MODE SHIFT PLAN

Sonoma County
Car Share Feasibility Study

December 2016
CAR SHARE FEASIBILITY STUDY

INTRODUCTION AND GOALS

The car share transportation model has been developed over the past 20 years as a way to facilitate reduced private vehicle ownership among individuals and families through the provision of convenient hourly and daily car rentals. Vehicles are available to members in the program and in most car share models, cars are located in designated parking spaces that provide access to a variety of potential users, including those in residential neighborhoods and areas with concentrations of office and commercial facilities.

Car share is supportive of transit use and an overall multimodal lifestyle. For those who commute by transit to work and for other daily trips, it provides an option for occasional vehicle trips. Access to car share also offers a flexible backup vehicle, providing additional transportation security to those who wish to reduce their household car ownership or electric vehicle owners.

Car share aims to capitalize on and more efficiently address the fact that privately owned automobiles sit unused for the majority of the day. On average, private autos are in use for less than one hour per day, and otherwise sit idly in parking lots or driveways. Car ownership can be a significant expense for families. In 2015, AAA found an annual cost of $5,822 for a small sedan driven 10,000 miles per year or $7,606 annually for a small sedan driven 20,000 miles, and costs increase for larger vehicles. For many households that don’t rely on personal vehicles for regular commute trips, use of car share vehicles may present an affordable alternative to costly vehicle ownership.

This feasibility study identifies potential operating models, funding models, and implementation tactics that may support introduction of car share in Sonoma County. This effort is conducted as part of the Sonoma County Transportation Authority’s (SCTA) Mode Shift Action Plan. Car share recommendations are based on: primary and secondary research into best practices in car share operations; and spatial analysis of Sonoma County using a set of factors related to land use, demographics, and community travel choices which affect and support use of car share.

Alignment with Mode Shift Action Plan

The following goals were developed for the Mode Shift Action Plan. Figure 1 summarizes the potential for car share to affect these goals.

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Figure 1  Car Share Contribution to Mode Shift Goals

<table>
<thead>
<tr>
<th>Mode Shift Action Plan Goals</th>
<th>Car Share Contributions</th>
</tr>
</thead>
</table>
| Reduce single occupancy vehicles (SOVs) mode share               | Not directly applicable, though car share has a demonstrated ability to reduce individual car ownership. The average car sharing household reduces vehicle ownership by 50%.  
3 Martin, Elliot, Susan Shaheen and Jeffrey Lidicker (2010) The Impact of Carsharing on Household Vehicle Holdings                                                                 |
| Increase average vehicle occupancy                               | Car share has a demonstrated ability to reduce individual car ownership, which may facilitate carpooling.                                                                                                                                                                  |
| Increase transit mode share                                      | Car sharing program members report a 46% increase in public transit trips.  
| Increase walk and bike commute mode share                        | Each car share member reduces their personal carbon emissions by between 1,100 and 1,600 pounds per year.  
This suggests that car share members pursue alternative modes where possible for many trips.                                           |
| Increase overall walk and bike mode share                        | Car sharing program members report a 10% increase in bicycling trips and 26% increase in walking trips.  
| Increase share of children walking and biking to school          | Not directly applicable; however, by reducing the need for individual car ownership or multiple car ownership for families, some families may pursue alternative modes of school transportation such as walking and biking.  
7 AAA estimates that it costs $7,606 per year, or $633/month, to own a car.  
http://carshare.org/nonprofit-carsharing-offers-unique-benefits/  
8 Frost and Sullivan (2010) Strategic Analysis of Carsharing Market in North America                                                                                                           |
| Reduce transportation costs by improving access to alternative modes | Individual car ownership is expensive and most cars are used only a few hours per day.  
7 Frost & Sullivan estimates that car sharing can reduce the total transportation costs for its members by 70%; Zipcar members report saving an average of $600 per month compared to owning a car.  
8 Frost and Sullivan (2010) Strategic Analysis of Carsharing Market in North America                                                                                                           |
| Incentivize job growth and economic vitality in PDAs through mobility options | Car share provides another option for local trips and facilitates shorter trips, which may make it easier to access local business districts. Car share also has the potential to reduce annual transportation expenses for families. |
requirements of Turo/RelayRides and Getaround, suggesting a fleet-based model should be pursued in the future.

More recently, the SCTA was awarded a Climate Initiatives grant to implement a pilot car sharing system in Santa Rosa consisting of up to four car share sites and nine vehicles. This pilot program is currently scheduled to begin in 2017. This project is intended to help encourage expanded and permanent car sharing systems in the county and address transportation, environmental, health, and equity goals in the mode shift plan.

As part of this effort, a steering committee made up of SCTA and Regional Climate Protection Authority (RCPA) staff and local partners developed a preliminary list of potential Santa Rosa car share sites based on employment and transit hubs and other major trip generators. A separate effort to evaluate potential car share sites in Santa Rosa only was undertaken in fall 2015 and is incorporated in this study.

In early 2016, Zipcar began operating at Sonoma State University with two vehicles on campus. The vehicles are available to student, faculty, staff and public members. Annual student memberships are discounted $10 and available to those over 18 years old.

**EVALUATION OF POTENTIAL OPERATING MODELS**

Car share programs utilize either a fleet-based model, in which the operator owns and maintains a fleet of car share vehicles, or a peer-to-peer model in which the operator relies on privately-owned vehicles to make up its fleet. In the peer-to-peer model, the owners of the vehicles take a percentage of the revenue generated by rentals and retain responsibility for all vehicle maintenance. A further distinction is made between round-trip car sharing, in which vehicles must be returned to their home location, and one-way (or point to point) car sharing, which allows users to complete use of a vehicle in any location in the designated home area (e.g. Car2go).

Car share companies representing a selection of operating models are evaluated and described in this section. See Figure 2 below for a direct comparison of key program and model specifications, followed by additional details about each company. Note that this list is not exhaustive and other car share operators may be available to respond to a request for proposals (RFP) in Sonoma County.
## Car Share Model Comparison

<table>
<thead>
<tr>
<th>Company</th>
<th>Turo (formerly RelayRides)</th>
<th>Getaround</th>
<th>Car2go</th>
<th>Zipcar</th>
<th>Enterprise Carshare</th>
<th>Carma / City Carshare</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category</td>
<td>Peer to peer</td>
<td>Peer to peer</td>
<td>Fleet-based</td>
<td>Fleet-based</td>
<td>Fleet-based</td>
<td>Fleet-based</td>
</tr>
<tr>
<td>Key System</td>
<td>Manual key exchange between users</td>
<td>Automatic technology (card)</td>
<td>Automatic technology (card)</td>
<td>Automatic technology (card)</td>
<td>Automatic technology (card)</td>
<td>Automatic technology (key fob)</td>
</tr>
<tr>
<td>Anticipated Level of Start-Up Costs</td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>End of Trip Parking Requirements</td>
<td>Car’s home location</td>
<td>Car’s home location</td>
<td>Any public, legal parking spot in the designated ‘home area’ (on-street in most markets)</td>
<td>Car’s home location (Zipcar leased parking spot)</td>
<td>Car’s home location (Enterprise leased space)</td>
<td>Car’s home location (City Carshare leased space)</td>
</tr>
<tr>
<td>Parking Costs to User / Company</td>
<td>User responsible for parking costs during trip; ending home parking spot provided by car owner</td>
<td>User responsible for parking costs during trip; ending home parking spot provided by car owner</td>
<td>Users pay meters when traveling outside ‘home area’ but do not pay in ‘home area’; Car2go pays a percentage – many times 100 percent – of meter; tracked via GPS</td>
<td>User responsible for parking costs during trip; home parking spot paid by Zipcar</td>
<td>User responsible for parking costs during trip; home parking spot paid by Enterprise</td>
<td>User responsible for parking costs during trip; home parking spot paid by City Carshare/Carma</td>
</tr>
<tr>
<td>Differentiators for Users</td>
<td>Pro: Cars available in every community Con: Necessary to coordinate key exchange to access vehicle</td>
<td>Pros: Automatic car entry; insurance and roadside assistance; no joining/member fees</td>
<td>Pro: One-way trips</td>
<td>Pro: Gas and insurance included in hourly rate</td>
<td>Pros: Gas and insurance included in hourly rate</td>
<td>Pros: Gas and insurance included in hourly rate; potential for future coordination with ridesharing</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Cons: All vehicles must be returned to home location (round-trip only)</td>
<td>Cons: All vehicles must be returned to home location (round-trip only)</td>
<td>Cons: All vehicles must be returned to home location (round-trip only)</td>
<td></td>
</tr>
</tbody>
</table>
Turo

Turo, formerly RelayRides, is a peer-to-peer car share model that relies on user-owned cars to make up its fleet. There is no technology involved or installed in cars; thus little to no financial investment is required by Turo. Cars must be picked up and returned to the location designated by the car owner; coordination for key exchange and other details is completed by the vehicle owner and the renter. Turo appears to be currently active in Sonoma County, with five to 15 vehicles available throughout the county depending upon requested rental dates. See Figure 3 for a sample of current Turo vehicle locations listed in Sonoma County.

Process

New locations are driven by car owners and members who sign up there. Additional vehicles and increased use of Turo could be enhanced through advertising and marketing.

Figure 3 Sample of Current Turo Vehicles in Sonoma County

Getaround

While still a peer-to-peer car share company, Getaround recently revised its technology component to mimic Zipcar. Rentals no longer require a key exchange between owner and user; Getaround now installs technology called Connect in vehicles to allow for automated entry by users. However, this requires a significant financial investment by Getaround in each new car so car owners are charged a $99 one-time installation fee and $20/month for the life of their participation in Getaround. Getaround also provides a scheduling function that defaults to car availability when car owners have not indicated otherwise.
Getaround is now operating in more distinct service areas and on a more structured growth plan than it did in its early stages when it operated like Turo/RelayRides. Getaround attempted to enter the Santa Rosa market operating under the old key exchange model but the coordination required in manual key exchange was considered a burden by many members; perhaps the new model could be more successful.

**Process**

Getaround reviews RFPs issued by cities/public agencies as a basis for starting conversations about new locations.

**Car2go**

Car2go’s model presents the unique option for users to make a one-way trip. Car2go users are not required to begin and end their trip in the same parking spot; instead, they are able to park the car in any legal and public parking spot within the “home zone” of Car2go service in their city. For all new locations, Car2go seeks urban settings characterized by population and employment density in order to generate demand. Car2go approaches new markets by starting with a smaller footprint and then expanding the “home zone.” Car2go has expanded outside the “home zone” in some locations to include smaller satellite areas, which typically target a large employer or business park. Examples of current Car2go service areas include in and around downtown San Diego, and central Denver.

On-street parking, a cornerstone of the Car2go model, ensures cars are visible and easily accessible to users. Car2go users are not required to pay the meters at street parking spots, which is perceived as a great benefit for users and allows additional flexibility. Car2go seeks cities willing to offer on-street parking permits and make arrangements for payment of meter revenue on a monthly or annual basis.

**Process**

Car2go has a distinct business development department that works with potential new markets. This contact is frequently initiated by either Car2go or the City – and sometimes initiated by frequent requests from members of the public to provide cars in that location.

**Zipcar**

When evaluating a new location, Zipcar considers the potential member base in order to determine the capital and operating costs of the locations (e.g. number of cars and staff required). Specifically, Zipcar looks for promise in three areas when evaluating a location for new or expanded Zipcar car share service: population density, transit and supportive policies.

- **Population Density and Demographics**: While there is no defined threshold or range for population density, Zipcar looks for existing population density or a substantial designated user group, such as arrangements to take over a municipal or corporate vehicle fleet, to indicate potential for a robust member base. Zipcar also considers the projected population growth and land use plans for a city, as well as demographics such as low vehicle ownership and primary age groups.

- **Transit**: The existence of a transit network that supports a car-free lifestyle. This can also be achieved through efforts and infrastructure to facilitate bicycling and walking.

- **Supportive Policy**: Zipcar seeks to partner with cities with supportive policies for multimodal transportation and a commitment to a vision of fewer private vehicles. Zipcar
especially seeks to partner with cities with progressive development and land-use policies such as unbundled residential parking, parking maximums, plans to add density, and other transportation demand management policies.

Zipcar also indicated that it is most likely to enter a new mid-size market that is in close proximity to a major market where staff and resources are already available, and in jurisdictions or cities willing to offer in-kind support or services (examples of in-kind support are described later in the Implementation section).

**Process**

Zipcar responds to RFPs and emphasizes that cities can streamline the process by crafting a brief and flexible RFP which car share operators can adapt to their own model. Zipcar also encourages cities to consider beginning with a pilot program, which allow for a set period of operations to test the market and determine the location’s ability to scale. Zipcar frequently begins conversations with cities to work through barriers and program details and tailor an agreement that works for both parties.

**Enterprise Carshare**

Enterprise Carshare uses a similar operating model to Zipcar, including the round-trip rental model requiring that vehicles be returned to the home location. Enterprise Carshare does attempt to enter markets where Enterprise Car Rental is operating in order to offer efficiencies in operations. Enterprise reviews and utilizes the records of frequent car rental customers to suggest that they become members of the carshare service. Enterprise Carshare seeks to partner with large companies or other organizations (e.g. public entities) to replace their car fleet with a car share fleet and memberships for all employees. Enterprise says they can typically replace the existing fleet with only 60% of the previous vehicles. For example, an existing fleet of 30 vehicles can be replaced with 20 car share vehicles and be successful due to the efficiencies in the online booking process and maintenance processes. After partnering with a large company, Enterprise will pursue a “retail” model in that location to supplement with additional members and use of cars, which means including members of the public not associated with the organization.

**Process**

Enterprise Carshare reviews and responds to RFPs and is also willing to begin conversations with cities/counties beforehand to discuss the potential for entering that particular market.

**Carma/City Carshare**

Carma is a fleet-based carsharing and carpooling combined business model. Recognizing that a fleet of carpool vehicles sits idle for all hours outside of peak commute times, Carma seeks to facilitate the use of the same vehicle fleet for carsharing trips during the off-peak periods. Carma recently acquired City Carshare, a non-profit car sharing organization based in San Francisco, in order to increase its fleet of vehicles. City Carshare will continue to offer its reduced cost membership programs for low-income community members residing in areas near City Carshare vehicles.

Carma/City Carshare may seek a partner with a municipality willing to cover costs of monthly operations of car share vehicles until the cars become profitable. They estimate this may be $900-$1,000 per month per vehicle, though provision of free parking spaces would help reduce monthly costs.
Process

Carma/City Carshare does review and respond to RFPs. They suggest that RFPs are not overly stringent or prescriptive in terms of car fleet, operating model, etc. to ensure all operators consider the potential of operating in Sonoma County.

Electric Vehicle Assessment

Electric vehicle car share remains a lofty goal for most car share operators. Some operators have attempted to weave electric vehicles into their fleet or have even tried to use a 100% electric fleet. As an example, Car2go attempted to utilize a fleet composed entirely of electric Smart cars in San Diego but ultimately changed cars out for internal combustion cars due to a lack of charging infrastructure. Some of the challenges of EV car sharing include:

- **Range anxiety:** When fully charged, an EV car2go can travel 65 miles at maximum. Internal combustion car2gos can travel up to 342 miles on a single tank. This presents “range anxiety” for some users, particularly tourists who are unfamiliar with the area and wish to travel fairly long distances.
- **Charging time:** An EV car2go takes 6-8 hours to charge, compared with a re-fueling time of 5-10 minutes. It also requires additional staff to ensure cars are charging correctly when not in use. As technology evolves, the charging time for EVs is likely to shorten.
- **Car unavailability:** In San Diego, about 20% of the EV fleet was unavailable to members at any given time due to charging or low charge. That’s more than twice as high as in other markets where cars can be quickly re-fueled and returned to circulation.
- **Spotty and expensive infrastructure requirements:** Electric vehicle charging stations are few and far between in most markets, making it nearly impossible to charge on-the-go.

Electric vehicle charging stations (e.g. ChargePoint) range in cost from $2,000-$8,000, depending on the brand, features, and number of ports. Installation is an additional cost, and can exceed thousands of dollars. Some local municipalities have successfully funded the acquisition of electric vehicle charging technology with Bay Area Air Quality Management District (BAAQMD) and California Energy Commission (CEC) grants, and several others are currently exploring grant opportunities. Local municipalities generally begin by installing electric vehicle charging stations at city halls or county administrative offices for use by employees and the general public.

As part of the Fuel Shift Action Plan, an electric vehicle siting framework focuses on opportunities for electric vehicle charging infrastructure at single-family residential, multi-family residential, workplace, and other high-volume opportunity sites. Recommendations for multi-family residential and workplace charging align with housing and employment density factors considered for car share and are opportunities for future electric vehicle car share sites. The list of potential electric vehicle charging sites developed as part of the Fuel Shift Plan was cross-checked with this study’s list of car share sites, and is discussed in more detail below.

Multiple car share operators express optimism in integrating electric vehicle technology into car share fleets through the introduction of hybrid vehicles, which use combustible engine technology when they are low on charge and can be re-fueled with gasoline to complete trips. This technology eases the effect of range anxiety on potential car share users and reduces the technology and infrastructure requirements.

Locally in Sonoma County, electric vehicle owners are interested in developing a peer-to-peer car sharing program using privately-owned infrastructure (e.g. charging stations). This group may be
supportive of a peer-to-peer EV car share system by offering low rates to encourage potential users to try the vehicles. Additionally, car share can support electric vehicle use by providing members with an alternative non-EV option in the event that an electric vehicle does not serve their needs.

**Funding and Operating Models**

Three major funding and operating models are summarized in Figure 4; these are ownership and operation by a private company, a public entity, or a non-profit organization. Depending on the final agreements, a public entity or non-profit may contract with a private vendor to operate all or some components of the system.

Potential funding sources include:

*State of California*
- Greenhouse Gas Reduction Fund (cap-and-trade)

*Bay Area Region*
- Metropolitan Transportation Commission
  - Climate Initiatives Program
  - Congestion Mitigation Air Quality (CMAQ) program federal funds
  - OBAG 2 (OneBayArea Grant program) – will fund projects from 2017-18 through 2021-22
- BAAQMD
  - Charge! program provides funding to public agencies and businesses to expand network of public plug-in charging stations
  - Light Duty Electric Vehicle Program to fund the purchase or lease or zero-emissions or partial-zero-emissions light duty vehicles in high mileage fleets
  - Transportation Fund for Clean Air (TFCA) regional fund

*Private Sector/Public Utility Providers*
- Advertising revenue
- Contributions from major employers concentrated in a specific area of Sonoma County
- Sonoma Clean Power
- Pacific Gas & Electric
- Corporate sponsorships (such as, New York City's Citibank sponsored bike share)

There are no case studies of full corporate sponsorship of car share systems in the U.S. The closest example is WaiveCar in Santa Monica, which is an advertising-supported, free-floating car share model. Use of WaiveCar vehicles is free for the first two hours and $5.99/hour after the first two hours. Membership is free.9

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9 [https://www.waivecar.com/](https://www.waivecar.com/)
### Operating and Funding Car Share Models

<table>
<thead>
<tr>
<th>Operating Model</th>
<th>Peer Example</th>
<th>Financial Risk/Liability</th>
<th>Funding Sources</th>
<th>Operating Responsibility</th>
<th>Level of Public Staff and Capital Resources Required</th>
<th>Applicability to and Consideration for Sonoma County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Privately-Owned and Operated</td>
<td>Zipcar, Enterprise Car Share, Car2go</td>
<td>Financial risk assumed by private organization; turnkey operator takes on liability risk/coverage</td>
<td>Potential for local, regional, and state funding to support some costs such as staff time; corporate sponsorships; in-kind support from public agencies; membership revenue</td>
<td>Private turnkey operator</td>
<td>Low</td>
<td>Low resources required (Zipcar already operating at Sonoma State University) Near other operations throughout Bay Area region May limit ability to ensure equitable station distribution</td>
</tr>
<tr>
<td>Public-Agency Run</td>
<td>Car To Go (Aspen, Colorado)</td>
<td>Financial risk and liability assumed by the public entity</td>
<td>Local, regional and state grant funding; corporate sponsorships and advertising revenue; sales tax revenue; membership revenue</td>
<td>Public entity or operating vendor depending upon arrangement</td>
<td>High</td>
<td>High resources required (May want to consider after attempting to gain private operations) Allows for full control of system distribution and growth</td>
</tr>
<tr>
<td>Non-Profit/Co-op Organization</td>
<td>E-Go Carshare (Boulder-Denver, CO) City Carshare (San Francisco Bay Area)</td>
<td>Financial risk and liability assumed by the non-profit organization</td>
<td>Potential for local, regional, and state funding; fundraising opportunities; corporate sponsorship/advertising revenue</td>
<td>Non-profit organization or operating vendor depending upon arrangement</td>
<td>Mid to Low</td>
<td>Requires dedicated group of people and likely public support</td>
</tr>
</tbody>
</table>

Figure 4
PEER SYSTEM ANALYSIS

This section provides a brief overview of several peer systems to inform the market analysis and provide context for a potential car share system in Sonoma County. Peer car share systems operating in communities of similar size, land use, and potential market were selected, including private, public, and non-profit car share financial models. Many systems are similar to Sonoma County in terms of the presence of universities and a strong tourist industry. The peer systems outlined in Figure 5 include:

- Aspen, Colorado (Car to Go)\(^{10}\) – operated by City of Aspen
- Boulder-Denver, Colorado (E-Go Carshare) – operated as a non-profit organization
- Eugene-Springfield, Oregon (Enterprise Car Share) – privately-operated
- San Diego, California (Car2go) – privately-operated
- Ithaca, New York (Ithaca Carshare) – operated by non-profit
- Cary, North Carolina (Turo) – privately-operated and peer-to-peer

Multiple peer systems operating a station-based model report having only one vehicle at each “pod.” A pod is a location where one or more cars have designated parking, and where they are picked up and dropped off before and after use. In addition, multiple peer systems reported having launched operations at a university campus and then expanded to a wider area. The availability of car share to those under 25 years of age sets it apart from traditional car rentals, which typically charge an extra fee or higher daily rental rates to those under 25 years old. Most car share companies do not charge any extra fees to drivers under 25 years of age – in fact, some providers offer reduced membership and hourly rental rates to university students. Examples of this include Enterprise Car Share at University of Oregon in Eugene, which offers students a $1 joining fee and $5 hourly rental rates, and Zipcar at Sonoma State University, which offers students $10 off the annual membership price and currently has one pod containing two vehicles on campus. Though Enterprise Car Share and Zipcar normally require members to be 21 years of age or older, those joining in conjunction with a university are eligible as long as they are 18 years of age or older. The exception to this is Turo, which does not offer memberships to those under 21 years old and imposes certain restrictions on the type of vehicles that can be rented to those under 25 years old.

\(^{10}\) Not to be confused with Car2go, the privately-operated one-way car share operator.
<table>
<thead>
<tr>
<th>Peer System Name</th>
<th>Operating Model</th>
<th>Ownership Model</th>
<th>Number of Car Pods</th>
<th>Number of Vehicles</th>
<th>Usage Statistics</th>
<th>Membership Pricing and Rental Fees</th>
<th>Markets Served</th>
<th>Financial Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspen, CO (Car To Go)</td>
<td>Fleet-based, station-based model</td>
<td>Owned and operated by the City of Aspen Transportation Department</td>
<td>9 – each location has only one car</td>
<td>9</td>
<td>All vehicles within surrounding 40 mile radius. Each car is used approximately twice a day, for two hours per trip.</td>
<td>$10 monthly membership. Per-hour and per-mile charges based on use. Rental car and shuttle discounts for trips outside geographic limits.</td>
<td>Aspen area residents. Long-term tourists and second home owners visiting in the summer and winter.</td>
<td>Vehicles purchased from FEMA grant and administered by CDOT. Usage fees cover other operating costs.</td>
</tr>
<tr>
<td>Boulder and Denver, CO</td>
<td>Fleet-based, station-based model</td>
<td>A 501(c)(3) nonprofit managed by a board of directors and group of staff composed of Boulder County residents</td>
<td>40+</td>
<td>40+ of 15 different variables, located throughout Longmont, Boulder, and Denver</td>
<td>Did not disclose</td>
<td>Fees start at $4.50/hr + $0.33 per mile; reduced fees at night. Variable monthly and hourly rates based on how much members drive.</td>
<td>Did not disclose</td>
<td>Denver Boulder metro area businesses, universities (Colorado University Boulder, Naropa University). Vehicles are donated from the community. Received a Congestion Mitigation and Air Quality (CMAQ) grant through Denver Regional Council of Governments 2014-15; additional funding from Mile High Connects and the Denver Foundations.</td>
</tr>
<tr>
<td>Eugene-Springfield, OR</td>
<td>Fleet-based, station-based model</td>
<td>Privately-operated company located in multiple locations in Eugene, Oregon</td>
<td>8 – Eugene/Springfield 2 – University of Oregon campus</td>
<td>10 (one per pod)</td>
<td>Did not disclose</td>
<td>Regular rates: $20 application fee, $50 annual membership. Special membership pricing for UO students: waived application fee, $35 annual membership. Hourly rates from $5-$11/hour; some rental costs are per mile.</td>
<td>Did not disclose</td>
<td>Started at University of Oregon, expanded to the rest of Eugene and to Springfield. Operating and maintenance costs paid by Enterprise CarShare. Contracting completed through NASPO ValuePoint - a national program allowing both private companies/vendors and public entities to take advantage of efficiencies when designing contracts.</td>
</tr>
<tr>
<td>San Diego, CA</td>
<td>Fleet-based, free-floating model</td>
<td>Privately-operated company located in multiple locations in San Diego</td>
<td>Car2go operates free-floating car share; cars do not live in pods.</td>
<td>255 cars located throughout 23 square mile home area of San Diego.</td>
<td>Did not disclose</td>
<td>.19 cents per minute; $35 registration fee. Per hour max is $11.40 Per day max $65.</td>
<td>Did not disclose</td>
<td>23 sq mile home area including downtown San Diego, Mission Hills, University of San Diego, Pacific Beach, Ocean Beach. All operating costs paid by Car2go; some cities may receive grant funding to help supplement costs.</td>
</tr>
<tr>
<td>Ithaca, NY (ithaca Carshare)</td>
<td>Fleet-based, station-based model</td>
<td>A membership-based non-profit managed by staff and a board of directors</td>
<td>25 – each location has only one car</td>
<td>25</td>
<td>Typically higher during the academic year in 2015. 18,396 trips. 2.2 trips/day. 43 hours/day 24.7 miles/day. Membership rate plus hourly rate plus mileage rates. Cars: $0.30/mile. Van: $0.32/mile. Truck: $0.40/mile. Reduced rates for low-income residents. Special rates for college students, businesses, and non-profits.</td>
<td>Ithaca businesses and organizations. Residents. Universities (Cornell University, Ithaca College).</td>
<td>Ithaca area residents. Ithaca businesses. Long-term tourists and second home owners visiting in the summer and winter.</td>
<td>Started with grant funding, now supported by membership fees. 2015 total pre-tax trip income $314,777. Federal transportation program funds low-income subsidies.</td>
</tr>
</tbody>
</table>
| Turo in Cary, North Carolina | Peer-to-peer, station-based model | Privately-owned vehicles; free to list car on Turo | About 32 cars | Cars located at residents’ homes in surrounding region; many car owners offer to deliver to customers free of charge. | Did not disclose | Hourly rates vary based on car model, time of day, etc. Additional costs include trip fee, protection fee, and young driver fee if applicable. | Turo users must have valid driver’s license and submit to a background check. | Turo keeps 25% of revenue to cover rental platform, listing, and insurance. Car owners list vehicles on Turo free of charge. | 11 Aspen: http://www.aspennpkin.com/Departments/Transportation/Car-To-Go/Vehicles-Rates/  
12 Boulder County: http://carshare.org/  
13 Ithaca: http://www.ithacacarshare.org/  
14 Cary: https://turo.com/car-rental/nc/cary
COUNTYWIDE MARKET ANALYSIS

This market analysis combines quantitative and qualitative factors to identify potential car share trip types, user groups, and areas with highest potential to support car sharing at a countywide level. It builds on the findings of the Santa Rosa specific car share feasibility study developed for the pilot project. Quantitative factors are outlined in Figure 6, below. Qualitative factors include lessons from peer systems and operator interviews, stakeholder feedback, and contextual factors which inform station siting considerations.

The types of trips and users that support car share are highly dependent upon the operating model in use. Station-based fleet models facilitate trips made to destinations located further from origins than bike share; however, users are required to return the car to the home parking space, which means that short to medium duration trips are preferable. Peer-to-peer systems also require that users return the car to the home parking space and pay for the car the entire time the vehicle is away from that space. Free-flow fleet models allow users to deposit the car at their destination and suspend paying for the trip at that point, making this model feasible for commute trips and trips with a long stay in the destination; however, limitations on the car share system’s jurisdictional boundaries (the ‘home area’) may prevent trips made to destinations further afield.

Car share users are likely to be members of zero-car or one-car households, and to already rely on an alternative mode such as bicycling or transit for some of their usual trips. Car sharing makes it possible to live car-free in places where public transportation, biking, and taxis are available for other trips. In addition, car sharing makes it possible for a household to reduce the number of cars it owns (e.g. one car owned plus one car sharing membership).

In addition to trips made by individual or family members of a car share program, which some operators refer to as the “retail model,” car share is also well-suited for trips between company meetings or for work business. Multiple operators expressed the potential for car share to replace a company or public entity’s vehicle fleet. This provides both a guaranteed user base for a new car share operation, and a potential operational efficiency for the organization.

Potential User Markets and Demand Analysis

Population and employment densities, zero-vehicle household density, and proximity to key attractors including hotels, retail/commercial uses, and SMART commuter rail stations are all factors used to determine areas where car share demand is expected to be highest in Sonoma County. The resulting car share demand “heat maps” effectively establish the highest-priority areas where potential sites should be considered.

Feasibility Factors and Weighting

The demand analysis inputs for car share feasibility in Sonoma County are outlined in Figure 6. These inputs were chosen based on known factors that impact car share use and an overall multimodal lifestyle, which is supportive of alternative transportation models like car share. Relative weighting is based on local market conditions and best practice factors in successful peer systems.
Figure 6  Car Share Feasibility Factors and Weights

<table>
<thead>
<tr>
<th>Factor</th>
<th>Weight</th>
<th>Description</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population Density</td>
<td>High</td>
<td>Higher population densities support car share by generating a larger pool of potential car share users per pod area</td>
<td>• 2013 ACS 5 Year Surveys&lt;br&gt;• Census Block Groups</td>
</tr>
<tr>
<td>Zero Car Households</td>
<td>High</td>
<td>Low vehicle ownership areas have more demand for short-term car rentals</td>
<td>• 2013 ACS 5 Year Surveys&lt;br&gt;• Census Block Groups</td>
</tr>
<tr>
<td>Employment density</td>
<td>High</td>
<td>Higher employment densities support car share by generating trip destinations and balancing demand with residential areas</td>
<td>• 2013 LEHD&lt;br&gt;• Census Blocks</td>
</tr>
<tr>
<td>Hotel</td>
<td>Med</td>
<td>Tourists are a potential car share market</td>
<td>• ½-mile distance from hotel designated land uses&lt;br&gt;• Land Use code = ‘HOT’</td>
</tr>
<tr>
<td>Universities and Colleges</td>
<td>High</td>
<td>College students are a potential car share market</td>
<td>• Schools from Sonoma County GIS</td>
</tr>
<tr>
<td>Retail/Commercial</td>
<td>High</td>
<td>Commercial areas generate frequent, often local, trips— an ideal market for car share</td>
<td>• ½-mile distance&lt;br&gt;• Land Use Codes = ‘STC”, “SC”</td>
</tr>
<tr>
<td>Proximity to bus stop</td>
<td>Low</td>
<td>Car share serves as a first/last-mile connection to transit; bus transit generates lower demand than rail transit</td>
<td>• 1/4-mile distance&lt;br&gt;• Sonoma County Transit, Santa Rosa CityBus, and Golden Gate Transit Bus Stops</td>
</tr>
<tr>
<td>Proximity to rail stop</td>
<td>High</td>
<td>Car share serves as a first/last-mile connection to transit; rail transit generates higher demand than bus transit</td>
<td>• ½-mile distance&lt;br&gt;• SMART Rail Stations</td>
</tr>
</tbody>
</table>

**Car Share Demand Analysis**

Geographic areas of potential car share demand are mapped based on the factors described in **Figure 6**, are shown in **Figure 7** for the entirety of Sonoma County. **Figure 8** through **Figure 11** show detailed views of potential demand in Santa Rosa, Petaluma, Cotati/Rohnert Park, and the City of Sonoma.
Figure 7  Sonoma County Car Share Demand
Figure 8   Car Share Demand – Santa Rosa
Figure 9  Car Share Demand - Petaluma

Petaluma Car Share Demand

Car Share Demand Analysis calculated from the following inputs with their weighted rankings:
- Population Density - High
- Employment Density - High
- Zero-Vehicle Household Density - High
- Hotel Proximity - Medium
- Retail/Commercial Proximity - High
- University/College Proximity - High
- Bus Stop Proximity - Low
- SMART Rail Stop Proximity - High

Sonoma County City Boundaries
Data Source: 2010 ACS 5-year survey, 2015 GDI Sonoma County EIR
Figure 10  Car Share Demand – Cotati / Rohnert Park

Car Share Demand Analysis calculated from the following inputs with their weighted rankings:

- Population Density - High
- Employment Density - High
- Zero-Vehicle Household Density - High
- Hotel Proximity - Medium
- Retail/Commercial Proximity - High
- University/College Proximity - High
- Bus Stop Proximity - Low
- SMART Rail Stop Proximity - High

Data Sources: ZEUS, ACS 5-Year Survey, NEXIS, Sonoma County SRI
Figure 11  Car Share Demand – City of Sonoma
Figure 12  Car Share Demand – Cloverdale

Cloverdale Car Share Demand

Car Share Demand Analysis calculated from the following inputs with their weighted rankings:
- Population Density - High
- Employment Density - High
- Zero-Vehicle Household Density - High
- Hotel Proximity - Medium
- Retail/Commercial Proximity - High
- University/College Proximity - High
- Bus Stop Proximity - Low
- SMART Rail Stop Proximity - High

Sonoma County City Boundaries

Figure 13  Car Share Demand – Healdsburg

Healdsburg Car Share Demand

Car Share Demand Analysis calculated from the following inputs with their weighted rankings:
- Population Density - High
- Employment Density - High
- Zero-Vehicle Household Density - High
- Hotel Proximity - Medium
- Retail/Commercial Proximity - High
- University/College Proximity - High
- Bus Stop Proximity - Low
- SMART Rail Stop Proximity - High

Sonoma County City Boundaries

Data Sources: 2010 ACS 5-Year Survey; 2010 Census; Sonoma County

[Map showing Car Share Demand in Healdsburg with color coding representing demand levels from low to high]
Figure 14 Car Share Demand – Windsor
Figure 15  Car Share Demand – Sebastopol

Sebastopol Car Share Demand

Car Share Demand Analysis calculated from the following inputs with their weighted rankings:
- Population Density: High
- Employment Density: High
- Zero-Vehicle Household Density: High
- Hotel Proximity: Medium
- Retail/Commercial Proximity: High
- University/College Proximity: High
- Bus Stop Proximity: Low
- SMART Rail Stop Proximity: High

Sonoma County City Boundaries

Data Sources: 2011-2015 Heat Severe, 2012-2013, Sonoma County, ESRI

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Local Trip Patterns

In addition to the demand analysis reflected above, average trip distances in Sonoma County were considered. Data on trip-making patterns for all trips and for commute trips with trip ends in Sonoma County are presented in Figure 16 and Figure 17. These maps illustrate the trip-making patterns of traffic analysis zones (TAZs) with roughly similar populations. TAZs with the lowest average trip lengths represent locations where the average distance of trips originating or ending in that TAZ is less than five miles. TAZs with longer average trip lengths represent locations where people tend to travel greater distances to reach their destination.

Figure 16 and Figure 17 illustrate that people tend to travel shorter distances for all trips than for commute trips. For example, while the average trip length for all trips remains within the five to 10 mile range immediately outside of Santa Rosa city limits, the average trip length for commute trips quickly climbs to the 10 to 20 mile range outside of Santa Rosa city limits.

For commute trips, TAZ’s with an average distance of less than 10 miles are concentrated in Santa Rosa itself and in limited pocket areas in Rohnert Park, Cotati, and Petaluma. Alternatively, among all trips, almost all TAZs in the county have an average trip length of less than 20 miles. Larger pockets of Santa Rosa, Rohnert Park, and Petaluma have average trip lengths of less than five miles. Because short to medium distance trips are well-suited to car share trips, areas of the county with shorter average trip lengths will be identified when considering car share station siting.
Figure 17  Average Trip Length (Commute Trips)
Communities of Concern

SCTA has identified equitable access to affordable transportation as a goal of the county’s Mode Shift plan. Specifically, the plan aims to “promote equity through the provision of new and low cost transportation options and reducing the need to own a personal vehicle.” Car share supports this goal by providing an alternative to private vehicle ownership for individuals and to multi-vehicle ownership for families. In 2015, AAA found an annual cost of $5,822 for a small sedan driven 10,000 miles per year or $7,606 annually for a small sedan driven 20,000 miles. Costs increase for larger vehicles. For this reason, some low income individuals or families either cannot afford or would benefit from alternatives to car ownership. 15

As such, the communities of concern and priority development areas (PDAs) identified as part of the Plan Bay Area process by the Metropolitan Transportation Commission (MTC) are being considered in the site selection process for car share. While SCTA identified its own set of communities of concern, these are located in less dense parts of the county where car share may not be successful or viewed as feasible by potential car share operators; therefore, MTC’s Plan Bay Area communities of concern are considered for analysis and illustrated on Figure 18.

Geographic areas with consistent potential car share demand and designation as a community of concern and/or PDA include:

- Petaluma: West of 101 near planned SMART station at Washington
- Santa Rosa: east of 101 and north of Highway 12 in downtown Santa Rosa
- Santa Rosa: west of 101 near Steele Lane
- Santa Rosa: south of Highway 12/Maple Ave along 101 corridor

Figure 18  Communities of Concern (Plan Bay Area)
Car Share Siting Strategy

When identifying specific locations for potential car share sites, the following factors, in addition to potential demand mapped on Figure 8 through Figure 11, will be considered:

- **Street Environment** – Optimal sites would be located on or along low-speed streets in urban, mixed-use areas with an active pedestrian street presence. This type of environment fosters a sense of security through “eyes on the street” and is often typified by a convenient walking environment, making potential users feel more comfortable in accessing car share vehicles.

- **Walkability** – The site should be surrounded by a robust pedestrian network including continuous sidewalks, safe and convenient street crossings, and direct walking routes to potential attractors.

- **Synergy** – There are several areas in the county with Specific Plans (adopted or underway) that include transit-supportive land use and circulation guidelines and policies, often with a focus on reducing the reliance on auto ownership for mobility, where a synergy with car share services is likely to happen. A similar effect may occur at proposed development projects that have expressed an interest in reducing auto-reliance, often in tandem with a reduction in proposed onsite parking supply.

- **Visibility** – The site should be visible, particularly around transit hubs and hotels where some potential users are likely to be unfamiliar with the area.

- **Proximity to Bike Share** – Car share and bike share siting strategies rely on many of the same characteristics. Locating both functions near one another has several benefits: 1) some users may choose to transfer from one mode to another, i.e., park their car share and complete their trip by bike or vice-versa, and 2) the combination of bike and car share increases visibility of the services, and 3) permitting and/or procedural requirements for both functions may be streamlined at a combined site.

- **Expandability** – All sites should have sufficient space for two car share vehicles, with the potential to add more spaces if warranted by demand.

- **Publicly Accessible** – Priority will be given to locating car share in publicly-owned areas. This may include public or quasi-public parking lots, government/community facilities, and on-street parking spaces. If no suitable public locations exist, privately-owned locations will be considered. While there may be potential for car share facilities to be located at major employers in suburban settings, such locations will not be the focus of this exercise.
IMPLEMENTATION

Site Identification

Building on the work conducted for the Santa Rosa car share pilot, this study has identified a list of preliminary car share sites at a countywide level. In the most urban sites where space constraints are greatest, alternate car share locations have also been recommended. Sites are designated as either “Phase 1” or “Phase 2,” with Phase 1 sites having the greatest potential for near-term car share demand.

Site identification was informed by the factors identified in Market Analysis (Figure 6), feedback received through the community engagement process, sites included in previous plans (including the Santa Rosa study), SMART station sites, potential parking opportunity sites, potential trip purposes such as commute, school, shopping, tourism and recreational, and location of trip attractors. In addition, efforts were made to consider a diverse set of areas throughout the county, including communities of concern and areas where the population could benefit from alternative transportation options.

Preliminary Locations Countywide

The areas identified in Figure 19 are consistent with the high demand locations identified in the map analysis, or have other unique characteristics that make them suitable candidates.

Figure 19 Potential Car Share Demand Areas

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Potential Car Share Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cotati</td>
<td>SMART Station</td>
</tr>
<tr>
<td>Healdsburg</td>
<td>South of Plaza, near SMART station (planned)</td>
</tr>
<tr>
<td>Petaluma</td>
<td>Near Petaluma Downtown SMART Station</td>
</tr>
<tr>
<td>Petaluma</td>
<td>Petaluma Marina Complex</td>
</tr>
<tr>
<td>Petaluma</td>
<td>Petaluma North SMART Station (planned)</td>
</tr>
<tr>
<td>Petaluma</td>
<td>West side of downtown/Petaluma City Hall</td>
</tr>
<tr>
<td>Rohnert Park</td>
<td>City Center/SMART Station</td>
</tr>
<tr>
<td>Santa Rosa</td>
<td>City Hall/Garage 12</td>
</tr>
<tr>
<td>Santa Rosa</td>
<td>Downtown Santa Rosa</td>
</tr>
<tr>
<td>Santa Rosa</td>
<td>Finley Center/City of Santa Rosa Public Works and Water Departments</td>
</tr>
<tr>
<td>Santa Rosa</td>
<td>Memorial Hospital vicinity</td>
</tr>
<tr>
<td>Santa Rosa</td>
<td>Railroad Square/Downtown SMART Station</td>
</tr>
<tr>
<td>Santa Rosa</td>
<td>Santa Rosa Junior College</td>
</tr>
<tr>
<td>Santa Rosa</td>
<td>Planned Roseland Village Plaza</td>
</tr>
<tr>
<td>Santa Rosa</td>
<td>Santa Rosa North SMART Station/Coddingtown</td>
</tr>
<tr>
<td>Santa Rosa</td>
<td>Sonoma County Administration Center</td>
</tr>
<tr>
<td>City of Sonoma</td>
<td>South of Plaza</td>
</tr>
</tbody>
</table>
In some cases, particularly in the most urban areas or at SMART stations, where acquiring dedicated car share parking spaces may be most challenging, alternate car share locations are identified. In several cases sites are also identified at or near government employers, where there is potential for car share operators to provide some of the agency’s vehicle fleet needs in addition to serving the surrounding area.

The full list of potential car share sites is provided in Appendix A. Locations identified as “Phase 1” and having the highest potential near-term demand include:

- Santa Rosa Airport Business Park/SMART Station (Location C)
- Santa Rosa Junior College (Location F)
- Santa Rosa Downtown/Courthouse Square (Location H)
- Santa Rosa Railroad Square/SMART Station (Location J)
- Rohnert Park SMART Station (Location M)
- Sonoma State University (Location N)\(^\text{16}\)
- Petaluma Downtown SMART Station (Location R)
- Petaluma Downtown (Location S)

The full list of potential car share sites are in Appendix A and Figure 20. These sites can be viewed in an interactive map at https://goo.gl/SNTywY. Green pins represent Phase 1 site recommendations, while yellow pins represent potential Phase 2 sites.

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\(^{16}\) Zipcar currently operates one pod of vehicles at Sonoma State University. Zipcar could expand the number of vehicles or number of pods at the campus. Alternatively, other operators entering the Sonoma County market could add vehicles in the area using their criteria to determine ideal locations for vehicle placement.
Figure 20  Potential Car Share Sites
Alignment between the recommended potential car share sites and the initial list of sites suitable for electric vehicle charging stations developed for the Fuel Shift Plan is included in Appendix A. Note that potential EV sites identified as part of Fuel Shift are designated at the traffic analysis zone (TAZ) level and car share sites are identified by specific locations (intersections or destinations). The sites are considered in alignment if the recommended car share site is within the TAZ identified for a potential EV site. Technology and Infrastructure Requirements

While the technology and infrastructure components required to launch and run a car share program are similar regardless of financial model, the responsibility for installation and upkeep of said infrastructure is highly dependent on the model selected. For example, a publicly-operated model or a model relying on a public partnership with a non-profit would require a high level of effort and spending to achieve both physical infrastructure (e.g. vehicles and signage) and virtual infrastructure (e.g. website). Alternatively, a privately-operated company would be far less resource-intensive for an implementing public agency, as the operator (e.g. Zipcar, Enterprise Carshare) would pay for and maintain the majority of the necessary infrastructure and technology.

Figure 21 outlines high-level technology and infrastructure implementation steps for public and private/non-profit operators. These steps would be triggered by an agreement with a partner operator (private or non-profit) or determination to run a publicly-operated system.

<table>
<thead>
<tr>
<th>Step</th>
<th>Public Operator</th>
<th>Private / Non-Profit Operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer-facing website</td>
<td>Develop in-house</td>
<td>Developed by operator/ partner organization</td>
</tr>
<tr>
<td>Advertising and marketing materials</td>
<td>Developed, installed, and paid for in-house</td>
<td>Developed by operator/ partner organization; either installed and paid for by County or partner</td>
</tr>
<tr>
<td>Back-end site management (including booking, vehicle maintenance tracking, etc)</td>
<td>Developed and maintained in-house / by vendor</td>
<td>Developed and maintained by operator/ partner organization</td>
</tr>
<tr>
<td>Vehicle procurement and in-car technology (including parking monitoring system if applicable)</td>
<td>Procured and installed by vendor</td>
<td>Procured and installed by operator/ partner organization</td>
</tr>
<tr>
<td>Site signage</td>
<td>Developed, installed, and paid for in-house</td>
<td>Developed, installed, and paid for by operator/ partner organization</td>
</tr>
</tbody>
</table>

Multiple operators interviewed as part of this study indicated an opportunity for smaller cities or markets to offer in-kind support and assistance, which would offer a cost savings to the operator and reduce their risk of entering a new market. While the operators will almost assuredly utilize their own website, booking system, and back-end logistical operations system, this in-kind support could include provision of advertising and marketing space or materials, assistance with cost and installation of signage, etc. Figure 22 outlines a range of potential in-kind support services that could make operating car share in Sonoma County more appealing and reduce barriers for private companies.
Figure 22 Potential In-Kind Support Services

<table>
<thead>
<tr>
<th>In-Kind Support/Assistance from Local Jurisdiction</th>
<th>Benefit to Car Share Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promote car share services to residents and businesses (e.g. posting to agency social media, free or discounted public agency-owned advertising space, including on websites, newsletters, etc.)</td>
<td>Reduced set-up, promotional costs for car share company</td>
</tr>
<tr>
<td>Provide memberships to all City/Town/County employees to use car share for government business travel</td>
<td>Offers a certain amount of likely car use and revenue generation</td>
</tr>
<tr>
<td>Subsidize one-time/annual car share memberships/joining fees for members of the public, perhaps specific population groups</td>
<td>Facilitates new members; improves confidence in market potential</td>
</tr>
<tr>
<td>Assist car share company in building partnerships with large destinations/businesses (e.g. large hospital, new developments)</td>
<td>Reduced promotional costs, potential to generate a large number of new members</td>
</tr>
<tr>
<td>Offer free or discounted parking spaces in public lots or metered street parking rates</td>
<td>Reduced operating costs for car share company, increased company and service visibility</td>
</tr>
<tr>
<td>Provide support with car maintenance or roadside assistance</td>
<td>Reduced operating costs for car share company</td>
</tr>
<tr>
<td>Efforts to integrate and coordinate car share with fixed route transit</td>
<td>Opportunities for additional publicity and membership/use</td>
</tr>
</tbody>
</table>

**Opportunities for Integration with Fixed-Route Transit**

Every effort should be made to integrate car share service with fixed-route transit. Such integration communicates a message of multimodal accessibility and supports the efforts of initiatives like SMART to change travel preferences and behavior. Tactics to support this include:

- Car share siting at SMART rail stations
- Car share siting at or within close proximity of bus transit hubs (e.g. Santa Rosa Transit Mall)
- Inclusion of car share on any web-based transit trip planning tools or informational sites/apps
- Wayfinding and signage directing users between transit hubs/stations and car share stations
- Advertisements and promotions at transit stations/hubs or on transit vehicles
- Inclusion of car share use or membership in a SMART rail or other transit product
- Discount offers or coordinated giveaways on car share membership or transit passes with purchase of one of the two products

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17 Examples of this can be found in Europe, including the Mobility Rail Card in Switzerland, which combines an annual carsharing membership with a discounted annual train pass.

18 An example of this type of coordination can be found through Capital Car Share operating in Albany, NY. They offered a free 7-day transit pass to those who signed up for a car share membership. [https://www.capitalcarshare.org/news/april-enews/](https://www.capitalcarshare.org/news/april-enews/)
RECOMMENDATIONS AND NEXT STEPS

The car share demand analysis outlined above indicates that areas in Santa Rosa, Petaluma, and Rohnert Park have elements that support a customer base and demand for car share. The successful operation of peer systems of similar size and population to some cities in Sonoma County is also encouraging. Car share in Sonoma County can benefit from ZipCar’s presence at Sonoma State University and being in close proximity to San Rafael, Napa and the larger markets in San Francisco and Oakland where car share companies already operate. Car share providers already operating in the Bay Area have noted that the ability to utilize operations teams already servicing the above cities would make expansion easier. From the user perspective, an expanding service area for the same provider would benefit both new and current users when traveling around the region.

- **Consider partnering with existing providers:** As a first step, local jurisdictions may consider partnering with Turo, which already has vehicles available in multiple parts of the county, to market and maximize use of the existing network.

- **Consider a private or non-profit fleet-based partnership:** In order to pilot a fleet-based system, implementing agencies in Sonoma County can either seek a private or non-profit partner organization (e.g. Zipcar or City Carshare/Carma) via a request for proposals or attempt to develop a publicly-run system. A private or non-profit model allows for a partner organization to take on much of the staffing and capital costs, while a publicly-run system would present significant staffing and capital costs to the implementing agency. If outsourcing a car share system to a private operator, there is potential to lose much of the control over vehicle and fleet locations. This may be overcome by partially subsidizing high priority locations to address equity and access concerns.

  Given the transportation, demographic and land use conditions in Sonoma County, a station-based operator is most likely to come on board, though a free-floating model (e.g. Car2go) should not be ruled out. However, the free-floating model should only be pursued if local jurisdictions have or are willing to develop a supportive on-street car sharing policy.

- **Build an attractive RFP for operators:** A suite of in-kind services and staff support would help incentivize a privately-owned and operated car share company to begin new service. Ensure enough flexibility in the RFP for operators to imagine ways to make their business work in Sonoma County.

- **Consider an electric vehicle car sharing system:** Based on lessons learned from multiple industry experts, the existing technology constraints, and consumer preferences, electric vehicle car sharing would present implementation challenges with existing conditions in 2016. However, electric vehicle range and public charging infrastructure are both expanding rapidly, and could provide favorable conditions for electric vehicle car sharing in the near future. A hybrid vehicle or electric vehicle with gas backup fleet is a good near-term compromise, which is both palatable to users and advances the community and SCTA’s environmental goals.
• **Seek approval for a wide variety of car share sites:** Finally, agencies in Sonoma County are encouraged to select and gain necessary approvals for a wide variety of potential car share site locations, without being totally prescriptive, as this provides a level of flexibility that is attractive to potential car share operators. Based on peer system analysis, it is likely that a car share pilot in Sonoma County would begin with one car at each site before expanding or adjusting locations to meet user demand. Car share operators are likely to select from available car share sites, and may shuffle cars between sites until a successful balance is reached. Depending upon interest from operators, a free-floating model (e.g. Car2go) may be chosen, making the identification of sites unnecessary.

**Steps to Implementation**

A high level set of steps to implementation include:

1. Determine whether any specific operating model is preferable to Sonoma County
2. Identify and/or apply for funding to support program
3. Develop draft RFP for car share program
4. Obtain program buy-in from necessary agencies or elected officials, including permission to issue RFP and the details of supportive policies, which ideally include:
   - 10-20 free on-street or public garage parking spaces, working with car share company to identify locations throughout county and in high-potential areas
   - Significant promotional assistance including social media and online advertising, free space on physical advertising platforms owned or subsidized by local municipalities and transit agencies
   - Commitment to purchase memberships for county/city employees. This could be done at various levels (e.g. all employees as an additional benefit/perk or only those employees for whom car share would replace their use of a city-owned fleet).
   - Replace or supplement county/city-owned vehicle fleet with car share
   - Offer to make introductions and facilitate partnerships with large local businesses and employers
   - Function as highly supportive champions of car share to both publicly and privately support the effort
5. Ensure zoning or parking regulations allow for car share
6. Finalize and issue RFP
7. Review proposals and select provider for implementation
### APPENDIX A: DESCRIPTION OF CAR SHARE SITES

<table>
<thead>
<tr>
<th>ID</th>
<th>Jurisdiction</th>
<th>Site</th>
<th>Location</th>
<th>Space Type</th>
<th>Key Characteristics</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Alignment with Fuel Shift Plan EV suitability opportunity sites(^{19})</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<tr>
<td>Healdsburg</td>
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<td></td>
</tr>
<tr>
<td>A</td>
<td>Downtown Healdsburg</td>
<td></td>
<td>East side of Healdsburg Avenue south of Plaza</td>
<td>On street</td>
<td>Central downtown location, high visibility, near several hotels along private parking lot street frontage (not directly in front of a business), approximately 0.4 miles from future SMART station</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

| A-1 | Alternate |      | Healdsburg Avenue south of Mill Street | On street or within future development project | Within adopted Central Healdsburg Avenue Area Plan, on roadway segment that is intended to become a multimodal “complete street” adjacent to planned multifamily/mixed-use development (Healdsburg Green), located approximately one-quarter mile from both the Healdsburg Plaza and future SMART station | X | X |

| A-2 | Alternate |      | Future Healdsburg SMART Station | Within future SMART lot | Convenient to those commuting or visiting via future SMART rail service, walkable distance to downtown | X | X |

| Windsor |    |      |          |            |                     |         |         |                                  |
| B  | Downtown Windsor |      | Intermodal transit station parking lot | Public parking lot | Adjacent to SMART station and Sonoma County Transit bus hub within Station Area Specific Plan, which includes progressive parking and transportation related policies aimed at reducing auto reliance, proximate to existing mixed-use development including multifamily residential, with additional multifamily residential expected in the future | X |

| Santa Rosa |    |      |          |            |                     |         |         |                                  |
| C  | Airport Business Park |      | SMART Station on Airport Boulevard | Within SMART station lot | Adjacent to SMART station central location within major office park employment center, accessible to airport via transit and potential future SMART shuttles | X | X |

| C-1 | Alternate | Sonoma County Water Agency | Western side of SCWA parking lot | Across Airport Boulevard from SMART, future multi-use path will connect SCWA site to SMART station, potential for car share to function as part of SCWA vehicle fleet | X | X |

| D  | County Administration Center | Near intersection of Ventura Ave/ Fiscali Drive | On street or in public parking lot | Central location within the Sonoma County Administration Center complex, potential for car share to function as part of County vehicle fleet | X | X |

\(^{19}\) This represents a cross comparison of initial electric vehicle sites developed as part of the Fuel Shift Plan with this study’s list of potential car share sites. Electric vehicle locations have only been determined to the traffic analysis zone (TAZ) level; thus, we indicate alignment if the potential car share site is located with a TAZ selected for an electric vehicle station.
<table>
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<tr>
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</table>
| E  | North Santa Rosa SMART/ Coodingtown | Guerneville Road SMART Station | Within SMART station lot | Adjacent to SMART station  
Near multifamily residential complexes including several affordable housing developments  
Within North Santa Rosa Station Area Plan, adjacent to future increased housing densities  
Accessible to Santa Rosa CityBus and potential future SMART shuttles | X | X | |
| E-1| Alternate     | Coodingtown Mall west lot adjacent to Range Avenue and CityBus transfer center | Private mall parking lot | North Santa Rosa Station Area Plan calls for new “complete street” connection between this location and the Guerneville Road SMART Station  
Good visibility  
Proximate to the SMART station, mall, and CityBus transfer center  
Somewhat more central to existing and future residential growth areas compared to SMART station | X | X | |
| F  | Santa Rosa Junior College | Surface lot on southwest corner of Mendocino Avenue/Bear Cub Way | SRJC parking lot | Central to large student and faculty population  
Good visibility from Mendocino Avenue  
Walking distance to population-dense Junior College neighborhood  
Near potential bike share location | X | X | |
| G  | Stony Circle  | Santa Rosa Public Works & Water Departments | Within City-owned parking lot | Satellite location for several City of Santa Rosa departments  
Within walking distance of several major office complexes  
Likely to be viable only if City of Santa Rosa contracts to use car share as part of City fleet | X | X | |
| H  | Downtown Santa Rosa | East side of Santa Rosa Avenue south of Third Street | On street | Central downtown location  
Adjacent to Courthouse Square and Transit Mall  
Downtown Station Area Plan identifies nearby sites for high-density multifamily residential  
High visibility  
Adjacent to potential bike share location | X | X | |
| H-1| Alternate     | West side of Mendocino Avenue north of Fifth Street | On street | Central downtown location  
Along private parking lot street frontage (not directly in front of a business) | X | X | |
| H-2| Alternate     | City parking lot south of Third Street between D and E Streets | Public lot ("White House" parking lot) | Public parking lot requires no use of on-street spaces  
Within short walking distance of core downtown area  
Near future high-density infill housing | X | X | |
| I  | Santa Rosa City Hall | Southeast corner of Santa Rosa Ave/Fist St intersection | City Hall parking lot | Within City Hall complex  
Serves the southern downtown area  
May only be viable if City of Santa Rosa contracts to use car share as part of City fleet | X | X | |
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<tr>
<td>J</td>
<td>Santa Rosa Railroad Square</td>
<td>West terminus of Fourth Street</td>
<td>On street</td>
<td>Located directly at downtown Santa Rosa SMART station. Adjacent to potential bike share location. Very close to several hotels. Walking distance to western downtown area and future transit-oriented infill development.</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>K</td>
<td>Memorial Hospital Area</td>
<td>West side of Sotoyome Street just south of Montgomery Dr</td>
<td>On street</td>
<td>Within core area of Memorial Hospital complex and surrounding medical offices. Would also serve eastern downtown area. Potential to capture some usage from Montgomery Village retail area (0.75 miles to the east). Near potential bike share location.</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>L</td>
<td>Roseland Village Plaza</td>
<td>North side of Sebastopol Road near West Avenue</td>
<td>On street or in future parking lot</td>
<td>Adjacent to planned community plaza with multifamily residential, retail, and service uses. Located within the core Roseland neighborhood commercial district. Accessible by frequent transit service on Sebastopol Road. Within Roseland Area Specific Plan (to be adopted Fall 2016), which encourages transit-oriented development and multimodal circulation along Sebastopol Road. Adjacent to potential bike share location.</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

**Rohnert Park**

| M  | Rohnert Park SMART Station | Northern terminus of Seed Farm Drive, south of Rohnert Park Expressway | SMART parking lot | Located directly at Rohnert Park SMART Station and near the City’s geographic center. Within recently-adopted Central Rohnert Park PDA Plan, which calls for substantial increases in multifamily housing and emphasizes pedestrian and bicycle circulation. Within one-half mile walking/biking distance of many existing retail and employment uses in the City center. | X       |         | X                                                             |

**M-1 Alternate**

| M-1 | Alternate | East side of State Farm Drive, south of Rohnert Park Expressway | On street | The Central Rohnert Park PDA Plan calls for introducing complete street components on this segment of State Farm Drive including lane reductions, bike lanes, and diagonal parking. A major mixed-use, transit-oriented development is proposed between State Farm Drive and the SMART Station (Rohnert Crossings). A new street will be constructed at this location directly linking State Farm Drive to the rail station (an approximately 0.25 mile distance). Potential opportunity to collaborate with Rohnert Crossings developer to implement car share. | X       |         | X                                                             |

**N  | Sonoma State University | Lot D near Student Center and Recreation Center | SSU parking lot | Located in the core of Sonoma State University and near student housing. Concentration of potential users including 9,400 students (including 3,000 on campus student residents) and faculty. Adjacent to potential bike share location. Potential to also serve Cotati until car share is implemented at Cotati SMART station. |         | X       | X                                                             |

**Cotati**
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<tr>
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<th>Site Description</th>
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| O   | Cotati SMART Station | Santero Way, south of East Cotati Avenue | SMART parking lot | Located directly at Cotati SMART Station  
Within Santero Way Specific Plan area, which calls for further increases in multifamily housing surrounding the rail station  
Potential to serve both Cotati and the southeastern portion of Rohnert Park  
Within one-half mile walking/biking distance of retail center and apartments along East Cotati Avenue corridor |  | X |  |
| P   | North Petaluma SMART Station | Corona Road, east of N. McDowell Boulevard | SMART parking lot | Located directly at future North Petaluma SMART Station  
Likely to serve some demand from large business park area to the north within one-half mile walking/biking distance  
Additional medium density residential housing planned near station in the future  
Adjacent to potential bike share location |  | X | X |
| Q   | East Petaluma | Deer Creek Shopping Center, N. McDowell Blvd at Professional Center Drive | Private lot | Within large retail center  
High visibility from North McDowell Boulevard major arterial  
Approximately 0.25 mile from Petaluma Valley Hospital and surrounding medical office buildings, plus large multifamily housing complex and surrounding neighborhoods  
Central location to serve East Petaluma |  | X | X |
| R   | Petaluma Downtown SMART Station | Visitor Center/Arts Center between East Washington and D Streets | Parking lot | Adjacent to SMART station and one block away from transit mall  
Located within Petaluma Station Area Plan and Central Petaluma Specific Plan areas, which call for a concentration of transit-oriented and mixed-use development surrounding the station including large increases in the number of multifamily residential units  
Within walking/biking distance of existing retail centers and high density housing |  | X | X |
| R-1 | Alternate | West side of Copeland Street mid-way between E. Washington and D Streets | On street | Similar characteristics to SMART station site identified above  
Approximately 0.20 mile walking distance from SMART station, decreasing to approximately 500 feet once future development east of Copeland Street occurs  
Located on street frontage of proposed major mixed-use project (Haystack Pacifica) that has expressed interest in the potential to include car share |  | X | X |
| S   | Downtown Petaluma | North side of Western Avenue between Keller and Kentucky Streets | On street | Within core of downtown Petaluma commercial district  
Area of high walking and bicycling activity  
Located 0.20 miles from bus transfer area on Fourth Street serving local and regional bus routes  
Spaces abut City parking garage, not directly in front of businesses  
Within walking distance of historic residential areas and City Hall |  | X | X |
| S-1 | Alternate | City Hall employee parking lot, northwest corner of Howard and Bassett Streets | City parking lot | Adjacent to Petaluma City Hall complex  
Within one-quarter mile walking/biking distance of downtown core  
Serves a large residential area identified by mapping as having a moderately-high car share demand  
Location becomes more viable if City of Petaluma contracts to use car share as part of City fleet |  | X | X |
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<tr>
<td>T</td>
<td>Petaluma Marina</td>
<td>Marina complex parking lot</td>
<td>Quasi-public parking lot</td>
<td>Site includes a public marina, major hotel with meeting facilities, over 100,000 square feet of office uses, and a proposed 90-unit multifamily residential complex Car share would have unique potential to serve recreational boaters docking at the Marina The City of Petaluma holds parking easements at the site; the specific location of car share spaces would need to be coordinated between the City and land owners</td>
<td>X</td>
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<tr>
<td>U</td>
<td>The Springs (County of Sonoma)</td>
<td>South side of Boyes Boulevard, just west of Highway 12</td>
<td>On street</td>
<td>Care of Feters Hot Springs/Boyes Hot Springs/Agua Caliente commercial district and surrounded by medium-density and multifamily neighborhoods Adjacent to a major resort hotel Within The Springs Specific Plan area, currently under development and anticipated to include housing and multimodal circulation improvements in these underrepresented communities Potential to serve many non-auto owning households</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>U-1</td>
<td>Alternate Private parking lot on northwest corner of Highway 12/Vallejo Avenue intersection</td>
<td>Sonoma Mission Inn parking lot (private)</td>
<td>Similar characteristics to on-street primary option Would require collaboration with Sonoma Mission Inn Potential to serve as an amenity to resort guests while also serving the surrounding Springs communities</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>Sonoma Plaza</td>
<td>West side of Broadway just south of Napa Street and the Sonoma Plaza</td>
<td>On street</td>
<td>In Sonoma’s downtown area surrounded by retail, visitor-serving, and hotel uses Within walking/biking distance of surrounding neighborhoods City has long-range plans to transform Broadway into more of a “complete street,” reducing the number of lanes and possibly including diagonal parking</td>
<td>X</td>
<td>X</td>
<td></td>
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</tbody>
</table>