

A Tool Kit for Community-Based Carsharing in Underserved Communities

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Introduction

Motivation for Toolkit

- We developed this toolkit to assist communities considering electric carsharing in underserved communities.
- Carsharing is a short-term car rental service, typically 24 hours or less, and is available anytime (rather than fixed business hours).
- The toolkit is based on Míocar's experience (since 2019) building a non-profit electric carsharing service and implementing/operating in several underserved communities in California's rural and urban areas.
 - These include Tulare and Kern counties (rural), the cities of Stockton, Tracy, French Camp, and Escalon in San Joaquin County, and Richmond in Contra Costa County.
- Míocar's fleet will grow from 50 vehicles in 2024 to over 80 vehicles in 2025.

About Míocar's Mission

To provide affordable electric carsharing to vehicle-insufficient households in areas with low-quality transit that are unlikely to be served by commercial carsharing services.

Research to date indicates for low-income populations, especially people of color, Míocar:

- Reduces unmet travel needs and transportation insecurity,
 - Promotes economic mobility without increased auto ownership, and
 - Decreases greenhouse gas emissions.
- In contrast to commercial for-profit carsharing services, Míocar:
- Has a track record of providing reliable and sustained electric carsharing,
 - Serves communities with a much lower ability to pay for market-rate electric vehicle carsharing (Míocar's rate is \$4/hour and \$35/day), and
 - Needs fewer members to support optimal vehicle use because fewer transportation resources are available to them.
 - For-profit carsharing is typically located in high density affluent urban areas with high quality transit.

Benefits of electric carsharing...

- Electric carsharing may be a promising policy option to reduce greenhouse gas emissions while promoting equitable access.
- When subsidized, it can provide an affordable travel alternative, particularly in rural, small towns, and urban areas where high-quality transit is costly to provide.
- It also provides exposure to and training on the use of electric vehicles, which may translate to greater acceptance and adoption of these vehicles.
- Electric carsharing partnerships can facilitate EVSE installation in underserved communities and serve as an anchor client where there is concern about EVSE use.
- Evaluations that verify and quantify the benefits of these programs can inform longer-term government investments in electric carsharing services.

Challenges of electric carsharing...

- Electric carsharing can be more expensive to provide than conventional or hybrid vehicle carsharing because
 - Requires electric vehicle supply equipment (EVSE) installation, which is costly and time-consuming, limiting vehicle supply and distribution by location,
 - Often, there is limited availability of fast chargers in and around service areas, which makes recharging difficult outside of the carsharing station,
 - Frequent recalls with long repair times (although this is improving),
 - Need two vehicles per station or backup vehicles because of vehicle repair and charging issues,
 - More time is required to train members on electric vehicles, and
 - Greater likelihood of on-call support and emergency response needed for new electric vehicle users.
- In the short term, accessibility benefits are less in electric versus conventional carsharing; however, as electric vehicle infrastructure matures and costs decline, this issue could be addressed.

System Design

Funding

- Most electric carsharing programs are initially funded by local, state, and federal grants.
- Recent research by Harold and Rodier (in press, 2024) suggests:
 - Affordable services will require public funding, but scaled operations can minimize costs.
 - The share of public subsidy is likely less than transit service.
- Other revenue sources may include advertising on vehicles and charging market-rate fares for those who do not income-qualify.
- Foundations funding, charitable giving, and other fundraising activities may also generate operational funds for ongoing service.
- In general, fare prices need to be affordable to residents of the underserved communities served by the carsharing service.

Carsharing Service Model Options

Models

- Round-Trip: Pick-up and drop off vehicle at the same location (e.g., Zipcar and Míocar).
- One-way or Free Floating: Pick up vehicle at one location and drop it off at another (e.g., BlueLA and formerly Gig in Sacramento).
- Peer to Peer: Private vehicle owners rent to others (members of the carsharing platform) to earn money when vehicle is not in use by owner (Turo and Getaround).

Considerations

- Electric vehicles can be used in all forms of carsharing.
- Round-trip carshare is more affordable to operate than one-way or free floating because it requires fewer charging stations (e.g., BlueLA) and staff to charge cars (e.g., AAA gig).
- Peer-to-peer requires a sufficient supply of electric car owners willing to rent their car, which is most often the case in high density urban areas.

Site Selection and Community Goals

- Site selection for electric carshare systems in underserved areas are typically based on these community goals:
 1. Optimize use and fare revenues: Sites are selected in an area with a high population of vehicle-insufficient households and low-quality inter-city transit service. Such sites are more likely to be identified in medium and small cities or towns.
 2. Lifeline: Sites are selected in low-population-density areas without meaningful alternatives to personal vehicle travel. The carsharing service and site selection are focused on low-income households without access to personal vehicles. These sites are more likely needed in small towns and unincorporated communities in rural areas.

Electric Vehicle Supply Equipment (EVSE)

- EVSE is typically made available to a new electric carsharing service in two ways:
 - (1) A new electric carshare service uses existing EVSE installed by public agencies and private landowners.
 - (2) New EVSE is installed to serve the new electric carsharing system.
- In practice, most start-up electric carsharing systems use a combination of existing and new EVSE.
- Both arrangements require an agreement between the carsharing service and the owner-operator of the EVSE.

EVSE Partners

- Partnerships with affordable housing developers may provide early success in implementing electric carsharing systems:
 - These developers are often committed to expanding transportation services, like Míocar, that give residents expanded access to services and opportunities.
 - They are often willing to facilitate new EVSE installation and community engagement for training and awareness.
 - In California, new affordable housing developments must have the infrastructure to install EVSE without “make-ready” expenses and many already have EVSE installed.
- Public sites often take longer to install EVSE or allow the use of existing EVSE for carsharing due to the legal requirements under which they operate and the limited staff time.
 - Although securing these sites may take longer, they are often highly desirable because of their visibility and population density.

Customers and Use Models

Public-Access Network

- In most cases, this is the recommended approach because it will yield higher utilization and revenues to support the service's sustainability.
- Scaling carsharing services is a key method of reducing fixed service costs and, thus, the monthly operation costs of carsharing vehicles.

Private Network

- This is an approach used at some affordable housing complexes and upscale market-rate housing.
- The latter has not proved to be a sustainable model for carsharing.
- The former may be hard to sustain without on-going public funding.

Community Engagement and Marketing

- Community engagement is an important part of the planning process for successful electric carsharing programs.
- Carsharing organizations should connect with community-based organizations (CBOs) to incorporate features into the service that are needed by residents, as possible.
- CBOs can also be important marketing partners. They can identify events and other opportunities to spread the word about the service and train potential members on how to use it.
- CBOs should be compensated for their assistance.
- Distributing flyers within a 2-mile radius of a carsharing station can also be helpful. If possible, engage and pay community members to perform these types of activities.
- Word of mouth is critical and because of this, it may take a year of exposure to the service to generate optimal membership.
- If a carsharing service scales sufficiently in a city or town, then other forms of mass media may be helpful.

Evaluation

- Electric carsharing services in underserved communities are new and funded largely through government grants.
- Thus, it is critical to document their benefits using valid data collection, survey methods, and data analysis methods.
- Partnering with a University can be an easy way to access the expertise necessary to conduct evaluations and to train the next generation of planners and researchers.
- Carsharing technology typically collect data on vehicle and individual use of the service (i.e., reservations, vehicle miles travel, travel time).
- Surveys can be used to measure how the service improves access to destinations for low-income members and greenhouse gas emissions through changes in mode choice, conventional vehicle miles travel, and electric miles travel.

Organizational Considerations

Legal Entity

A carsharing service may choose to operate through several organization structures, including:

- 501(c) (3) Not-for-profit
- For-profit benefit corporation
- Employee-owned co-operative
- LLC owned by a not-for-profit, and
- A not-for-profit that owns an LLC for housing the fleet

The choice of these structures will likely depend on the carsharing service's ability to:

- Achieve its mission, vision, and values,
- Isolate risks,
- Obtain and maintain auto insurance,
- Provide employee benefits, and
- Lower core business costs.

Organizational Staffing

- Like any business, staffing is critical to providing high-quality services that are responsive to customer needs and sustaining expanding operations.
- Importantly, carsharing services can provide good-paying jobs with opportunities for advancement in the underserved communities they serve.
- It is essential to invest in staff, grow leadership, and foster team cohesion.
- A staffing structure could include:
 - Executive leadership (CEO and COO), who manage the organizations' finances, programs, and strategic expansion.
 - Management, including fleet and customer service managers, supported by
 - 1.5 Full Time Equivalent (FTE) for fleet associates per 40 vehicles and
 - 1.5 FTE customer service associates per 600 active and non-active members
 - Contractors as needed for special projects.

Administrative Support

- In addition, typically the following are needed to support the administration of the organization:
 - Accounting staff that deal with medium to large businesses that may be expanding,
 - CPA firm for pre-audit, audit, and overarching maintenance of books and records,
 - Legal counsel to assist in contracting, litigation, arbitration, mediation, and compliance with state and federal laws, and
 - A dynamic customer success management (CSM) software that assists with a range of client/customer communications and management.

Insurance

- Securing and maintaining fleet insurance can be an arduous process.
- Organizational structure may be linked to insurance availability and costs.
- It is important to work with an insurance broker that understands carsharing and fleet insurance.
- You should research currently available insurance products and those coming on the market. Always ask questions!
- Make sure coverage meets the required limits on your contracts or public grants.
- Analyze products and negotiate for affordable insurance coverage and necessary insurance limits.

Fleet

Fleet Mix

- Electric carsharing organizations should maintain a mix of electric vehicle makes and models in their fleet.
 - Electric vehicles (past and present) have been and will be recalled, and thus, at times, may need to be removed from the fleet.
 - For example, between 2018-2022, General Motors had 5 critical recalls on various Chevy Bolt models.
 - Including multiple types of electric vehicles can allow carsharing services to continue operations with limited service when one or more electric vehicle make(s) and model(s) are grounded due to recalls.
 - The alternative could be a complete shutdown of services from which a carsharing service may have difficulty recovering.

New or Used Electric Vehicles?

- Some public grants require new electric vehicles, and others allow used electric vehicles that meet certain requirements.
- The advantage of used electric vehicles is the lower cost and the access to more expensive electric vehicle types (e.g., minivans or trucks) that may not fall within the budget of your grant but are desired by members.
- The advantages of new electric vehicles are the 3-year warranties and built-in roadside assistance, which can reduce costs related to vehicle maintenance, customer support, towing, and staff support during a project startup period.

Technology Compatibility

- Vehicle telematics technology must be compatible with the electric vehicle you purchase.
- Make sure you test (and test again) the installation and functionality of your telematics system with vehicle make and model.
- Technology changes constantly, so keeping up with the market is important. For promising technology, carsharing operators should ask vendors for demonstrations and walk-throughs.
- Each hardware and software combination has many add-on features that operators must consider to determine whether they will improve operations and user experience.

Fleet Turnover

- Electric fleet turnover depends on
 - The number of vehicles of the same make/model/year and
 - Their performance (i.e., repair and maintenance costs).
- In general, most vehicles can be included in the fleet for about 8 years.

Recalls and Long-Term Maintenance

- Your operations team should conduct daily monitoring of the fleet and weekly comprehensive maintenance checks.
- Electric vehicles also require:
 - Software checks and updates, which should be monitored and documented by maintenance staff,
 - Quarterly intensive vehicle maintenance in coordination with maintenance professionals,
 - Extra attention to wear and tear on tires because electric vehicles are heavier than conventional vehicles, and
 - Management should monitor recall announcements.
 - If a vehicle is affected, then you should devise a plan to cycle out the vehicle(s) in the fleet until the problem is resolved.
 - Generally, the automaker's website will post, and update vehicle recalls by VIN.

Operations

Maintenance Protocol

Maintenance Protocols are the most important aspect of fleet management for the safety of users and preservation of company assets by vehicle or by station, daily checks conducted and communicated in a systematic and real-time fashion are essential. Here are some examples that may be checked daily or weekly:

- No visible or critical damage to the vehicle interior and exterior
- Keys and in-vehicle hardware are present, key-fob battery is functional
- Emergency hazard lights working
- Headlights working
- Doors are operational and lock/unlock with the app and the backup keys
- Interior is clean, and no visible damage
- Cleaning supplies that members use between reservations are stocked
- Fleet charging cards are in the center of the console
- Tires are in good condition and at appropriate tire pressure
- Windshield wiper fluid is full
- Wiper blades are functional
- Windshield is absent of cracks or damage
- Vehicle is absent of cigarette, vape or other smoke smell

Reservation Technology and In-Vehicle Hardware

Platforms should have the following capabilities for **administrative functions**:

- Manage carsharing services across different geographic communities,
- Create and modify carsharing stations,
- Inventory, assign, search, and modify fleet,
- Track applications and membership profiles,
- Dynamic accounts receivable for member accounts,
- Send reservation alerts (e.g., vehicle late returning, vehicle not returned, vehicle battery status, and other real-time status records),
- Seamless integration with the in-vehicle hardware,
- Data collection and dashboard, and
- Ability to customize your operations branding and or expansion.

- The following are key features that carsharing operators should look for to optimize the **user experience**:
 - Intuitive user interface
 - Downloadable and functional on a wide variety of smartphones, tablets, and desktop computers
 - The app should unlock/lock the vehicle and allow members to easily manage or modify trips and manage accounts

Application Processing

- A Motor Vehicle Record (MVR) is an official report kept by state motor vehicle departments on an individual's driver's licensing status, accident history, convictions, and violations.
- It is a standardized tool used in multiple sectors, including carsharing.
- For carsharing, it is a tool to screen applicants for a valid license and good driving history.
- This is an important factor for both members and operators.
 - It creates stability in the carshare's membership pool from an insurance liability standpoint.
 - It is also an accountability mechanism for members, which helps build a sharing culture.
- There are various driving record services that can be subscribe to perform MVR checks.
- Each carshare operator's insurance will have its own eligibility and liability requirements. Carshare operators should understand and follow these requirements.
- Generally, a carsharing operation should include the following operations components when securing fleet insurance coverage:
 - MVR Screening process for any persons driving the vehicles,
 - An in-vehicle monitoring system/telematics that passively monitors speeding and vehicle health, and
 - Rigorous vehicle maintenance schedules, written reports, and daily/weekly maintenance checklists.

Final Thoughts

- *Míocar is available to help organizations plan and develop carsharing services*
- *These systems can be tailored to meet community-identified needs.*
- *Please feel free to contact us for more information.*
 - *Gloria Huerta: gloria@miocar.org*
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 - *Caroline Rodier: cjrodier@ucdavis.edu*

To Learn More

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