COMPARE COSTS & NOTE REIMBURSEMENTS

Overview

Costs of a mobility project can be generally categorized as:

- Staffing & Direct Costs
- Capital Equipment Costs
- Operations & Maintenance Cost

Worksheet

A spreadsheet has been created to help compare the actual cost of your line items with typical ranges in the industry for bikeshare, scooter share, carshare, carpool/vanpool, innovative transit services, and ride on-demand services. There is also a list of items that can be fully or partially reimbursed for CMO MPV Awardees.

The following section provides more context for the value and line items included in the spreadsheet.

The mode-specific summaries draw from pilot projects to outline the sample costs. When possible, these costs are converted to a per-unit measure to better estimate project-specific costs. These examples can serve as reference points while working with any professional operator partner. An operator partner can be a private sector operator, a local community-driven organization, or a non-profit operator. Where available, explore working with a community-based or local non-profit operator to further the project's community-based focus. A list of possible business models is briefly given in the Bikeshare and Scooter-share system section below but can be options for all mode types. Once an operator is identified, specific cost ranges to develop the project budget can be determined more fully.

TIP!

Click **HERE** to make a copy of or print out this worksheet.

Bikeshare & Scooter-Share - *Use this spreadsheet to compare costs of your line items with typical costs in the industry. You may also use this spreadsheet to estimate general project costs.* ***To use this spreadsheet, go to "File > Make a copy" and then place the cost and unit of your items in the blue cells.***

Category	Line Item	Typical Cost Range	Unit	*Your Actual Cost*	Unit
Staffing & Direct Costs					
One-Time Start-Up Administration Costs	Small Sized System	$15,000 - $30,000	<10 stations or <100 bicycles		
	Medium Sized System	$60,000 - $100,000	20 - 30 stations or <200 - 300 bicycles		
Ongoing Staff & Contractor Costs	Launch Manager	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Operations/General Manager	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Marketing/Community Engagement Manager	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Customer Service Saff	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Maintenance Staff	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Project Team Coordinator	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Project Team Planner	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Community Ambassadors	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Electrician	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		

Bikeshare & Scooter-Share - *Use this spreadsheet to compare costs of your line items with typical costs in the industry. You may also use this spreadsheet to estimate general project costs.* ***To use this spreadsheet, go to "File > Make a copy" and then place the cost and unit of your items in the blue cells.***

Category	Line Item	Typical Cost Range	Unit	*Your Actual Cost*	Unit
	Solar Panel Installation Technician	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Add other positions...	*Add typical cost range...*	*Person*		
Capital Equipment Costs					
Vehicle Type - *Note that CMO Awardees are eligible for reimbursements put towards certain vehicle types and technologies.* ***See page 14*** *for more details.*	Pedal-Assisted Bike, *2-3 year lifecycle*	$300 - $600	Pedal-Assisted Bike		
	Pedal-Assisted Bike, *5-10 year lifecycle*	$1,000 - $1,200	Pedal-Assisted Bike		
	E-Bike	$1,500 - 3,000	E-Bike		
	Docking Station	$30,000 - $60,000	Docking Station		
	E-Scooter	$800 - $1,200	E-Scooter		
	E-Cargo Bike	$1,800 - $8,000	E-Cargo Bike		
Charging Equipment	Charging Cord	$30 - $50	Charging Cord		
	Smart Bike System Software Platform	$100 - $200	Per Month Per Device		
	Telematics Device	$15 - $60	Per Month per Device		
	Smart Locks	$120 - $220	Vehicle		
	Smart Hub	Costs will vary	All Stations		
	Electric Docking Station	Costs will vary	Station		
	Level 1 EV Car Charging Station 120V	$1,000	Station		
	Spare Parts	Costs will vary	Per Part		
	Unlocking/Locking Access & Application Management	Costs will vary	Per Application Management		
	Infrastructure for Users Without Smartphones or Bank Accounts	Costs will vary	-		
	Installation Cost	$3,000 - $5,000	Station		
	Station Site Acquisition	Costs will vary	Site		
	Station Site Permitting	Costs will vary	Site		
	Vehicle/Device Insurance Cost	Costs will vary	Vehicle or Device		
Operations, Maintenance, & Administrative Costs					
Stations	Docked Systems	$85 - 150	Station per Month		
	Replacement Stations	Cost will vary	Station		
	Electricity	Cost will vary	Station per Month		
Vehicles	Maintenance & Repair Tickets	Cost will vary	-		

Bikeshare & Scooter-Share - *Use this spreadsheet to compare costs of your line items with typical costs in the industry. You may also use this spreadsheet to estimate general project costs.* ***To use this spreadsheet, go to "File > Make a copy" and then place the cost and unit of your items in the blue cells.***

Category	Line Item	Typical Cost Range	Unit	*Your Actual Cost*	Unit
Vehicles	Replacement Parts & Vehicles	Cost will vary	-		
General Operations & Maintenance	Maintenance of Storage Facility	Cost will vary	-		
	Marketing and Outreach Material	Cost will vary	-		
			TOTAL	$0.00	

Carshare - *Use this spreadsheet to compare costs of your line items with typical costs in the industry. You may also use this spreadsheet to estimate general project costs.* ***To use this spreadsheet, go to "File > Make a copy" and then place the cost and unit of your items in the blue cells.***

Category	Line Item	Typical Cost Range	Unit	*Your Actual Cost*	Unit
Staffing & Direct Costs					
Ongoing Staff & Contractor Costs	Manager	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Fleet Operations	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Member Services	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Marketing Staff	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Volunteers	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Customer Service	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Maintenance Staff	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Project Team Coordinator	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Project Team Planner	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Community Ambassadors	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Electrician	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		

Carshare - *Use this spreadsheet to compare costs of your line items with typical costs in the industry. You may also use this spreadsheet to estimate general project costs.* ***To use this spreadsheet, go to "File > Make a copy" and then place the cost and unit of your items in the blue cells.***

Category	Line Item	Typical Cost Range	Unit	"Your Actual Cost"	Unit
	Solar Panel Installation Technician	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Add other positions...	*Add typical cost range...*	*Person*		
Capital Equipment Costs					
Vehicle Type - *Note that CMO Awardees are eligible for reimbursements put towards certain vehicle types. For exact pricing in your area, please visit* **Kelley Blue Book** *or a local dealership for more information*	*Low-Mileage* ZEV	$30,000 - $50,000	ZEV		
	High-Mileage ZEV	$46,000 - $90,000	ZEV		
	Light-Duty Plug-In Hybrid	$35,000 - $55,000	Hybrid		
Charging Infrastructure - *Costs are outlined in* ***Section E Project Eligibility Costs*** *in the Implementation Manual.*	Electric Vehicle Supply Equipment (EVSE)	Cost will vary	Device		
	EVSE Installation Cost	Cost will vary	Station		
	Hydrogen Refueling Equipment	Cost will vary	Device		
	Hydrogen Refueling Infrastructure Installation Cost	Cost will vary	Station		
	Telematics Devices (GPS)	Cost will vary	Device		
Operations, Maintenance, & Administrative Costs					
Stations	Electricity	Cost will vary	Station per Month		
	Level 2 EV Charger	$925	Charger		
	Level 2 EV Charger Installation	$1,400	Station		
	Level 3 DC Fast Charger	$33,414	Charger		
	Level 3 DC Fast Charger Installation	$25,395	Station		
	Installation Distributed Solar Photovoltaic Equipment for 10 kW	3,897	Station		
	Installation Distributed Solar Photovoltaic Equipment for 10-100 kW	$3,463	Station		
	Installation Distributed Solar Photovoltaic Equipment for 100-1,000 kW	$2,493	Station		
	Installation Distributed Solar Photovoltaic Equipment 1-10 MW	$2,025	Station		
Vehicles	Maintenance	Cost will vary	Vehicle		
	Cleaning	Cost will vary	Vehicle		
	Roadside Assistance	Cost will vary	Vehicle		
	Bodywork	Cost will vary	Vehicle		
	Rebalancing Carshare	Cost will vary	Staff Time		

Carshare - *Use this spreadsheet to compare costs of your line items with typical costs in the industry. You may also use this spreadsheet to estimate general project costs.* ***To use this spreadsheet, go to "File > Make a copy" and then place the cost and unit of your items in the blue cells.***

Category	Line Item	Typical Cost Range	Unit	*Your Actual Cost*	Unit
General Operations & Maintenance	Managing & Procuring Parking Spaces	Cost will vary	Staff Time		
	Establishing Third Party Agreements	Cost will vary	Staff Time		
	Reservation System & Supporting Technology	Cost will vary	Technology		
	Multi-lingual Support & Materials	Cost will vary	Translation Service		
	Public Outreach/User Training	Cost will vary	-		
			TOTAL	$0.00	

Carpool/Vanpool - *Use this spreadsheet to compare costs of your line items with typical costs in the industry. You may also use this spreadsheet to estimate general project costs.*
To use this spreadsheet, go to "File > Make a copy" and then place the cost and unit of your items in the blue cells.

Category	Line Item	Typical Cost Range	Unit	*Your Actual Cost*	Unit
Staffing & Direct Costs					
One-Time Start-Up Administration Costs	Background Check	$20 - $100	Person		
Ongoing Staff & Contractor Costs	Volunteer Participants	$0	Person		
	Alternate Drivers	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Bookkeeper/Manager	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Fleet Manager	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Customer Service	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Passenger Subsidies	Cost will vary - For example, $2/day up to $4/day	Person		
	Add other positions...	*Add typical cost range...*	*Person*		
Capital Equipment Costs					
Technology	Payment Platform	Cost will vary	ZEV		
	Reservation System	Cost will vary	ZEV		
	Routing Technology	Cost will vary	Hybrid		
Vehicle	Low-Mileage ZEV	$30,000 - $50,000	ZEV		
	High-Mileage ZEV	$46,000 - $90,000	ZEV		
	Light-Duty Plug-In Hybrid	$35,000 - $55,000	Hybrid		
	Software & Hardware	Cost will vary	Technology		
Operations, Maintenance, & Administrative Costs					
Stations	Electricity	Cost will vary	Station per Month		
Vehicles	Reimbursing Mileage	$0.56	Mile		
General Operations & Maintenance	Mobility Provider Fee	Cost will vary	Per Ride/Per Payment/Per Year		
	Outreach & Marketing	Cost will vary	-		
			TOTAL	**$0.00**	

Innovative Transit Service - *Use this spreadsheet to compare costs of your line items with typical costs in the industry. You may also use this spreadsheet to estimate general project costs.* ***To use this spreadsheet, go to "File > Make a copy" and then place the cost and unit of your items in the blue cells.***

Category	Line Item	Typical Cost Range	Unit	*Your Actual Cost*	Unit
Staffing & Direct Costs					
Ongoing Staff & Contractor Costs	Drivers	$0	Person		
	Management	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Administration	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Customer Service	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Maintenance Staff	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Project Team Coordinator	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Project Team Planner	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Community Ambassadors	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Electrician	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Solar Panel Installation Technician	Compensation depends on local conditions, compensation restrictions, benefits, projects business model, and more.	Person		
	Add other positions...	*Add typical cost range...*	*Person*		
Capital Equipment Costs					
Vehicle - *Please see full list of* ***hybrid and zero-emission truck and buses.***	Medium-Duty Vehicle	$220,000 - $300,000	Medium-Duty Vehicle		
	Vans	$40,000 - $150,000	Van		
Operations, Maintenance, & Administrative Costs					
Stations	Electricity	Cost will vary	Station per Month		
Vehicles	Operations for In-House Service	$65 - $214	Per Service Hour for In-House Service		
	Operations for Contracted Service	$35 - $100	Per Service Hour for Contracted Service		
	Maintenance	Cost will vary	Vehicle		

Innovative Transit Service - *Use this spreadsheet to compare costs of your line items with typical costs in the industry. You may also use this spreadsheet to estimate general project costs.* ***To use this spreadsheet, go to "File > Make a copy" and then place the cost and unit of your items in the blue cells.***

Category	Line Item	Typical Cost Range	Unit	*Your Actual Cost*	Unit
	Cleaning	Cost will vary	Vehicle		
	Roadside Assistance	Cost will vary	Vehicle		
	Bodywork	Cost will vary	Vehicle		
General Operations & Maintenance	Mobility Provider Fee	Cost will vary	Per Ride/Per Payment/Per Year		
	Outreach & Marketing	Cost will vary	-		
			TOTAL	$0.00	

Step 3: Compare Costs & Note Reimbursements

WORKSHEET

Ride On-Demand - *This service is on-demand rides for individuals provided by taxi companies transportation network companies (TNCs). Therefore, taxi companies or TNCs are responsible for Staffing & Direct Costs, Capital Equipment Costs, and Operations & Maintenance Costs. However, mobility projects can subsidize rides. Subsidized ride costs are included below.*

Fare Model Examples	Trip Cost Paid By Rider	Trip Cost Paid By Agency	Cost to Agency (pier 1,000 rides)
Full Subsidy	$0.00	$12.00	$12,000.00
Flat Fare ($2.00)	$2.00	$10.00	$10,000.00
Flat Initial Fare ($2.00) With Capped Subsidy ($8.00)	$4.00	$8.00	$8,000.00
Cost Sharing (50%)	$6.00	$6.00	$6,000.00
Flat Subsidy ($5.00)	$7.00	$5.00	$5,000.00

Reimbursable Costs for CMO Awardees - Here is a list of the type of items that can be reimbursed through the CMO Program, and the maximum reimbursable amount for each item.

Bikeshare & Scooter-Share	
Vehicle Type & Technology	**Maximum Reimbursable Amount (per vehicle)**
New neighborhood electric vehicle (NEV)	Up to $15,000
New electric tricycle/pedicab (3-4 seats)	Up to $12,500
New electric bicycle (e-bike)	Up to $3,500
New bicycle	Up to $1,500
New electric kick-scooter	Up to $700
New electric cargo bicycle	Up to $4,500
Carshare	
Vehicle Type & Technology	**Maximum Reimbursable Amount (per vehicle)**
New light-duty ZEV	Up to $65,000
New light-duty plug-in hybrid (PHEV), only models with 6 seats capacity or more	Up to $40,000
Used light-duty ZEV or PHEV (6 seats capacity or more) 4 years or newer	100% of the Kelley Blue Book Value (cannot exceed maximum reimbursable amount for the new vehicle)
Leased new light-duty ZEV	Up to $850 per month (including up to $3,000 down payment)
Leased used light-duty ZEV	Up to $600 per month (including up to $3,000 down payment)
New zero-emission passenger van and shuttle bus up to Class 6 (<= 26,000 GVWR^2) or under 30 feet in vehicle length	Total vehicle purchase cost.
Additional allowance for purchase of new ADA-compliant vehicles: for van-size and up (e.g. wheelchair lift, wheelchair ramp)	Additional $20,000 beyond allowable reimbursable amount per vehicle
Carpool/Vanpool	
Vehicle Type & Technology	**Maximum Reimbursable Amount (per vehicle)**
New light-duty ZEV	Up to $65,000
New light-duty plug-in hybrid (PHEV), only models with 6 seats capacity or more	Up to $40,000
Used light-duty ZEV or PHEV (6 seats capacity or more) 4 years or newer	100% of the Kelley Blue Book Value (cannot exceed maximum reimbursable amount for the new vehicle)
Leased new light-duty ZEV	Up to $850 per month (including up to $3,000 down payment)
Leased used light-duty ZEV	Up to $600 per month (including up to $3,000 down payment)
New zero-emission passenger van and shuttle bus up to Class 6 (<= 26,000 GVWR^2) or under 30 feet in vehicle length	Total vehicle purchase cost
Additional allowance for purchase of new ADA-compliant vehicles: (e.g. wheelchair lift, wheelchair ramp)	Up to $20,000 additional to be allowable reimbursable amount per vehicle
Charging & Fueling Equipment Installation	
Charging and Fueling Infrastructure (includes Equipment and Installation)	**Maximum Reimbursable Amount (per unit)**

Reimbursable Costs for CMO Awardees - Here is a list of the type of items that can be reimbursed through the CMO Program, and the maximum reimbursable amount for each item.

Charging & Fueling Equipment Installation	
Charging and Fueling Infrastructure (includes Equipment and Installation)	**Maximum Reimbursable Amount (per unit)**
Level 2 electric vehicle supply equipment (EVSE) unit, including all equipment, construction, and installation costs	Up to $30,000 (Note: CMO will only reimburse the cost of two ports per funded vehicle)
DC Fast Charge EVSE unit, including all equipment and installation costs	Up to $112,000 per unit
Solar Photovoltaic Equipment to supply electricity for EVSE and other clean mobility options charging equipment	Up to $100,000 per installation
Infrastructure costs for conventional bicycle, scooter, and other micromobility vehicles (including docking equipment, lockers, and "quick build" right-of-way infrastructure and installation)	Amount reimbursed must be based on community input regarding the supply needed to support funded equipment
Fuel Cell Electric Vehicle (FCEV) infrastructure installation and fueling costs	Up to $200,000 per project for building a refueling station or providing fuel cards
Infrastructure costs for conventional bicycle, scooter, and other micromobility vehicles (including docking equipment, lockers, and "quick build" right-of-way infrastructure and installation)	Up to 200 percent of the voucher-reimbursable amount for bicycles in the project fleet ($1,500 per bicycle). Total cannot exceed $525,000 per project.
Infrastructure costs for electric bicycle, scooter, and other electric micromobility vehicles (including charging equipment, docking equipment, lockers, and "quick build" right-of-way infrastructure and installation)	Up to 300 percent of the voucher-reimbursable amount for e-bikes in the project fleet ($3,500 per e-bike). Total cannot exceed $525,000 per project.
Quick Build or Infrastructure (includes built structures for charging, storing, or parking conventional and electric micromobility devices such as but not limited to bicycles, scooters, pedicabs, and tricycles)	**Maximum Reimbursable Amount (per unit)**
Docking equipment, lockers, and quick build right-of-way infrastructure and installation for bikes and scooters	Up to $1,500 per bicycle or 200% of the Voucher reimbursable amount for bicycles. Total cannot exceed $525,000 per project.
Docking equipment, lockers, and quick build right-of-way infrastructure and installation for e-bikes and e-scooters	Up to $3,500 per e-bike or 300% of the voucher reimbursable amount for e-bikes. Total cannot exceed $525,000 per project.
Notes:	
Zero-emission passenger vans and shuttle buses are considered used if odometer reading is more than 3,500 miles at purchase or lease.	
Light-duty vehicles are considered used if odometer reading is more than 7,500 miles at purchase or lease.	

Bikeshare and Scootershare Systems

Bikeshare and scootershare systems provide members with access to bicycles, electric bicycles (e-bikes), or electric scooters (e-scooters) on a short-term rental basis. Dockless systems allow for variable distribution of devices across the service area, whereas docked-based systems require users to return devices to a station closest to their destination. The most common types of bike share technologies in the U.S. are "smart docking" systems where a dock with a terminal and kiosk holds the bicycles between rentals and "smart bike" systems in which locking technology is self-contained within the bicycle and can facilitate a dockless system.

The sections below outline cost considerations and offer sample cost values for Staffing and Direct Costs, Capital Equipment Costs, and Operations and Maintenance Costs. The numbers given do not guarantee a project team will receive similar rates and are solely illustrative. Additionally, all cost categories may not be relevant to every project. For example, start-up costs may not be relevant for projects where services are already operating. As another example, bikeshare or scooter-share services may be offered to the Project Lead through a "turnkey" partnership with a company. The operator partner bundles all costs and then receives compensation in the form of a blanket operating subsidy. In this case, the Project Lead may not be responsible for assembling all of the detailed and itemized cost information referred to below.

Staffing and Direct Costs

A project should first consider the initial staffing and direct start-up costs needed to establish a sustainable program. These one-time start costs generally consist of hiring and training new employees, organizing office space, retaining professional services, and obtaining necessary permits. Other staffing costs consist of specific hires needed to oversee, operate, and maintain different system parts. Finally, hiring and costs will be dependent on the chosen business model.

One-Time Start-up Administration Costs

Typical one-time administrative start-up costs for a small system (<10 stations, <100 bicycles) range from $15,000 - $30,000. For a medium sized system (~20-30 stations, ~200 – 300 bicycles), administrative costs can range from $60,000 - $100,000 and include:

- Recruitment costs to hire and retain initial employees who can pivot to new roles as needed
- Organizing or acquiring office space, warehouse, and storage space
- Purchasing office equipment and maintenance supplies
- Establishing and obtaining insurance, legal, and accounting services
- Permit acquisition
- Employee training

Ongoing Staffing Costs

Both bicycle programs and scooter shares range from a few dozen devices to a few hundred devices, and staffing needs depend on the program's size and the business model the project adopts. In general, a system needs the following positions to effectively oversee the launch and continuing operations of a shared micromobility system. These could be new hires or staff already involved in an organization's core program work where their roles will shift. For a small system, these roles will likely overlap between one to two full or part-time employees. Compensation will depend on local conditions, public agency or company compensation restrictions, and benefits offered.

Typical staffing needs include:

- Launch manager to manage end-to-end planning, siting permitting and legal requirements, stakeholder relationship management
- An Operations/General Manager to oversee operations, data gathering, and operations staff, liaison between the operator partner and public partners
- Marketing/Community Engagement manager and customer service staff
- Maintenance staff
  - If the project is a docked or dockless system, this includes staff to rebalance the fleet distribution and perform the field maintenance
  - Operations staff to repair assets

The staffing requirement will also depend on the business model that the project leverages. There are various business models a bicycle or scootershare project can take and varies depending on local conditions.

Examples include:

- Publicly owned and operated
- Public-Private Partnership (Publicly Owned, Privately operated)
- Nonprofit owned and operated
- Non-Profit-Private Partnership
- For-profit owned and operated

A variety of e-bikes and scooters were available to try at the mobility demonstration project as part of Bike Ventura County's Oxnard Clean Mobility Options Transportation Needs Assessment.

Typically, shared-bicycle systems in the U.S. are public-private partnerships. It is essential to define the operator's role and responsibilities in a shared bicycle operator partnership. Scootershares are often for-profit ventures operated by scooter companies through permits and operating agreements from a public agency. However, the business model depends highly on local conditions. It is necessary to understand the business model and the operator partner's complementary roles and how they will take on a portion of the project's costs depending on the partnership structure. Striking the right balance and understanding the responsibility of each partner will clarify the budget and staffing commitments. Also, leveraging community volunteers and staff at trusted community organizations to act as program ambassadors, distribute marketing materials, and staff events can reduce the overall staffing budget and build trust with community stakeholders, especially during initial operations.

Capital Equipment Costs

The initial capital costs associated with starting a bikeshare program include purchasing bicycles and docking infrastructure (for additional details, see **Section D.7 in Implementation Manual**). A shared bicycle system can take on a few different forms. When planning a shared bicycle project, there is a choice between a mixture of e-bikes and traditional pedal-assist bicycles and a docked or dockless system. Scooter share systems consist of dockless e-electric scooters or dockless lock-to scooters.

Both scooters and bicycles have a wide range of quality and features, and the chosen model needs to best suit the project design. For all capital equipment costs vary depending on the equipment type and quality, system size, and technology requirements (GPS, self-locking, etc.). The allowable reimbursable costs for purchasing vehicles and hardware are listed in the table below and further explained in the **Implementation Manual.**

This table outlines the maximum allowable reimbursable costs for vehicles.

Vehicle Type & Technology	Maximum Reimburseable Amount (per vehicle)
New neighborhood electric vehicle (NEV)	Up to $15,000
New electric tricycle/pedicab (3-4 seats)	Up to $12,500
New electric bicycle (e-bike)	Up to $3,500
New bicycle	Up to $1,500
New electric kick-scooter	Up to $700
New electric cargo bicycle	Up to $4,500

Ranges for Capital Equipment (Price ranges are given where applicable on a per-item basis and are general reference ranges):

Capital Equipment		Price Range
Non-electric bicycles		$400 - $800 per bike
Class 1 Electric Bicycle (pedal-assisted bikes)		$1,200 - $3,500 per bike
Class 2 Electric Bicycle (pedal-assisted bikes with throttle)		$1,200 - $4,000 per bike
Docking station, depending on features and station size		$30,000 - $60,000 per station
E-scooters		$600 - $1,200 per scooter
E-bike and e-scooter charging station (For more information on charging equipment and infrastructure, see Cost Guidance for Infrastructure Improvements and Transportation Enhancements, with some examples below)	Charging cords	$30 - $50
	Smart Hub	variable
	Electric Docking Station	variable
	Level 1 EV Car Charging Stations	usually packaged along with Level 2 system

Other capital costs to consider:

- Spare parts
- Unlocking/locking access and application management
- Infrastructure for people without smartphones or bank accounts
- Smart bike system platform: $100 - $200 per month, per device
- Telematics device (if not built-in): $15 - $60 per month, per device depending on fleet size and needs
- Smart locks: $120 - $220 per unit
- Installation costs: dependent on the size, type of equipment, expansion phase.
  - $3,000 - $5,000 per station
- Station site acquisition/permitting
- Vehicle/Device insurance costs
  - There are specific insurance costs needed for electric bicycles and scooters beyond the requirements for auto liability for vans or other vehicles used for rebalancing or collection purposes; see **AB 1286** for more detailed requirements.

Operations and Maintenance Costs

There are many costs associated with operating and maintaining a shared micromobility system. Operating costs can be negotiated before project launch and typically are on a per-dock per-month basis. With a recommended 1.8 – 2.0 ratio for dock-to-bike to ensure suitable docking locations for riders, this is an important distinction to consider when planning and negotiating operating costs with a mobility provider partner and establishing rebalancing strategies with the operator at the start of the project.

Station operating costs (if a docked system) are between $85 - $150 per station per month, depending on the type of rack or dock used and the system's size. This range is equivalent to $1,600 - $3,000 per year per bike.

Other operating and maintenance costs to consider:

- Vehicle maintenance and repair tickets
  - Include costs associated with estimated rates of destruction, theft, vandalism
- General operations (staff) costs associated with managing the project
- Customer service
- General maintenance and operations, of storage facility
- Replacement parts, vehicles, and stations
- Marketing and outreach

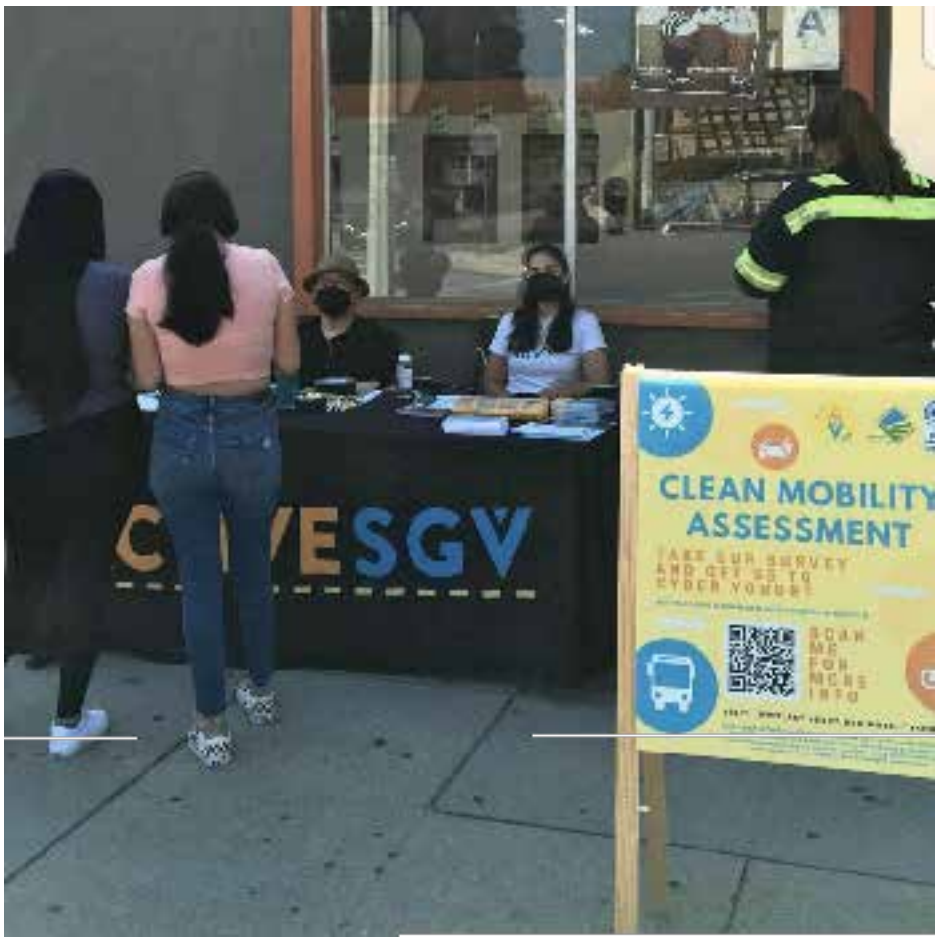
Example Budget Costs

Several communities have published bikeshare feasibility studies and scooter pilot plans are widely available. While costs will differ significantly from state to state, with California's costs most likely being on the higher end of most cost estimates, these examples provide further guidance around what information feasibility studies return and the baseline costs to be considered. **St. Louis Bike Share Study** and the **Grand Rapids Feasibility Study** both offer good overviews of costs associated with bikeshare systems. **GREENbike, Salt Lake City** is a medium-sized system that offers an overview of the feasibility and business model choice and high and low-cost estimates. There are several examples of scooter pilot programs to support the business model choice and partnership coordination. Documentation from the Alexandria, VA scooter pilot can be accessed **here**.

Bikes from a Big Pine mobility event part of the Tribe's Big Pine Paiute Tribe of the Owens Valley Community Transportation Needs Assessment.

Carshare

Carshare services provide members with access to an automobile through short-term rentals. Eligible carsharing models include round-trip carshare, which requires users to borrow and return vehicles at the same location; and one-way or free floating carshare, which allows users to pick up a vehicle at one location and drop it off at another.



ActiveSGV hosted a pop-up in front of Cyber Yogurt, a bicycle friendly business located in El Monte, to collect survey responses from folks as they waited in line for yogurt. This was part of ActiveSGV's El Monte - South El Monte Community Transportation Needs Assessment

Staffing and Direct Costs

A project should consider the staffing needs involved to launch, manage, and maintain a carshare fleet. A typical carshare program of fewer than 10 vehicles should plan on approximately 2.5 full-time staff. These could be new hires or staff already involved in an organization's core program where their roles will shift.

Manager	Oversee the launch and subsequent operations, including tasks such as managing permitting, legal, and insurance requirements
Fleet Operations	Make sure the vehicles are clean, working correctly, and where they need to be when not in use
Member Services	Oversee user relations, manage user needs and emergencies, and provide 24/7 on-call support – some carshare operators use call centers to help with these needs
Marketing Staff	Oversee marketing needs and build awareness of the program
Volunteers	Community-based carshare programs can engage its users to volunteer to help maintain the vehicles through incentives, such as driving credits

It is important to define the mobility operator's role and responsibilities before formally entering into a partnership with a carshare operator. For example, if the private/non-profit operator is responsible for purchasing the vehicles, they may likely manage the carshare fleet, assuring the vehicles are maintained and cleaned regularly. Other direct costs include vehicle insurance, including liability and collision damage, some of which could be absorbed by the mobility operator.

Capital Equipment Costs

The initial capital costs associated with starting an EV carshare program include purchasing vehicles, installing the charging infrastructure, and procuring the reservation system technology platform. Eligible costs are outlined in **Section D.7 Project Eligibility Costs** in the Implementation Manual. Capital equipment acquisition is potentially a place where the mobility operator can bring quite a bit to the partnership. The operator could have reservation technology platforms, for example, and have an established process for purchasing vehicles. The EV charging infrastructure is also an allowable capital cost under the CMO program. While planning for the charging infrastructure, the project should work with a licensed provider to ensure it is done correctly and follow local zoning and other ordinances.

The allowable costs for purchasing vehicles and associated hardware are listed in the table on the next page and further explained in the Implementation Manual.

TIP!

For more information on eligible project costs, see the **Implementation Manual.**

The table below outlines the maximum allowable reimbursable costs for vehicles.

Vehicle Type and Technology	Maximum Reimbursable Amount (per vehicle)
New light-duty zero-emission vehicle	Up to $65,000
New light-duty plug-in hybrid (PHEV) (only models with 6 seats capacity or more)	Up to $40,000
Used light-duty ZEV or PHEV (6 seats capacity or more) 4 years or newer	100% of the Kelley Blue Book (KBB) value (cannot exceed maximum amount for the new vehicle)
Leased new light-duty ZEV	Up to $850 per month (including up to $3,000 down payment)
Leased used light-duty ZEV	Up to $600 per month (including up to $3,000 down payment)
New zero-emission passenger van and shuttle bus up to Class 6 (≤ 26,000 GVWR) or under 30 feet in vehicle length	Total vehicle purchase cost
Additional allowance for purchase of new ADA-compliant vehicles: for van-size and up (e.g. wheelchair lift, wheelchair ramp)	Up to $20,000 additional to be allowable reimbursable amount per vehicle

For exact pricing in your area, please see **www.kbb.com** or a local dealership for more information. The price estimates on the next page were taken from the manufacturer's MSRP listing during the Spring of 2021.

There are limited models of ZEVs on the market. In general, many lower-mileage ZEVs cost between $30,000 - $50,000, depending on brand and quality. Higher-mileage vehicles tend to be more expensive, with costs between $46,000 - $90,000, depending on brand and quality. Examples are listed below but are not an exhaustive list of available ZEVs on the market. The complete list is found at the **U.S. Department of Energy Alternative Fuels Data Center**. The **Clean Vehicle Rebate Program (CVRP)** vehicle list can also be used to identify eligible vehicles. The examples below estimate costs but are not a recommendation or endorsement of the vehicle or brand by CARB. All mileage estimates are taken from the manufacturer's website.

New Light - Duty zero-emission vehicles with greater than 299 miles of range:

- Standard Sedan Models (Ford Mach-E, Model 3) $46,000-$65,000

New Light - Duty ZEV with less than 299 miles of range:

- Compact, 4-door Models (Niro, Kona, Bolt) $28,000-$44,000
- Standard Sedan Models (Polestar, Ioniq, EV6) $45,000-$65,000

There are also limited options for light-duty plug-in hybrids (PHEVs). Average base MSRP pricing is between $35,000 - $55,000. **The U.S. Department of Energy Alternative Fuels Data Center** comprehensive list of available vehicles can help explore options.

Voucher reimbursement is allowed only towards PHEVs that can carry 6 or more passengers, limiting reimbursable equipment to SUVs or minivans.

New Light-Duty plug-in hybrid (PHEV) (6 seats or more)

- 2022 Chrysler Pacifica Plug-in Hybrid (82 MPGe combined): $40,000 - $55,000

Used and leased vehicles are also reimbursable. It is recommended to explore **www.kbb.com** for accurate and up-to-date used car pricing. Locate lease deals on your local dealership's websites.

Used light-duty ZEV or PHEV (6 seat capacity or more) 4 years or newer (Fair market range from www.kbb.com)

- Used 2019 Tesla Model S Standard Range (263 mile range): $70,000 - $90,000
- Used 2019 Chevrolet Bolt EV (238 mile range): $15,000 - $25,000
- Used 2019 Chrysler Pacifica Hybrid (82 MPGe combined): $38,000 - $50,000

Lease new light-duty ZEV

- 2020 Tesla Model 3: $660 - $695/ month
- 2020 Chevrolet Bolt EV: $298/month

Leased used light-duty ZEV

- Check with a local dealership

Charging infrastructure is also a necessary cost and is detailed further in the infrastructure improvements and transportation enhancements section (beginning on page 31). Charging and refueling options include EVSE, Solar Photovoltaic (PV), and Hydrogen fuel cell.

Operations and Maintenance Costs

Operations include all of the activities necessary for operating and maintaining a carshare fleet. Cost considerations to plan for in a carshare program include:

Maintenance Costs

- Scheduled vehicle maintenance (tires, windshield fluid, brakes, etc.)
  - Note, many new car purchases or leases include routine manufacturer-covered maintenance for 2 to 4 years
- Cleaning, inside and out regularly
- Roadside assistance
  - Often included in new car purchases for a limited time
- Bodywork can be a high cost, and small damage like dings, dents, and crunched bumpers may be fixed outside of an insurance claim

Operational Costs

- Rebalancing carshare fleet (pertains to one-way carshare)
- Managing and procuring new parking spaces
- Establishing agreements with local businesses, residents, transit hubs for shared parking spots
- Identifying EV charging infrastructure at different legs of common origin/destinations and working on agreements for carshare users to utilize charging infrastructure
- Reservation system and supporting technology
  - The operator may already have a booking and reservation system in place. If not, this can be a large capital purchase and for EV you will need a trio of software and hardware that can communicate with each other and is also compatible with the charging infrastructure

Customer Service Costs

- Customer relations, help desk, call-in center
- Multi-lingual support and materials
- Orientations with new members to familiarize people with carshare
    - Covering topics such as:
        - Reserving a car
        - Setting up a payment system
        - Charging technology
        - Rules (keep vehicles clean, return on time, etc.)

Example Budget Costs

There are several useful references to look at to get a sense of how much it will cost to start and operate a carshare program, including the **Portland Hacienda EV pilot** and costs outlined in **Bringing Car-Sharing to Your Community** published by City Carshare. The latter is an older source, but it references some of the carshare budget and implementation considerations.

Carpool/Vanpool

Carpooling (or vanpooling) is the grouping of drivers and passengers with common origins and/or destinations into a shared vehicle. Carpooling uses a "self-serve" model, meaning the driver is a traveler in the pool just like other passengers instead of a hired driver in shared taxi rides or ridehail services. New technologies such as mobile device applications provide an opportunity to connect drivers and riders in innovative ways.

TIP!

Zero-emission passenger vans and shuttle buses are considered used if odometer reading is more than 3,500 miles at purchase or lease.

TIP!

Light-duty vehicles are considered used if odometer reading is more than 7,500 miles at purchase or lease.

Carpool/Vanpool drivers tend to be volunteers, generally using a vehicle already in their possession. As a result, overhead costs around staffing and parking are less than other shared mobility programs. With that said, coordinated carpool/vanpool programs still present some Operations and Maintenance and Outreach/Marketing costs.

Staffing and Direct Costs

Given that the drivers are often not paid employees, carpool/vanpool service differs in its business model from other shared mobility programs. It is also prudent to budget for background checks and other screening criteria for drivers and possibly users of the carpool/vanpool service. In addition to volunteer drivers, coordination is needed to manage the process.

Suggested roles to designate in the program are as follows:

- Volunteer Participants: leaseholder or primary driver
- Alternate drivers: people approved by your Vehicle Supplier to drive the vanpool vehicle
- Bookkeeper/Manager: many vanpools designate a person to assist the Volunteer Participant in maintaining the records of the vanpool
- Passengers: people who regularly or occasionally ride the vanpool to help meet minimum occupancy requirements

Capital Equipment Costs

The carpool/vanpool program's capital costs consist of purchasing the vehicles, installing charging infrastructure, and purchasing a reservation system so riders can be paired with one another. Examples of prices for allowable reimbursements are listed in the carshare section above.

There are several apps currently available that could be used for a carpool/vanpool system. Carpool/vanpool operators, such as those listed in the **Clean Mobility Provider Directory**, can help with the following aspects of a pilot project:

- Fleet Management
- Payment Platforms, with considerations for unbanked and users without smartphones
- Reservation Systems, with considerations for unbanked and users without smartphones
- Routing Technology
- Service Operations and Staffing
- Vehicle Procurement
- Vehicle Software and Hardware

Operations and Maintenance Costs

In its most basic form, carpooling involves someone using their personal vehicle to coordinate and pick-up passengers traveling along the same route through either a centralized coordination system or by waiting at specified locations at specific times - a process sometimes referred to as 'slugging.' Alternatively, the vehicles can also be owned by a mobility provider linked to an app that allows for pick-up coordination.

In both cases, the trip requests are logged, and users are paired based on their origin, destination and travel times. A **Ridesharing Learning Module** is available that reviews some of the dynamic carpool models currently available. In both cases, an operations team is responsible for working on relationships with area businesses to market and expand the user base and identify parking opportunities. For example, the BART carpool program guarantees a parking spot at select transit stations until 10 a.m. on weekdays for users of its carpool program. For carpool/vanpool programs that provide vehicles through a mobility provider, there is often an assigned driver responsible for picking up and dropping off the other passengers. This can switch between users as they take turns driving the vehicle. Usually, the driver then parks the vehicle at their residence overnight and during the weekends. Participants of the program then use those vehicles.

Driver and Passenger Incentives

- Driving credits
- Reduced cost of the program when a passenger if also a driver
- Access to the vehicle off-hours might be perks made available to the drivers
- Direct passenger payments per ride (Ex: San Mateo County Program: $2.00 per ride, up to $4.00 per day)

Reimbursement Rate

Volunteer drivers are usually reimbursed for the mileage associated with the vanpool/carpool at the **IRS standard mileage rate**, which is 58.5 cents per mile for 2022.

Service Fees

If using an app-based matching system, the provider can take a set fee per ride, per payment, or an annual fee. These fees cover operations and maintenance costs associated with the program. For example, a $1 per passenger service fee is common for providers offering the platform for such passenger driver matching. It is recommended to have a clear idea and negotiations on fees before signing a contract. The mobility provider partner in your project will likely have a process in place that you can take advantage of for your program. If the mobility provider does not provide these services, then another option is to hire contractors to manage the fleet to ensure proper working order.

Operations and Marketing Costs

Outreach and marketing a carpool/vanpool program is critical. For the program to be a viable option for people to rely on to travel to work, there needs to be a sufficient user base to pair riders based on their travel needs. If that user base does not exist, riders will likely look toward other travel options.

Marketing and outreach activities to budget for involve:

- Reaching out to neighborhood groups
- Attending local festivals/street fairs
- Visiting local community groups to try and familiarize people with the program so that they feel comfortable using it
- Polling potential users to find out where they are traveling to/from to define routes and manage workforce destinations

Example Budget Costs & Other Resources

The **LA Metro Vanpool program** offers many useful tips and procedures to consider when developing a Vanpool/Carpool Program. Many of the costs associated with the vanpool are passed on to the riders. LA Metro recommends that fares should reflect an equal division of the real costs of leasing the vehicle, less the Metro Vanpool Program lease fare subsidy. Maintenance fees (gas, parking, tolls, vehicle cleaning) may be set slightly higher.

Innovative Transit Service

Innovative transit services (or “microtransit”) provide members with access to services within a set boundary. Private companies traditionally operate Microtransit, but recently, some public agencies have begun offering innovative transit services of their own. Broadly, microtransit describes app-enabled transportation through dynamically-routed, multi-passenger vehicles. In some cases, these services involve curb-to-curb or door-to-door transportation. However, many microtransit operators require users to meet drivers at a common pick-up/drop-off location to streamline routing. This category also includes wheelchair accessible vehicles and complementary paratransit service.

The budget items, Capital Equipment Costs, Outreach, and Marketing Costs, and Operations and Maintenance Costs, outline the cost considerations and offer sample values associated with operating innovative transit systems.

Staffing and Direct Costs

Microtransit often resembles existing demand responsive transit modes or supplements fixed-route service. Public microtransit can be operated in a wide variety of partnership configurations. Different types of partnerships reflect the capital and operational needs of the partnering agency. According to the public agency's specific needs, a microtransit service provider can provide any or all of the technology, vehicles, drivers, maintenance, and other operations. Currently, a private partner's provision of technology is generally common to all these arrangements, however, other types of technology providers may be available in the future, such as a community-based or non-profit organization providing technology services.

Different partnership configurations between public, non-profit, and private partners that currently operate include:

- Private sector technology; public agency vehicles and drivers. An agency deploys the private partner's dispatch, routing, and/or user app technology on their agency-owned and operated vehicles. The **AC Transit** program uses this model.
- Private sector technology; public agency vehicles; non-profit agency drivers. A variation on the most basic arrangement above, more common to human services transportation.
- Private sector technology and drivers; public agency vehicles. The **Seattle Via-to-Transit** project is an example.

Turnkey Solutions

A single private, non-profit operator (or consortium) provides the entire microtransit transportation service for an agency, including technology, vehicles, and drivers. This type of partnership is common for agencies or jurisdictions that do not already have their own vehicles or structure appropriate to provide microtransit. The **Arlington, TX microtransit service** is an example a public-private partnership

Ongoing Staffing Needs

There are three general categories of staff roles: Drivers, Management/Administration, and Customer Service.

- Driver labor represents the majority of operation expenses.
- Management/Administration includes oversight, maintenance, and community engagement.
- Customer Service to answer user questions, respond to issues and manage the call center to assist in scheduling trips.

Capital Equipment Costs

Vehicles

The list of eligible medium - and heavy-duty vehicles is congruent with California's Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP). While CMO vehicles are not eligible for HVIP reimbursement, the voucher cost listed by HVIP is roughly equivalent to (but usually lower than) the incremental cost difference from diesel to EV. **The full list of vehicles can be found on the HVIP website** with some examples listed below.

- Medium-duty vehicles over 20 passengers (class 4-5, cutaway vehicle, useful life of 5 years, **example**): $220k - $300k total cost of vehicle:
  - Phoenix Motor Cars ZEUS 300 Passenger Shuttle, 105kWh: $270,000

- Vans (40kW battery, optimal closer to 110kw)
  - Ford Transit -- base MSRP: $40,000 - $50,000
    - EV Conversion: ~$80,000
    - For extended range (100+ mi), average total price: $150,000
  - GreenPower EV Star All-Electric Min-eBus
    - HVIP Incentive is $90,000*

**Since a total cost of vehicle purchase is reimbursable by CMO voucher funds, new vehicles funded by this program cannot receive additional incentives from HVIP program.*

Operations and Maintenance Costs

Operation and maintenance costs can vary widely by service for many reasons including labor, geography, and the different partnership configurations described above. Additional information can be found in **SUMC's Microtransit Learning Module**.

- For in-house service, total hourly costs per vehicle service hour can range between $65 - $220/hr.
  - Ranges from 2.4 - 4 passengers per vehicle service hour.
- $35 - $100/vehicle service hour for contracted service.
  - Ranges from 2.7 - 4 passengers per vehicle service hour.
    - These figures come from the *Transit Cooperative Research Program (TCRP) Synthesis 141, Microtransit or General Public Demand–Response Transit Services: State of the Practice. 2019.*
- Vehicle/Station maintenance is another important operational expense. This should be determined and budgeted when contracting an outside vendor or developing service in-house.
- Consideration for times of day service will be available to users.

Example Budget Costs

Examples of contracts are available from the **HGAC Buy** (government procurement services). **Shuttles, Transits, Trams, & Other Specialty Buses** and **EV Charging Equipment and Related Services** are two good places to start. Also, the following are two example agreements between municipal governments and Via, an innovative transit provider.

- **Arlington, TX agreement with Via**
- **King County, WA (Seattle) agreement with Via**

Student interns were the first passengers on the district's new electric school buses as part of Porterville Unified School District's (PUSD) project, PUSD Energy and Sustainability Program.

Ride On-Demand

CMO defines ride-on-demand services as on-demand rides for individuals provided by taxi companies and transportation network companies (TNCs). To be eligible as a core project model, the service must only include trips taken in zero-emission vehicles, consistent with the vehicle eligibility criteria described in **Section D.3** of the Implementation Manual.

The ride-on-demand services have slightly different eligibility requirements than the other CMO allowable shared modes. CMO will not provide funds to purchase or lease vehicles used for TNC services. This category also includes wheelchair-accessible vehicles and complementary paratransit service.

CMO funding will only cover allowable costs for the funding program that includes:

- Incentivizing and supporting greater utilization of rides-on-demand in clean vehicles.
  - Discounted fares for trips originating in the project area.
- Customizing the software platform
- Expanding or contracting boundaries of geofencing
- Community Outreach
- Marketing Costs - Costs include pre-launch activities, including rider acquisition and education. They also include ongoing marketing costs through the course of the service. In two recent partnerships between transit agencies and TNCs, the agencies spend 15-20% of their total budget on marketing expenses. Both projects' total budgets were between $100,000 and $200,000. Ride providers may conduct additional marketing activities at no additional cost to the agency.

When developing on-demand project budgets, project applicants should consider how they plan to utilize ride-on-demand services to help residents access certain destinations. Unlike other project models that are available in a fixed destination, on-demand services may fluctuate on how they serve riders and passengers. For instance, the on-demand service could be preexisting or could use a volunteer driver to provide on-demand rides as needed.

While the funding eligibility differs for ride-on-demand services, some questions to consider when planning these services are similar to other CMO eligible modes.

Some key questions and considerations include:

- What does your target community look like?
- How will on-demand services meet needs in the community?
- Partnerships with TNCs can be complex and often take considerable time to negotiate agreed-upon terms.
- What type of integration with a TNC or taxi provider app do you hope to achieve?
  - The simplest and most common integrations involve individual agreements with one or more mobility providers to establish parameters around splitting fares, geographic boundaries, and other aspects about the services. These typically have not required any up-front setup costs, as the funding agencies rely on providers' existing technology as the interface for the rider. The revenue is generated entirely through fares and the finances are reconciled at a frequency and method as agreed upon.
- If greater sophistication is desired, then front-end costs for a procuring technology and/or setup may be required. This may be of interest if an applicant is looking to integrate multiple ride providers on a single platform.

For taxi/TNC partnerships with public agencies, rides are typically paid for through a combination of rider fares and agency subsidies. This can take on a variety of forms:

- Full subsidy: The funding agency covers the full cost of the ride. The rider pays no fare. (e.g. **Pierce Transit Limited Access Connections**)
- Flat fare: The rider pays a fixed amount. The funding agency covers the rest. (e.g. **GoMonrovia**)
- Flat initial fare with capped subsidy: The rider pays a fixed amount, with the funding agency covering the rest up to a certain amount, beyond which the rider pays the remainder. (e.g. **Valley Metro RideChoice**)
- Cost sharing: The rider and funding agency share the ride's cost based on a defined percentage. This can come with a cap on the agency's subsidy, beyond which the rider pays the remainder. (e.g. **GoDublin**)
- Flat subsidy: The funding agency covers a fixed amount, with the rider paying the remainder. If the fare is less than the subsidy, then the agency covers the full fare. This is similar to providing the rider a discount of the fixed amount. (e.g. **PSTA Direct Connect**)

When choosing/adapting a fare model and determining your budget for rides, estimate what the average, minimum, and maximum trip costs would be based on trip length and duration and your local taxi or TNC rates. The agency can typically control these factors by making subsidies available only within a specified geographic area or during specific times of the day or days of the week. Placing hard caps on the subsidy or the number of trips an individual can take can control costs.

Since this mode requires rides in zero-emission vehicles, applicants should consider whether mobility providers charge more or less than they do for rides in conventional vehicles.

Eligible funding for projects may include infrastructure improvements only when they directly support, and are essential to, the core project model(s). The following infrastructure types are eligible to receive voucher funds as long as the equipment meets the eligibility criteria described in **Section D** of the Implementation Manual.

Fare Model	Trip Cost Paid by Rider	Trip Cost Paid by Agency	Cost to Agency (per thousand rides)
Full Subsidy	$0	$12	$12,000
Flat Fare ($2.00)	$2	$10	$10,000
Flat initial fare ($2.00) with capped subsidy ($8.00)	$4	$8	$8,000
Cost sharing (50%)	$6	$6	$6,000
Flat subsidy ($5.00)	$7	$5	$5,000

Charging and Fueling Equipment and Installation

Categorized under Infrastructure Improvements in the Implementation Manual, installation of electric vehicle supply equipment (EVSE) are eligible for funding as long as they meet the criteria outlined in **Section D.4** of the manual. For a carshare pilot project, these costs consist of charging stations and associated technology and equipment. The table below outlines the maximum allowable costs for charging infrastructure.

Charging and Fueling Infrastructure (includes Equipment and Installation)	Maximum Reimbursable Amount (per unit)
Level 2 electric vehicle supply equipment (EVSE) unit, including all equipment, construction, and installation costs	Up to $30,000 per unit (Note: CMO will only reimburse the cost of two ports per funded vehicle)
DC Fast Charge EVSE unit, including all equipment, construction, and installation costs	Up to $112,000 per unit (maximum of 1 unit allowed per project)
Solar Photovoltaic Equipment to supply electricity for EVSE and other clean mobility options charging equipment	Amount reimbursed must be based on community input regarding the supply needed to support funded equipment
Fuel Cell Electric Vehicle (FCEV) infrastructure installation and fueling costs	Up to $200,000 per project for building a refueling station or providing fuel cards
Infrastructure costs for conventional bicycle, scooter, and other micromobility vehicles (including docking equipment, lockers, and "quick build" right-of-way infrastructure and installation)	Up to 200 percent of the voucher-reimbursable amount for bicycles in the project fleet ($1,500 per bicycle). Total cannot exceed $525,000 per project.
Infrastructure costs for electric bicycle, scooter, and other electric micromobility vehicles (including charging equipment, docking equipment, lockers, and "quick build" right-of-way infrastructure and installation)	Up to 300 percent of the voucher-reimbursable amount for e-bikes in the project fleet ($3,500 per e-bike). Total cannot exceed $525,000 per project.

Level 2 EVSE

A level 2 charger average cost values as estimated from **California Electric Vehicle Infrastructure Project Eligible Equipment List (CALeVIP)** estimates up to 4 units cost a total of $9,299, with $3,676 toward the charger's costs and $5,623 for additional costs associated with the unit's installation. Construction costs are often additional, as site preparation is often needed to run proper electrical service to the chosen location.

Electric Vehicle Infrastructure Training Program (EVITP)

Voucher recipients must comply with **Assembly Bill 841** which requires a California state funded project team to have:

a) At least one EVITP certified electrician in order to install charging ports
b) At least 25% or more of the total electricians working on a project at any given time to be EVITP certified in order to install equipment that supplies 25 kilowatts or more to a vehicle.

Voucher recipients must show the CMO Program Administrator that the electricians on the team meet all requirements.

Learn more about the requirements and exceptions in Chapter 3, Section 3, 1bII of the Implementation Manual and in **Assembly Bill 841**. Voucher recipients must show the CMO Program Administrator that electricians on the team meet all requirements.

DC Fast Charge EVSE

Electric vehicle charging equipment, also known as electric vehicle supply equipment (EVSE).

The average cost, according to **CALeVIP**, of 1 DC fast charger is $73,584. This estimate considers the average unit cost ($37,298) and additional costs associated with installation and construction costs ($36,286). Construction costs fall into the latter category, as site preparation is often needed to run proper electrical service to the chosen location. These costs scale down with more chargers built at a single at one location.

Distributed Solar Photovoltaic (PV) Equipment

Distributed solar photovoltaic equipment generates electricity to power EVSE and other mobility options charging equipment. There are four PV technology types based on power output, with pricing based on peak dollar cost per peak watt. The prices have significantly decreased since 2018, with the average price per watt in 2020 $0.21. Estimated installation costs were obtained from **National Renewal Energy Laboratory (NREL).**

Installation costs:

- Residential (4kW - 7 kW): $2.71 per watt DC (WDC) (or $3.12/WAC)
- Commercial (100 kW - 2 MW): $1.72 /WDC (or $1.96/WAC)
- Utility-scale (5 - 100 MW): $0.94/WDC (or $1.28/WAC) for fixed-tilt utility-scale PV systems or $1.01/WDC (or $1.35/WAC) for one-axis-tracking utility-scale PV systems

To extrapolate these figures, the NREL report provides the following project estimates:

- $26,153 - $28,371 for a 7-kW residential PV system with 3 kW/6 kWh of storage
- $35,591 - $37,909 for a 7-kW residential PV system with 5 kW/20 kWh of storage
- $2.07 - $2.13 million for a 1-MW commercial ground-mount PV system collocated with 600 kW/2.4 MWh of storage

Hydrogen Refueling Equipment

Hydrogen Refueling Stations Voucher funds may be used to support the installation of hydrogen refueling infrastructure. A hydrogen refueling station can cost between $1-3 million dollars to develop hydrogen on-site. Accordingly, allowable voucher funding amounts may not be sufficient to cover all capital costs associated with these facilities; hence, applicants must demonstrate that other secured funding sources. Hydrogen refueling stations must be sited where similar infrastructure already exists (e.g., installing a hydrogen refueling station at an existing fueling station or a commercial or industrial facility). A refueling station consists of low-pressure storage tanks, a compressor, high-pressure storage tanks, a pre-cooling system, and a dispenser. The average costs below are taken from the **comparison of vs. modular hydrogen refueling stations and on-site production vs. delivery**, based on 2017 research. Station construction is estimated to take one year, with site preparation costs (engineering, design, permitting) estimated to cost $300,000.

Conventional Hydrogen Fueling Station:

- Low-pressure storage tanks: $45,633
- Compressor (100 kg/day station): $189,827
- High-pressure storage tanks:
  - Pre-cooling system: $150,000
  - Dispenser: $250,000
- Total for a 100kg/day station (with all ancillary equipment): $894,256
- Station Cost Range (based on different compressor capacities): $900,000 - $1.2 million

Modular Hydrogen Fueling Station:

Modular stations are contained in a single structure (less dispenser), reducing installation costs.

- Installation costs: $60,000
- Station cost: $750,000 – $1.2 million

Hydrogen Dispenser:

Modular and conventional stations, like gas stations, need pumps and dispensers to refuel vehicles.

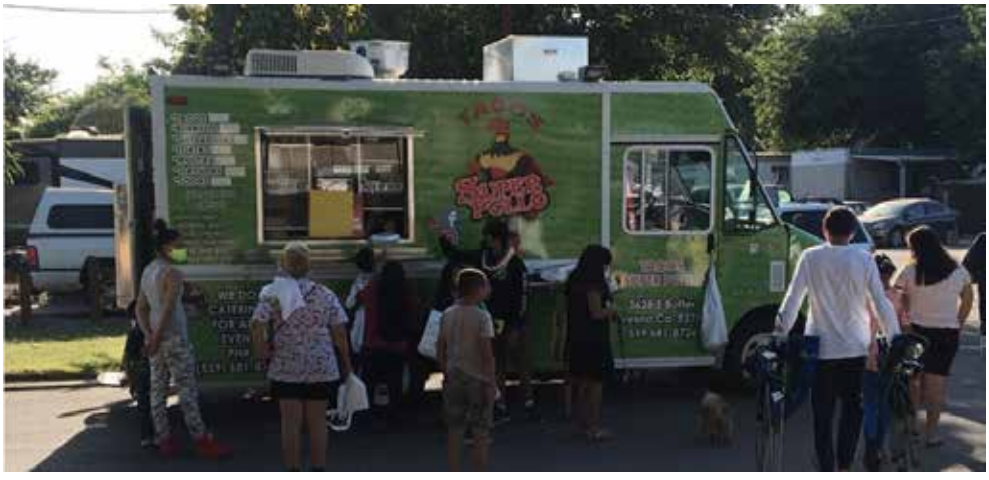
- To expand an existing project, CMO funds could be used to support the purchase and installation of a dispensing unit, up to $100,000.
- Dispensing units range between $150,000 - $350,000.

E-bike and Electric Scooter Charging Equipment

There are a few options available for micromobility charging. As mentioned above, if charging is required, this can be built into the docking station, but for dockless systems and docked systems with a mix of electric and analog devices, this may not be practical. There are a few options to address this need.

Most bicycles and scooters can charge plugged into Level 1 standard US 120V wall outlets. Individual charging cords ($40 per unit) often come with the device and allow the user to plug the e-bike or scooter into a regular outlet. A new 120V outlet costs around $1,000 each to install. Level 1 outlets should follow the National Electrical Manufacturers Association (NEMA) commercial-grade outlets that meet the National Electric Code (NEC) requirements. These outlets should be on a dedicated circuit, preferably rated for 20 amps, and use a ground fault circuit interrupter (GFCI).

Level 2 EVSE docks (see above) usually have a Level 1 plug integrated into the tower; consider this option if the project uses multiple modes.



Social Good Fund Project Regeneration survey team members tabling at Farmers' Market in Watsonville as part of the Community Transportation Watsonville Needs Assessment.

Infrastructure and "Quick Build" Costs

Infrastructure and "quick build" costs include built structures or infrastructure to support the charging, storing or parking of devices. Infrastructure costs for conventional bicycle, scooter, and other micromobility vehicles (including docking equipment, lockers, and "quick build" right-of-way infrastructure and installation) are eligible for up to 200 percent of the voucher reimbursable amount for bicycles in the project fleet ($1,500 per bicycle). For e-bikes, scooters, and other electric micromobility vehicles (including charging equipment, docking equipment, lockers, and "quick build" right-of-way infrastructure and installation), are eligible for up to 300 percent of the voucher reimbursable amount for e-bikes in the project fleet ($3,500 per e-bike). The total cannot exceed $525,000 per project for either conventional or electric devices.

Bicycle and Scooter Parking and Docking Stations

Station based bicycle and scooter sharing require docking stations. These docking stations can be analog or automated. An analog station can be as simple as a multi-device racking system to store bicycles or scooters. Smart docking stations for e-bikes and e-scooters deliver charging parking and storage options. An automated system integrates with a digital application to control use, unlocking the device after receiving payment. An additional feature for some docking stations features integrated charging equipment. Cost estimates are taken from existing micromobility projects and average prices from multiple manufacturers; please contact manufacturers and sellers to identify more accurate pricing.

Automated docking stations costs depend on features and station size and are estimated to cost between $30,000 – $60,000 per station. Charging stations for both e-scooters and e-bikes that also function as docking stations

can be hard-wired, battery-powered, or solar-powered with costs on the higher end or more of the range given above.

Installation costs are dependent on the size, type of equipment, expansion phase but typically run between $3,000 - $5,000 per station

Charging Hubs

A charging hub features locker-like compartments that hold multiple devices at one time and can also store the devices overnight or when not in use. But there are specialized charging devices to speed up the process and charge multiple devices at once. Pricing is dependent on scale and size, so estimates need to be obtained from the manufacturer.

"Quick build" Right-of-Way Safety Improvements

Quick build safety improvements for bicycles and scooters (see **Section D.4.d for more details**) are eligible for reimbursement based on a per device relationship. These projects may include, but are not limited to, roadway and curb paint, signs, parking and loading changes, painted safety zones, posts separating bike lanes from vehicle lanes, changes to the configuration of traffic lanes, and dedicated rights-of-way using barriers, bollards, or other materials. Pricing on these items varies considerably based on type and location. These items may also require permits or additional authorizations from the local municipality, so such costs need to be planned for if included in a project plan.

Transportation Enhancement Elements

Most of the funding associated with the Mobility Project Voucher is intended to be used for project costs and activities essential to implementing the proposed core project models (as defined in Implementation Manual **Section D**). To be eligible for reimbursement, such costs must be included in the Mobility Project Voucher Application at the application submittal time. However, up to 10 percent of the total voucher amount requested per project may be dedicated to "additional transportation enhancements" that directly support activities or services but are not essential to implementing the core project model. These enhancements may include other types of transportation resources or assets that complement the core project model in a way that improves accessibility, reliability, convenience, safety, and/or affordability for participants. Suppose the proposed project includes any type of additional transportation enhancement not listed in the Implementation Manual. In that case, the applicant may request approval as part of the application submission (see **Section K** for more details).

Examples of eligible transportation enhancements include:

- Developing trip planning or mobility-as-a-service (MaaS) platforms or integrating project data into existing platforms.
- Developing multi-modal payment platforms or integrating project payment systems into existing platforms.
- Providing subsidies for traditional fixed-route and public transit rides to better connect projects to existing services (i.e., first-mile, last-mile solutions).
- Providing transportation subsidies and special incentives for homeless individuals and families.

Mobility-as-a -service (MaaS) Platforms and Other Payment Platforms

A recent paper by the Shared-Use Mobility Center, **Towards the Promise of MaaS in the US**, provides an overview and examples of the key elements of the varying degrees of MaaS in active development and use. The key feature of MaaS is an integrated payment system to allow for trip chaining. A platform allows the user to view and choose from multiple travel options from a single interface, with a single payment mechanism. Costs involved in developing such a platform would consist of purchasing a software solution from a provider or hiring a developer to integrate a payment system into an existing platform.

Subsidies for Services

Subsidies can cover all or part of the cost of a service. Many transit authorities offer subsidies at the rate of 50% discount to the user for ride tickets, tokens, and passes. Depending on the local needs, this rate could be higher or lower. Still, the estimated ridership and associated costs need to be adequately estimated to account for such costs in an annual budget accurately. It is recommended that the estimated subsidy is revisited each year based on past annual ridership levels and projected demand.