of the project. The unique nature of the partnership provides an opportunity for the BlueLA pilot to include more vehicles and charging units as a result of combined efforts and funding, while also being a factor in some of the contract negotiation and permitting delays.



Services and Value Proposition

Carsharing is a service model that provides a rental vehicle by the minute or hour, rather than the usual daily rental. BlueLA users are charged for the time they use the vehicles. The service promises to provide many of the benefits of owning a car without some of the costs, such as fuel, insurance and maintenance. BlueLA is an additional transportation option to supplement first-mile/last-mile connections to public transit, offering flexibility to someone that does not own a car, and reducing the need for a second vehicle in a larger household.

The BlueLA service is an example of “one-way” carsharing, which allows the user flexibility of destination, rather than being required to return the vehicle to the station of origin. An additional benefit of BlueLA vehicles is the EV component, which is an environmentally-friendly feature that helps to reduce air pollution in neighborhoods and can eventually help to mitigate other health-related concerns.

BlueLA vehicles are station-based similar to bikesharing docks. The stations are primarily in the public-right-of-way and are designed to yield approximately two parking/charging spaces for each BlueLA vehicle. Members can only pick up and drop off cars at these locations and are charged for the one-way trip. Phase One of the project will include 100 EVs and 200 charge points at 40 stations in DAC neighborhoods in central Los Angeles.

The BlueLA target market are residents in the project area, with a focus on the DAC population. To reflect this emphasis, pricing for the BlueLA program is split into a tiered system: standard membership, community membership for the low income qualified, and trial memberships which are valid for one month. The income threshold is an annual household income less than \$31,550 for individuals or \$45,050 for a family of four, defined as very low income by the federal department of Housing and Urban Development. Community members are required to either show proof of income or proof of participation in a public program (i.e. Medicaid/Medi-Cal, CalFresh, WIC, etc.).

Phase One of the project will include 100 EVs and 200 charge points at 40 stations

Cost and Ownership Structure

Project funding includes a combination of city and state commitments totaling \$2,849,343 and \$10,000,000 in private investment from BlueLA to install and operate the service during the five-year pilot. Costs allocated to the CARB grant include community engagement, SUMC technical services, and parking conversion costs. City costs not covered by the CARB grant include in-kind staff time, charging infrastructure rebates, and discounts on regular city fees that would be necessary to operate such a service as BlueLA (Table 1). The fees are waived up to an agreed-upon amount, beyond which the operator is responsible for the cost.

BlueLA's \$10,000,000 investment in the pilot is largely dedicated to delivering the vehicle fleet, station infrastructure, EVSE equipment, and related fixtures such as reservation kiosks and meter pedestal.

During the negotiation process it became evident that the life cycle of the infrastructure and fixtures significantly outpaced the initial three-year term considered in the CARB Grant and RFQ. According to the operator and validated internally, the agreed upon life cycle for the investment was 10 years. In order to spread out the risk of this investment the team negotiated the following terms:

- Initial five-year term with three two-year options.
- At the end of the 10-year life cycle, ownership of all infrastructure and fixtures shall transfer to the city.
- In the scenario where either the city or the contractor terminates before the end of the 10-year life cycle, the city would have the option to purchase the fixtures based on the amortization schedule.
- In the scenario where the city terminates before the end of the 10-year life cycle, the city would reimburse the contractor for costs associated with infrastructure, minus any LADWP rebates.
- In the scenario where the contractor terminates before the end of the 10-year life cycle, the city would have the option to reimburse the contractor for costs associated with infrastructure, minus any LADWP rebates.

Table 1: Summary Comparison of Commitments and Funds

CARB Grant Funds (C.F. 15-1227)	
Car Share Operations Start-up Support	\$600,000
Parking Conversion	\$106,000
SPRF (Parking Revenue) Credits	\$252,600
Outreach Manager and Street Ambassadors	\$392,000
Advertising	\$100,000
Technical Advisory Services (SUMC)	\$218,743
Sub-Total	\$1,669,343
Additional City Commitments	
BOE Street Damage Restoration Fee Waivers	\$300,000
LADWP Charging Station Rebates	\$800,000
LADWP Customer Fee Waivers	\$80,000
<i>Additional City Commitments Sub-Total</i>	<i>\$1,180,000</i>
Public Investment Total	\$2,849,343
Private Investment Total	\$10,000,000

Revenue Model and Pricing

One-hundred percent of the revenue from the carshare program is retained by BlueLA. However, there is no expectation for the program to become profitable for at least another 10 years or more, making the project a long-term investment, with a strong desire on BlueLA’s part to scale up quickly. One of the revenue constraints is the requirement that all CARB grant funds be spent on equipment or services in CalEnviroScreen DACs only. This requirement limits uptake among higher-income members who may use the services more regularly and who would pay for them at the standard membership rate, while possibly limiting demand among lower-income residents who wish to end their reservations at destinations outside of the DAC area.

BlueLA has plans to open EVSE to private vehicle owners to generate additional revenue after reviewing the usage and demand of carshare vehicles first to ensure enough EVSE/parking spots would be available to the priority carshare service. BlueLA is also evaluating the possibility of selling the stored electricity from vehicle batteries back into the grid.

⁶ http://clkrep.lacity.org/online/docs/2015/15-1227_rpt_DOT_11-23-2016.pdf

BlueLA set pricing for use of the service with approval from the city, Steering Committee, and other project partners, creating a three-tiered system for standard, community and trial members (Fig. 4). The pricing is intended to encourage access for low-income residents, while providing price signals that help to manage supply and demand and ensure that vehicles are available for all residents. An additional discount was made available to community members, waiving fees for the second and third hour of the reservation; this deal has recently been opened to all members for a limited time. The pricing structure has been very popular among community members and they see it as a major incentive to join the program and use the vehicles.

Figure 4: Blue LA Pricing Options



Lessons Learned

Public-private partnerships offer a range of benefits. The public-private partnership approach allowed for greater flexibility, speed, and resources, in addition to rebates, fee waivers, and in-kind services from the city and significant investment in infrastructure and vehicles from BlueLA.

Consider scale for profitability and sustainability. In order for Blue LA to be a low-cost service for DACs, it will have to look for sponsorship beyond the CARB grant. One way to do this is by expanding service to include non-disadvantaged areas.

Balanced pricing is key. Pricing levels seem to have struck the right balance between affordability for low-income users and adequate signaling to manage demand and vehicle availability.

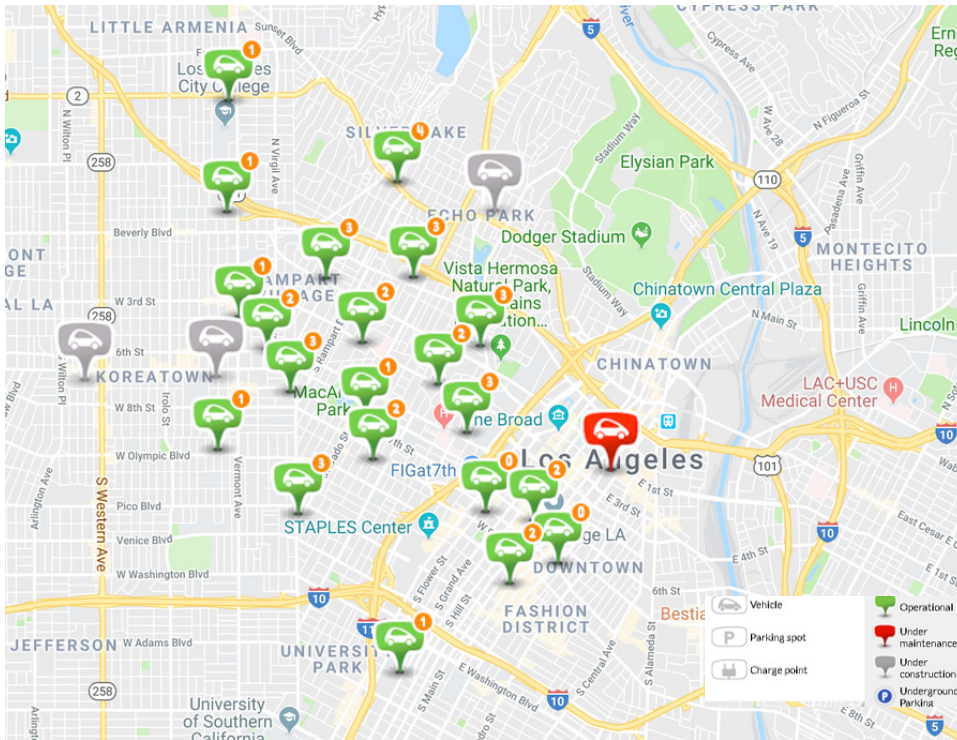
⁷ Source: www.bluela.com

Planning, Permitting, and Construction

The BlueLA program is a partnership-based business model in which the city and operator share in the costs, risks, and rewards of the project. The unique nature of the partnership provides an opportunity for the BlueLA pilot to include more vehicles and charging units as a result of combined efforts and funding, while also being a factor in some of the contract negotiation and permitting delays.



Figure 5: BlueLA Stations Map – February 2019



Service Area and Station Site Selection

The BlueLA model of electric carsharing in disadvantaged communities is more likely to be successful in a service area with certain spatial and demographic characteristics. Within that service area, the model relies on dedicated sites for parking equipped with EVSE. This section describes the process used to determine the service area and station sites.

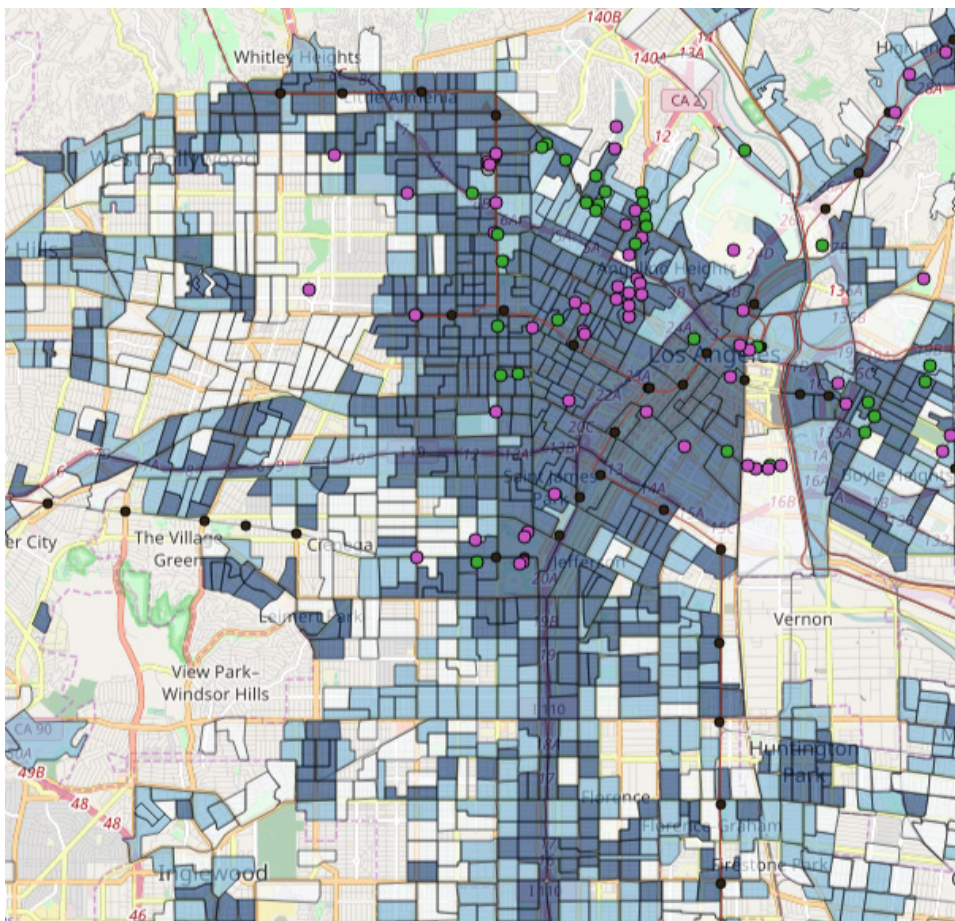
A first step was to identify a service area—the zone in which all stations would be located. To support this decision, SUMC performed an opportunity analysis, refining its national shared mobility opportunity mapping tool with granular local data and SUMC’s proprietary Carshare Expansion Index.

⁸ Source: www.bluela.com/stations-map

The analysis identified attractive carsharing zones, scored on the Carshare Expansion Index, based on such factors as:

- Transit availability and utilization
- Population and employment density
- Vehicle ownership
- Block size and intersection density (as a proxy for walkability)
- Longitudinal employer-household dynamics data

Figure 6: Result of Carshare Expansion Index



Results of SUMC Expansion Index as mapped in the customized online tool.

Almost all of the Phase One areas of the project as well as much of Boyle Heights, South LA near USC, and the East Hollywood / Thai Town areas are well suited for expansion in the near future.

Carshare Expansion Index

- Best
- Better
- Good

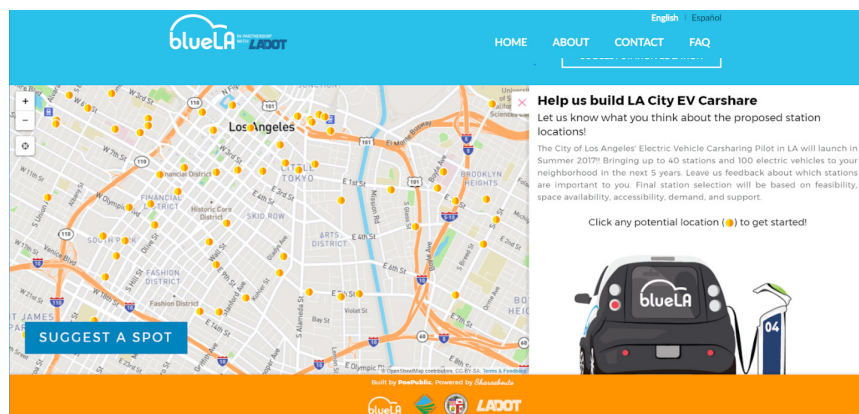
With the service area defined, the partners then identified specific locations for EV stations. (BlueLA developed a prototype early in the project.) Stations would consist of five parking spaces, five EVSE and a reservation kiosk, along with an average of two to three vehicles at each station. Ideally stations would be placed in the public right-of-way, occupying on-street parking that would make the vehicles more visible to the community.

Station sites were identified through a collaborative and iterative approach involving BlueLA, city departments, SUMC, and community residents. BlueLA developed the following criteria for selecting sites:

- At least one-half mile from other stations
- Population density above 15,000/sq. mi. within a half mile
- Employment density above 10,000/sq. mi within a half mile
- Three or more POI (Points of Interest) within walking distance
- Allows for comfortable vehicle and charger access (ample street lighting, in or near trafficked area, ample space to enter and exit the vehicle and utilize the chargers comfortably, traffic speeds below 35 mph, etc.)
- Visible from a major street
- Walk and transit score both above 60 (www.walkscore.com)
- Points of power and telecom feed are within +/-80 feet of the proposed station location

The partners engaged council district offices, local businesses, and community residents for input on station sites. In addition to holding several community forums, LADOT adapted the public input mapping tool that was previously used for bikeshare station siting in Venice for the project. Individuals were able to make (and explain) site suggestions and comment on others' suggestions through the BlueLA website prior to the launch of the project (Fig. 7).

Figure 7: BlueLA Website (www.bluela.com)



Building on its earlier opportunity analysis, SUMC developed an expanded site suitability map. The map combined information from BlueLA and LADOT site assessment as well as data received from community forum workshop participants on their origins and preferred destinations to help inform site selection for future EV sites. The city and BlueLA reviewed this information and began surveying potential sites to generate a list of addresses. With station sites identified, the project moved into the permitting phase; eventually site selection would be affected by permitting and design requirements as well.

Lessons Learned

Early collaboration on site selection can yield more streamlined results. Early interaction between city departments and council districts on project goals and input on suggested site locations can offset some delays in permitting and site selection.

Community Engagement

Community participation in decision-making is a crucial component of social equity and was prioritized in designing the project. As a first step, a Steering Committee was formed consisting of community-based organizations (CBOs) in the project area. The Steering Committee and SUMC developed a community outreach plan outlining eight goals for outreach efforts.

1. Achieve a membership target for lower-income communities.
2. Educate the target community on the benefits of the program and reduce concerns through an aggressive outreach campaign.
3. Support co-learning between the community and the program to make and implement recommendations.
4. Ensure that stations act as commons that serve the community.
5. Ensure that marketing is appropriate for and reaches the target community.
6. Support the creation of jobs that reflect the community through program hires.
7. Build a model for future low-income electric programs.
8. Build on neighborhood capacity by engaging local champions and key community influencers.

The plan identified a series of Steering Committee-led functions including events, surveys, tabling, and one-on-one outreach using part-time Street Ambassadors.

Between January 2018 and January 2019, all project partners have engaged the community through 136 events where the project has been either promoted or featured, including BlueLA community forums, street surveys and community events. Community forums were held near BlueLA stations throughout central Los Angeles starting in March 2017. The events were conducted in both English and Spanish with translation equipment provided, and bilingual FAQ sheets were provided. Childcare, snacks and drinks were also made available for attendees at each event to ensure convenient and comfortable participation for household caregivers.

The events enabled local residents to provide input on program design through small group discussions and mapping exercises. Residents were able to interact with the BlueLA vehicles, and BlueLA also promoted the street ambassador job opportunity to residents. The Street Ambassadors are hired through BlueLA to assist with outreach, education, and operations tasks such as rebalancing vehicles.

As part of the site selection and permitting process, outreach was conducted to businesses in close proximity to potential sites. In September 2017, it was noted that business outreach was being neglected while many other aspects of the project consumed a lot of attention. SUMC developed a memo identifying risks associated with business opposition with examples from other pilot projects that led to major site delays. The business outreach approach was adjusted to ensure that business owners were notified of the project and potential construction through early, direct contact with BlueLA, often with guidance from local council districts. The goal of business outreach was to obtain local business owner support for the station and program, and minimize opposition that could impede the installation of equipment and launch of the program.

The Steering Committee played a pivotal role throughout the project by engaging the community to help shape the program and ensure it was a service that community members would want to use.

Lessons Learned

Set aside ample budget for outreach. There was an initial lack of capacity for doing outreach because too little of the grant funding was earmarked to supplement public dollars for an outreach process. CARB has since recognized the gap and is allowing more funding for outreach activities for future programs.

Hold community forums. Several partners noted that community forums were the best way to receive feedback from community through small group discussions and mapping exercises.

Develop a business outreach plan. Implementing this plan early is key to generating goodwill and support within the project community. Business outreach was successful when soliciting support from council districts as well.

Communicate regularly with the Steering Committee. In general, Steering Committee members felt like there could have been better communication between the committee and BlueLA, particularly in regards to outreach. The Steering Committee felt that there should have been more opportunities to meet with Street Ambassadors so they could understand the value of CBOs in terms of how to engage local communities. There are basic differences in how a community organization and a large company operate and sometimes those differences made communication challenging. Creating a variety of opportunities for everyone to get to know each other, understand more about their needs and interests and creating a structure for formal communication can help breakdown those barriers and improve communication necessary for a successful project. With the insights from Phase One of the project, there is a renewed sense of how to recalibrate outreach to ensure productive communication between all project partners.

Station Design, Permitting, and Construction

Each project site or station consists of five parking spaces, five EVSE and a reservation kiosk, along with an average of two to three vehicles at each station. The majority of the sites or stations are in the public right-of way curbside, while there is currently one station planned in a LADOT-owned parking area. Each site is tied into existing telecommunications and electrical service, meeting the following requirements:

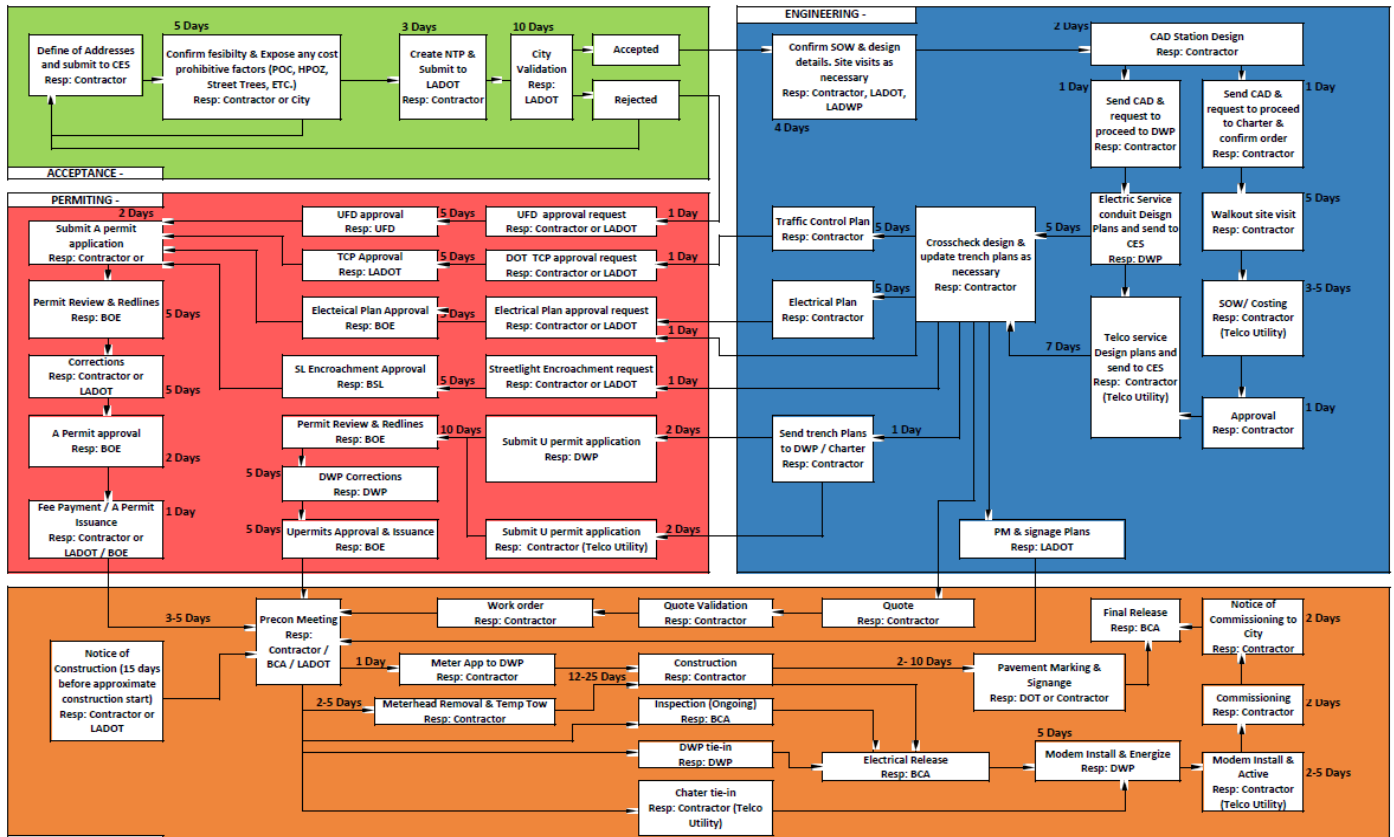
- Electric service: Provided by LADWP. 100A, 120/240V, 1PH, 3W Service
- Telecom service: Provided by Spectrum Business / Charter Communications
- Points of feed are within +/-80 feet of the proposed station location

Three engineering teams worked in parallel to design parts of the stations: LADWP, BlueLA's contractor CES, and Charter's contractor IES. LADWP does not share data with the public citing security concerns and must provide in-house design on all electrical connections. Engineering documents were developed to support permit applications. City "U Permits" were required for excavating and bringing utilities to each station. "A Permits" were required for installing BlueLA equipment in the public right-of-way. Each permit required submittal of multiple plans for approval by multiple city agencies and departments. Early in the project, the permitting process presented a roadblock to getting stations built.

Creating a variety of opportunities for everyone to get to know each other, understand more about their needs and interests, and creating a structure for formal communication can help breakdown those barriers and improve communication necessary for a successful project.

Even though the workflow and permitting process has been streamlined throughout the project, BlueLA feels that too many agencies and separate approvals are involved and would like to encourage the city to consider a "one-stop shop" or permit counter for EVSE that would consolidate the process. Such a system could also support the city's plans for increasing the amount of EVSE throughout the city through DWP programs and LADOT mobility hub investments.

Figure 8: Permitting and Construction Workflow



When permits were secured, BlueLA worked with contractors to install the stations. BlueLA and LADOT put together an EV carsharing station information packet which outlines the nature of station construction:

- Construction duration is a minimum of 11 business days, an average of 18 business days, and a maximum of 40 business days (depending on underground utilities, weather, etc.)
- Work classified as minor construction involves sidewalk demolition as required, trenching and excavation, installation of underground conduits, concrete pads, and charging equipment, and restoration of walkways and streets as required.
- Jobsites typically occupy an approximate 100' by 15' section of curb area. Some jobsites may involve street crossing excavation and may require occupation of additional street sections.
- Contractor ensures safe and efficient movement of road users in construction zones in accordance with the California Manual of Uniform Traffic Control Devices.

Construction of BlueLA stations was started in 2017 and a demonstration site was completed in June 2017. The service launched in April 2018 with seven sites. The 10-month period between the demonstration site ribbon-cutting and commercial launch saw some delays and in an effort to further expedite the construction process, BlueLA hired a second construction firm—Motive Energy—towards the end of 2018 to work in tandem with Vantage Company.



Lessons Learned

Focus on efficient permitting policy and process. The permitting process around fixed-space EV carsharing evolved over time, and all parties feel it can be improved for the rest of Phase One and beyond. There are policy changes needed to make the process smoother including making amendments to building code, simplifying the process of filing for an exemption, and implementing a consolidated permit counter for EVSE.

Gain central coordination on the city side. The city's BlueLA project manager is responsible for a variety of tasks, of which infrastructure permitting and construction is only one. As a result, LADOT will be hiring a dedicated senior-level infrastructure manager with planning and engineering expertise to move the process forward throughout city departments.

Streamline electrical design. BlueLA has stated that other cities they've worked in (Singapore, London, Paris) have more grid data publically available, allowing for design to be performed by a single engineering team, an approach that helps to expedite the design process.

Marketing & Operations



Marketing

Marketing for BlueLA was outlined in an advertising plan that sets aside \$100,000 from the CARB grant to promote the BlueLA program. The Steering Committee-led community outreach plan also incorporated some marketing elements for BlueLA to consider when executing a marketing campaign. Marketing tactics have included field outreach and canvassing, tabling at community gatherings, advertising, and social media engagement. Marketing has been led by BlueLA in partnership with the outreach manager housed at SALEF. BlueLA also employed a bevy of part-time Street Ambassadors, most of whom reside in the project area, and identified partnerships, sponsorships, and cross-promotional opportunities with local community organizations, schools and private businesses.

To manage prospects and members, BlueLA developed a CRM system which continues to be utilized. BlueLA also performed the main intake survey soon after the program launch.

Marketing highlights of the BlueLA program included a ribbon cutting ceremony on June 9, 2017. Los Angeles Mayor Eric Garcetti, California State Senate President Pro Tempore Kevin de Leon, CA State Assembly Member Miguel Santiago, LADOT, General Manager Seleta Reynolds, and CARB Member Hector De La Torre spoke at the event.

The ribbon cutting generated impressive media coverage, ranging from widely distributed newspapers to environmental and mobility special-interest blogs. However subsequent stations weren't launched until 10 months later when the commercial launch of the EV Carshare program took place on April 20th, 2018 at Los Angeles City College during Earth Week with 7 stations and 25 vehicles in operation. There were approximately 300 people in attendance at the event, including speakers who shared their support: Councilmember Mitch O'Farrell, CARB Vice-Chair Sandra Berg, US Representative Jimmy Gomez, Deputy Mayor Barbara Romeo and LADOT General Manager Seleta Reynolds.

Lessons Learned

Delay between the soft launch of the demonstration site and the launch of the commercial site 10 months later generated a loss of momentum for partners, prospective members and the project as whole. BlueLA also had some delays hiring a marketing manager, which left a lot of the initial marketing development to the Steering Committee and other partners. It may have been useful to think through the strategy and have various milestones to celebrate between the two launches in order to keep the public excitement going throughout the project.

Input from CBO's on marketing helped to reach target audience. The Steering Committee CBO's provided their insights on the best strategies to engage DAC's by suggesting multiple outlets and events, community partners, and information they felt would resonate with their community members.

Operations

EV Charging and Rebalancing

The technology around EVSE and Blue Vehicles was developed by IER, a Bolloré subsidiary. Vehicles run on a solid-state battery with an average range of 90-100 miles to the charge, depending on driving behavior and battery demand. EV charging equipment is "Level 2" EVSE with 3.3 kW capacity. The vehicles are unable to charge at DC fast charge stations due to the nature of their solid state batteries. They are typically charged overnight and have sufficient charge to operate throughout the next day, with supplemental charging occurring between reservations. BlueLA vehicles have a battery charge display on the dashboard; the vehicles can be rented if they are charged to at least 40%, and any vehicle below that threshold is taken offline until a suitable charge is reached. If a user reaches 30% charge or below during their reservation, they are notified and will

and will be requested to return the vehicle to a station when the battery charge is at 15%.

BlueLA materials and Street Ambassadors seek to educate members proactively about EVs and charging to avoid problems. During the pilot there were a small handful of cases where vehicle batteries were depleted during a reservation, and for the most part preventative measures have mitigated this risk.

The vehicles are rebalanced manually by BlueLA Street Ambassadors. The BlueLA dispatch office reviews a map to see where cars are and will receive alerts when too many, or not enough, cars are at a station; dispatch will then assign a rebalancing request to an available Street Ambassador. Ambassadors also service issues where vehicles are not plugged in at the end of a reservation. As of December 2018, there are eight Street Ambassadors and three people on the tech team to troubleshoot any issues with the vehicles or charging stations.

Member Enrollment and User Experience

Residents are able to enroll as members online at www.bluela.com, on their phone via the BlueLA App for iPhone or Android, or over the phone via the BlueLA Customer Service Center which operates 24 hours per day, 7 days a week. Street Ambassadors assist residents in registering and using the vehicles in the field. Once a member has registered, they receive a BlueLA card which they can then swipe at a station kiosk to start and end their reservation. BlueLA had been pursuing payment integration with the LA region's Metro TAP Card, but the process was put on hold due to delays with backend integration.

One of the most problematic usage issues is long rentals, which are considered to be four hours or more, with those over six hours being the most difficult. The issue with longer rentals is the concern over batteries losing charge and therefore creating issues with vehicles having enough power to get back to the station. BlueLA has been adapting their system to customer use and have had success working with customers using a subscription plan for longer rental times.

Another issue has been the cleanliness of the vehicles. In BlueLA's user guide the terms and conditions section has a \$50 cleaning fee listed for members that violate the terms. To address this issue, BlueLA has implemented a "Tidy Car Program" since January 1, 2019 to enable members to rate the cleanliness of their vehicle and to incentivize members to perform minor trash pick-up inside the vehicles in return for free drive time.

Personal outreach by the BlueLA customer service department and Street Ambassadors, BlueLA states, has prevented many negative experiences with the service and has engendered goodwill among BlueLA members to care for the vehicles.



Lessons Learned

Limited issues with EV range and charging. While observers of new EV shared mobility services often identify potential problems related to driver “range anxiety,” inability to keep charged vehicles available, misuse of charging equipment, or stranded vehicles, these issues have not been significant in BlueLA operations to date.

Ensure member education. Immediate and regular interaction with members helps to enhance education around user behavior.

Test with project partners. It has been helpful to have project partners interact with the system to troubleshoot any potential problems. A Steering Committee member who tested the system noticed that the Spanish language option was based on a dialect in Spain rather than dialects more common in Los Angeles. They also received feedback from a community member about needing time and better understanding on how to use the vehicle. Receiving this type of feedback early helps to ensure new users have a positive first experience in order for them to continue using the service.



Evaluating & Reporting

BlueLA has provided monthly reports to the City since the month following the commercial launch in April 2018. The monthly reports include membership totals, trip data, milestones, top routes and the spenddown of CARB funds. The city, with assistance from SUMC, has compiled the data quarterly for reporting to CARB for review. SUMC has also developed GHG emissions reduction estimates periodically.

Data points collected in reports include membership figures by membership type, travel demand (trips and VMTs) by membership type, and popular origin-destination pairs. To date, less reporting has been done on operational issues or marketing activities, which are also more likely to be addressed in regular member surveys. Members complete a survey during initial onboarding, but have not been re-surveyed on a regular basis to identify changing behaviors, preferences, or feedback.

While member surveys have not been conducted on a regular basis, BlueLA customer service has tracked feedback from members. Since the commercial launch of the project in April 2018, members have provided generally positive feedback about the service.

Common sentiments include:

- Appreciation for the pricing option of \$9 for up to three hours of service under the community membership.
- Grocery shopping is a big draw for using the service, along with carpooling, recreation, and dropping kids off at school.

- BlueLA has provided more flexibility than typical public transport and the ability to have a one-car household. Members have also acknowledged the eco-friendly element of an EV as an added bonus.
- The biggest demand among members is for project expansion.
- In terms of finding out about BlueLA, members have stated having a station in their neighborhood generally alerted them to the service, along with BlueLA's presence at marketing events and partnerships with some universities and apartment complexes.

Lessons Learned

Need frequent reporting on origins and destinations. The city is interested in receiving data on all of the stations more regularly, beyond just the most popular routes, as they feel that this information can help bolster council district engagement and future site selection. Currently, comprehensive data for all of the stations has only been supplied quarterly or on an ad-hoc basis.

More reporting on operations and marketing. Much the reporting from operator to city has been focused on construction, membership, and utilization. The city would like to see more information from BlueLA on operational issues and marketing efforts. The city learned about operational concerns by word-of-mouth, which were only confirmed by BlueLA retrospectively. A more proactive approach in regular reporting would allow all partners to weigh in with solutions.

A photograph showing two women standing next to a blue and white electric vehicle charging station. One woman is pointing at the station while the other looks on. In the background, a white car is parked at the station, and a city street with buildings and trees is visible. The text "Next Steps" is overlaid in large white font on the image.

Next Steps

The popularity of the BlueLA system among community members has renewed motivation among project partners and laid the groundwork for acting on the community's requests for expansion. Preparation for Phase Two is currently underway. LADOT received an award letter for \$3 million from CARB in January 2019 to support Phase Two activities in partnership with Mobility Development Partners. The majority of the grant funds will be utilized for carshare operator start-up assistance (\$900,000), contractual services, parking subsidies, mobility hubs programming, and CBO Steering Committee compensation. The expansion will allow the service to move further into South LA, East Los Angeles and East Hollywood. The city will renegotiate its partnership with BlueLA for Phase Two, with initial plans to deploy 200 additional EVs to the existing carshare fleet and 300 additional charge points in disadvantaged communities. BlueLA will also revisit possibilities around TAP card payment integration and new service models, including opening EVSE to private vehicle owners and allowing BlueLA vehicles to be parked outside stations at the end of reservations.

The BlueLA expansion fits well within the city's broader initiatives in the new mobility and transportation technology space. Under a new agreement with SUMC, the partners will renew outreach efforts around new mobility services, including stakeholder engagement in support of a new mobility community needs assessment to inform future investments.

LADOT is also pursuing an ambitious strategy to manage new mobility services in real-time by building technology platforms for generating, standardizing and exchanging data between city agencies and mobility providers. LADOT has developed a mobility data specification to standardize data definitions and formats, and developed a “Provider API” to allow LADOT to pull data from mobility providers on such metrics as fleet size and trip characteristics. The partners will work with BlueLA and other operators to apply the Mobility Data Specification to carsharing services in the city.

LADOT’s goal is to make diverse transportation options accessible to all segments of the population. BlueLA will be connected with other modes and services at a series of integrated mobility hubs. An initial set of 10-12 core hubs will be developed at key LA Metro rail and bus facilities through an \$8.35 million grant from the Federal Transit Administration’s Jobs Access and Reverse Commute program, with dozens of satellite hubs to follow. Funding in the BlueLA Phase Two grant has been earmarked to ensure that at least 20 BlueLA stations will be developed within mobility hubs and to launch an equity-focused scooter-/bike-share pilot based at the hubs alongside BlueLA vehicles. These services will enhance the accessibility of employment centers, job training sites, community colleges, and other critical destinations for low-income communities and communities of color.

The first-of-its-kind BlueLA EV Carsharing pilot project is already bearing fruit for the residents of central Los Angeles. Lessons learned in the first phase of the project will inform BlueLA expansion as well as similar efforts around the state and nation. As CARB moves to invest \$32 million in disadvantaged communities statewide for EV shared mobility pilots through its growing Clean Mobility Options program, BlueLA stands as a model of what can be achieved through meaningful partnerships between public agencies, mobility businesses, and community organizations.



Case Study



SHARED-USE
MOBILITY CENTER

312.448.8083

www.sharedusemobilitycenter.org