



CarShare Vermont New North End Market Research

Report Prepared for the Chittenden County Regional Planning Commission

Introduction & Background

In 2009—during our first year of operation—CarShare Vermont opened a pod in Burlington’s New North End (NNE) as a pilot project in response to interest from residents who lived there. We knew that the NNE had neighborhood characteristics that made it unique from our other pod locations in an around downtown Burlington, yet the neighborhood seemed sufficiently dense and our membership was growing there despite the absence of a vehicle.

We ventured to the NNE without conducting substantive market research. In response to feedback from our members and others, we located a vehicle at the Ethan Allen Shopping Center on North Avenue and conducted extensive neighborhood outreach to encourage its use. We wanted to determine if car-sharing would be successful in a neighborhood where car dependence seemed to be more prevalent than other areas of the city due to land use patterns, proximity to downtown, and other factors. We operated the vehicle for about 18 months and during this time we recruited about 40 members. However, the vehicle was the least utilized in our fleet and it was not sustainable for us to maintain the NNE location. We ultimately decided to relocate the vehicle closer to downtown—though still on North Street—where it would serve a greater portion of our members without completely alienating NNE residents.

Over the past few years since CarShare Vermont left the NNE and continued to expand in Burlington and into Winooski, we have received numerous requests from potential and existing members to bring our service back to the NNE. In fact, the NNE has been one the most popular pod requests we have received since 2011. We’ve also witnessed significant new housing development along the North Avenue corridor, including for seniors and low-income individuals. Similarly, we have anecdotally heard that the demographics of the NNE are changing—an increasing number of young professionals and one-car families have relocated to the NNE and they want to maintain their car-light lifestyles by utilizing our service.

As part of CarShare Vermont’s funding request for the 2015 Unified Planning Work Program (UPWP), we asked for support to re-visit the NNE by conducting a more thorough market assessment to better understand if the neighborhood is now ripe for car-

sharing. The following report outlines how we approached this project, our findings, and our recommendation for expansion.

Population, Geography & Other Considerations

As we consider expansion into the NNE for a second time, there are still certain neighborhood characteristics that give us pause as we try to determine the potential viability of a pod.

First off, the NNE is Burlington's largest neighborhood geographically but has a relatively low population density. With just over 8,700 residents (only 20% of Burlington's total population) on roughly half of the city's landmass, it has a distinctly more suburban feel than the Old North End, for example. The neighborhood is known for its large lot sizes, quiet cul-de-sacs, and plentiful parking. This spread out land use pattern encourages car ownership, and it poses a challenge for the success of a car-share pod. Because NNE members would likely have to travel further to get to a shared vehicle (i.e. over a quarter mile), it directly impacts the convenience of our service—making it less likely for residents to actively incorporate car-sharing into their day-to-day transportation choices. In addition, without safe on-road biking conditions or adequate bus service, residents do not have a reliable way to access a centralized pod or other neighborhood amenities, which makes it even more difficult to live car-free or as one-car households (the majority of CarShare Vermont's current members belong to zero and one-vehicle households).

The NNE also lacks a critical mass of employers, which means that most commuters leave the neighborhood during the day. Although businesses make up a relatively small portion of our current membership base, in downtown Burlington they play an important role in supporting daytime use of our vehicles when their employees use the service for either work-related travel or personal use. Similarly, many people who commute downtown for work regularly use our vehicles during the day for personal travel. This helps create demand during the workday, which positively impacts overall utilization.

With this in mind, our market assessment allowed us to explore these considerations further, to develop a clearer picture of what car-sharing in the NNE might realistically look like in 2015.

Research Methodology

To begin our market research in the NNE and re-examine interest and demand for our service, CarShare Vermont conducted a comprehensive community survey to solicit feedback directly from local residents. Essentially, we wanted to better understand the current transportation needs of the NNE community, whether or not our service would be

a good fit, and if and how often they would use a car if we located one in their neighborhood. We were also curious to understand more about what the residents of the NNE reported as their car ownership status, driving and commuting patterns, and household demographics.

The survey was comprised of 20 questions and was promoted through a neighborhood-wide postcard mailing to all NNE residents, a dedicated page of the CarShare Vermont website, Front Porch Forum, the Neighborhood Planning Assembly, Facebook, our electronic newsletter, and through direct outreach to our current NNE membership. We also reached out to staff at the Heineberg Senior Center, Northgate Apartments, and Thayer Commons—some of the largest housing developments in the NNE—to learn more about the transportation needs of their residents/clients and to encourage their participation in the survey. The survey remained open from January to early June 2015. During this period, we received 69 survey responses.

Key Survey Findings

Car ownership & Commuting Patterns

Close to half of the survey respondents (49%) own two or more vehicles, but drive less than 10,000 miles per year as a household. In addition, a little over a third of respondents (34%) expressed a willingness to shed a vehicle or avoid purchasing one if they had access to a CarShare Vermont vehicle in their neighborhood. Residents mainly expressed an interest in CarShare Vermont as a second car option to supplement their household's current car needs, or as a way to gain access to larger utility vehicles for moving things or large groups of people.

The vast majority of survey respondents work in Burlington or Winooski (78%). In theory, this makes walking, biking, or taking the bus to work within the realm of possibility. Although 59% currently drive a personal vehicle to work, when asked whether they could commute a different way 38% said they could take the bus, 6% could walk, 32% could bike, 18% could carpool, and 19% have the flexibility to be able to work from home if needed. If NNE residents are able to commute without the use of a personal vehicle they could also potentially access CarShare Vermont in downtown Burlington or Winooski as needed for work-related travel and personal errands, thereby supporting the use of our downtown cars.

Projected Membership Growth & Travel Needs

We currently have 19 members in the NNE that are actively using our service. Additionally, 50% of survey respondents reported that they are likely or very likely to join CarShare Vermont if we placed a vehicle in the NNE (34 households total). If we conservatively assume that 25% of these households would be early adopters (i.e. join within the first 6 months), then we are looking at 27+ potential users to support a NNE Pod. It is doubtful that this number of potential users is enough to support a pod. Generally we are looking

for closer to 50-60 *active* users per vehicle to yield the necessary utilization. For the purposes of this assessment, we are defining an active user as one who uses a car at least once every 12 months.

Based on our prior experience operating in the NNE, we know that the car was used mostly outside of the traditional Monday through Friday, 8:30am-4:30pm work day. Because there was not an additional vehicle in close proximity (i.e. within a half-mile), residents were competing to use the one vehicle during the same time frame (nights and weekends). This pattern negatively impacted availability and ultimately the reliability of our service for those who used it. This led to some frustration among the handful of members who used it; but the reality for us was that the vehicle mostly sat idle the majority of the week, which was financially unsustainable.

Current survey respondents project a much more evenly spaced vehicle use pattern during the week. Twenty-four percent of respondents foresee needing access in the morning, 21% mid-day, 27% evenings, and 21% all day. On the weekends it shifts to 25% mornings, 36% mid-day, 14% evenings, and 34% all-day. If this self-reported travel pattern is accurate, then a NNE pod with only one vehicle would likely be more sustainable.

Respondents report likely using CarShare Vermont at least once a month for accessing recreational opportunities (45%), making social trips (40%), running household errands (42%), and non-grocery shopping (38%). A smaller percentage would use the vehicle for getting to medical appointments (26%), picking up and dropping off kids to activities (25%), and moving or hauling items (23%).

Suggested Pod Locations

According to residents, the Ethan Allen Shopping Center is the preferred location for a pod with 40% of respondents recommending it as a suggested location. The abutting Thayer Commons development is also a top choice, along with Ethan Allen Park, and the old Merola's parking lot further to the north and the Miller Community Center. These suggestions make sense based on the current development and travel patterns in the NNE and helped us hone in on two areas worthy of further exploration with our Pod Ranking process (Ethan Allen Shopping Center and Merola's).

Demographics

The demographics of the NNE skew slightly older than the rest of Burlington. According to census data, the median age is 42 compared to 38 citywide. Our survey respondents also reflect this trend with 37% reporting being over the age of 45. The NNE also represents a more static population with less rental turnover than is typical in other Burlington neighborhoods. Eighty-seven percent of respondents report that they own their home, and the vast majority live with a spouse or partner (78%) and/or children (48%).

As mentioned earlier, anecdotally the NNE is currently experiencing a significant demographic shift as older residents age out of their homes and an influx of young individuals and couples look to buy homes that are more affordable than in other areas of the city. This could play well for car-sharing in the NNE as the demographics become more mixed. Seniors also make up a large portion of the population and could be a great fit for CarShare Vermont. As seniors begin to drive less, car-sharing can enable them to shed a vehicle—saving money and time—and use the service when they need to drive.

New North End Pod Evaluation

With a better sense of how NNE residents report that they would likely use (or not use) our service, the next step was to take a more objective look at how the top two suggested pod locations (Ethan Allen Shopping Center/Hannafords and Merola's) stacked up against our existing pod ranking criteria. We also wanted to use the data we collected to develop a picture of what the projected utilization might be so that we could attempt to determine pod viability.

The Pod Ranking Process

When determining where to locate a new pod, CarShare Vermont uses a pod ranking process to predict the likely performance of a new location, as well as to re-evaluate current pods. The criteria considered in this process include membership data of the area around a pod (quantifiable criteria), the subjective qualities of a pod's location (secondary criteria), as well as residential data from the 2010 Census. It is important to note that we assume that with the level of density needed to make car-sharing viable, there is a base amount of multimodal infrastructure and other transportation services in place. For example, we assume that there are decent sidewalks, the area is bikeable (even if lacking some of the infrastructure), and public transportation exists to some degree, as well as the availability of a taxi service.

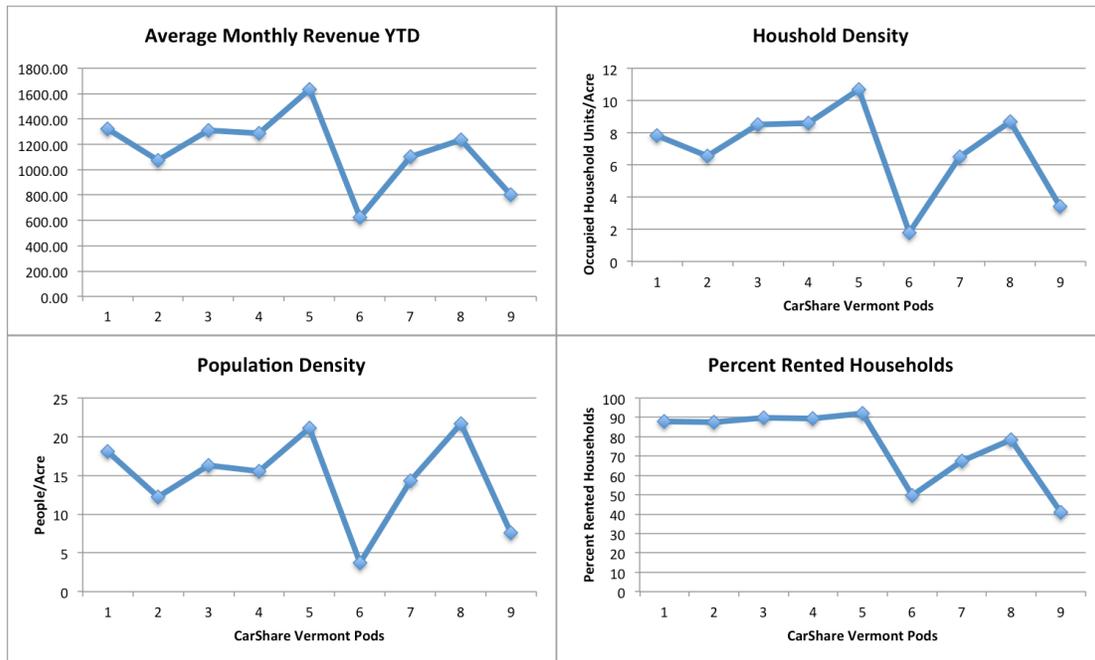
When looking at the quantifiable criteria, we take a general overview of a neighborhood and then hone in on a $\frac{1}{4}$ and $\frac{1}{2}$ mile radius around the proposed pod. This radius distance is important because we know from experience that members are less likely to use our service if they need to walk more than a half-mile to access a vehicle. We count and score number of members and a pod's proximity to other pods within the radius. The chart below shows the scoring table for these criteria.

Quantifiable Criteria	Description	Result	Score
Users within 1/4 mile	Number of members within a 1/4 mile who have used CarShareVT service within last 12mo (updated quarterly)	0-17	0
		18-35	1
		36-52	2
		53-70	3
Cars within 1/4 mile	Number of other CSVT cars within a 1/4 mile	0	0
		1	1
		2	3
		3	5
		4	6
Cars within 1/2 mile	Number of other CSVT cars within 1/2 mile	4+	7
		0	0
		1-2	1
		3-5	2
		6+	3

The secondary criteria include visibility, perceived safety, accessibility, ease of parking, and proximity to a major route of traffic or movement through town. These must achieve an acceptable level for a pod to be approved in any location. However, if they go above and beyond the pass/fail cut-off then they will get a bonus in the Pod Ranking score. The chart below shows the scoring table for these criteria.

Secondary Criteria	Description	Definition	Result	Score
Arterial Road	Any main route of traffic or movement through and around town.	(+ per adj. road; Examples include Main St., North Ave., Pearl St., Willard St.	+	2
			-	0
Visibility	All Pod Locations must be considered visible enough to be found by our members without issue.	(+ if the car is easily viewed by passerby, (-) if it is more off the beaten path	+	1
			-	0
Safety	All Pod Locations must be considered reasonably safe enough to be accessed by our members without issue.	(-) for safe enough, but not ideal	+	1
			-	0
Barriers	Physical or perceived barriers to access - a hill, a dangerous or difficult intersection,	(-) if it is near a hill that may be a deterrent for walking and biking; (-) for dangerous intersection	+	0.5
			-	0
Parking	Relative ease of parking the car	(+) if the parking is easy (-) if it is difficult	+	0.5
			-	0

The residential data from the 2010 Census that we consider for the ¼ mile radius around the pod location includes the population density (people/acre), household unit density (HHU/acre), and the percent of rented households. These data are not yet incorporated into the pod ranking scoring system. However, the utilization of our current pods does correlate very closely to the data—this provides valuable insight when predicting the effectiveness of a future pod. The charts below show the result of each of the residential data against the actual performance of our standard pod locations. The most similar correlation is household units per acre and population density per acre; the least is percent rented households.



Successful Pod Characteristics

Every pod must meet the basic requirements of the secondary criteria; but a good pod is always well lit, it is easy to park the car at its spot (i.e. the space is not next to a major obstruction), and it easy to find and access on foot, by bike, or bus. A successful pod is also conveniently located to as many members as possible. From our annual member surveys, we know that most people won't walk over half a mile to get to a CarShare Vermont car, and ideally they would like to walk less than a quarter mile. We also know that perceived convenience is a major factor in the success of a pod, so the higher the number of other vehicles within close proximity (i.e. less than a ¼ and ½ mile away), the better a pod will perform. This gives members a choice of vehicles, and also ensures use of our service when a preferred vehicle is not available.

The residential data correlations also make it clear that density and household type is an important consideration in the success of a pod. Essentially, we see a greater likelihood of success when we place a pod in an area where membership and usage is already growing, versus expanding to an area with no current pods or members.

Other Pod Arrangements

Some pods do not score very high in the Pod Ranking process but have other characteristics that make them feasible. For example, the scores for the cars that are located at or near the University of Vermont and Champlain College predict a lower than actual performance due to the proximity to other pods and residential data; but they are located close to a large population of students, faculty and staff so we take into account the large number of users that aren't reflected in the score.

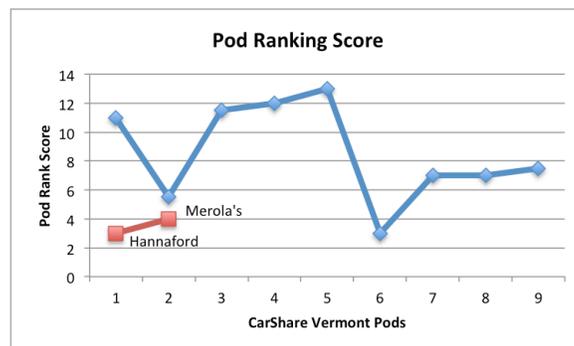
In some instances, we will partner with a business or entity to install a pod despite a low pod ranking score. In order for this to be feasible, the business or entity wishing to partner with CarShare Vermont usually has enough interest in hosting a pod that it will enter a revenue guarantee agreement with us. This assures that CarShare Vermont will be guaranteed payment up to a specified amount if the car(s) is not getting utilized enough to yield sufficient revenue. In this way, the business partner shares some of our risk and has incentive to promote our service to others.

NNE Pod Ranking Outcomes

Our survey of NNE residents suggests two different pod locations. The most popular is the Ethan Allen Shopping Center (Hannaford). We also wanted to explore a second location further north where North Ave. and Plattsburg Ave. split (i.e. near Merola's) because this location is more central to the bulk of NNE residents.

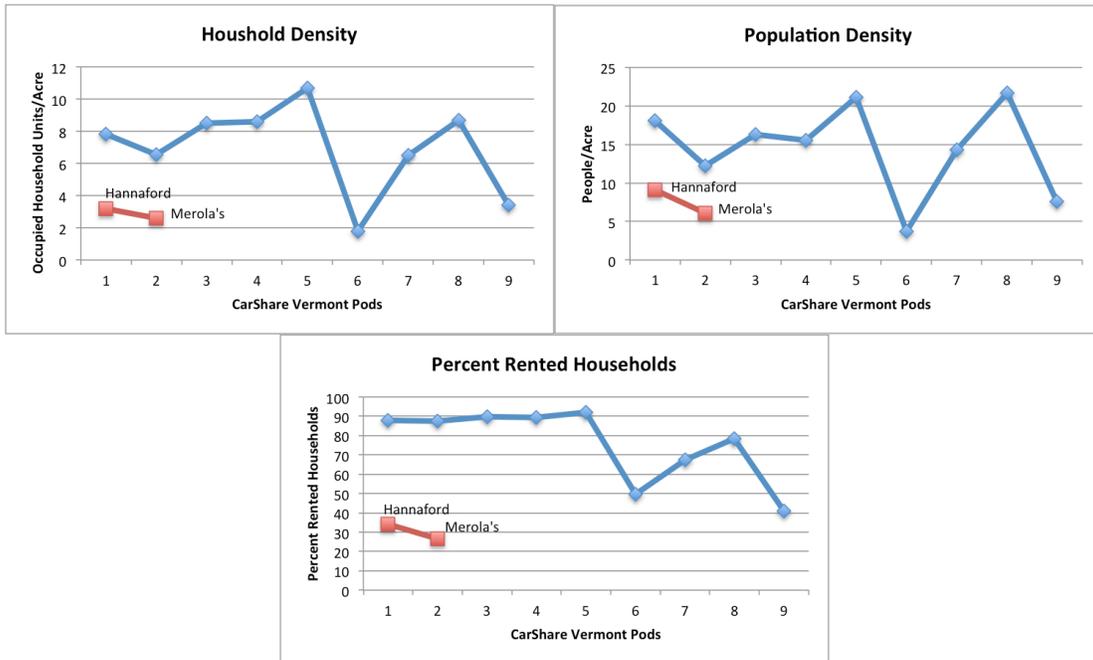
To score the quantifiable criteria of the suggested locations we used the count of the respondents within a quarter mile radius of each location who reported that their household was likely or very likely to join CarShare Vermont, or who was already a current member. Both of the suggested locations exceed most of our standards for the secondary criteria. The Hannaford location did not exceed our standards for visibility, and neither location exceeded our standards for safety. This is due to the general inactivity of a low-density residential area during the day compared to more populated and mixed use areas of Burlington.

The score for the NNE locations is shown below with the scores of our standard pods (excluding revenue guarantee, campus, and specialty vehicles). The NNE locations score similar to our lowest performing pods. It is important to note that the relative geographic seclusion of the NNE compared to Winooski and the South End of Burlington (columns 2 and 6 in the chart below) is not accounted for in the scores below. We expect that this factor would contribute to even lower usage in the NNE.

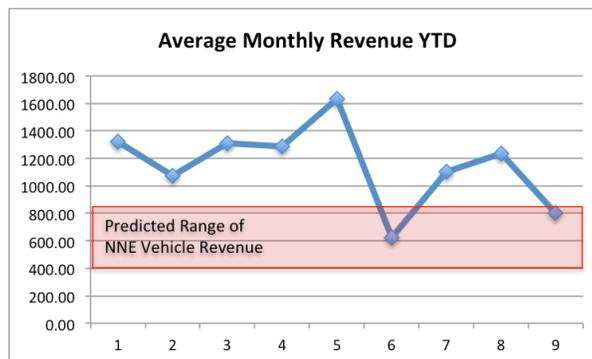


In the charts below, you can see how the residential data for a ¼ mile radius around the two NNE locations compare to that data for our standard pods in the rest of our fleet

(again, excluding revenue guarantee, campus, and specialty vehicles).



Combining the survey of NNE residents, the Pod Ranking process, and the residential data comparison gives the final result for the predicted financial performance of a NNE pod. This is shown below. As you will see, two of our existing pods currently fall below our revenue threshold; we are working to increase utilization by conducting more outreach and generating more membership in the neighborhoods they serve.



Conclusion & Next Steps

Although our market assessment did reveal a subset of the NNE population (albeit a small one) that would likely use our service as a primary or secondary car option, our Pod Ranking assessment revealed serious doubts about whether there is a potential membership base large enough to support the viability of a pod. Also, we know from

experience that the conversion rate from stated interest in joining CarShare Vermont and actually becoming a member is less than 30%, which also gives us reason to pause.

When considering the addition of a vehicle to our fleet, its projected performance plays the most important role in determining whether or not to proceed with expansion. We also take into consideration our current utilization rates, the source of funding for the vehicle (if any), availability of parking, and any special revenue agreements with partners. At this time, we cannot support or justify adding a car in the NNE if our Pod Ranking process and other data tell us that it would not meet certain minimum standards.

As the charts above reveal, we already have two under-performing cars in our fleet (not surprisingly, they are located in the lower density South End) and we are monitoring them closely. We may consider expanding to the NNE in the future if we can boost the performance of our existing vehicles, which we are committed to helping succeed. Through this process in the South End, we are learning how to approach outreach in (relatively) less dense residential areas and what to expect for a fair timeline from the time we launch a pod to declaring it successful.

If CarShare Vermont expands to the NNE in the near future, we will likely require a revenue guarantee from an anchor business or partner, or a grant source to help support the vehicle. At this time in CarShare Vermont's development, however, we must prioritize the placement of new pods where we know there is sufficient demand for our service—which is in part driven by certain neighborhood characteristics, including population density. By expanding our service where it will be broadly used, we know we will yield the most impact with respect to reductions in vehicle miles traveled and emissions, thereby advancing our mission. And by placing vehicles smartly, we will also optimize our limited resources; this is essential for us as a nonprofit organization with limited access to contributed income. As the NNE continues to evolve and density increases, it will certainly remain on our radar as a location for further expansion efforts.