Assessing Barriers to Carsharing and Ridesharing in HOPE Village

A Report for Focus: HOPE
January 4, 2016

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Acknowledgements

Table of Contents

Figures

Tables

Appendices

1   Executive Summary

This report was developed to inform Focus: HOPE's vision for transportation and mobility options in HOPE Village. By analyzing existing descriptive data and generating qualitative data through focus groups with HOPE Village residents, we identified community needs for and barriers to accessing shared-use mobility services such as ridesharing with Uber and carsharing with Zipcar.

Current transportation options in HOPE Village are limited. According to the Southeast Michigan Council of Governments, HOPE Village residents face a 10 to 30-minute trip via walking or public transit to access to local supermarkets, hospitals, or health clinics.[i] To commute to work, 86% of HOPE Village residents use a private vehicle.[ii] However, as one participant stated: "*the only thing about owning a vehicle in the city of Detroit is [that] the cost of auto insurance is exorbitant..."* In the zip code that includes HOPE Village car insurance costs $4,762 per year, five times the national average.[iii]

Although the bus system is an alternative option to private vehicle ownership, many participants were concerned with the bus's timeliness and safety. HOPE Village residents who ride the bus spend an hour or more commuting one way to work[iv] while one resident stated: "*I am concerned about when my daughter has to catch the bus... she has to pass through abandoned buildings… Girls, boys, anyone walking through those abandoned buildings is a concern when you are catching the bus.*"

Participants affirmed the potential for shared-use mobility services to satisfy transportation needs: "*[A carsharing program] could work. You might have to hire somebody to educate people more on technology, credit cards, budget classes, because it will be a better way to get around.*" However, in addition to enthusiasm our team identified a number of barriers to shared-use mobility services. The most significant barriers being access to credit, access to data, security concerns, and a lack of inclusion.

HOPE Village residents could be precluded from mobility services due to limited credit and data access. A University of Michigan working paper of Macomb, Wayne, and Oakland counties suggests among those with no high school degree, bank account usage fell from 57% to 29% and credit card holdings fell from 28% to 13%.[v] Additionally, a Pew Research data on national smartphone access from July 2015 suggests that only 41% of US citizens with a high school degree or less, 56% of US citizens with a high school degree, and 75% with some college have access to data via a smartphone.[vi] The same data from Pew Research suggests that only 52% of US households earning less than $30,000 per year and 69% of households earning $30,000 to $49,999 per year have access to data via a smartphone.[vii]

Participants discussed security as the primary barrier to the adoption of ridesharing services driven by: 1) A lack of background checks: "*The first thing I thought about was Uber: background checks, hiring, and all that stuff (...) They are not government regulated, and they might let some stuff slip through the cracks.*"; 2) Unknown passengers and drivers: "*I'm not too comfortable getting into a car with strangers.*" and; 3) passengers from high-crime areas: "*I just don't see people being comfortable with that. This is a high crime area. I wouldn't do it unless it were an extreme emergency.*"

Participants also noted mobility services have not targeted HOPE Village. One participant stated: *"A lot of things are marketed to areas, and regions, and it hasn't really been promoted, marketed over here."*

Although our Dow fellowship is ending, our team continues working with Focus: HOPE and additional Detroit communities. Together we are identifying partnerships and funding opportunities to create a shared-use mobility service focused on improving access to healthcare, food, jobs, and education.

2   Introduction

This report was developed for Focus: HOPE to inform its vision for mobility options in HOPE Village. Although work has been done in HOPE Village to explore traditional mobility options such as public transportation, bicycling, and walking, little is known about whether there is a need for shared-use mobility services, such as ridesharing with Uber and carsharing with Zipcar; and what barriers HOPE Village residents face when accessing shared-use mobility services.

To determine these needs and barriers we used existing descriptive data and qualitative data we generated by facilitating focus groups with HOPE Village residents. We intend for this report to:

- Provide background on mobility innovation in Detroit,
- Identify needs and barriers communities face when accessing shared-use mobility services, and
- Inform our continuing shared-use mobility work with HOPE Village and other Detroit communities

The following sections will provide a brief context on shared-use mobility services in Detroit and across the USA; assess HOPE Village's suitability for shared-use mobility services; summarize findings from secondary sources, focus groups, and interviews; provide recommendations regarding shared-use mobility services and other mobility efforts in Detroit; and outline next steps for continuing work in HOPE Village and across Detroit.

3   Public and Private Transportation Investments and the City of Detroit

Across Southeast Michigan, transportation development and investment is focusing on mobility technologies (i.e. autonomous vehicles, connected cars and "smart" infrastructure). However, the City of Detroit has been unable to attract this investment. On November 8, 2016, voters in four Southeast Michigan Counties rejected the Regional Transit Authority's ballot measure that would have seen almost $5 billion poured into transportation infrastructure over the next twenty years.[viii] Additionally, in October 2016 the City of Detroit was *not* chosen to receive the Obama Administration's $40 million Smart City Challenge aimed at integrating self-driving cars, data-connected vehicles, and smart sensors into the city's transportation infrastructure.[ix]

However, where government investment has been slow, private investment has been rapidly occurring. Ford Motor Company and General Motors Company have respectively invested in Uber and Lyft and General Motors executives have said their newest electric vehicle, the Chevrolet Bolt, was designed specifically for ridesharing. Meanwhile, the Detroit-based incubator Techstars Mobility is investing millions of dollars into mobility startups[x] and the University of Michigan[xi] and the American Center for Mobility, have opened autonomous vehicle test tracks in Southeast Michigan.[xii]

These investments indicate a paradigm shift in transportation towards shared-use, data-based vehicles and trips. However, these mobility services are usually targeted to high-end consumers and have the potential to preclude low-resourced, low-density communities from mobility innovations. A focus group participant noted this stating: *"A lot of things are marketed to areas, and regions, and it hasn't really been promoted, marketed over here."* Our work through the Dow fellowship seeks to overcome this situation by partnering with Detroit communities to create mobility innovations, starting with Focus: HOPE and HOPE Village.

Focus: HOPE is a Detroit-based nonprofit that has been working to fight hunger and increase economic opportunities for Detroit residents for over 48 years. The HOPE Village Initiative is a place-based

initiative which aims to ensure that, by the year 2031, 100% of the residents of the HOPE Village are educationally well-prepared, economically self-sufficient, and living in a safe and supportive community. Based on 2010 census figures, the community is home to approximately 5,300 residents.[xiii] Developing mobility options in HOPE Village is one part of achieving this vision.

4   Defining Shared-use Mobility

In recent years, the demand for shared-use mobility services, such as ridesharing and carsharing, has increased exponentially and will likely continue to grow as oil prices rise, traffic congestion increases, and accessibility concerns are brought to the forefront of the transportation conversation.[xiv] Shared-use mobility can be defined as an innovative transportation strategy that enables users to gain short-term access to transportation modes (i.e. vehicle or bicycle) on an "as-needed" basis. For the purposes of our report, we will be focusing on two forms of shared-use mobility: dynamic ridesharing and carsharing.

Dynamic ride-sourcing encompasses a variety of companies and services, including Uber and Lyft. Dynamic ride-sourcing typically consists of a single customer who hails a ride in real-time via a data-enabled smartphone. While distinguishing between the terms ridesharing and ride-sourcing is important for the report, we must note that during the focus groups and interview we used these terms interchangeably, so as not to impede the conversation. While many companies provide ride-sourcing services in the United States and worldwide, these companies are beginning to offer dynamic ridesharing services as well.

Dynamic ridesharing can be defined as an automated system made available by a rideshare provider who matches drivers and riders via an Internet-enabled phone for a non-recurring trip on very short notice or even en-route.[xv] These services typically offer on-demand transportation services to multiple passengers, often strangers, at one time. Many think of dynamic ridesharing as a synonym for traditional carpooling, although "ridesharing purists" argue that it is not motivated by profit, but instead for the various social benefits it creates—access, pollution mitigation, and cost savings. An MIT study showed that using ridesharing services like Lyft Line and UberPOOL can reduce their ride costs by 60% and travel time by 30%.[xvi] The same study suggested that these services could also reduce pollution; however, the study did not quantify this suggestion.

Carsharing is based on a model in which many users share access to an expensive asset, without any one user assuming the full financial burden associated with the asset. In the case of a car, this includes the initial investment, gasoline, insurance, and maintenance. Carsharing companies operate by providing "cars on the basis of a web or phone request by managing a fleet of vehicles distributed in a number of parking lots, called stations."[xvii] With a paid membership, users gain direct access to that company's fleet of vehicles and may reserve a car as needed. Examples of carsharing companies are Zipcar, Enterprise CarShare and Maven, which is owned by General Motors.

5   Shared-use Mobility in Communities Across the United States

Dynamic ride-sourcing, while not the same as ridesharing as discussed in Section 4, highlights an important niche within shared-use mobility services. Many ride-sourcing companies, such as Uber and Lyft, have been exploring ways to expand their services to include dynamic ridesharing. As such, we view ride-sourcing as an important springboard for ridesharing. The following examples show the dynamic aspects of ride-sourcing and its potential to serve low-resourced, low-density communities across the US.

5.1   Ride-sourcing in New York

In New York City, the use of UberX (Uber's lowest cost ridesharing service) dramatically increased ridership in low-income and minority neighborhoods such as Queens, the Bronx, and noncore Manhattan starting in 2014.[xviii] UberX in New York City grew quickly in exterior neighborhoods such as Astoria, Harlem, Jackson Heights, and Washington Heights. These areas and associated neighborhoods experienced more than 1,200% growth in monthly UberX rides throughout 2014[xix] with most of this growth happening in low-income zip codes. This highlights the potential of ride-sourcing to increase access to available for-hire vehicles within previously underserved neighborhoods.

5.2   Ride-sourcing in Florida and Colorado

A slightly different application of ride-sourcing can be seen in Pinellas County, Florida. Uber and the Pinellas Suncoast Transit Agency (PSTA) partnered to offer subsidized rides to low-income residents within Pinellas County's borders. Those who qualify, (riders with documented household income which does not exceed 150% of 2015 Federal Poverty Guidelines) may take up to 23 free rides per month between the hours of 9:01 PM and 5:59 AM.[xx] Elsewhere in Florida, the local government of Altamonte Springs has created their own partnership with Uber to subsidize 20% of all Uber rides within the city limits and 25% for those traveling to and from their light rail train station.[xxi]

In Centennial, Colorado, the Centennial City Council and Lyft engaged in a 6-month private-public partnership pilot to offers users a 100% subsidized Lyft ride to and from the RTA's light rail system.[xxii] Partnerships structured as these tend to emphasize access to larger transportation network "nodes" so riders can use already existing transportation systems.

5.3   Ridesharing in Major Cities Across the US

The above examples highlight creative solutions cities with a growing urban core and an increased need for accessible and equitable mobility options are adopting. Although current ride-sourcing structures do not allow many users to access zero to low-carbon, low-cost mobility options, dynamic ridesharing could.

Ridesharing lowers the cost of a trip by splitting the fare across multiple passengers with similar origins and destinations. Likewise, by increasing the number of passengers per vehicle and thereby reducing the number of cars on the road, ridesharing has the potential to decrease carbon emissions that come from cars.[xxiii] It is because of these benefits that the major ride-sourcing services such as Uber and Lyft are beginning to pilot dynamic ridesharing models across the United States.

In New York City, uberPOOL, which uses a dynamic ridesharing model, offers customers one-way trips for a flat rate of $5.00. Compared to a New York Yellow Medallion Cab, which costs passengers $5.00 and a peak hour surcharge just for one mile, uberPOOL is the economical choice.[xxiv] Using uberPOOL is also up to 55% cheaper than using uberX, which is Uber's lowest cost ride-sourcing service.[xxv] Adding

even more potential for uberPOOL to increase mobility access across the country, WageWorks, a company that focuses on consumer-directed benefits through pre-tax saving programs, officially partnered with Uber to expand transit options using pre-tax earnings to pay for Uber rides. According to their website, a rider can save up to 40% of their commuting costs by using uberPOOL.[xxvi] While these services do not currently focus on low-resourced, low-density communities, it highlights the potential for dynamic ridesharing to expand transportation opportunities to help connect low-resourced individuals to the greater transportation network. UberPOOL is currently available in cities across the US including Atlanta, Boston, Chicago, Denver, Los Angeles, Miami, New York City, Philadelphia, San Diego, San Francisco, Seattle and Washington D.C.[xxvii]

Another example of ridesharing services offered in the United States is a service called Bridj. This service is a mix between ridesharing and traditional shuttle buses. It is essentially a dynamic shuttle that has no fixed bus stops, but instead relies on rider demand to dictate the route. Customers can reserve a spot on the shuttle days in advance or just minutes before departure using the Bridj app on a data-enabled smart phone.[xxviii] Over time, the Bridj shuttle uses historical data to find the most efficient route for all rides scheduled during specific time slots. Once again, this model has yet to be used in low-resourced, low-income communities, but it highlights an important form of dynamic ridesharing that may end up serving these users. Currently, Bridj operates in Boston, Washington DC, and Kansas City.[xxix]

5.4 Carsharing in California, New York, and Illinois

Carsharing services are also beginning to offer alternative, low-cost transportation to low-resourced communities. In Los Angeles, the California Air Resources Board (CARB) has partnered with twelve community-based organizations and five carsharing companies (both for profit and non-profit) to implement a carsharing service in low-income neighborhoods. This model requires a subsidy to decrease the cost to the driver with the funding for this initiative coming from polluter fees collected under the state's climate change law, AB 32. A second law, SB 535, mandates that one quarter of these funds are allocated toward initiatives that benefit "disadvantaged communities in highly polluted areas."[xxx] While a tax-based funding model might not be feasible in many cities, it demonstrates the advantages of public and private partnerships for mobility solutions.

A similar program in Buffalo, New York offers low-cost carsharing services to low-income neighborhoods. The company, Buffalo Carshare, has facilitated over 35,000 trips and driven over one million miles.[xxxi] Most of these trips are taken by individuals who are unable to afford a private vehicle of their own. According to their website, over 50% of their members make a household income of $25,000 or less. This program spurred an estimated $5 million dollars in cost savings for members, provided access to work and healthy food and facilitated a sense of freedom that didn't previously exist.[19] This model turned out to be successful over the course of its 6-year life. This company was sold to ZipCar in 2015.

Another emerging form of shared-use mobility is peer-to-peer carsharing. Similar to traditional carsharing, peer-to-peer carsharing enables users to rent a car from another individual for a short time. The Shared-Use Mobility Center is piloting their peer-to-peer carsharing service, Getaround, in several low-income communities in Chicago. The pilot will explore the impact that carsharing services in low to moderate-income communities might have and aims to highlight equitable access to shared-use mobility services. This pilot has 5,000 owners and renters, 75 vehicles, and a two-year time period.[xxxii] The pilot is funded through a $715,000 Federal Highway Administration grant. The Getaround model incentivizes vehicle owners to rent their vehicles by presenting an opportunity to earn additional income from their private vehicles which on average sit idle for over 90% of the day.[xxxiii] There are several

companies that are beginning to emerge in the peer-to-peer carsharing market such as Turo, Getaround and JustShareIt.

6   Neighborhood Profile: HOPE Village in Detroit, Michigan

Focus: HOPE, a Detroit--based nonprofit, has been working to fight hunger and to increase economic opportunities of Detroit residents for over 48 years. The HOPE Village Initiative, is a place-based initiative which aims to ensure that, by the year 2031, 100% of the residents of the HOPE Village are educationally well-prepared, economically self-sufficient, and living in a safe and supportive community.[xxxiv] Based on the 2010-2014 American Community Survey, the community is home to approximately 5,300 residents.[xxxv] This section provides a brief overview of HOPE Village characteristics.

Figure 1: HOPE Village Boundaries
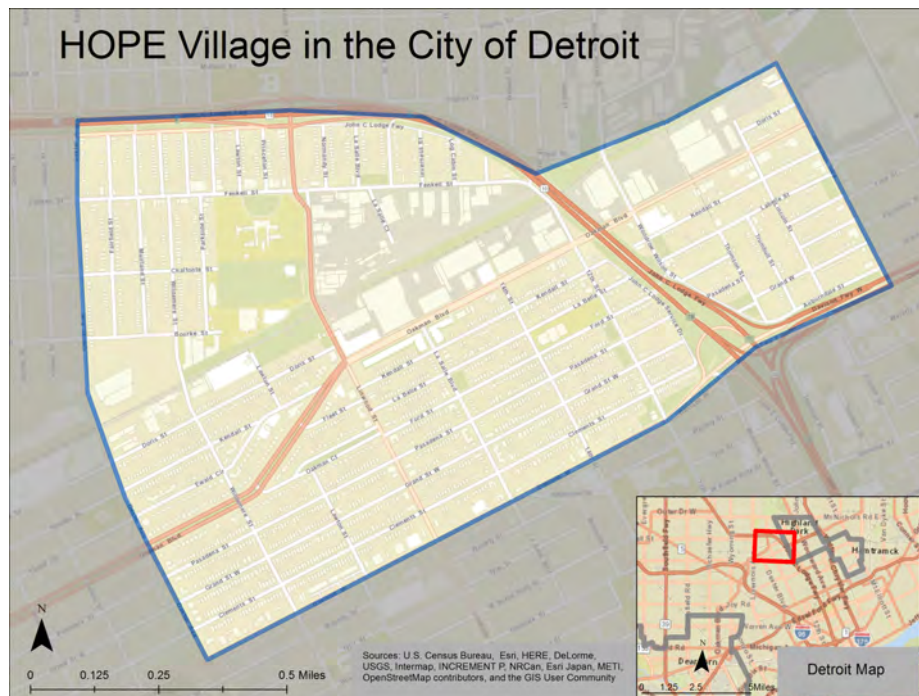
6.1   HOPE Village Demographics

Table 1 compares HOPE Village's demographic characteristics from the 2010-2014 American Community Survey to characteristics of a typical ride-sourcing customer. A HOPE Village resident is likely to be older, earn less per year, and have less years of education.

Table 1: HOPE Village Demographic Comparison to Typical Ride-Sourcing Customer [xxxvi, xxxvii, xxxviii, xxxix]

Metrics	Median Age	Median Household Income	Years of Education (25 years or older)	Race
Average HOPE Village resident	39	$18,756	High School or Higher: 72.01% Bachelor's Degree or Higher: 6.68%	Black or African American Alone: 96% Other: 4%
Average Customer	33	$75,000 or more	Bachelor's Degree: 29%	n/a

6.2   HOPE Village Mobility Metrics

While public transit, walking, and bicycle-based mobility options are available in HOPE Village, it is clear these options alone might not meet all resident's mobility needs. The Southeast Michigan Council of Governments (SEMCOG) data shows residents of HOPE Village do not have consistent or reliable mobility options to local supermarkets, hospitals, or health clinics; see Figures 2-4 with the HOPE Village neighborhood boundary shown in red. [xl]

Figure 2: Travel Time to Supermarkets in HOPE Village[xli]
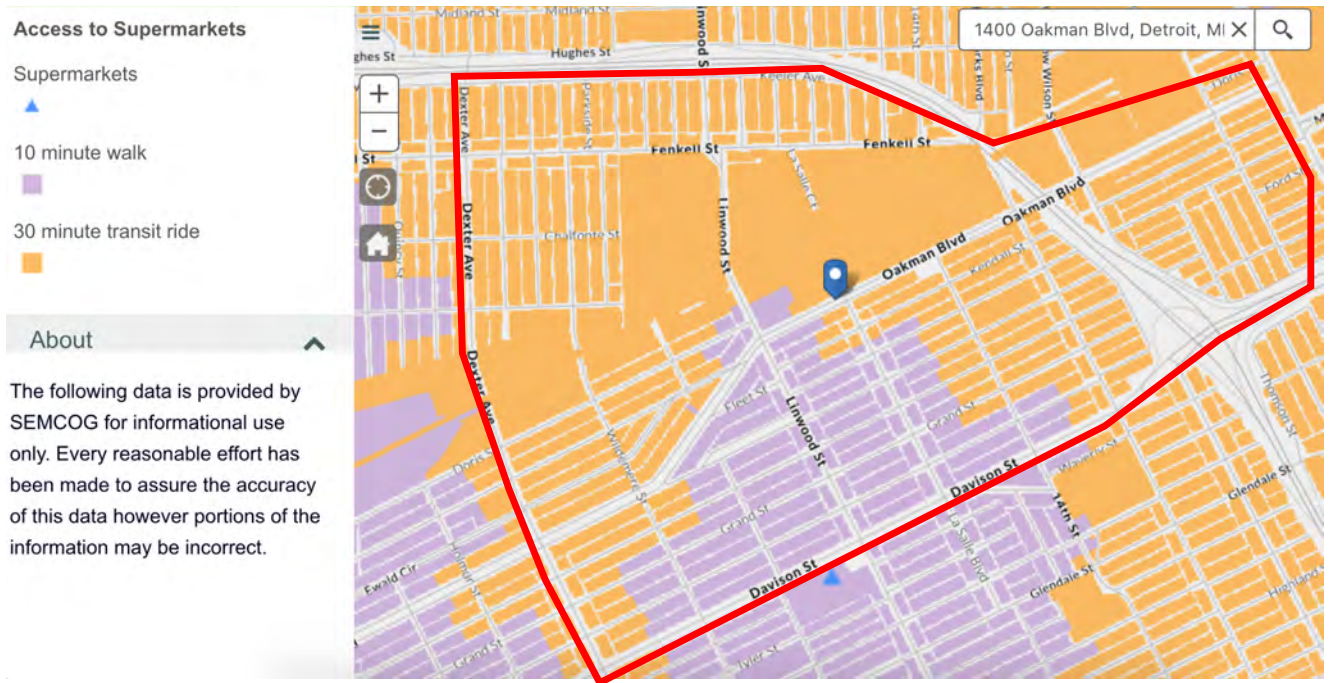
Figure 3: Travel Time to Hospitals in HOPE Village[xlii]
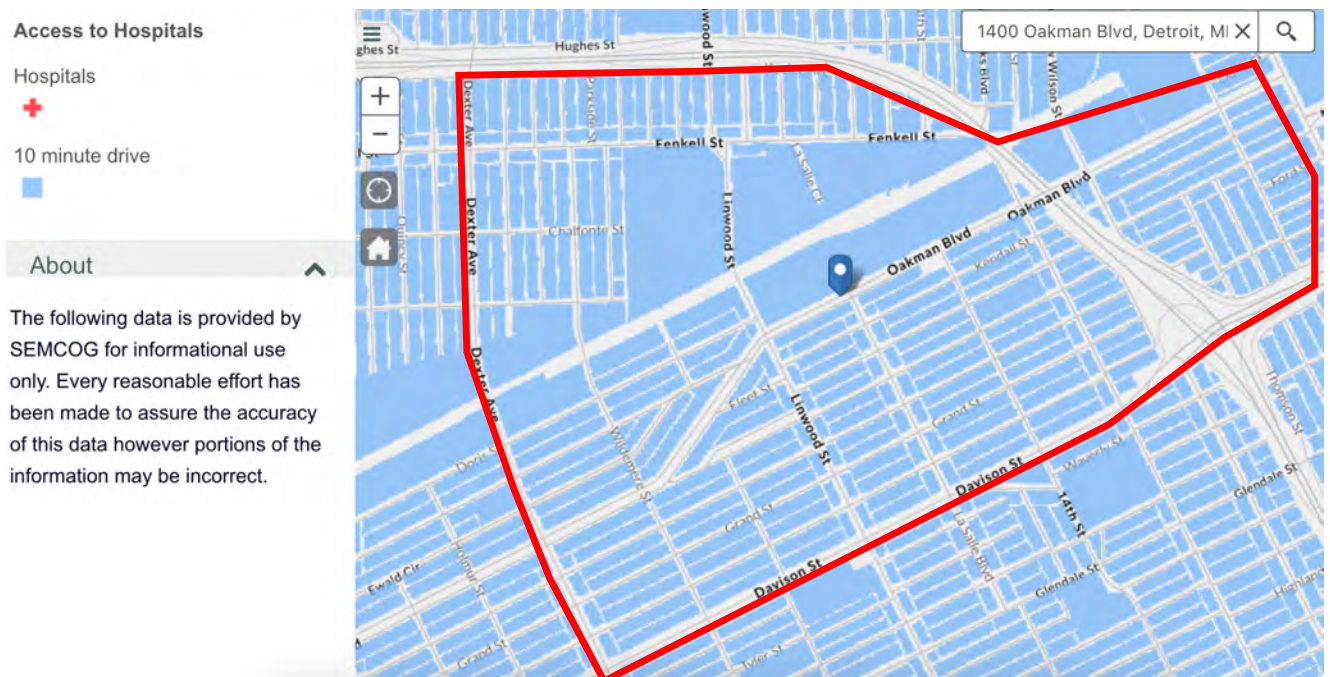
Figure 4: Travel Time to Health Centers in HOPE Village[xliii]
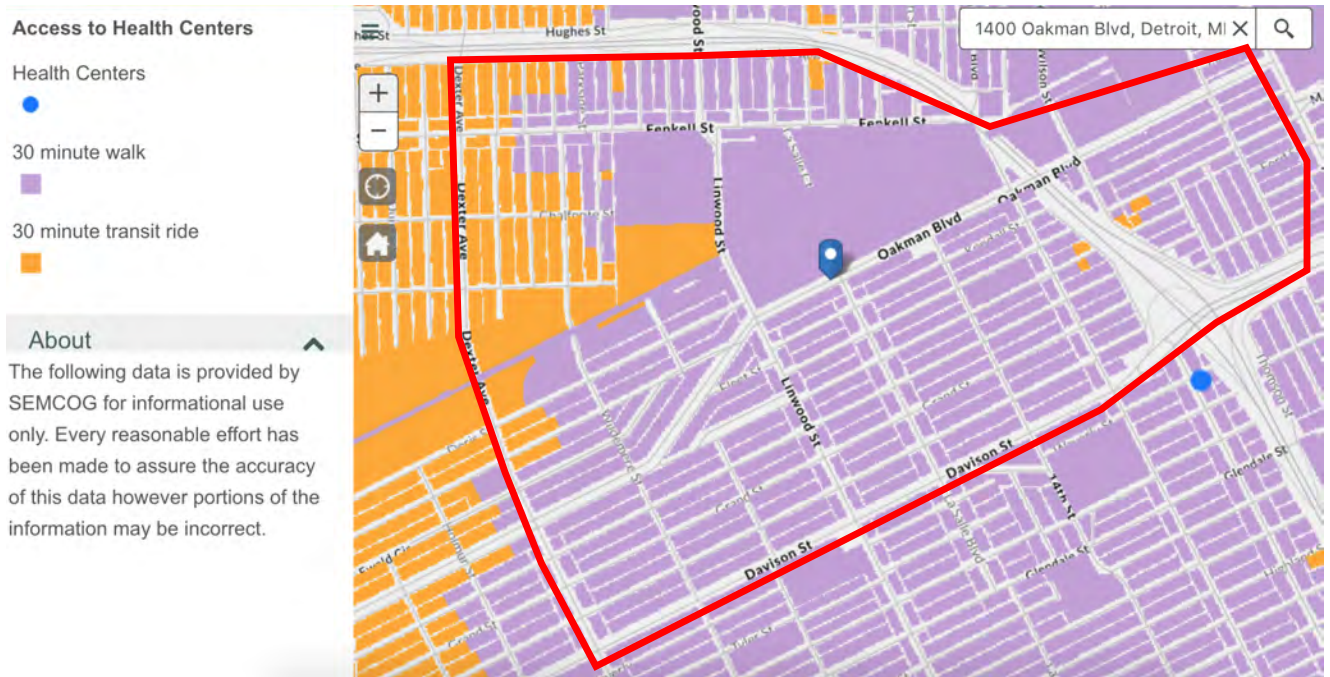
It is not surprising to learn that many HOPE Village residents use private vehicles as their primary mode of transportation given the amount of time it takes to access supermarkets and health services by public transportation or on foot. This is evidenced by how HOPE Village residents commute to work.

The 2010-2014 American Community Survey suggests 87% of HOPE Village residents commute to work using a private car, truck, or van and 77% of these commuters travel to work alone.[xliv] The remaining 23% of private vehicle commuters (or 19% of all commuters) carpool to work with at least one other person.[xlv] This carpooling rate is higher than the estimated 11.9% carpooling rate for Detroit.[xlvi] Bus (7%), walking, (5%) and other modes of transportation (2%), such as taxicabs, motorbiking, and cycling, are also present in HOPE Village, but represent a much smaller fraction of commuters (See Figure 5).[xlvii]

Figure 5: Modes of Transportation Used by HOPE Village Residents[xlviii]
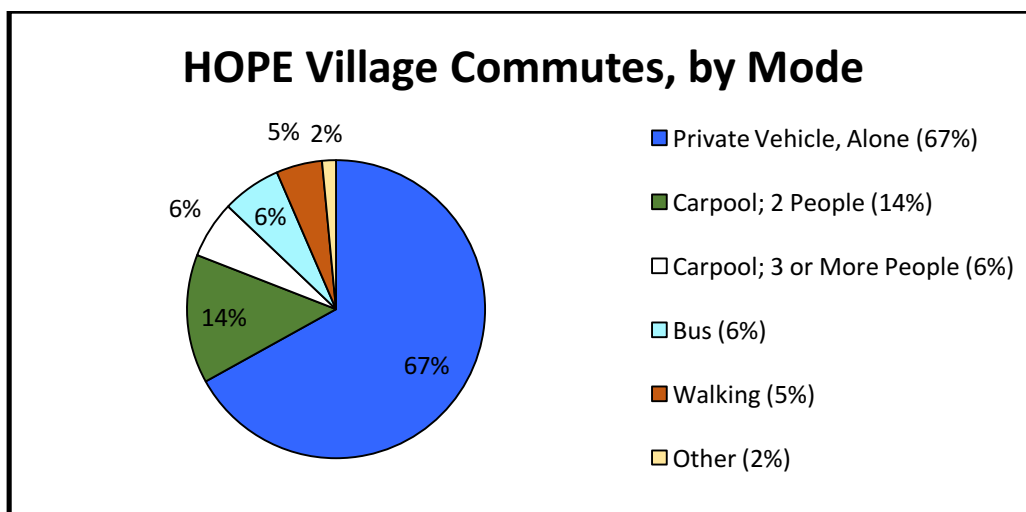
The average one-way travel time to work for HOPE Village commuters who are sixteen years of age or older is between 15 to 19 minutes across all modes, including private vehicles, public transit, bicycling, walking, and taxicabs.[xlix] While this is lower than Detroit's average one-way commute time of 26.8 minutes,[l] it is important to note that HOPE Village commute time varies significantly depending on the mode of transportation; see Table 2. For example, the average one-way commute time for commuters who travel alone via private vehicle is 20 to 24 minutes, while bus riders could spend an hour or more commuting one-way in spite of the fact that HOPE Village is served by several Detroit Department of Transportation bus lines as shown in Figure 6.[li]

Table 2: HOPE Village Average Commute Time per Mode[lii]

Mode	Average Commute Time (Minutes)
Private Vehicle, Alone	20 – 24
Carpool	15 – 19
Bus	60 or more
Walking	10 – 14
Taxicab, Motorcycle, Bicycle	20 – 24
Average Across All Modes	15 – 19

Figure 6: DDOT Bus Routes Serving HOPE Village
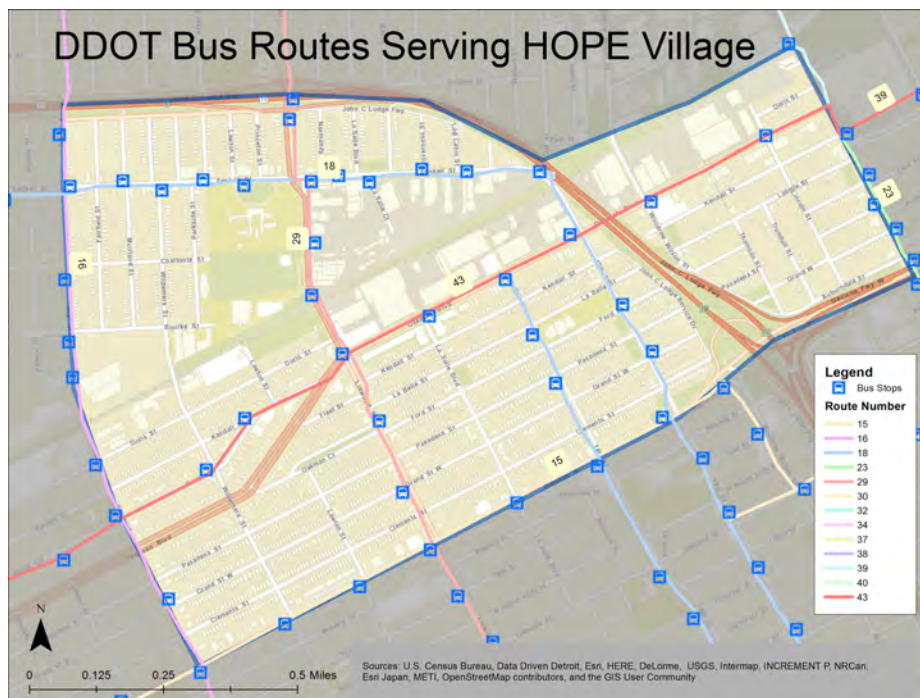
As these commute times do not account for distance it is possible that commuters who use the bus travel farther than those using private vehicles. Although more detailed analysis comparing trips is necessary to understand the differences between bus and private vehicle travel times, a simple Google Maps travel time estimate for trips in and around HOPE Village suggest that public transit system mechanisms account for most of the difference in commute times. Table 3 compares private vehicle and bus travel times for trips from the Focus: HOPE offices to the nearest Meijer grocery store and Ferndale Urgent Care. In both cases, private vehicle trips to the same destination take half the time. Although

public transit serves a different purpose than private vehicles and should not be held to the same standards, a 38-minute one-way trip to an urgent care center just five miles away poses a significant problem for those who rely on public transit.

Table 3: Travel Times from Focus: HOPE Offices to Meijer and Ferndale Urgent Care[liii liv]

Mode	Estimated Travel Time in Minutes from Focus: HOPE to Meijer (4.7 mile waking distance)	Estimated Travel Time in Minutes from Focus: HOPE to Ferndale Urgent Care (5 mile walking distance)
Private Vehicle, Alone	9 – 14	9 – 14
Bus	38	38

6.3 HOPE Village Residents' Disability Status

The 2010-2014 American Community Survey shows approximately 27% of civilian, non-institutionalized HOPE Village residents have a disability.[lv] Although more detailed information is unavailable, certain comparisons can be drawn from the 2000 decennial census data at the national level. Assuming the HOPE Village population with disabilities has a similar distribution to the national population, 23% of individuals with disabilities require assistance or equipment to access transportation and 12% of these individuals have difficulty accessing transportation.[lvi] A limitation to this approach is that the proportion of HOPE Village residents with disabilities, 27%, is higher than the national average of 19% as estimated in the 2000 decennial census. This difference indicates that the HOPE Village population may not be comparable to the national population.

7   Research Methods

Our team used quantitative and qualitative research methods to evaluate the need for and assess the possibility of shared-use mobility services for HOPE Village. The process used for each method is described below.

7.1   Quantitative Methods: Research using Existing Descriptive Data

Census tract level data was used to analyze HOPE Village because of unreported and partial transportation data at the block group level and concerns regarding sample error inherent in small-area data analysis. Almost all census tract level data were gathered from the 2010-2014 American Community Survey Five Year Estimates, with the exception of internet access, which was accessed using data from the Federal Communications Commission and mapped by DETROITography.

HOPE Village includes some or all of five census tracts in its footprint. However, some of these census tracts are not fully within the HOPE Village boundaries. To address this mismatch, we used Geographic Information System (GIS) tools to calculate the proportion of each census tract included within HOPE Village (Figure 7). Census tracts 5316 and 5317 are completely contained within HOPE Village. Census tract 5303 has 70% area overlap with HOPE Village while census tract 5533 has 37% and tract 5301 has only 7% overlap.

Figure 7: HOPE Village Census Tracts
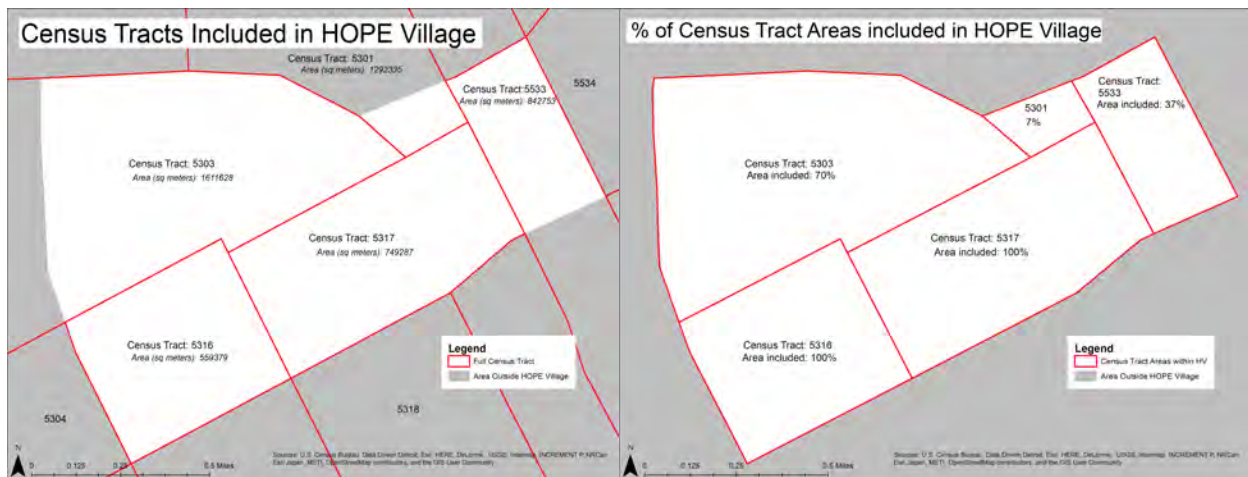
For the census tracts that are not fully included in HOPE Village, we conducted a preliminary analysis using GIS tools to determine whether or not the proportion of residential populations was the same across areas within and outside of the HOPE Village boundaries (see Figure 8). For tracts that seem to have equal population distributions throughout their whole areas, we weighted the data by the area included in HOPE Village. If the population seemed to be more heavily concentrated in HOPE Village, we adjusted area weight up, and vice versa for tracts in which the population seemed more heavily concentrated outside the HOPE Village bounds. This analysis is not comprehensive and is only intended to provide a demographic profile of HOPE Village.

Although 7% of census tract 5301's area is included in HOPE Village, analysis shows that population density and demographic characteristics are not evenly distributed throughout the census tract.[lvii] There are approximately 2,172 individuals in census tract 5301.[lviii] The portion of census tract 5301 within HOPE Village includes the NSO Bell Building, home to approximately 150 residents in as many housing

units.[lix] We weighted data from this census tract by 0.07, the fraction of households that are in HOPE Village.

37% of census tract 5533 overlaps with the HOPE Village neighborhood boundary.[lx] Although the proportion of residential parcels seems equally distributed across the tract, we did not assume proportional distribution because a preliminary visual analysis of parcel data from Loveland[lxi] suggests that there is a significantly higher rate of vacant properties in the HOPE Village portion of the tract. In light of this, the weight we used for data from census tract 5533 is 0.20, approximately half of what it would be assuming proportional distribution of the population.

Finally, 70% of census tract 5303 overlaps with the HOPE Village neighborhood boundary. However, using satellite imagery we determined approximately 49% of census tract 5303 is residential and 57% of this residential populate is located within HOPE Village. Again performing a visual analysis of parcel data from Loveland, we determined there does not seem to be a significantly higher rate of vacant properties in the HOPE Village portion of the census tract.[lxii] Based on this analysis, we apply a 0.57 weight to this census tract to describe the HOPE Village neighborhood characteristics.

Figure 8: HOPE Village Proportion of Resident Populations
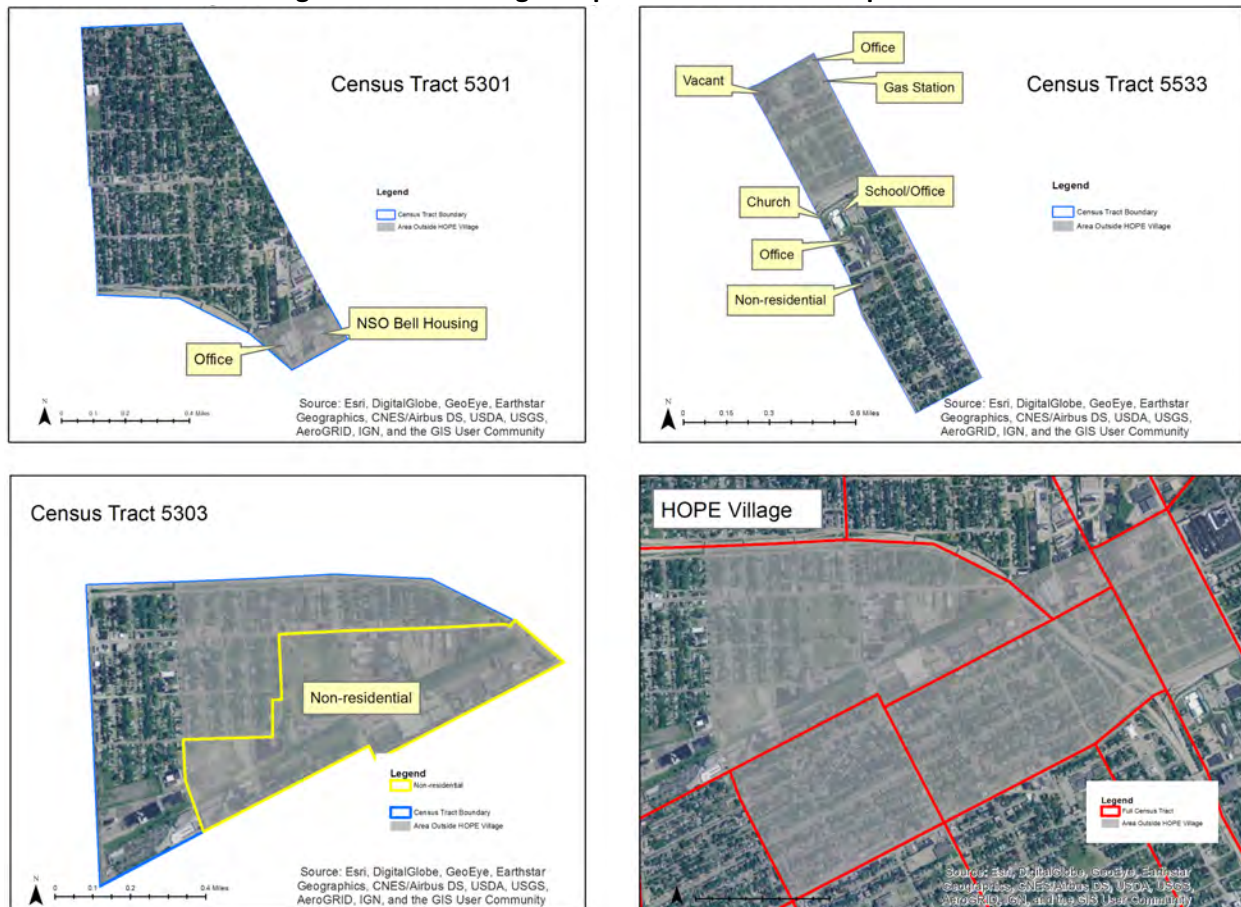
7.2 Qualitative Methods: Focus Groups

To gather residents' perceptions and experiences of transportation and mobility, we held three focus groups and one semi-structured interview. Our team applied to the University of Michigan's Institutional Review Board (IRB) to ensure compliance with ethical research standards including human subjects and received an "exempt" status on May 27, 2016. We chose to assess residents who are 18 years of age or older as our population of interest.

The team originally planned four focus groups with four to six participants each, with the option of conducting one-on-one interviews as needed. From August 2016 to September 2016, the team recruited participants currently living in HOPE Village at town hall meetings, community events, and public spaces such as the neighborhood library. However, as a result of time constraints and recruiting limitations, the team held three focus groups and one interview.

In total, the team registered 57 participants. Prior to the focus groups, team members called participants by phone to discuss demographic background questions (i.e. smartphone access, personal automobile ownership, credit card access, etc.) The team intended to divide participants into groups with lower barriers and higher barriers to accessing shared-use mobility services. However, limitations in the sample and limited flexibility for scheduling prevented sorting participants into groups with similar characteristics.

The focus groups that were held were conducted as follows: All focus group and interview participants were reimbursed for their time with a $20 Meijer gift card. Snacks were available at all focus groups. Each focus group and interview lasted approximately 1 to 2 hours and were held at Focus: HOPE offices in Detroit at 1400 Oakman Boulevard. The focus groups were recorded using an audio recording device. Focus groups and interviews discussed subjects in the following order: general transportation within and around HOPE Village, then ridesharing, and then carsharing. A copy of the focus group and interview notes, facilitator guidelines, and anonymized recruitment and participant list is available in Appendix A.

8 Quantitative and Qualitative Data Analysis

This section discusses findings from the quantitative and qualitative analysis described above. Focus group and interview audio recordings were analyzed to determine HOPE Village residents' mobility needs and identify barriers HOPE Village residents face when accessing ridesharing and carsharing services. External data is combined with focus group analysis to provide a more complete understanding of the topics. Table 4 summarizes the potential needs for carsharing and ridesharing while Table 5 summarizes the barriers to carsharing and ridesharing discussed in more detail in the following sections.

Table 4: Needs for Carsharing and Ridesharing

	Timely	*Affordable*	*Perceived to be Safe*	*Accessible to Elderly*	*Accessible to those with Medical Needs*	*Accessible to Families with Children*
Walking		✔				
Bicycling		✔				
Public Transit		✔				
Needs-based Service		✔	✔	✔	✔	
Taxi Service			✔	✔		✔
Private Vehicle	✔		✔	✔		✔

Table 5: Barriers to Carsharing and Ridesharing

	Access to Data and Credit	*Cultural Norms*	*Community Trust*	*Safety Concerns*	*Access to Driver's Licenses*	*Physical Access*	*Unfamiliar Operating Platform*
Carsharing	✔	✔	✔		✔	✔	✔
Ridesharing	✔	✔	✔	✔		*	✔

*Those requiring door-to-door assistance might not be able to access ridesharing services.

8.1 HOPE Village Resident's Transportation Needs

Focus group participants most frequently named private vehicles and public transit when asked to discuss their primary modes of transportation. The discussion of public transit is limited to the bus because participants did not volunteer their opinion on other modes of public transit in Detroit. While travel modes such as bicycling, walking, and traditional taxis are also used in HOPE Village, they are omitted from this analysis because residents did not discuss these options much when prompted during the focus groups. The following analysis shows that limitations of both private vehicles and public transit indicate a need for affordable, reliable, and accessible mobility options for HOPE Village residents.

8.2 HOPE Village Residents and Private Vehicles

Most focus group participants described private vehicles as their primary means of transportation. This is to be expected: According to 2014 American Community Survey 5-year estimates, 67% of HOPE Village commuters travel by themselves in a private vehicle while only 7% of commuters use public transit; see Figure 5.[lxiii]

Most participants agreed that although direct costs of owning a vehicle such as gasoline and maintenance are low, indirect costs such as parking, concern of auto-theft, and insurance are high. One participant whose main mode of transportation is her own car stated: "*the only thing about owning a vehicle in the city of Detroit is [that] the cost of auto insurance is exorbitant...*"

This is reflected in the high cost of auto insurance which is possibly the most significant barrier to car ownership in Detroit and HOPE Village. Although average annual car insurance rates in Michigan are $2,226, over twice the national average rate of $1,002, in the zip code that encompasses HOPE Village, the average cost of car insurance is $4,762, nearly five times the national average.[lxiv] The zip code adjacent to HOPE Village has the highest average car insurance rates in the country at $5,109.[lxv] These high insurance costs likely contribute to drivers operating motor vehicles without insurance.[lxvi]

Many car owners in the focus groups stated that they would consider using transportation alternatives, if available, in order to save on personal vehicle ownership costs. Participants also noted that car ownership may be unaffordable or even inaccessible for some as a result of the high costs.

8.3   HOPE Village Residents and Public Bus Transportation

While some participants appeared to be satisfied with the public bus service, it seemed that many participants had the perception that the bus system is inefficient and unsafe for a large portion of residents. Although many focus group participants felt that the bus service is affordable, many believe it to also be inefficient and unreliable. Participants mentioned being marooned by the bus service unable to return home after using the bus to travel to a destination because a route was not operating off-peak hours, while others have lost their jobs because a late bus often made them tardy. The 2010-2014 American Community Survey 5-year estimates suggest that 89% of commuters who take the bus to work face travel times of at least 45 minutes while only 7% of commuters who travel by private vehicle spend 45 minutes or more getting to work.[lxvii]

Participants were also concerned with safety and security when taking the bus, especially at night. This is in part due to a perceived and real lack of infrastructure or its low quality (e.g. no shelters or benches to wait for buses), but also a concern regarding accessing bus stops. One participant stated: "*I am concerned about when my daughter has to catch the bus. She catches it on Dexter and Fenkell, but she has to pass through abandoned buildings that are open. Girls, boys, anyone walking through those abandoned buildings is a concern when you are catching the bus.*"

While the bus system seems to meet some participants' needs, it is apparent that a number of participants were reluctant to rely on the bus system. Although there are certainly gains to be made in efficiency and safety, certain problems are inherent to any bus system design. Current public transit systems require people to travel from their homes to the bus stop, introducing a security risk for all residents and a physical barrier for elderly residents and those with disabilities.

8.4   HOPE Village Resident's Perceptions on Needs-based Transportation Services

Although needs-based services exist for the elderly and those with disabilities, users may find difficulty in accessing these services due to the sheer number of services in operation, the difficulty in determining eligibility status for a service, and the tendency for these services to go out of business. The website, Julie's List, (http://julieslist.homestead.com/Transportation.html) lists over 100 needs-based transportation services available; however, the onus is places on the user to determine for which service they are eligible, which meet their needs, and which are in operation. One resident who had used the service Dial-a-Ride, a low-cost alternative that transported people to designated locations like grocery

stores and malls, stated: *"I haven't seen a lot of people [Dial-a-Ride] because I think they have a hard time trying to get them. When I first got sick and I needed transportation… I couldn't even get to the number and when I got the number, it just flipped to something else."* Additionally, existing transportation services such as these typically have to be scheduled 3 to 7 days in advance.

8.5   HOPE Village Resident's Positive Reactions to Shared-use Mobility Services

Based on responses during focus groups, there is evidence that shared-use mobility services could meet HOPE Village resident's transportation needs. Some participants proposed community-operated ridesharing programs as a possible solution. One participant said that "*if [the ridesharing program] were community based, then people might feel more comfortable*". Another participant voiced a similar idea: "*Maybe they could register under the HOPE Village Initiative neighborhood. Say you have four drivers who live in the area. [You could] call one of these four drivers, and [the users] might feel more comfortable*".

Responses were also positive when a participant discussed the needs-based transportation service Dial-a-Ride: "*It was a nice bus, a shuttle bus that could fit 16 passengers. It would get people out of the house, they felt safe and it was really nice. The people who lived in the community used it."* The positive reactions to the Dial-a-Ride model, which is largely subject to the same security concerns as dynamic-ridesharing, indicates that the community component could act as a mitigating factor, at least psychologically, for the physical safety and security concerns discussed in the focus groups.

Another positive reaction was an understanding that culture and age affect perceptions about ridesharing. One participant pointed that the concept of sharing a ride with strangers might be more appealing, or could even be seen as "normal", by young people: "*Urbanites, young people, who live in super urban areas, that wouldn't even faze them. If I were to say to my daughters 'Oh, I wouldn't do that', [they would say] 'mom, you are so negative!'. They don't think of that kind of stuff! They wouldn't think it's strange if the Uber driver said 'Oh, can we get two other people, because they are going to the same restaurant you are?'"*

In regards to carsharing, one resident stated "*[A carsharing program] could work. You might have to hire somebody to educate people more on technology, credit cards, budget classes, because it will be a better way to get around.*" These comments indicated willingness to engage and learn the technology and point to the possibility of a shared-use mobility service satisfying HOPE Village resident's mobility needs.

8.6   HOPE Village Resident's Barriers to Shared Use Mobility Services

Some barriers identified in the research are present in all forms of shared use mobility. The most prominent barriers from existing academic research and HOPE Village focus groups are discussed below. While each of these obstacles has the potential to prevent the adoption of shared use mobility services, more information will be necessary to fully understand each concern.

8.6.1   Access to Credit

Carsharing and dynamic ridesharing services such as Zipcar, Uber, and Lyft operate with credit card payment mechanisms. Typically, fares are charged to credit cards stored on a user's data-based account. While convenient, the credit card payment mechanisms excludes those without access to credit. A University of Michigan working paper of Macomb, Wayne, and Oakland counties suggests access to financial services fell significantly after the Great Recession. Among those with no high school degree, bank account usage fell from 57% to 29% and credit card holdings fell from 28% to 13%.[lxviii]

Surprisingly few focus group participants cited lack of a credit card as an obstacle to shared use mobility. It is possible that this could be a product of limited representativeness focus group participants as most participants held jobs or were retired or that participants did not want to discuss an issue as it might have been too personal. Regardless, credit card access remains a significant barrier for those seeking access to ridesharing and carsharing services.

As it relates to financial access, financial security such as identity theft and online security seemed to be an issue of greater concern for participants: "*That could be a safety issue too: fraud, people's identity being stolen. For me, that's a safety issue. I'm concerned about both!*" Another participated cited the risk of having the information stolen from the card or the phone itself: "*Once you go into the app it don't matter. You know those little panels, magnetic things? They copy everything on your phone, it doesn't even need to touch it or anything. It takes 30 seconds.*"

8.6.2   Data Access via Home Internet Connections and Smartphones
Data access via a smartphone or a home Internet connection could also be a barrier to accessing shared-use mobility services. Many services require a data connection not only to reserve cars or trips but to create a user account. Again, while convenient, data based services exclude those who do not have regular Internet access or a smartphone with a data plan.

The Federal Communications Commission (FCC) estimates that only 27-47% of households in HOPE Village have residential Internet connections greater than 200 kbps. [lxix] Pew Research data on smartphone access from July 2015 suggests that only 52% of US households earning less than $30,000 per year and 69% of households earning $30,000 to $49,999 per year have access to data via a smartphone.[lxx] The same research suggests that only 41% of US citizens with a high school degree or less, 56% of US citizens with a high school degree, and 75% with some college have access to data via a smartphone.[lxxi] Although some participants noted that access to shared use mobility may be impossible for residents without data access, data access in general did not seem to be an overwhelming concern for many participants.

Figure 9: City of Detroit Broadband Connections[lxxii]
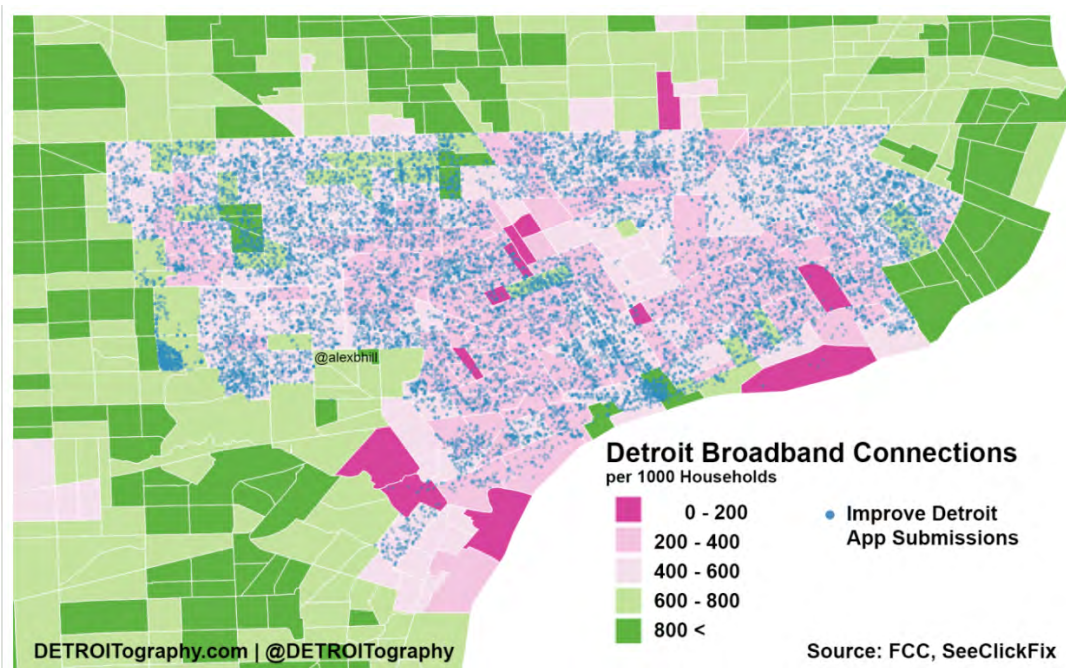
8.6.3   Lack of Community Involvement and Trust

Some participants expressed concern with businesses with no connection to their community and neighborhood operating services in the area. In regards to ridesharing, one participant stated that "*if it were community based, then people might feel more comfortable. A community system might also be more accessible for people without credit cards.*" Another participant noted that a key determinant of the success of a carsharing service in HOPE Village would be how well the service was able to build trust within the community.

8.6.4   Cultural Norms Regarding Owning a Personal Vehicle

Despite the fact that shared-use mobility services could improve mobility for people without access to a private vehicle, some focus group participants voiced concern over foregoing car ownership. One participant stated that a main barrier to alternative transportation was *"not owning your own car."* which suggests people view shared-use mobility services as a complement to private vehicle ownership rather than a substitute.

8.6.5   Disability Status and Medical Needs

As discussed in Section 6.3, 27% of HOPE Village residents have a disability and rely on assisted transportation. As a result, it is unlikely carsharing is able to meet these residents' needs due to the necessity for users to driver a motor vehicle and walk and undetermined distance to access vehicles. While a ridesharing service could meet these residents' needs, it is likely residents requiring door-to-door assistance would not be able to use the service. Further research is needed to clarify how a shared-use mobility service could be made fully accessible to these residents.

8.7   HOPE Village Residents' Barriers to Ridesharing

The following section discusses the barriers focus group participants discussed when accessing ridesharing services. Most participants were concerned about security, particularly risks to personal security arising from lack of regulation in the ridesharing industry and physical safety risks while sharing a vehicle with an unknown driver and passengers.

8.7.1   Physical Safety Risks Associated with Unknown Passengers and Drivers

This was a principal security concern expressed in the focus groups and one with which people seemed unwilling to compromise. The main aspect of this concern involves the increased risk of sharing a vehicle with a potential criminal, a concern that could be amplified when using ridesharing services in high crime areas. One participant said: "*I'm not too comfortable getting into a car with strangers. I feel that my chances are better with one person*." Moreover, these concerns did not seem to be allayed by introducing mitigating factors like neighborhood drivers: "*If [the driver were from my neighborhood] I would still not want to do it. Circumstances and history play into that, so no. Even if the driver said he was picking up someone and I had seen him around the neighborhood, no. I would have to give that some really serious thought. I am not too comfortable doing that. But I have become relatively comfortable calling Uber for myself. For one thing, you get a picture of the person, you get a license plate of the person and a rating.*" Finally, another participant's opinion captures the consequence of this concern: "*You know what? I don't really see that working. I just don't see people being comfortable with that. This is a high crime area. I wouldn't do it unless it were an extreme emergency.*"

The seeming intractability of this security concern, however, must be weighed against current responses to various forms of ridesharing and other mitigating factors. Even though there are no current dynamic ridesharing services in Detroit that we can use as a benchmark for analyzing actual responses to the security concern of sharing a ride with strangers, we can draw inferences from other modes of

transportation that have similar features which allow useful comparisons. The most relevant is the bus system, in which passengers also have to share a vehicle with strangers. As noted above, the bus system was cited as one of the most widely used modes of transportation by participants in focus groups. Despite the fact that security was mentioned as a concern regarding the use of public buses, these concerns were not related to the aspect of sharing the vehicle with others. Rather, concerns focused on the security risks involved in accessing buses, not those existing *inside* the bus. For example, some common concerns involved poor lighting in bus stops and the risks of walking by abandoned buildings to get to the stops. Out of 18 participants in the focus groups, only one mentioned a negative aspect related to being inside the bus: "*When school started back, it became a little bit uncomfortable, only because the level of respect from our younger generation is not always there on the bus. You know, on the bus you should be able to sit back and enjoy your ride to your destination and not hear any noise, but they're just being youth. They're just being young and they're doing what they're doing, but it's now always respectful. That's one of the gripes I have with public transportation*". However, in this case the concern was not so much one of security, but rather one of respect and decorum. To overcome security concerns, a ridesharing service could look to mimic the conditions of the public bus service.

8.7.2 Lack of Regulation Leading to Security Risks

The focus groups revealed a perception that ridesharing companies are not subject to strict government oversight and that this lack of regulation could pose security risks through deficient background checks for drivers. One focus group participant brought up an indirect concern: "*I would want to see their basis for hiring. Like I said, that was my main concern, because the first thing I thought about was Uber: background checks, hiring, and all that stuff (...) They are not government regulated, and they might let some stuff slip through the cracks.*" While another participant made a more direct connection between lax background checks and security, although in this case the risk was reckless driving, not criminal behavior: "*My daughter used to take Uber and I thought it was great until the Uber driver had a car accident. My daughter wasn't in there, but it can happen to any regular car. He looked shady, anybody can be an Uber driver, and that causes me to raise my eyebrows*".

These security concerns are fueled by widely publicized events, such as the 2016 Kalamazoo shootings[lxxiii] which have been linked to systemic failures in the background screening processes used by ridesharing companies—in this case Uber. Several participants made direct references to this incident during the focus groups and brought this up as a concern for using this service. One participant stated: "*what happened in Kalamazoo, Michigan, should have never happened!*" However, an analysis of the potential effect that this concern could have on ridesharing services must consider responses to it. As noted above, dynamic ride-hailing services are available and used in HOPE Village, and these services are subject to the same security concern of inadequate background checks. Many participants in the focus groups themselves had used dynamic ride-hailing services such as Uber in the past and many were regular users. In other words, for the majority of participants this particular security concern did not seem to be serious enough as to stop them from using ride-hailing services. This could mean that, for these users, the advantages of ride-hailing services (such as their low cost, reliability and punctuality) outweigh these security risks. Another explanation could be that the security features that dynamic ride-hailing services do offer (such as GPS tracking and driver and vehicle and license plate identification) offset the concerns. It could be that the security risks arising from lack of regulation or limited background screenings for drivers would not pose a significant barrier to ridesharing services in HOPE Village. Of course, any solution should address these safety concerns; simply because the business practice has been normalized does not mean it is justified or acceptable.

8.7.3   Insecurity Associated with Hard to Identify Vehicles

Although ridesharing services provide some vehicle information such as license plate, vehicle make, and vehicle model, some focus groups participants raised the concern ridesharing vehicles lacking clear or obvious identifiable features contributing to a sense of insecurity. Focus group participants stated they would feel more comfortable using a ridesharing service if the vehicle were associated with their community or branded in an easily identifiable manner.

8.8   HOPE Village Residents' Barriers to Carsharing

The following section discusses the barriers focus group participants discussed when accessing carsharing services. Most participants were concerned about limited access to driver's licenses, physical accessibility concerns, and unfamiliarity with general carsharing operating platforms.

8.8.1   Limited Access to Driver's Licenses

Focus group participants stated concerns that many residents in HOPE Village might not have a driver's license. Although residents could obtain a license, it is understandable not all residents would want to obtain a license to operate a carsharing vehicle. Such residents could include elderly users who can no longer drive and people with disabilities that preclude them from driving motor vehicles.

8.8.2   Physical Accessibility of Carsharing Vehicles

Because carsharing vehicles are placed in a centralized location, it is likely that the vehicles would be too far away for some to access. This concern was raised by participants with children and elderly participants. One resident stated: *"It's not accessible in this neighborhood. If it were accessible, i could just go up the street and hop in, go to the mall and do my shopping and not bother anybody, but it's not accessible."*

Although this concern can be mitigated by strategically locating carsharing vehicles in a community, it is unlikely to be alleviated for all residents. Another concern regarding vehicle locations was security risk involved in walking to and from the vehicles through areas with abandoned houses or poor lighting. These security concerns are similar concerns voiced by people who ride the public bus system.

8.8.3   Unfamiliarity with Carsharing Systems and Operating Platforms

Some participants raised concerns about the unfamiliarity of using carsharing services. When it was mentioned that Zipcar had piloted a carsharing vehicle in HOPE Village many participants were surprised. When discussing how the service could have been successful, participants felt appropriate outreach and education would have to be components of any future carsharing service: *"[A carsharing program] could work. You might have to hire somebody to educate people more on technology, credit cards, budget classes, because it will be a better way to get around."* and *"[The carsharing program] could do something like a first week introduction special program, where they actually go around and do outreach in the car, see how people respond and educate people about what the program and the service is all about. That might help ensure success."*

9 Lessons Learned and Recommendations for Future Work

The following section discusses challenges and limitations associated with the focus groups and interviews and research needs for future work.

9.1 Challenges in Focus Group Recruitment

Our team allocated significant time to recruiting community members who could participate in focus groups. In addition to the significant amount of time it takes to recruit, pre-screen, and confirm schedules with focus group participants, one challenge we faced in recruiting for focus groups was residents were unfamiliar with us. At events in which we recruited participants, it was residents' first time seeing us or hearing about our project.

In future work we'd like to work more closely with community leaders at an earlier stage in the research process so residents are familiar with us and the project. Additionally, we would be interested in asking community members to consider others who would be interested in participating in focus groups to help us identify more participants. However, we understand that community leaders' and members' time is limited and the strategy would have to include which community leaders could easily introduce us while respecting their time.

9.2 Limitations of Focus Group Analysis and Results

The focus groups we conducted were limited to participants over 30 years of age. This is because residents over 30 years of age were the only respondents to our focus group outreach efforts. Although we attempted to include those under 30 years of age, we had difficulty contacting residents who met this criterion. A result that might be influenced by the age of our focus group population is that older people are found to be less aware of and comfortable with the shared-use mobility services. One study suggests that younger individuals are the most likely to use a ridesharing service, and those aged 35–44 the least likely age group to participate.[lxxiv] In fact, one participant indirectly stated this: "*Urbanites, young people, who live in super urban areas, that wouldn't even faze them. If I were to say to my daughters 'Oh, I wouldn't do that', [they would say] 'mom, you are so negative!'. They don't think of that kind of stuff! They wouldn't think it's strange if the Uber driver said 'Oh, can we get two other people, because they are going to the same restaurant you are?'*"

It is possible concerns expressed about the security aspects of sharing rides with strangers could be intertwined with the age of our participants. This could mean that the concerns, and therefore the associated barriers discussed in the focus groups could be lower among younger people. This does not mean that the security concerns expressed are unwarranted or insignificant. It does, however, imply that there might be important age and cultural factors at play that our focus groups either magnified or played down. Further research, such as focus groups among younger age groups, would be needed to shed light on these questions if a ridesharing solution is adopted in Hope Village.

10 Carsharing and Ridesharing Service Recommendations

The solution to mobility challenges in any setting must be holistic to meet the needs of residents. Many of the solutions presented below were in fact mentioned by focus group participants which is not surprising. They are in fact the experts on what they need in a shared-use mobility service to meet their needs. Although this report focuses on the potential for shared-use mobility services of ridesharing and carsharing, based on our research within this report we feel a transportation system must include solutions for public transit, bicycle, and walking to successfully meet all of a resident's and community's mobility needs. The following recommendations focus on potential pilot programs, policy changes, and grant opportunities for HOPE Village and other communities within the City of Detroit. Some information on regional, state, and federal opportunities are also provided.

Some characteristics must be present in any shared-use mobility service to overcome barriers identified in this report. One of the most pressing simply being inclusion of low-resourced communities and their residents when shared-use mobility services are designed and implemented. The lack thereof was highlighted by one participant: *"A lot of things are marketed to areas and regions and it hasn't really been promoted or marketed here."* A first step in overcoming this limitation could be facilitating community town halls, focus groups, interviews, and other community engagement events with key community stakeholders with the goal of empowering a community in the process of developing a mobility service.

Any solution must take steps to be inclusive of all residents to the extent possible, including the elderly, those with disabilities, those without access to data and/or financial services, and those who have safety and security concerns regarding shared-use mobility services. Additionally, a recent working paper by researchers at the University of Washington, Stanford, and MIT suggests evidence of a concerning trend of racial and gendered discrimination in ridesharing services. The working paper's abstract states: "We sent passengers in Seattle, WA and Boston, MA to hail nearly 1,500 rides on controlled routes and recorded key performance metrics. Results indicated a pattern of discrimination, which we observed in Seattle through longer waiting times for African American passengers—as much as a 35 percent increase. In Boston, we observed discrimination by Uber drivers via more frequent cancellations against passengers when they used African American sounding names. Across all trips, the cancellation rate for African American sounding names was more than twice as frequent compared to white sounding names. Male passengers requesting a ride in low-density areas were more than three times as likely to have their trip canceled when they used an African American-sounding name than when they used a white-sounding name. We also find evidence that drivers took female passengers for longer, more expensive, rides in Boston. We observe that removing names from trip booking may alleviate the immediate problem, but could introduce other pathways for unequal treatment of passengers."[lxxv]
A goal of these recommendations is to begin a conversation on inclusive solutions as to how these challenges can be overcome to create equity for all users of a shared-use mobility service.

10.1 Accept Non-traditional Forms of Payment to Alleviate Financial Access Barriers

As identified in the quantitative and qualitative analysis, financial and data access presents barriers to residents use of ridesharing and carsharing. Solutions must be able to accommodate people with limited access to financial resources, the internet or a data connection. Although unrelated the ridesharing, the Ypsilanti organization Growing Hope has been able to facilitate payment at farmer's markets across a variety of platform including cash, credit, SNAP, WIC, and others.[lxxvi] The potential for time-banking and sweat-equity also exist. A shared-use mobility service could seek ways to accept payment from these sources.

10.2 Partner with Existing Data Service Providers to Improve Data Access

While a new shared-use mobility solution should be made accessible by phone, text, and data, residents' data-access can also be improved to access solely data-based services. It could be possible to partner with Lunar Labs which provides low cost data-enabled smart phones. Although Lunar Labs is a startup company, past behaviors indicate the startup might have a social impact goal as well.[lxxvii]

Cart is a service begun by University of Michigan graduate students to provide access to grocery stores via existing ridesharing services.[lxxviii] They seek to eliminate the data-access barrier to shared-use mobility services by operating a call center style service as well as providing a ride subsidized by the grocery store. Cart is expanding and this service could connect residents to existing ridesharing services to access grocery stores.

To overcome non-smartphone based data access, the Detroit Community Wireless Project and Detroit Employment Solutions Corporation seek to provide free wireless access points and a mobile wireless access point respectively.[lxxix] Although it is our understanding Focus: HOPE has interacted with these organizations in the past, we recommend promoting these organizations' work when appropriate so their work can continue. Similarly, Comcast Internet Essentials program provides a low cost option for home internet service.[lxxx]

10.3 Formalize Existing Shared-use Mobility Behaviors in HOPE Village

According to the 2010-2014 American Community Survey nearly 25% of HOPE Village residents carpool to work with at least one other person.[lxxxi] However, this network appears to lack any formal structure; focus group participants identified ridesharing was done mostly for friends and by word of mouth. It is possible these informal carpooling structures could be transformed into a formal system which all residents have the ability to use. This solution could include a transactional system to incentivize its use.

10.4 Coordinate Existing Needs-based Transportation Providers

As identified in section 8.4, hundreds of need-based transportation services exist in Southeast Michigan. However, the mental burden placed on those requiring these services is difficult to overcome. Furthermore, many of these services are have difficulty achieving financial sustainability and either go out of business or offer a limited service. A shared-use mobility solution could involve coordinating the various needs-based transportation providers to achieve financial sustainability, provide efficient and timely rides for users, and allow users to easily filter and determine for which services they are eligible and which services are still in operation. This potential solution also has the benefit of mitigating security concerns identified in focus groups as the transportation providers are official companies in easily identifiable vehicles operated by company employees.

10.5 Ridesharing Service Models

It is important any ridesharing service overcome the most significant barriers identified in the focus groups. To overcome security concerns, the vehicles should have easily identifiable features such as fixed colors, signs, or other branding. Further, it is likely any service must have a connection to the community, employee background checks, and a social component to identify passengers to overcome the security concerns as well as social preferences identified in the focus groups.

10.5.1 The Bridj, LyftLine, and uberPOOL Dynamic Ridesharing Shuttle Model

Multiple focus group participants identified a community based shuttle as a possible ridesharing solution. This suggestion is similar to current services operated by Bridj, Lyft Line, and uberPOOL. Such a

service could be piloted in HOPE Village and other Detroit communities. The approach of such a pilot would be unique from other pilots in the sense that is would be designed and implemented with residents of neighborhoods like HOPE Village. With the ongoing paradigm shift in transportation towards mobility and the presence of the 'Big Three' motor companies in Southeast Michigan, this partnership could be possible with Ford, GM or Chrysler. Regarding Ford Motor Company, the Go Detroit Challenge[lxxxii] presented by Ford Smart Mobility presents a current opportunity for partnership.

A barrier associated with this potential solution is the lack of trust expressed by the community toward big companies and top-down approaches. If this service became favorable among HOPE Village residents, we would need to ensure that they had an equal role in co-creation of the project. This solution is intriguing because it addresses the trust and safety issues associated with smaller-scale ridesharing from the perspective that this system operates similar to a fixed bus route. Many people described current bus systems and needs-based transportation shuttles as safe, but highlighted frequency and unfavorable bus stop location as barriers. This solution is more dynamic in that a shuttle could stop closer to where users want to get on the bus and would increase transportation opportunities that stem from these current gaps in public transportation infrastructure.

10.5.2 The Uber, Lyft, and Juno Ridesharing Model

The ridesharing model is described in detail in sections 4 and 5. In addition to Uber and Lyft, the New York City startup Juno builds on the ridesharing model by hiring drivers as full time employees and running background checks on their drivers to mitigate security concerns.[lxxxiii] This distinction also creates more equity in the driver-business relationship. It is possible any proposed solution involving this model would have to take further steps than those of Juno to overcome the safety aspects identified in the focus groups. To further differentiate itself from competitors, a ridesharing service could use a fleet of zero-carbon emitting vehicles while outsourcing fleet ownership and maintenance to a separate company which charges a fee.

10.6 Carsharing Service Models

The carsharing model is described in detail in sections 4 and 5. As identified by residents in the focus groups, a carsharing service should have an educational component aimed at assisting those who wish to use the service to acquire driver's licenses and demonstrating how to use the service. As with the ridesharing service, to further differentiate itself from competitors, the carsharing service could use a fleet of zero-carbon emitting vehicles. Barriers to a carsharing service include vehicle ownership preferences and physical accessibility. More research is needed to identify whether and how carsharing would be a viable service model.

10.6.1 The California and New York Community-Based Carsharing Model

The cities of Los Angeles, California and Buffalo, New York have implemented community-based carsharing services designed to offer low-cost, low-barrier access to low-resourced communities. It is possible a solution could mimic the characteristics of these programs to find success.

10.6.2 The Getaround and Turo Peer-to-peer Carsharing Model

Companies including Getaround and Turo are beginning to provide the legal framework for car owners to rent their private cars.[lxxxiv] Both of these companies require background checks on renters and have large insurance policies while providing renters and owners a 24/7 emergency support line. This structure is challenging the current market of carsharing by having community members maintain private vehicle ownership while earning income on the asset while it is unused.

10.7 Support Existing Mobility Initiatives in the City of Detroit
Below is a short list of ways Focus: HOPE, HOPE Village residents, and other communities in Detroit could be involved in mobility work in the City of Detroit. Although we recognize it is likely some may be aware of these initiatives, the list is included below to ensure the initiatives are known.

10.7.1 Support Reforms for Detroit's Sidewalk Maintenance and Repair Ordinance
Article 7, Chapter 4, Sec. 7-402 of the Detroit Charter and City Government places the cost burden of sidewalk repair on the property owner. HOPE Village and Focus: HOPE could contact representatives about revising this law to fund sidewalk repair as other cities.[lxxxv]

10.7.2 The City of Detroit's Office of Mobility Innovation
The City of Detroit recently hired a Director for the new Office of Mobility Innovation. HOPE Village could contact the office to support and advocate for the type of future work to be undertaken by the office.[lxxxvi]

10.7.3 Detroit Bike Share
The Detroit Bike share launching in Spring 2017 could provide mobility solutions for those looking to take short trips (approximately 1.8 miles). The program is seeking neighborhood ambassadors from communities. Focus: HOPE could assist the bike share in identifying an appropriate ambassador.[lxxxvii]

10.7.4 Detroit Greenways Coalition
HOPE Village can support and advocate for work being done by Detroit Greenways Coalition, such as the Inner Circle Greenway, which advocates for greenways throughout the City of Detroit.[lxxxviii]

10.7.5 Complete Streets Coalition
HOPE Village can support and advocate for work being done by Detroit's Complete Streets Coalition which advocates making streets healthy and equitable for all Detroiters.[lxxxix]

10.7.6 Continue Partnership with Detroit Future City
HOPE Village should continue its partnership with the Detroit Future City implementation office and discuss future operations regarding shared-use mobility services.[xc]

10.8 Support Mobility Initiatives at the Regional, State, and Federal Level
Although momentum exists at the regional, state, and federal level, this report focused on solutions specific to HOPE Village in the City of Detroit. Many of the opportunities presented at the regional, state, and federal level are meant for the City of Detroit government rather than individual communities in Detroit. However, we've outlined potential opportunities for Focus: HOPE, HOPE Village, and other communities in Detroit to pursue if willing.

10.8.1 Regional
SEMCOG Transportation Alternative Programs (TAP)
In addition to supporting SEMCOG transportation programs, HOPE Village in partnership with an appropriate Michigan or Detroit government act-51 eligible agency could apply to SEMCOG's Transportation Alternative Programs. There is an info-session on January 13, 2017 and applications are due January 30, 2017 at 5pm.[xci] More information can be found at: http://semcog.org/Plans-for-the-Region/Transportation/Transportation-Alternatives-Program-TAP

In addition to TAP, HOPE Village could identify those responsible for coordinating projects under TIP and explore the potential for a TIP project in HOPE Village.[xcii] More information can be found at: http://semcog.org/Plans-for-the-Region/Transportation/Transportation-Improvement-Program-TIP

Regional Transit Authority (RTA)

As a result of the November 8, 2016 vote, it is unclear how the RTA will proceed in accomplishing their mission in providing regional transit. We recommend monitoring and supporting RTA initiatives as their plans develop in the coming months.[xciii] More information can be found at: http://www.rtamichigan.org/

10.8.2 State

At the state level, Focus: HOPE, HOPE Village, and other Detroit communities could apply for or partner with an appropriate government agency for the following grant opportunities:

- Safe Routes to School: http://saferoutesmichigan.org/
- Small Urban Program: http://www.michigan.gov/mdot/0,1607,7-151-9621_17216_40829---,00.html
- State Infrastructure Bank: http://www.michigan.gov/mdot/0,4616,7-151-9621_17216_70284---,00.html
- Transportation Economic Development Fund: http://www.michigan.gov/mdot/0,1607,7-151-9621_17216_18230---,00.html

10.8.3 Federal

Although opportunities exist at the Federal level, it is unclear at this point in time how the results of the November 8, 2016 presidential election will affect available grants made available under the Obama Administration. Additionally, many of the grants available through the Federal DOT are targeted at city and state governments rather than communities. It would be possible to support existing government's initiatives to acquire grant funding and highlight HOPE Village and the City of Detroit as a community in which projects could take place. More information can be found at:

- https://www.transportation.gov/resources/government
- https://www.transportation.gov/grants

11 Next Steps for Future Work

In the coming months, members of the Dow Sustainability Fellowship team will work with Focus: HOPE, HOPE Village residents, and other communities in Detroit to co-create shared-use mobility solutions using a human centered design approach in which residents and community leaders co-create mobility solutions with us. Future ideas will build on the concepts identified throughout this report, particularly, sections 4, 5, 8, and 10.

The team will be working within the University of Michigan School of Public Health's Innovation in Action[xciv] program to continue this work through March 2017 and is seeking other opportunities to continue work post-graduation in April 2017, such as Ford Motor Company's Go Detroit Challenge by Ford Smart Mobility.[xcv]

To continue this work, our team recommends taking the next steps below, some simultaneously, to create the equitable mobility services that all Detroit residents deserve.

Next Steps
- Discuss our work with Detroit neighborhoods, communities, and mobility organizations
- Identify funding opportunities to continue our work on equitable mobility innovation
- Identify which trips from neighborhoods have the most demand and the least access
- Design and pilot a shared-use mobility service in partnership with Detroit communities

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Appendix A – Focus Group Materials

Assessing Barriers to Carsharing and Ridesharing in HOPE Village:
APPENDIX A
Recruitment List for Focus Group Participants

_____

#	Gender	Recruitment Date and Location	Date signed up for:	Attended?	HOPE Village Resident?	Agree to Participate	Owns Smartphone?	Owns credit card?	Access to car?	Travel outside	Age
1	Female	7/28/2016 Town Hall	9/13/2016	Yes	No	Yes	No	Yes	Yes	Yes	45
2	Female	7/28/2016 Town Hall	9/13/2016	Yes	Yes	Yes	Yes	No	Yes	Yes	55
3	Male	7/28/2016 Town Hall	9/22/2016	Yes	Yes	Yes	No	No	No	Yes	62
4	Female	7/28/2016 Town Hall	9/13/2016	Yes							
5	Female	7/28/2016 Town Hall	9/22/2016	Yes							
6	Female	7/28/2016 Town Hall			Yes	Yes	No	Yes	Yes	Yes	82
7	Female	7/28/2016 Town Hall									
8	Male	7/28/2016 Town Hall	9/20/2016	Yes	Yes	Yes	No	No	Yes	Yes	60s
9	Female	7/28/2016 Town Hall			No						
10	Female	7/28/2016 Town Hall	9/13/2016	Yes	Yes	Yes	Yes	No	Yes	Yes	73
11	Male	7/28/2016 Town Hall	9/22/2016	Yes	No	Yes	Yes	No	No	Yes	41
12	Female	8/24/2016 Library									
13	Female	8/24/2016 Library									
14	Male	8/24/2016 Library									
15	Male	8/24/2016 Library	9/13/2016	No	Yes	Yes	Yes	No	Yes	Yes	35
16	Female	8/24/2016 Library	9/13/2016	Yes	Yes	Yes	Yes	No	Yes	Yes	40
17	Female	8/24/2016 Library	9/22/2016	No	Yes	Yes	Yes	Yes	Yes	Yes	25
18	Female	8/24/2016 Library	9/20/2016	No	Yes	Yes	No	No	No	Yes	20
19	Male	8/24/2016 Library									
20	Female	8/24/2016 Library	9/22/2016	Yes	No	yes	Yes	Yes	Yes	Yes	37
21	Male	8/24/2016 Library									
22	Male	8/24/2016 Library									
23	Female	8/24/2016 Library	9/20/2016	No	No	yes	Yes	No	Yes	Yes	30
24	Female	8/24/2016 Library									
25	Male	Saw flyer + Library	9/26/2016				Yes	Yes	Yes		

#	Gender	Recruitment Date and Location	Date signed up for:	Attended?	HOPE Village Resident?	Agree to Participate	Owns Smartphone?	Owns credit card?	Access to car?	Travel outside	Age
26	Female	8/27/2016 Back to school Bash									
27	Female	8/27/2016 Back to school Bash									
28	Female	8/27/2016 Back to school Bash	9/26/2016		Yes	Yes	No	No	No	Yes	68
29	Female	8/27/2016 Back to school Bash	9/26/2016				Yes	No	Yes	Yes	48
30	Female	8/27/2016 Back to school Bash				No					
31	Female	8/27/2016 Back to school Bash	9/26/2016								
32	Male	8/27/2016 Back to school Bash									
33	Male	8/27/2016 Back to school Bash				No					
34	Male	8/27/2016 Back to school Bash									
35	Female	8/27/2016 Back to school Bash									
36	Male	8/27/2016 Back to school Bash									
37	Female	8/27/2016 Back to school Bash									
38	Male	8/27/2016 Back to school Bash									
39	Female	8/27/2016 Back to school Bash			No	Yes	Yes	No	Yes	Yes	30
40	Female	8/27/2016 Back to school Bash									
41	Male	8/27/2016 Back to school Bash	9/20/2016	No	Yes	Yes	Yes	Yes	No	Yes	36
42	Male	8/27/2016 Back to school Bash									
43	Female	8/27/2016 Back to school Bash	9/26/2016		Yes	Yes					
44	Male	8/27/2016 Back to school Bash	9/26/2016		Yes	yes	Yes	No	Yes	Yes	62
45	Female	8/27/2016 Back to school Bash	9/22/2016	No	Previously						
46	Male	8/27/2016 Back to school Bash			Yes						
47	Female	8/27/2016 Back to school Bash	9/13/2016	No	Yes	Yes	Yes	No	Yes	Yes	31
48	Male	8/27/2016 Back to school Bash	9/26/2016		Unsure		Yes	Yes	Yes	Yes	30
49	Male	8/27/2016 Back to school Bash	9/26/2016		Yes						
50	Female	8/27/2016 Back to school Bash									
51	Female	8/27/2016 Back to school Bash	9/26/2016		Yes	Yes	Yes	No	No	Yes	30
52	Female	8/27/2016 Back to school Bash									
53	Male	8/27/2016 Back to school Bash	9/26/2016			Yes					
54	Female	8/29/2016 Back to school Bash									
55	Female	8/29/2016 Back to school Bash									
56	Female	8/29/2016 Back to school Bash	9/22/2016	Yes	Yes	Yes	Yes	Yes	Yes	Yes	48
57	Female	8/29/2016 Back to school Bash									
58	Male	8/29/2016 Back to school Bash	9/26/2016		Yes	Yes	Yes	Yes	Yes	Yes	

Assessing Barriers to Carsharing and Ridesharing in HOPE Village: Focus Group Guide

_____

General Objective

- To evaluate general perceptions, opportunities and barriers to innovative transportation alternatives such as carsharing and ridesharing in HOPE Village.

INTRODUCTION / PRESENTATION (5 minutes)

M: Good evening. Thank you for coming tonight. My name is _____, and I am part of a team of graduate students at the University of Michigan who are researching transportation options in the Detroit area. Today I am accompanied by _____ who will be taking notes. We have invited you here today to discuss transportation options in Hope Village and Detroit. Your personal information will be kept anonymous and undisclosed to anybody but the team members. Please, feel free to give your honest opinion at any time. There is no right or wrong opinion; all your comments are extremely important and valuable to us.

We would also like record the audio from this discussion. The recording will remain private and will only be used by the team members.

Section 1: INTRODUCTIONS AND WARM-UP
(Maximum estimated time: 5 minutes)

OBJECTIVE: Warm-up and presentation of participants.

VERY QUICKLY

To begin with, I would like to know a little bit about you. Can everyone now go around and share a bit about themselves...for example…

- What are your names? How old are you?
- What do you do for a living?
- Who do you live with at home?
- How long have you been living for in HOPE Village?
- What do you like to do in your spare time?

Before starting, establish some ground rules: Emphasize that it is a discussion. No interrupting, please listen to what others are saying. If you disagree, that's OK, but please do so respectfully. Please stay on topic

<u>Section 2:</u> **GENERAL DISCUSSION ABOUT TRANSPORTATION**
(Maximum estimated time: 12-15 minutes)

OBJECTIVE: To discuss the importance of transportation in the lives of people and some of the general problems faced by HOPE Village residents in the field of transportation.

Now I will be asking questions to the group. Please tell me…

- When we talk about transportation in and out of Hope Village (or commuting/mobility) what is the first thing that comes to your mind? (If not spontaneous, reiterate: *It can be an emotion - how do you feel about transportation? Does it work? Is it terrible?* Make sure the moderator writes everything down for everyone to see). Anything else?
- How do you get around? (If not spontaneous, ask what they use, how long they take to travel, what the transportation system is like, who they travel with, how this changes from day to day).
- What transportation options are working well in HOPE Village?
- What transportation options are not working well?
- Cost: What kind of fares do they buy? What alternatives do they have? How important is price in choosing one alternative over another one?

<u>Section 3:</u> **IMPROVEMENTS TO CURRENT TRANSPORTATION**
(Maximum estimated time: 5 minutes)

OBJECTIVE: To hear what transportation options participants view as optimal before we discuss carsharing and ridesharing

Now tell me…

- What would the ideal way to travel be like for you? (Write ideas in a flipchart)
- (Moderator makes a list of solutions to improve transportation – now people rank or vote each alternative)

<u>Section 4:</u> **EVALUATION OF RIDESHARING AFTER INFORMATIONAL VIDEO**
(Maximum estimated time: 20 minutes)

OBJECTIVE: To evaluate perceptions, opportunities and barriers about ridesharing.

M: Now I am going to show you a short video about ridesharing. Ridesharing is a transportation alternative that is popular in many cities. After this video, I will ask you some questions about this transportation alternative. [*After video, briefly explain that one aspect the video does not touch on is sharing a trip with multiple passengers*]

VIDEO PROJECTION

Now tell me…

- What are your first impressions? (**USE FLIPCHART)**
- What did you like most about this idea? And what do you like the least? (If not spontaneous, try to see if they find it practical, economical, safe, innovative).
- Do you think ridesharing would work in HOPE Village?
- What type of trips would you use it for? How long do you think the rides would take? How much would you be willing to pay for these rides?
- Would you try it? Why? Why not? **(NAME SOME BARRIERS IF PEOPLE DO NOT COME UP WITH THEIR OWN, AND DISCUSS EACH: COST, SECURITY, CULTURAL BARRIERS, LACK OF ACCESS TO TECHNOLOGY, LACK OF ACCESS TO CREDIT CARDS. THEN RANK THE BARRIERS).**
- Do you think that ridesharing could contribute to solving HOPE Village's transportation problems?

Section 5: EVALUATION OF CARSHARING AFTER INFORMATIONAL VIDEO
(Maximum estimated time: 20 minutes)

OBJECTIVE: To evaluate perceptions, opportunities and barriers towards carsharing.

M: Now I am going to show you a short video about carsharing, another relatively new transportation alternative. After this video, I will ask you some questions.

VIDEO PROJECTION

Now tell me…

- What are your first impressions? (**THE OBJECTIVE IS TO SEE IF PEOPLE ARE REALLY ENTHUSED.**)
- What did you like most about this idea? least? (If not spontaneous, try to see if they find it practical, economical, safe, innovative).
- Do you think car-sharing would work in HOPE Village? Who do you think it could work for? Why?
- From where to where would you use it? (How long do you think the rides would take? How much would you be willing to pay for these rides?)
- Would you try it? **(NAME SOME BARRIERS IF PEOPLE DO NOT COME UP WITH THEIR OWN, AND DISCUSS EACH: COST, SECURITY, CULTURAL BARRIERS, LACK OF ACCESS TO TECHNOLOGY, LACK OF ACCESS TO CREDIT CARDS. THEN RANK THE BARRIERS).**

- Do you know that X years ago, ZIPcar placed a rental car in HOPE Village? **(ASK IF PEOPLE KNEW OF THE ZIPCAR'S EXISTENCE, WHY THEY USED IT OR NOT AND WHY THEY THINK IT FAILED).**
- If a company or government program were to place another car in HOPE Village, what could make it work?
- Do you think that carsharing could contribute to solving HOPE Village's transportation problems?

Thank you for participating in our focus group. We hope this process was informational and thought provoking. We are also interested in one on one interviewing where we can dive a bit deeper into your personal stories on transportation needs. If you are interested, please come up and see us as we would greatly appreciate your input further.

Thank you and talk soon!

Assessing Barriers to Carsharing and Ridesharing in HOPE Village: Focus Groups Report

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Introduction

This report summarizes the findings of three focus groups on alternative transportation options conducted in Hope Village in September 2016. Each focus group was limited to five or six participants, who included male and female residents of Hope Village aged 30 to 73. The discussions were divided into three main sections: 1) an overview of Hope Village's Current Transportation Landscape, 2) a discussion about ridesharing, and 3) a discussion about carsharing. This report only presents the main themes that emerged in the discussion of each of these topics. Analysis, conclusions and recommendations from these findings will be included in the final Project Report. In addition, the Final Project report will include additional details about the research methodology and recruitment of participants in the focus groups.

Research Design

Objectives of the study

The following were the main objectives of the focus groups:

- To evaluate resident's general perceptions, opportunities and barriers to carsharing and ridesharing in and out of HOPE Village.
- To identify resident's perceptions about the existing transportation landscape in Hope Village and the City of Detroit and about current transportation options such as public transport, taxis, private vehicle ownership, etc.
- To identify resident's aspirations around transportation, particularly what people regard as the ideal or optimal transportation scenario for their needs.
- To evaluate resident's perceptions, opportunities and barriers about ridesharing, and estimate the perceived relevance of this alternative for their trips in and out of Hope Village.
- To evaluate resident's perceptions, opportunities and barriers about carsharing, and estimate the perceived relevance of this alternative for their trips in and out of Hope Village.
- To compare resident's perceptions and emotional responses to ridesharing and carsharing, identify main points of divergence and any hidden or indirect relevant barriers to each.

Type of study: exploratory qualitative study through group discussions.

Universe: The adult population (18 years of age or older) of Hope Village.

Sample: Three group discussions with five to six participants, distributed as follows:

No.	Date	Gender	Age	Number of participants	Characteristics
1	09/13/16	Women	40-73	5	Adult residents of Hope Village
2	09/22/16	Men and women	30 to 72	6	Adult residents of Hope Village
3	09/26/16	Men and women	30 to 67	6	Adult residents of Hope Village

Hope Village's Current Transportation Landscape

All three focus groups began with a general discussion about the present transportation landscape in Hope Village, people's thoughts about the transportation options currently available, and their views about transportation more generally. Perceptions about the most mentioned transportation options are summarized below:

Private vehicles: While people feel that private vehicle ownership is generally accessible and affordable in Detroit (with down payments being as low as $45), there is also the acknowledgement that some people simply cannot afford this option and that it might be inaccessible to some for other reasons (such as lack of a driving license to drive or credit score to secure a loan to purchase a vehicle). Moreover, there are several barriers that affect even those that do own private vehicles such as parking costs, insurance costs, and security concerns such as auto theft. In the words of one participant, whose main mode of transportation was her own car:

 "the only thing about owning a vehicle in the city of Detroit is [that] the cost of auto insurance is exorbitant. (...) And if you have to park a car in a parking structure in midtown or downtown, the cost is extremely high. So normally I take the bus to go into the city."

As such, even the people who do own vehicles see them as an individual alternative within a wider transportation system. In general, participants that owned vehicles recognized that they would consider using other transportation alternatives if they were available in order to save money on gas or maintenance costs.

Public transportation: Perceptions about public transportation are mixed. One group consistently labelled public transportation as inefficient and unreliable, while another had positive perceptions about accessibility, reliability, and coverage. For the "negative" group, public transportation in Hope Village, and Detroit more generally, lack adequate coverage and accessibility to their destinations. A common theme throughout the discussion was how this inefficiency and unreliability affects people's daily lives, from causing some people to lose their jobs for arriving late on a consistent basis, to getting stuck in places because they cannot get back home. The lack of infrastructure or its low quality (e.g. no shelters or benches to wait for buses) is also regarded as a problem. Finally, security is is an important concern, especially at night. One participant stated:

"*I am concerned about when my daughter has to catch the bus. She catches it on Dexter and Fenkell, but she has to pass through abandoned buildings that are open. Girls, boys, anyone walking through those abandoned buildings is a concern when you are catching the bus* ".

However, even this group acknowledges positive aspects of public transportation, especially its affordability. For example, one participant said: "*the city bus is affordable, but the service is poor*". In addition, the Dexter Bus is an exception: it is perceived as the only working bus line in the city of Detroit, even by those who have a negative perception of public transportation more generally.

The "positive" group not only views public transportation as affordable, but perceives it as reliable and as having adequate coverage. Referring to the bus schedule and punctuality, one participant claimed that "*90% of the time the bus is accurate*". Participants value the technological applications, such as a phone application and a text alert service, and recognize that these have contributed to making the service more convenient and user-friendly. One participant summarized the views of this group nicely. While acknowledging problems like security, she claimed that "*the bus service has improved and is continuing to improve. It's political, but it's happening. Some things are getting better*".

It is important to note that the discussions of public transportation across all three groups were limited to the bus system. People did not bring up the lack of a public transit system, commuter rail or a subway system in Detroit. As such, the perceptions summarized above should be interpreted as referring to the bus system only.

Paratransit: Paratransit options like "Dial-a-ride" are either unknown or are perceived negatively (as being user unfriendly or having a system that is simply impossible to navigate). Some participants were not even aware that "Dial-a-ride" still existed, and those who had tried to use it had negative experiences, like the following: "*I haven't seen a lot of people [using this service] because I think they have a hard time trying to get them. When I first got sick and I needed transportation (...), I couldn't even get the number, and when I got the number, it just flipped to something else*".

Other private systems: Other private transportations options were frequently brought up as viable alternatives. Most of these include private shuttle services operated by senior living facilities or companies like Walmart. In general, focus group participant's perception of these services is positive but acknowledges thelimited scope of such services, which are restricted to specific apartment complexes or for certain sectors of the population (such as the elderly living in retirement homes).

Bicycles: The general perception is that their use is increasing, but infrastructure is still inadequate. The increase of bike ridership is attributed to personal preference and the rising cost of other transportation alternatives. Specific concerns regarding bicycles are the lack of bike lanes and the conditions of roads.

Taxis: Taxis did not figure prominently in the discussion. The perception is that they are costly and simply inaccessible in some areas of Hope Village, where taxi companies won't even venture into. "*If you're talking about taxis, some of the areas they don't even come into after a certain time. Definitely not down the street [from here] to Hamilton. You have to walk up on Woodward, and try your luck!*"

Ridesharing

For this section of the discussion, participants were shown a short two-minute video about ridesharing and then prompted to give their initial reactions. The moderator then asked what they perceived to be the positive and negative aspects about this transportation option.

<u>*Initial impressions*</u>

Across all three focus groups, it was clear that participants had pre-existing notions about ridesharing that influenced their responses to the video and to our questions. That is to say, most participants were already familiar with the concept of ridesharing and with existing ridesharing companies such as Uber and Lyft, and many had used their services before. It is important to note, however, that these participants had not used Uber or other companies for *ridesharing* in its truest definition (sharing a ride with more than one passenger), but simply for rides in which they were the only passenger. A few participants, especially older ones, were unfamiliar with the concept and with specific ridesharing companies.

Initial reactions, however, were negative across the board. One participant simply said "*I don't like it!*" Another one brought up the issues about regulation and background screening that have affected ridesharing companies:

"*I would want to see their basis for hiring. Like I said, that was my main concern, because the first thing I thought about was Uber: background checks, hiring, and all that stuff (...) They are not government regulated, and they might let some stuff slip through the cracks.*"

Other participants reacted by bringing up the security and criminal issues surrounding Uber, such as the Kalamazoo shooting earlier in 2016: "*what happened in Kalamazoo, Michigan, should have never happened!*" Security was also an immediate concern regarding the concept of sharing rides. One participant said:"*You don't know who you get in the car with, you don't know who you're picking up.*" Another participant even provided a more personal story regarding the use of Uber, saying:

"*My daughter used to take Uber and I thought it was great until the Uber driver had a car accident. My daughter wasn't in there, but it can happen to any regular car. He looked shady, anybody can be an Uber driver, and that causes me to raise my eyebrows*".

A few participants had initial reactions that were not entirely negative. One, for example, mentioned that it might be a good transportation option for senior citizens and people without a car or a driver's license, and also noted the positive environmental effects that ridesharing could bring:

"*The advantage of that is particularly [for] senior citizens who don't drive, who don't have a family. [It] would be wonderful for people who needed rides: you could be sure that they had rides to the doctor's office, you could be sure they had a ride back, [also] just to run the errands, and it's affordable. It would be great for people who don't own cars. And it would save in terms of pollution and carbon monoxide in the air. So it's a very good concept, but let's face it, we all live in the city and we have trust issues.*"

Even for these participants the positive aspects were overridden by the security concerns.

<u>*Positive Aspects of Ridesharing*</u>

On the most part, little discussion time was devoted to the positive aspects of ridesharing. Even when the question was posed directly, participants nevertheless returned to the negative

elements, almost as if saying that these were so large that the positive ones were not worth discussing. However, a few people did voice their appreciation for specific aspects of ridesharing. One participant, for example, praised its cost and punctuality of one of the ridesharing companies:"*I like [Uber] better than the taxis as far as cost and time. They are more prompt than a lot of the cabs are now.*" Another participant liked that that the user could have information about the driver and the location of the vehicle in real-time: "*I think it's awesome that the passenger has the same information that the dispatcher has*". Finally, one participant related how she started using Uber, referring to some of the same advantages mentioned above:

"*I started using Uber when last year they did a free pickup for GoodWill. It didn't matter how many trips. They came to my place three times in one day. That was good marketing to me. And then I started to use them gradually and to reduce the number of times I would call a cab. And really saw the difference in how Uber is more prompt*".

However, all of the arguments and ideas that were offered in affirmation of ridesharing —low cost, punctuality and tracking— do not relate to the concept of sharing itself. Rather, these are benefits that derive from the technological elements used by car-hailing companies, and which apply both for individual and shared rides. Positive elements inherent to the concept of sharing itself, such as the reduction in cost by sharing the fare, or the reduced environmental impact, were mostly absent from the discussion.

Negative Aspects of Ridesharing

The discussion about the negative aspects of ridesharing revolved around two main issues: personal security and credit card security.

The issue of personal security —the concern of getting into a car with an unknown person— dominated this part of the discussion across all three focus groups. One participant put it thus: "*I'm not too comfortable getting into a car with strangers. I feel that my chances are better with one person.*" Asked by another participant whether her opinion would change if the driver were from her area, she replied:

"*If [the driver were from my neighborhood] I would still not want to do it. Circumstances and history play into that, so no. Even if the driver said he was picking up someone and I had seen him around the neighborhood, no. I would have to give that some really serious thought. I am not too comfortable doing that. But I have become relatively comfortable calling Uber for myself. For one thing, you get a picture of the person, you get a license plate of the person and a rating*".

Similar views were voiced in all discussions, although some participants responded to this concern by saying that users would be more comfortable if they personally knew their drivers. This led some participants to propose community-based ridesharing systems, which we discuss later in the report.

The issue of credit card security was mentioned by several participants, although it came up in only two of the three focus groups. Since ridesharing companies require setting up an account that is linked with a credit card, participants were concerned about their personal and credit card information being compromised. Referring to this potential problem, one participant said: "*That could be a safety issue too: fraud, people's identity being stolen. For me, that's a safety issue. I'm concerned about both!*" In other cases, the concern seemed to be about credit cards more

generally, and the risk of having the information stolen from the card or the phone in the car itself: "*Once you go into the app it don't matter. You know those little panels, magnetic things? They copy everything on your phone, it doesn't even need to touch it or anything. It takes 30 seconds.*"

Finally, a wide range of other concerns were raised in the discussions. When asked to give the main barriers to ridesharing besides security, one participant responded that "*cultural and accessibility would be behind safety*". By "cultural" issues, participants seemed to refer to two separate barriers. First, some people might not be accustomed to using phone applications or technology for transportation services, although this idea was undermined by the fact that many participants had used Uber before or were regular uses. Second, the concept of sharing a service with other people might be strange, alien or unfamiliar to some. For example, one participant pointed that the concept of sharing a ride with strangers might be more appealing, or could even be seen as "normal", by young people:

"*Urbanites, young people, who live in super urban areas, that wouldn't even face them. If I were to say to my daughters 'Oh, I wouldn't do that', [they would say] 'mom, you are so negative!'. They don't think of that kind of stuff! They wouldn't think it's strange if the Uber driver said 'Oh, can we get two other people, because they are going to the same restaurant you are?'*"

The accessibility barrier was not developed in more detail, but seemed to refer to the fact that people without phones or internet access would be unable to access the service. Finally, other negative aspects included the fact that with real-time ridesharing you cannot schedule rides in advance, and that Uber vehicles are not adequately signalled, which makes them difficult to identify, thus feeding into the security concerns.

Ridesharing's Applicability to Hope Village

At the end of this section of the discussion, we asked people if they thought ridesharing could work as a feasible transportation alternative in Hope Village. The reactions were mostly negative. One participant said: "*You know what? I don't really see that working. I just don't see people being comfortable with that. This is a high crime area. I wouldn't do it unless it were an extreme emergency.*" In the face of these negative prospects, many participants proposed ways in which ridesharing could be modified or adapted to better fit a community like Hope Village. Most of these changes revolved around making ridesharing a community-based system, in which drivers and passengers could know each other. For example, one participant mentioned that "*if it were community based, then people might feel more comfortable. A community system might also be more accessible for people without credit cards*". Another participant proposed a similar idea: "*Maybe they could register under the Hope Village Initiative neighborhood. Say you have four drivers who live in the area. [You could] call one of these four drivers, and they might feel more comfortable*". Responding to these ideas, a participant mentioned a ridesharing program that existed in the neighborhood where she grew up. This system, call Dollar Ride, was a low-cost alternative that took people to designated locations like grocery stores and malls. "*It was a nice bus, a shuttle bus that could fit 16 passengers. It would get people out of the house, they felt safe and it was really nice. The people who lived in the community used it.*" The reactions to this idea were very positive, even though this system would be subject to the same security concerns as ridesharing.

Carsharing

As in the ridesharing section, participants were shown a short two-minute video about carsharing and then prompted to give their initial reactions. The conversation then shifted to the positive and negative aspects of this transportation option, and finalized with a discussion on the applicability of carsharing to Hope Village.

Initial Impressions

As opposed to the concept of ridesharing, with which most participants across the focus groups seemed to be familiar, it was clear that many participants had not heard of the idea of carsharing before the video screening. Initial reactions were positive, and focused on the autonomy and independence carsharing offers. One participant stated: "*I think that's good. I think that's great. It saves time, wear and tear on your own car.*" Another participant's first reaction was to contrast it to ridesharing, emphasizing that carsharing does away with the risk of sharing a car with strangers: "*I'd be more willing to do carsharing before I do the ridesharing. I do not want that stranger getting into the car.*" Across the board, however, participants were concerned with practical issues related to the logistics and implementation of a carsharing system. Participants asked questions about the creation of online accounts, how to obtain the keys to access the vehicles, rental and insurance rates, and other logistical issues. For example, one participant said: *"I like it. The only thing I'm concerned about is… How would they provide you with insurance?"* Since the introductory video did not include this level of detail, the moderators devoted some time to explaining the inner workings of carsharing systems.

Positive Aspects of Carsharing

Overall, participants seemed attracted to carsharing and open to using services such as ZipCar, with minor suggestions and cautions. The main positive factors of carsharing that came out during the discussions were the safety, autonomy, affordability, freedom from a personal vehicle, and reduced carbon footprint. Participants were excited that carsharing services, such as Zipcar, charge by the hour, which some viewed as providing greater flexibility than traditional car rental companies. One participant highlighted this greater independence and flexibility:

"Zipcar [is better] if there is something longer you need to do. For example, I have a grandson and I want to take him to the park sometimes. Come on, we're going! [Zipcar gives you] that freedom and independence."

The generally positive response to carsharing was captured by one participant, who stated: "*It is an awesome option. I'm ready to call them tomorrow*!"

Negative Aspects of Carsharing

Despite the overall approval of a carsharing concept in HOPE Village, there were some concerns from the participants. The main concerning factors that were revealed included: worry for the lack of adequate information needed within neighborhood, location(s) of the vehicles and possible difficulty accessing these, and the concept's isolating toward people who cannot drive, don't have a credit card, internet access, or who are impaired (disabled) in some way. The accessibility of vehicles was one of the principle concerns that was voiced. One participant explained that she would use ZipCar for shopping, "*but it's not accessible in this neighborhood. If it were accessible, I could just go up the street and hop in, go to the mall and do my shopping*

and not bother anybody, but it's not accessible". Other participants expressed skepticism of the ease with which they would be able to access the vehicles, being concerned about the possibility of them being in far away locations. One participant offered the solution of a community van enabling users to be dropped off. If the vehicles remain at a far away location, the difficulty to reaching them would inevitably deter the participants and continue to isolate them from engaging with carsharing services.

A second important barrier was lack of access to technology and some of the other services required to having a carsharing account, such as internet and a credit card. Participants brought up the fact that not everybody in the HOPE Village can be assumed to own a credit card, a smartphone, or have internet access. With technology as both the way to get the ride, find the ride, and pay for the ride, without it would be very difficult. With internet access however, one could still log on to their account on a computer and purchase their ride that way. A separate, but significant, factor to this concept working would be to have a valid driver's license. Several participants voiced this concern and suggested that a carsharing program could include strategies to facilitate driver's licenses.

Carsharing's Applicability to Hope Village

The discussion about carsharing was ended by asking participants if they thought it could work as a feasible transportation alternative in Hope Village and whether it could potentially contribute to alleviate some of the transportation problems in the neighborhood. Of particular relevance to this part of the discussion was the fact that a ZipCar used to be stationed in Hope Village a few years ago. The program, however, was unsuccessful and eventually abandoned the area.

In general, participants did consider that carsharing could play a role in improving transportation in Hope Village. One participant said: "*Absolutely, it would be a great help. It wouldn't be bad. It would definitely be an upgrade, an asset*." Participants thought it would be a useful alternative for a wide range of people. Responding to the question of who the potential users of a carsharing vehicle could be, one participant said: "*Parents, people who work. I would. People who are running late. The average people would use it. If you hire someone that people trust, or can build some kind of trust in the community, it would work*." One participant added that it would be particularly helpful for people who do not have access to a private vehicle or other transportation alternatives.

These positive reactions and expectations about the potential benefits of carsharing, however, seemed to be contradicted by the past failure of ZipCar in Hope Village. One participant referred to it in these terms: "*There used to be a ZipCar here but nobody used it, it would just be sitting there*." However, it became quickly apparent that the problem with the ZipCar in Hope Village was lack of information. Even participants who were aware of the existence of the ZipCar and had seen the vehicle did not know what it was for and did not know how the program worked. In the words of one participant, the problem was poor advertising: "*There used to be a ZipCar in Hope Village. But people didn't know it was here. It was poorly advertised. A lot of people would see it and ask about it, but nobody knew what it was*". Another participant expressed a similar viewpoint: "*You told me today more about the ZipCar than I've known about a Zipcar, and I have seen them. I didn't know the logistics on how to go about getting them, what a Zipcar was*".

Education and advertising were mentioned as key elements if a carsharing program were to be reintroduced and be successful. For one participant, community outreach and canvassing would

have to be a main component of such a program: "*They could do something like a first week introduction special program, where they actually go around and do outreach in the car, see how people respond and educate people about what the program and the service is all about. That might help ensure success.*" However, others thought that the educational efforts should not be limited to the carsharing program itself, but should also address some of the other barriers limiting access, such as not having a driving license or a credit card: "*It would work. You might have to hire somebody to educate people more on technology, credit cards, budget classes, because it will be a better way to get around.*" Despite the barriers, the overall sentiment could be summed up by one participant's reaction: *"It is an awesome option. I'm ready to call them tomorrow!"*