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The Most Livable City in America

November 2, 2018

Ms. Elaine Koutsoukos
TAB Coordinator
Metropolitan Council
390 Robert Street North
St. Paul, MN 55101-1805

Dear Ms. Koutsoukos:

Attached, please find answers to questions asked by TAB members regarding the EV Community Mobility Proposal. Taken as a whole, we understand these questions to indicate that TAB members are eager to learn more about how the project will work and want to understand and mitigate any potential risks associated with the project. Though we have done our best to thoroughly answer all questions, complete answers are not available for all questions at this time.

The City of Saint Paul was very pleased to be announced this week as a winner of the Bloomberg Philanthropies American Climate Cities Challenge, together with Minneapolis. We featured the mobility hub concept in our proposal to Bloomberg Philanthropies, and receiving this award will bring significant technical resources to bear on the project. This further bolsters our confidence that we will be able to deliver on all of the planning and process parts of this proposal. We look forward to updating the TAB on the status of the project as it develops.

Sincerely,

Paul Kurtz
City Engineer

## QUESTIONS AND ANSWERS RE. SAINT PAUL/HOURCAR TCEVMN APPLICATION

Operating

**Q1. All projects applying for Regional Solicitation funding must include the full cost of a project, not just a portion. The application only includes the capital portion of the project. Please provide a three-year operating budget.**

A1. The City of Saint Paul intends to contract with a Carshare Network Provider (HOURCAR) and a Charging Network Provider for project operations (see A6 below). The City (the applicant) will not incur operational expense for this project; therefore our proposal was complete as submitted. However, in view of the uniqueness of our proposal, and in the interest of full transparency, we offer the following supplementary budget information. With the assistance of an outside consultant specializing in financial modeling, HOURCAR has prepared a detailed eight-year financial projection for the project (the proposed project length is eight years, not three). HOURCAR has provided us with the following proposed summary budget for the project (in thousands):

| | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** | **Year 7** | **Year 8** |
|---|---|---|---|---|---|---|---|---|
| Revenue | 1,308.9 | 1,922.5 | 2,148.8 | 2,149.2 | 2,149.2 | 2,149.2 | 2,149.2 | 2,149.2 |
| Cash Cost of sales | 165.2 | 224.3 | 236.0 | 236.0 | 236.1 | 236.1 | 236.1 | 236.2 |
| **Gross Revenue** | **1,143.7** | **1,698.3** | **1,912.8** | **1,913.2** | **1,913.1** | **1,913.1** | **1,913.1** | **1,913.0** |
| | | | | | | | | |
| Operational Expense | 1,271.9 | 1,614.9 | 1,593.8 | 1,617.3 | 1,689.3 | 1,621.0 | 1,854.0 | 1,833.0 |
| **Net Revenue** | **(128.3)** | **83.4** | **319.1** | **295.9** | **223.9** | **292.1** | **59.1** | **80.0** |
| Cumulative Surplus/Deficit | (128.3) | (44.9) | 274.2 | 570.1 | 793.9 | 1,086.0 | 1,145.1 | 1,225.1 |

**Budget Narrative:** HOURCAR projects a loss on the project in the first year, which it will absorb from its own assets. They project rising revenues over the first three years as the project scales up and utilization rises, leveling off in years four and following. The project is projected to be in the black by the middle of year three. Subsequent budget surpluses will be used to buffer against contingencies and as a sinking fund for reinvestment in future endeavors. The vehicles reach their useful life and are liquidated at around year 6. They will be replaced with leased vehicles for the duration of the project. Operational expense rises in years 7-8 to account for the difference between revenue from liquidation of the vehicles and the cost of the leases (approx. $550K).

**Q2. What is the implementation timeline of the project in the application (right-of-way acquisition, construction, vehicle purchase, operations)?**

A2. The cities of Saint Paul and Minneapolis will not be acquiring nor vacating ROW for this project. Instead, we intend to use Master License Agreements (MLAs) to allow access and use of ROW to the TCEVMN, with Supplemental License Agreements (SLAs) for each individual mobility hub site. Each MLA will likely require passage by the respective City Council. As noted in our proposal, we also intend to negotiate a Joint Powers Agreement (JPA) between the two cities to facilitate project operations. Since no ROW acquisition/transfer/vacation is required for the project, the timeline can be significantly expedited. We estimate one year to negotiate the JPA and MLAs, plus an additional 1-2 weeks for each SLA. Construction can commence once the MLA and first SLA are approved, and proceed concurrently. We currently project the following timeline for the project:

| Month | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| JPA and MLAs | | | | | | | | | | | | | | | | | | | | | | | | |
| SLAs and construction | | | | | | | | | | | | | | | | | | | | | | | | |
| Initial purchase 50 vehicles | | | | | | | | | | | | | | | | | | | | | | | | |
| Launch of operations | | | | | | | | | | | | | | | | | | | | | | | | |
| Scale up to 150 vehicles | | | | | | | | | | | | | | | | | | | | | | | | |

Capital Maintenance and Replacement

**Q3. Who is the owner of the vehicles and the charging stations?**

A3. We anticipate the City of Saint Paul will be the owner of the vehicles, which will be provided to HOURCAR on a no-cost or low-cost basis. We also anticipate Saint Paul and Minneapolis will be the owners of the EVSE (charging stations), and that access to the EVSE will be municipally controlled. This structure reduces the risk to the project should HOURCAR be unable to carry the project to its term for some unforeseen reason. As an example, when the City of Paris cancelled its contract with Bolloré, the operator of the AutoLib EV carshare program, it was able to negotiate a new contract for access to its municipally-owned charging stations with a different operator, Renault, within days, resulting in minimal interruption of service.

There is also a possibility that Saint Paul and Minneapolis will elect to create a Joint Powers Entity (JPE) to facilitate this project. A JPE is an entity created by two or more municipalities to which the municipalities delegate some of their powers. In that case, the JPE could be the owner of the vehicles and EVSE. It is not our intention that ownership of the capital assets be transferred to HOURCAR. If, after consulting with the respective city attorneys, it becomes evident that transferring some or all of these assets to HOURCAR or another third party is the most expeditious course of action, we plan to lien or otherwise encumber the assets to ensure recoverability.

**Q4. What is the expected useful life of the vehicles? What is the plan for vehicle replacement after useful life of the vehicle? Will Xcel stay with the project for second-lifecycle equipment replacement?**

A4. The industry standard for vehicle replacement in a carsharing context is 79,000 miles. We project that most of the vehicles will reach this threshold around year 6. Our plan is to replace the owned vehicles with leased vehicles in years 7-8, using revenues from the liquidation of the vehicles to cover most of this cost (see Budget Narrative in A1). The useful life of the EVSE is projected to be 8 years. The useful life of the make-ready construction by Xcel, including infrastructure and upgrades, is projected to be 30 years or more. There will therefore be no need for Xcel to commit further resources to the project. At the end of the project, at least 10 years from now, we anticipate the landscape of transportation will have changed significantly. At that point, the infrastructure may continue to be used to support a carsharing network, or repurposed to support some other mobility service(s), perhaps unforeseen at the present time.

**Q5. How is damage inspection/assignment/insurance handled with HourCar's current round-trip system? Would the same system work for TCEVMN? Are insurers able and ready to cover TCEVMN? How much of such costs would go to individual users over and above membership fees and per-use fees? If any, can target users afford them?**

A5. Insurance for the vehicles will be supplied by HOURCAR as the operator of the service. HOURCAR currently provides liability insurance for its users at no additional cost, and plans to do the same for the TCEVMN. HOURCAR users are liable for up to $2,000 in damages to an HOURCAR incurred

in an at-fault accident. Users can purchase a damage fee waiver ($50 a year for the first household member, $10 per person per year for each household member thereafter) to insure themselves against this liability. Although HOURCAR has not developed a pricing structure for this project (see A16 below), we anticipate a similarly reasonable cost for damage fee waivers for the new project. HOURCAR's insurer, Gallagher (AJG), has indicated it is prepared to insure this new project.

**Q6. What is the maintenance plan for the vehicles and the stations? Who will oversee the operation/maintenance of the charging stations? Will St. Paul and Minneapolis establish effective rules and practices, or need to pass any laws, to assist this process?**

A6. As the Carshare Network Provider, HOURCAR will be responsible for the maintenance of the vehicles. We intend to use an RFP process to select a Charging Network Provider to supply and operate the EVSE. The selected Charging Network Provider will be responsible for operation and maintenance of the EVSE. We intend to investigate best practices of similar projects in other regions, including BlueLA in Los Angeles, and apply these learnings to the TCEVMN. Bloomberg Philanthropies recently announced Saint Paul and Minneapolis as winners of the American Climate Cities Challenge. Saint Paul prominently featured the mobility hub concept in our proposal to Bloomberg Philanthropies, and this award will bring significant technical assistance to bear on the project. To the best of our knowledge at this time, there is no need to pass any ordinances to facilitate the project, although as noted in A2 the respective city councils will need to approve the Joint Powers Agreement and Master License Agreements to facilitate the project. Saint Paul and Minneapolis are prepared to work with HOURCAR and other appropriate agencies to develop any necessary regulations for the project.

Vehicle Users

**Q7. Who will be eligible to use/register for HourCar? How are users screened?**

A7. At present, anyone who meets the following criteria is eligible to become a member of HOURCAR:

a. Possess a valid driver's license (domestic or international).
b. 18+ years of age, with at least one year of previous driving experience.
c. No alcohol or drug-related moving violations in the past seven years, no major moving violations in the past three years (MMVs include excessive speeding 15+ mph over the speed limit, driving to endanger, leaving the scene of an accident, driving with a suspended/revoked license, vehicular felonies, or a school bus violation). Drivers must meet these criteria to be insurable.

Applicants are screened by HOURCAR to ensure they meet these requirements. HOURCAR does not check credit or criminal history of applicants, only their driving record. As noted in our proposal, we intend to embark on a community engagement effort to better understand the barriers that might prevent low-income communities and people of color from accessing the proposed service. Based on learnings from this process, and in conversation with HOURCAR and their insurer, we may seek to adjust these requirements to increase access to the service, assuming we can do so in a way that also promotes public safety.

**Q8. Will users with repetitive needs make, or be able to make, repeat reservations?**

A8. The new network will have a new reservation system. We anticipate the answer to this question will be "yes," but it is not possible to give a definitive answer at this time. As noted in A7, we plan to embark on a community engagement process to explore features that maximize the utility of

the service for all users, especially seniors and those living in low-income communities. We intend to explore this as a possible feature while designing the reservation system.

**Q9. Though TCEVMN is defined as one-way, users will start and end at a TCEVMN charging dock. What lessons from Nice Ride—in its docking iteration—or elsewhere apply?**

A9. Bikesharing and carsharing differ greatly in terms of logistics, capital outlay, and use cases, so NiceRide may not provide the best example in this case. Our primary model for this project has been BlueLA (www.bluela.com), a municipally-sponsored all-electric hub-based one-way carsharing service with a strong focus on increasing transportation access in underserved communities. One advantage to the hub-based system demonstrated by BlueLA is that it anchors the service in communities, especially low-income communities. With good logistical support (see A16), such hubs become reliable transportation access points for the whole neighborhood. This, in turn, encourages car-shedding; studies have shown that fixed carsharing hubs substantially decrease vehicle ownership within a half-mile radius.[1] We describe our service as "hub-based" because vehicles will eventually need to return to hubs to charge (most charging will happen at night). It is not clear, however, that every trip will begin and/or end at a charging station. We are exploring the possibility of a free-floating component to the service (see A16). In such a model, users might receive a credit for returning a vehicle to a charging station, similar to HOURCAR's current credit for filling the gas tank. This would merge the advantages of a free-floating system with incentives to return vehicles to stations for charging.

**Q10. Existing average HourCar trip length is 12.9 miles. How will this fit in with the limitations of the charging stations? What is the range of use for the vehicles?**

A10. In general, carsharing trips in a one-way context are much shorter in mileage and duration than trips in a round-trip context. We note that from furthest point to furthest point (terminal to terminal), our service area is 15 miles. We anticipate the average trip length for this service will be significantly shorter than HOURCAR's current average trip length. We also anticipate more trips per vehicle per day in the one-way model than in the current model. We have not yet settled on a vehicle type for the service. We anticipate using a BEV with a range of approximately 200 miles, similar to the Chevy Bolt (range 238 miles). We anticipate the vehicles will need to charge only once every few days, at most once per day in very cold weather. We also anticipate that cars will occasionally run out of charge due to user error (i.e., failure to plug in a vehicle to charge). The Level 3 charging capacity described in our proposal will allow us to rapidly recharge vehicles and return them to service on an as-needed basis.

Increased Transit Ridership

**Q11. How many transit riders (bus & rail) who don't now use a car at all will use TCEVMN for some or all trips & for part or all of those trips? Application states in a 2016 HourCar survey that 28 percent of users increased transit use, 56 percent that transit use stayed the same, 14 percent current riders reduced transit use. What is TCEVMN's definition of 'new transit rider' and 'new transit ridership'? What is the methodology for calculating new transit riders?**

A11. The Twin Cities' transit system connects many points at many times, but not all transit trips are quick or convenient. Carsharing allows people who use transit to more conveniently make certain trips without having to purchase a car. Access to carsharing, then, can prevent loss of transit users by eliminating the need to purchase a car and allowing a truly multi-modal set of choices.

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[1] Cervero, Golub, and Nee, "San Francisco City CarShare: Longer-Term Travel-Demand and Car Ownership Impacts," Institute of Urban and Regional Development, UC Berkeley, 2006.

It is difficult to answer the specific behavioral question (will TCEVMN replace one leg of a multi-route transit trip? All of it?). In A12 we give a detailed example of a woman who commutes exclusively in her own car. Although her work is a short drive away, it requires three bus routes (two transfers) each way. With TCEVMN, she can substitute an EV for the first leg of the trip and reach a different bus route, allowing her to cut 27 minutes from her commute each way and leave her car at home every day. The same multi-transfer scenario is also common for zero-car households. If the woman in the example below did not own a car, introducing TCEVMN would allow her to reduce her daily transit trips from 6 to 4, thereby reducing the probability that she will decide to purchase a vehicle and give up using transit altogether.

In our application, we stated that we consider the TCEVMN to be an innovative new mode of transit. We therefore counted all users of the service as transit users. We listed the characteristics of transit and described how carsharing shares these characteristics. The TCEVMN:

- is shared use
- is open to all who pay or otherwise qualify
- complements existing transit but does not rely on it
- reduces VMT, emissions, and environmental impact.

It is also clear that carsharing serves an additional purpose in the regional transportation system which is not currently being filled: a multi-modal connector. Every study of the actual impacts of carshare (including those cited in our application) finds that overall, carshare leads people to

- Shed a vehicle they now own, and/or
- Defer purchase of an additional vehicle, and
- Replace many of those trips with public transit.

These studies also find that people use carshare to access transit differently in different regions, depending on that type of carshare is available (round-trip or one-way) and the geography of a region's transit.

We want to underscore at this point that projects submitted in the Transit Expansion category are not assigned the burden of proving that their riders are "new"—that is, previous non-users of transit who convert to become users of transit—nor is the ridership measure for these projects calculated using unique individuals. The ridership measure is simply an estimate of the number of annual *rides* that a given service will provide after three years, based on an analysis of peer routes. There is no requirement to quantify how many of these rides will be siphoned from other, existing transit lines, or to measure the total increase in transit ridership in terms of unique individuals. Here is the actual language of the ridership measure instructions for new urban and suburban transit lines:

> Use peer routes that are currently in service to develop a ridership estimate for the third year of service. Applicants must use the most recent annual ridership figures that are available. To select the peer routes, the applicant should identify routes in the same transit market area (as defined in the 2040 Transportation Policy Plan), or routes that serve locations with similar development patterns. Applicants must use the average passengers per service hour of at least three peer routes to apply a rate of ridership for the proposed service project. (Regional Solicitation Transit Expansion Application, Measure 2a)

In our application, we analyzed peer carsharing services to arrive at a ridership calculation for the third year of our service. We estimated 328,500 annual rides. Our full calculation is included as "Appendix A."

Because there is clear interest in the impact of the TCEVMN on other, "traditional" forms of transit, we also offer the following estimate of the system's effect in terms of increasing or decreasing usage of *other* forms of transit.

Currently, HOURCAR is a round-trip carsharing network (members must return the car to where they picked it up). Because the new TCEVMN will be one-way, not round-trip, extrapolating from round-trip data should be done with caution. In general, the research suggests that access to one-way carsharing is a win for transit; where such services are available, people increase their use of transit due to car-shedding and forgoing vehicle purchases, rather than decreasing it.[2]

HOURCAR currently serves 37 members per car. Because the proposed TCEVMN would be a one-way network, and one-way networks are more useful and thus see much larger enrollment and greater utilization per vehicle per day, we expect significantly greater enrollment per vehicles. But, to be conservative:

- We will create a new network of 150 new vehicles.
- Using a floor of 40 members per vehicle, at least 6,000 people would participate.
- As noted in the survey, the vast majority of current HOURCAR (98%) members are also transit users and use both services concurrently.
- 28% of HOURCAR users increased their use of transit. If this percentage held, 1,680 people would add new trips on transit in addition to trips on the TCEVMN, likely as a result of car-shedding. Estimating 1 new trip per person per day, we arrive at a total of 613,200 additional trips on other forms of transit generated by the project.
- 14% of HOURCAR users decreased their use of transit. Assuming this percentage holds, 840 people would decrease their use of other modes of transit due to the increased convenience of the new service, though most would continue to use these other modes. We estimate the loss of an average 1 transit trip per person per day. This comes to 306,600 trips lost on other forms of transit.
- 56% of HOURCAR users kept their transit use the same, and 2% never use transit, so we assume no change for the other 3,480 users of the new service.

Based on these calculations, we estimate the new service would provide 328,500 new trips in the third year, plus an additional 306,400 new trips on other modes of transit, for a total of 634,900 new trips annually.

**Q12. The application states that the charging stations are within a quarter-mile of transit, but also states that the people can access the cars near their homes to drive to transit. These are conflicting statements.**

A12. Although all mobility hubs are located proximal to transit stations, not every neighborhood served by our project has equal access to all routes. One of the goals of the project is to improve access to additional transit routes for people living in neighborhoods where current transit routes do not serve their needs. The application included a map of proposed charging station locations. These locations were chosen because they fit two criteria:

a. The locations provide even coverage across the service area, so that each hub/charging station will be an easy walk to and/or from homes and destinations in that area.

[2] Cf. Martin and Shaheen, "The Impacts of Car2go on Vehicle Ownership, Modal Shift, Vehicle Miles Traveled, and Greenhouse Gas Emissions: An Analysis of Five North American Cities," 2016, Transportation Sustainability Research Center, UC Berkeley.

b. The locations are intentionally positioned near transit stops.

Because the stations fit both criteria, both statements in the application are true. Ninety percent of the transit routes in the region will pass within a quarter mile of a hub/charging station. And, the hubs/charging stations will be convenient to thousands of residences. This siting allows people to use the new network in a variety of ways. To give just a few examples:

a. A person who lives in a suburb and works in one of the downtowns typically drives to work so that they can use their vehicle during the day for meetings and errands (planned or not). Because there will be a hub/charging station near their transit line and thus their work location, he can now leave their personal vehicle at home or at a Park & Ride, and use the new network to drive during the day.

   *Example: an accountant lives in Anoka and works in downtown Minneapolis. The drive can be as quick as 30 minutes, but never at rush hour, and the trip times are becoming more and more unreliable. Parking is getting more expensive as surface lots are redeveloped. He and his boss are both unhappy. He would like to park at either the Richardson P&R and take the 766 Express, or at Anoka Station and take the NorthStar. But he needs a car during the day to drive to client meetings. With the new network, he can park in Anoka, commute with reliable transit, working on the way if necessary, and, using any of the seven hubs downtown, be able to drive anywhere in the cities during the day.*

b. A person in the core coverage area works in a location that is served by transit on the work end, but that route does not serve her home. Now she will be able to walk to the hub/charging station near her home, and drive to a hub near the transit line that serves her work site. And reverse at the end of her work day.

   *Example: a nurse lives in the Riverview neighborhood of Saint Paul, south of the river, and works at the VA Hospital. It's an affordable neighborhood, and just a 16-minute drive to the VA. She would like to save money by taking transit, but her choices are to walk a mile across the Smith Ave. High Bridge and then take two different transit routes, or start near her house and take three routes. No set of routes would take less than an hour and 10 minutes, when the connections all work, to cover a 9-mile drive. With the new network, she would be able to walk to the hub near her home at George and Ohio, drive the EV to the hub at Saint Clair and West Seventh, and take transit the rest of the way, saving 27 minutes each way—an hour a day—off the all-transit time. Result: she starts regularly commuting by EV + transit.*

Users may mix and match these two basic use cases. For example, transit may work well in one commute direction, but, because of a late shift, not in the other, so the person drives both ways. With the new network, people who commute within the proposed service area and work non-standard hours will be able to take transit one way and drive the other. This saves them money and reduces congestion on the roads at the peak travel times when transit service is most plentiful.

<u>Charging Stations</u>

**Q13. If TCEVMN envisions docking at busy transit transfer points, stops & stations, can such space be acquired & financed expeditiously? Parking at such nodes has a long history of contention. Fixed route transit works best if actual stops are actually at the same corners within one intersection.**

A13. As noted in A2, Saint Paul and Minneapolis are the primary ROW holders for the project. No transfer or vacation of public ROW is contemplated for this project. The public works departments of both cities have confirmed that agreements allowing access and use of ROW can be secured expeditiously and within the timeframe outlined for the project.

**Q14. TAB considers the risk of a project not being able to be completed before selection. Have locations been identified for the charging stations and the car parking? Have property owners been contacted? What right-of-way needs are there?**

A14. As noted in A2, Saint Paul and Minneapolis are the primary ROW holders for the project, and no transfer or vacation of public ROW is contemplated for this project. In some cases, we may seek to enter into agreements with other ROW holders; this includes the campuses of local universities and colleges. HOURCAR is the official carsharing provider of the University of Minnesota, and provides carsharing services at several other local universities and colleges. HOURCAR has begun a series of conversations with its college and university partners as well as other current hub hosts regarding the new project. Response has been positive, and we anticipate that agreements can be negotiated as necessary within the timeframe detailed in A2.

**Q15. How will St. Paul and Minneapolis guarantee that the charging stations are available for public use? Parking at the charging stations cannot be reserved for HourCar use only. When charging stations are used by the public, where will HourCars be stored, particularly overnight?**

A15. The experience of BlueLA in Los Angeles strongly suggests that most public charging will take place at the Level 3 chargers, not the Level 2 chargers (our proposal includes 280 Level 2 chargers and 20 Level 3 DC fast chargers). Although BlueLA has publicly-accessible Level 2 chargers at curbside, these chargers are used infrequently by the public because they are not fast enough to warrant this kind of use. Most Level 2 charging happens either at home or at work, not at curbside. As a result, we do not anticipate much competition for access to the Level 2 chargers. The Level 3 DCFCs will be left open for demand charging; no carshare vehicles will be parked there unless they require an emergency charge due to user error. We anticipate that most carshare vehicles will charge overnight at Level 2 chargers, although some users may elect to take them home and bring them back the following day, as they can currently do with an HOURCAR. Even if all 150 vehicles were charging at one time at night, there would still be 130 Level 2 charge points and 20 Level 3 charge points available for public use.

<u>HourCar Fares and Charging Station Rates</u>

**Q16. What will the fare structure be for the use of the vehicles? What are the current fares and what will the new fares be? When a car is used for a one-way trip to a location away from a charging station, how is the car available for other users? How are fares determined for cars parked away from a charging station?**

A16. As detailed in our proposal, prior to launching the service we intend to engage in a community outreach effort with an emphasis on engagement with underserved neighborhoods and populations to better understand barriers to access. We plan to develop a rate structure that maximizes inclusion and participation for everyone who can benefit from this service, especially single mothers, people who cannot afford to own a car, and seniors living on fixed incomes. We are deferring development of a rate structure until this process is complete. We note that the BlueLA project, which we consider a model, has a qualified low-income rate of $1 per month membership fee and $.15 per minute ($9 per hour); we will certainly take this structure into consideration as we develop our own rates. Given that funds from Xcel and the Regional Solicitation are being used to underwrite capital expense for the launch of the service, and that electric vehicles are more economical to operate than internal-combustion vehicles, we intend to develop a rate structure that maximizes the utility of the service for as many people as possible, especially people in low-income situations and disadvantaged communities. Saint Paul

and Minneapolis (or potentially the Joint Powers Entity created for this project, see A3) will control access to the infrastructure and will exercise appropriate oversight to ensure that rates are set at levels that maximize access.

Successful one-way carsharing logistics requires that support staff regularly move vehicles from areas of low demand to areas of high demand ("cold zones" to "hot zones") to ensure that vehicles are available when and where they are needed. Once a carsharing vehicle is reserved in a one-way model, the user enters the vehicle and drives to the destination. At this point, there are two possible scenarios:

**SCENARIO ONE – POINT TO POINT:** The user parks the vehicle at a mobility hub near her/his destination, where s/he has reserved a charging station. The user gets out, plugs the vehicle in to charge, and walks or uses a bike or scooter to complete their trip. The hub would then show up on a reservation map as having a car available to reserve. This point-to-point model is currently used by BlueLA in Los Angeles. Since our service area is designed around a walkshed with a .6 square mile grid, most destinations within the walkshed will have a hub located within .3 miles, about 5 minutes' walk.

**SCENARIO TWO – SEMI-FREE FLOATING:** The user drives the vehicle to their destination. The user then has the option to park the car in a legal parking space or return it to a charging station for a small credit. In this scenario, the vehicle's GPS location would then show up on a reservation map indicating the vehicle is ready to be reserved by the next user.

We have not yet determined which of these two scenarios will prevail as the service model.

**Q17. What will be the cost for public charging of vehicles at the charging stations?**

A17. We have not yet developed a rate structure for public charging at the stations. As noted in A6, we intend to issue an RFP to select a Charging Network Provider to supply and operate the EVSE. Charging rates will be set by the Charging Network Provider with oversight from Saint Paul and Minneapolis to ensure that the rates promote access to the service, while also promoting responsible use of the underlying infrastructure and power grid.

<u>Other Questions</u>

**Q18. Will St. Paul, Minneapolis, or MPCA consider cost-sharing the project with TAB?**

A18. In partnership with Xcel Energy, we applied to the Regional Solicitation for funding for this project because it substantially accomplishes the goals of the CMAQ program: reducing VMT, congestion, and emissions while improving air quality and transportation access for residents, not only of the Twin Cities, but of the entire region. We continue to think that Regional Solicitation funds are the best way to ensure the success of the project. In a contingency where less funding was available than requested, we might be compelled to scale back the geographic footprint of the project in order to preserve coverage density, which would disproportionately affect people living in low-income neighborhoods. These neighborhoods tend to be located at the outside edges of the project in places like Dayton's Bluff, the North End, and North Minneapolis.

MPCA is not a party to our project. We assume they were referenced in the question because they administer the VW Settlement funds. To date, only a small fraction of these funds has been allocated for development of charging infrastructure, and that mostly for corridor charging. Although it is possible that later application cycles may present opportunities for funding our project, this remains speculative and unknown.

The TAB has indicated that it is interested in mitigating risk for the project. The best way to do this is to fully fund the project as per our proposal. If the TAB elects not to provide full funding

for the project, we will seek to make up the difference from other sources. This introduces additional risk into the project, either that it will not come to fruition, or that it will be scaled back in a way that reduces its potential to provide transportation access in underserved communities. Should the TAB elect to approve partial funding, we urge TAB members to consider providing the maximum amount possible (preferably not less than $4 million) to ensure successful implementation.

## APPENDIX A - Original Ridership Estimate

**Describe Methodology: How Park-and-Ride and Express Route Projections were calculated, which Urban and Suburban Local Route(s) were selected, and how the third year of service was estimated**

As the methodology templates provided do not fit this mode, we developed the following methodology. As inputs, we rely on:

1. Two years of trip data for HOURCAR's 60-vehicle fleet, which uses a round-trip ("return to base") model. On average, this service had 1.86 round trips per vehicle per day (pvpd), with each trip averaging 25.8 miles. Each of these round trips represents two one-way trips, for a baseline of 3.72 one-way trips pvpd, with each one-way trip averaging 12.9 miles. Given the restrictive nature of HOURCAR's current round-trip service model, we anticipate an increase in trips over this baseline by implementing a one-way service.
2. Publicly available data for Autolib, an all-electric carsharing program in Paris, France that has been operating for seven years. Autolib operates a fleet of 3,900 vehicles which can be used for either one-way or two-way trips. Autolib averages 12,700 trips per day, or 3.25 trips pvpd. An unknown number of these trips are two-way trips, but a conservative estimate of 25% yields an average of 4.07 one-way trips pvpd.
3. Other data uncovered in a landscape survey of one-way carsharing providers, including nonpublic data for car2go, ReachNow, and Communauto (Montreal, Canada). Communauto, a large provider of round trip carsharing, launched a one-way service in 2013. In the third year of the service, the one-way service averaged 4.2 trips pvpd. Since Communauto maintained its two-way service in parallel with the one-way service, we assume practically all these trips are one-way trips (although there is some overflow from the two-way to the one-way service during peak usage on evenings and weekends).

Based on this data, we conservatively estimate 4 one-way trips pvpd in the third year of the service.

We also estimate 1.5 occupants per vehicle per trip, based on research from the Texas A&M Transportation Institute.(1) This research is based on the 2009 National Household Travel Survey, using a weighted average from a custom tabulation created from the 2009 NHTS dataset. This data considers all the use cases that a carsharing service would be expected to address.

We therefore estimate 6 (4 x 1.5) rides pvpd in the third year of the service. Based on a fleet of 150 vehicles, we estimate 328,500 rides in the third year of the service: 4 trips pvpd x 1.5 occupants x 150 vehicles x 365 days = 328,500.

(1) P. Lasley, PhD, "Change in Vehicle Occupancy Used in Mobility Monitoring Efforts," Texas A&M Transportation Institute, August 2017. https://static.tti.tamu.edu/tti.tamu.edu/documents/TTI-2017-9.pdf

## APPENDIX B – Recent Inquiry from Lime Re. “Mobility Pods”

Lime, which provides bikesharing in Saint Paul and scooter sharing in Saint Paul and Minneapolis, recently announced plans to launch "transit pods" as a new "micro-mobility transportation option" in Seattle.[3] Within the past two weeks, they have also inquired of Saint Paul and Minneapolis about the possibility of bringing this concept to the Twin Cities. In response, Saint Paul has had one informal conversation with Lime. Lime has shared no concrete plans or timelines, though they have indicated an interest in possibly starting in 2019. Based on this one conversation and press reports, we share what we believe to be the known facts about Lime's ideas, and what they may or may not mean for this region and our proposal.

1. *Vehicle:* Lime says it has not chosen a vehicle as their mobility pod, but they appear to be looking at an ultra-mini electric quadricycle such as the Renault Twizy. The Twizy is sold in Europe in two versions; one with a 5 hp motor, and one with 17 hp.[4] It is not currently sold with a heater, and does not come standard with driver or passenger windows. They are extremely small (four can fit into a single parking space).
2. *Charging:* In no city where it has talked about possibly launching new vehicles has Lime said anything about charging. Our understanding is that they intend to use battery swaps rather than building out charging infrastructure.

**Discussion**

This project may or may not come to fruition in the Twin Cities. Depending on how the experiment goes in Seattle, they may adjust their rollout venues and timelines. But assuming for the sake of discussion that Lime did launch such a service here at some point, it would be fundamentally different from the TCEVMN, and provide far fewer benefits.

The quadricycles Lime proposes to use have substantial limitations. They are intended for very short distances. Like other powered cycles (i.e., mopeds), they are not legal for freeways, nor are they approved for any roadways where the speed limit is over 35 mph. They may not perform well in icy or sub-freezing temperatures. Similar to bikes and scooters, they will likely not be a year-round option for most people, and therefore will not lead to car-shedding unless accompanied by a robust year-round carsharing option. The project is experimental and may not succeed long term (if it comes to the region at all).

We welcome the possibility of an additional mobility choice for commuters in the region. But if Lime were to bring such a service to market, it would serve a very different purpose with different results than those that will be provided by the TCEVMN. TCEVMN will provide a transportation option that is:

a. year-round,
b. anchored in communities through mobility hubs, and
c. evenly distributed throughout Saint Paul and Minneapolis.

This ubiquity, predictability, and presence in both cities will create a mobility network specifically designed to integrate with and support the existing transit system and specific community transportation needs. As a result, it will allow households to meet their needs with fewer personal vehicles. Lime, on its own, will not.

Any city agreement with Lime may or may not include requirements related to equity. However, quadricycles will not provide year-round transportation solutions for underserved neighborhoods, and their limited range and inability to travel on highways and freeways restricts their usefulness in such communities. Moreover, Lime has announced that the cost of the service will be $25 per hour ($1 to start plus $.40 per minute). Although we have not developed our rate structure for TCEVMN, this is far higher than anything we have considered, and does not include a qualified low-income rate as we plan to

[3] https://www.smartcitiesdive.com/news/lime-applies-for-car-sharing-permit-in-seattle/540988/
[4] https://en.wikipedia.org/wiki/Renault_Twizy; also has pictures.

do.

Mobility technology is changing, and the region may see other new mobility proposals and experiments over the next decade. Such experiments may come and go, as car2go did in 2016. We feel confident that the region's residents and businesses will benefit from the presence of a stable and reliable carsharing option that uses real cars and hard infrastructure. The EV Community Mobility Project is an 8-year project that will provide a flexible, reliable, and stable transportation option for the region. In some sense, the TCEVMN stands midway between the long-term stability of public transportation and the rife experimentation of the private sector, serving as a framework in which some of these more experimental projects can play out while providing a stable option for residents over an 8-year period.