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## **Hispanic Memphis and Access to Public Transportation**

Why is public transportation not a viable option for many Hispanics in Memphis, and what are the social, economic and familial effects of this?

Many residents encounter problems with the Memphis Area Transit Authority (MATA). The purpose of this paper is to investigate how and to what extent these affect Hispanic communities. The South is often divided into only Black and White; this research will examine some of the struggles of a different minority group. Hispanic people have limited access to public transportation due to general challenges that Memphis area transit entails, such as a lack of bus stops and infrastructure, long waits, and limited walkability. These problems are magnified for the Hispanic community, specifically women, by the initial language barrier caused by a lack of Spanish materials.

Access to public transportation is defined as “the ease with which any land-use activity can be reached from a particular location, using a particular transport system.”<sup>1</sup> Five sets of factors hinder accessibility. First is the issue of language, which is often the initial barrier for many Hispanic riders. The second obstacle is timing. Some stops have a waiting time of over two hours, and this combined with long bus rides and bus transfers makes public transportation a less viable option for many people. The third possible barrier is the discomfort of the buses and bus stops. Bus stops are often simply a sign on a telephone pole, and without a bench or cover the excessively long wait becomes uncomfortable. The walkability of stops is essential for

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<sup>1</sup> David O'Sullivan, Alastair Morrison, and John Shearer. 2000. "Using desktop GIS for the investigation of accessibility by public transport: an isochrone approach". *International Journal of Geographical Information Science*. 14 (1): 85.

people without other means of transportation. The lack of a sidewalk or cross walk can make it difficult to access the bus stops. Finally, the fees act as a financial barrier for many people.

This paper will first review the existing literature on accessibility and discuss the research methods employed. It will present background information about MATA and the Hispanic community in Memphis and then focus on this community through a gender lens. After this, the paper uses previous research, Geographical Information Systems (GIS) maps, and interviews in order to delve into the five components of access. The paper ends with proposed solutions and conclusions.

## **Literature Review**

When researching the reasons for low utilization of public transportation within Hispanic communities, one must examine several bodies of scholarship. First, it is important to look at Memphis' changing demographics. Then the literature review looks at the more significant amount of research on Hispanic access to resources, mostly in terms of health care. There is also previous research on how mobility affects women specifically and on the significant implications of inadequate public transportation.

### Hispanics in Memphis

The Hispanic population is growing quickly in the United States and is projected to increase 31 percent by the year 2060.<sup>2</sup> The fast growing pace makes Hispanics an increasingly important demographic to study. There is a somewhat recent influx of Hispanics in the South, and with this comes a new dynamic of “a multicultural, transnational dominion in what was once

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<sup>2</sup> Colby, Sandra L., and Jennifer M. Ortman. "Projections of the Size and Composition of the US Population: 2014 to 2060." *US Census Bureau, Ed* (2015): 25-1143.

the United States' preeminently biracial landscape."<sup>3</sup> The Hispanic community in Memphis is relatively new. A majority of Hispanics living in Tennessee arrived within the last decade, causing the proportion of immigration into Tennessee to be double the US average.<sup>4</sup> Because most of this immigration has occurred recently, the likelihood that language is an obstacle increases. This creates a need for access to more social services in order to aid "successful integration."<sup>5</sup> Hispanics all throughout Tennessee "tend not to be concentrated in any particular area."<sup>6</sup> Most cities in Tennessee have a main employer of the Hispanic community, but there is a diverse labor force in Memphis.<sup>7</sup> Hispanic businesses are also fairly dispersed throughout the city.<sup>8</sup> Part of this separation is due to more relaxed zoning regulations in Memphis.<sup>9</sup> The Hispanic community is generally "concentrated in three economic sectors: construction, distribution and retail trade."<sup>10</sup> Although new and dispersed, Hispanic groups already "constitute a stable, permanent population in these areas,"<sup>11</sup> so mobility for this community is a problem that is not temporary.

The Hispanic community has the highest poverty rate in Shelby County at 45.5%<sup>12</sup> but also maintains the lowest unemployment rate of any race in Memphis at only 5.2% in 2012.<sup>13</sup>

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<sup>3</sup> Drever, Anita I. "New neighbors in Dixie: The community impacts of Latino migration to Tennessee." *Latinos in the new South: Transformations of place*(2006): 19-36.

<sup>4</sup> Ibid.

<sup>5</sup> Mendoza, Marcela. "Latino Immigrant Women in Memphis." (2002).

<sup>6</sup> Drever, Anita I. "New neighbors in Dixie: The community impacts of Latino migration to Tennessee." 22.

<sup>7</sup> Ibid.

<sup>8</sup> Ibid.

<sup>9</sup> Ibid.

<sup>10</sup> Mendoza, Marcela, David H. Ciscel, and Barbara E. Smith. 2001. *Latino immigrants in Memphis, Tennessee: their local economic impact*. Memphis, Tenn: Center for Research on Women, University of Memphis.

<sup>11</sup> Ibid.

<sup>12</sup> Delavega, Elena "2015 Memphis Poverty Fact Sheet" The Mid South Family and Community Empowerment Institute (2015).1.

<sup>13</sup> Delavega, Elena "2014 Memphis Unemployment Fact Sheet."

Most people in the Hispanic community make between seven and ten dollars an hour.<sup>14</sup> This results in a group of low income people who can scarcely afford a car but need to commute to work. In the year 2000, Hispanics spent about 69 million dollars on transportation, a large expense and second only to housing.<sup>15</sup>

Between 50,000 and 75,000 undocumented immigrants are estimated to live in Tennessee.<sup>16</sup> If undocumented immigrants drive, they do not have the necessary documents, such as a social security card, to obtain a driver's license under state law. From 2004 to 2006 Tennessee issued "certificates for driving" to undocumented immigrants, but this policy was stopped for "fear that it gave legitimacy to undocumented immigrants."<sup>17</sup> This program had pro-immigration opposition as well, as people feared that the police would be confused and inconsistent in handling these card holders.<sup>18</sup> People driving without a license have never taken a driving course or test, which adds an additional layer of stress and safety concerns into the process of transportation. A study done about California's large Hispanic population "clearly shows that unlicensed drivers are significantly more likely to cause accident related deaths, serious injuries, and property damages."<sup>19</sup>

### Access

The literature available on language barriers in public transportation is extremely limited, but there is literature on how language affects Hispanics' access to other services, such as health

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<sup>14</sup> Mendoza, Marcela, David H. Ciscel, and Barbara E. Smith. 2001. *Latino immigrants in Memphis, Tennessee: their local economic impact*. Memphis, Tenn: Center for Research on Women, University of Memphis.

<sup>15</sup> Ibid.

<sup>16</sup> Passel, Jeffrey S. "Undocumented immigrants: Facts and figures." (2004).

<sup>17</sup> Fausset, Richard (2006). <http://articles.latimes.com/2006/feb/25/nation/na-drivers25>

<sup>18</sup> Ibid.

<sup>19</sup> Cedillo, Gilbert. "A Social, Public Safety, and Security Argument for Licensing Undocumented Drivers." *Center for Latin American Studies* (2004).

care and child care.<sup>20</sup> Overall, “policies and programs that increase migrants' (especially women's) access to transportation and affordable child care could greatly enhance the potential both for migrants' more full participation in public life and for their collective action.”<sup>21</sup> There are studies focused on the financial equity aspects of public transportation.<sup>22</sup> Others focus on smaller details such as how weather affects people’s access to public transportation.<sup>23</sup> These are done in other cities, often larger and with a more expansive public transportation system. Some of this literature depicts geographic barriers to access using maps. One paper that details the problems with the public transportation in Malta, for example, talked about general problems and ideas for reform of their bus system.<sup>24</sup> While some of this was administrative and environmentally focused, the problems with access and timing were similar. In this way, studying literature on other cities provided a helpful comparison when studying transportation issues in Memphis.

### Gender

Hispanic women are often affected by a lack of transportation more than men because of a “dependence on men for transportation and their caretaking of children that often leaves them

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<sup>20</sup> Deeb-Sossa, Natalia, and Jennifer Bickham Mendez. 2008. "Enforcing Borders in the Nuevo South: Gender and Migration in Williamsburg, Virginia, and the Research Triangle, North Carolina". *Gender & Society*. 22 (5): 615.

<sup>21</sup> Ibid.

<sup>22</sup> Taylor, Brian, and Alexandra Tassiello Norton. 2009. "Paying for Transportation". *Journal of Planning Literature*. 24 (1): 22-36.

<sup>23</sup> Kuby, Michael, Anthony Barranda, and Christopher Upchurch. 2004. "Factors influencing light-rail station boardings in the United States". *Transportation Research Part A: Policy and Practice*. 38 (3): 223-247. Van Vugt, Mark, Paul A. M. Van Lange, and Ree M. Meertens. 1996. "Commuting by car or public transportation? A social dilemma analysis of travel mode judgements". *European Journal of Social Psychology*. 26 (3): 373-395.

<sup>24</sup> Attard, M. (August 01, 2012). Reforming the urban public transport bus system in Malta: Approach and acceptance. *Transportation Research Part A*, 46, 7, 981-992.

isolated in the home.”<sup>25</sup> This “restricted physical mobility inhibits Latinas' ability to participate in public life, find better jobs, and access resources in the community that might increase their economic mobility such as day care and English classes.”<sup>26</sup> “Latina migrants'...social and geographical isolation and dependency”<sup>27</sup> affects females disproportionately. Some of this could be due to the fact that driving a car can be seen as a “masculine privilege.”<sup>28</sup> Learning to drive was one of the concerns that Latinas indicated as important in a study done on Hispanic immigrants in Shelby County.<sup>29</sup> More specifically, women have expressed interest in learning how to drive a car but often cannot because lessons are taught in English.<sup>30</sup>

Public transportation has the ability to change immigrant’s experiences, and “women migrants in urban, gateway sites... have been shown to seek out services available in the new society.”<sup>31</sup> This is likely because they had increased mobility due to better transportation in these more urban areas. In the case of Williamsburg, Virginia, limited transportation options cause women to exit the labor force, further isolating them.<sup>32</sup> A lack of transportation is not an isolated issue but rather a barrier to an improved and more educated life, specifically for women and low income residents.

### Public Transportation Implications

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<sup>25</sup> Deeb-Sossa, Natalia, and Jennifer Bickham Mendez. 2008. " Enforcing Borders in the Nuevo South: Gender and Migration in Williamsburg, Virginia, and the Research Triangle, North Carolina". *Gender & Society*. 22 (5): 615.

<sup>26</sup> Ibid.

<sup>27</sup> Ibid.

<sup>28</sup> Ibid.

<sup>29</sup> Mendoza, Marcela. "Latino Immigrant Women in Memphis." (2002).

<sup>30</sup> Ibid.

<sup>31</sup> Deeb-Sossa, Natalia, and Jennifer Bickham Mendez. 2008. " Enforcing Borders in the Nuevo South: Gender and Migration in Williamsburg, Virginia, and the Research Triangle, North Carolina". *Gender & Society*. 22 (5): 615.

<sup>32</sup> Ibid.

There has been a more widespread shift “away from inner-city, lower income riders and toward “choice” suburban commuters—people who have the option and inclination to drive.”<sup>33</sup> Because of growing environmental concerns, the way that people think about public transportation has altered “so that it now is concerned less with providing mobility to those who lack it and more with luring those who do have mobility away from their automobiles.”<sup>34</sup> This creates a tension between the demand for bus routes for low income residents, and “accommodating the political interests and desires of a more mobile, dispersed, and largely white suburban-based electorate on the other.”<sup>35</sup> This challenge for a balance is evident in Memphis with regard to the trolley funding, which many view as “costly projects that are unlikely to generate results.”<sup>36</sup>

Transportation often affects employment and many other aspects of people’s lives.<sup>37</sup> There are already limitations to the jobs that some Hispanics can perform due to their “undocumented immigration status and/or limited English proficiency.”<sup>38</sup> As a result, Hispanics “tend to find work in the low wage sectors of the economies of Tennessee and other Southern states.”<sup>39</sup> The social concept of “spatial mismatch” explains how impoverished people do not live in areas with plentiful jobs. This means that they must rely on transportation in order to reach those jobs. Inaccessible or difficult transportation can further the problem and reinforce systemic poverty. Public transportation is a barrier to employment for low income people. Employment opportunities “are affected not solely by distance but also by travel time and

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<sup>33</sup> Blumenberg, Evelyn, and Michael Manville. 2004. "Beyond the Spatial Mismatch: Welfare Recipients and Transportation Policy". *Journal of Planning Literature*. 19 (2): 182-205

<sup>34</sup> Ibid.

<sup>35</sup> Ibid.

<sup>36</sup> Ibid.

<sup>37</sup> Taylor, Brian, and Alexandra Tassiello Norton. 2009. "Paying for Transportation". *Journal of Planning Literature*. 24 (1): 22-36.

<sup>38</sup> Mendoza, Marcela, David H. Ciscel, and Barbara E. Smith. 2001. *Latino immigrants in Memphis, Tennessee: their local economic impact*. Memphis, Tenn: Center for Research on Women, University of Memphis.

<sup>39</sup> Ibid.

accessibility to different travel modes.”<sup>40</sup> A long commute can “lead to higher job turnover and lower overall earnings.”<sup>41</sup>

Additionally, the employment and wealth disparity caused by public transportation is more extreme in Memphis than in the United States as a whole. In 2014, people who used public transportation had a median income of \$16,323, almost half that of those who drove to work (\$30,152). This same disparity is less than \$5,000 for the United States as a whole.<sup>42</sup> The wide gap highlights a need to improve transportation access, and consequently people’s quality of life and income. While employment is the main example cited, mobility affects every part of people’s lives.

## Methods

In order to examine the causes and effects of the underuse of MATA, I first spoke to the Memphis Hispanic community about their experiences. The initial plan involved a survey that was meant for people who had used public transportation. It quickly became clear, however, that this was not a viable option, because I could not locate a significant number of people in the Hispanic community who frequently use the bus system in Memphis. After my initial interview with Christina Condori, a resident who used to ride the bus frequently, I called several people to whom she referred me.<sup>43</sup> I began talking to people informally about why they do not use public transportation. I found that this is the best way to get the most opinions, and the answers were quite similar and straightforward.

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<sup>40</sup> Blumenberg, Evelyn, and Michael Manville. 2004. "Beyond the Spatial Mismatch: Welfare Recipients and Transportation Policy". *Journal of Planning Literature*. 19 (2): 182-205

<sup>41</sup> Ibid.

<sup>42</sup> Delavega, Elena. 2014. "Public Transportation & Earnings in Memphis." *School of Urban Affairs and Public Policy*. 1

<sup>43</sup> Christina Condori, interview by Abigail Watkins, Caritas Village, July 7, 2016



My research focused on four different groups. I talked to people through Su Casa, a religious based program that strives to “glorify God and to advance his Kingdom by ministering to the spiritual, physical, and social needs of Hispanic residents in the Memphis area.”<sup>44</sup>

Similarly, I connected with the Hispanic community through Caritas Village, which “uses art, music, hospitality, theatre, classes, and connections to creatively join people together in common goals from many ethnic, racial and socioeconomic backgrounds.”<sup>45</sup> I also spoke to people from the Memphis Bus Riders Union and Memphis Area Transit Authority in order to gain other perspectives on the problem.

The second part of this research was geography-based, and for this I used Geographical Information Systems (GIS). I began by identifying the census tracts that are more than 20% Hispanic. I highlighted these tracts on a map and plotted the location of all bus routes and stops.<sup>46</sup> I then used different symbols to represent whether the bus stops had a bench or cover. Cross walks on these routes are represented with yellow lines. I was planning on differentiating areas that lacked a sidewalk, but fortunately all of the streets in these areas that had a bus route also had a sidewalk. These tracts have areas with only 20% Hispanic people or more, so they are not representative of only the Hispanic community’s experience, but rather illustrative of public transportation in greater Memphis. In order to show more clearly the actual location of Hispanics, I used block group data to make a more detailed map.

I then created several maps to illustrate citywide information. One map compares income to the routes and stops. Another demonstrates the timing issue by showing the number of stops per day on each route. A similar map reveals whether that the buses operate during the weekend.

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<sup>44</sup> "Su Casa." Su Casa. Accessed May 24<sup>th</sup>, 2016. <http://sucasamemphis.org/about-us/>.

<sup>45</sup> "Welcome to Caritas Village | Home." Welcome to Caritas Village | Home. Accessed May 6<sup>th</sup> 2016. <http://www.caritasvillage.org/>.

<sup>46</sup> A MATA route change occurred in May, so some routes differ slightly.

Another demonstrates walkability using a 400 meter buffer, to show areas that had no access to transportation.<sup>47</sup> I included an additional map showing a two block radius around bus stops, because I felt this was a more realistic distance. The city wide maps highlight the issues not only facing the Hispanic community but provide a picture indicating generally limited access to public transportation.

### **Memphis Area Transit Authority**

The focus of this research is the bus system within Memphis, which is not as expansive as many citizens would like. Most problems stem from a lack of funding and include an inadequate amount of bus stops and routes. There are certain regulations regarding minorities that MATA must abide by, and as a result “35 of all 36 MATA fixed routes are classified as minority routes.”<sup>48</sup> A minority route is defined by the Federal Transit as “one in which at least one-third of the revenue miles are located in a Census block, Census block group, or traffic analysis zone where the percentage minority population exceeds the percentage minority population in the service area.”<sup>49</sup> However, because relaxed zoning laws cause a variety of income levels in one area, this is an easy regulation to follow.<sup>50</sup> As mentioned in the literature review, the target of public transportation has shifted. MATA has “made it a priority to improve service by connecting low-income neighborhoods with employment areas,”<sup>51</sup> but improvements

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<sup>47</sup>Murray. A. R Davis, R Stimson, and L Ferreira. 1998. "Public Transportation Access". *Transportation Research Part D: Transport and Environment*. 3 (5): 319-328.

<sup>48</sup> Alison Burton, interview by Abigail Watkins, email, June 29, 2016.

<sup>49</sup> U.S. Department of Transportation. Title VI Requirements and Guidelines for Federal Transit Administration Recipients. Federal Transit Administration. FTA C 4702.1B

<sup>50</sup>Drever, Anita I. "New neighbors in Dixie: The community impacts of Latino migration to Tennessee." *Latinos in the new South: Transformations of place*(2006): 22.

<sup>51</sup> Alison Burton, interview by Abigail Watkins, email, June 29, 2016.

still need to be made. MATA is focused on providing transit service throughout the city, and must consider several factors when making service changes. For example, a route that attracts fewer customers may remain because eliminating the route could isolate an area and leave residents with little or no access to transit. MATA must constantly consider multiple options to ensure that transit service covers enough area and runs frequently enough to provide service where and when it is needed.<sup>52</sup> This balance means that MATA does not always make decisions based on ridership, which often affects access for people who rely on public transportation.

The Memphis Bus Riders Union (MBRU) is an organization that tries to improve access to MATA. Members talk to MATA's leadership and policy makers and organize protests and demonstrations. They have been effective in both raising awareness and making positive changes to the public transportation system. Despite positive gains, the language barrier applies not only to the public transportation system, but also limits the tools available for Hispanics to engage social movements. Christina Condori was one of the initial members of the Memphis Bus Riders Union when the organization was founded in 2012.<sup>53</sup> She participated to show that there was support from the Hispanic community, but stopped going to meetings soon after, because they were only in English. When MBRU posts events online, Christina copies them into Google Translate to decipher and spread the word about protests or marches, but is otherwise unable to participate. The same barriers that hinder Hispanics utilization of public transportation also prevent them from participating in the necessary social change.

### **Knowledge Barrier**

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<sup>52</sup> Scarlet Ponder, interview done by Abigail Watkins, Café Eclectic, July 25<sup>th</sup>, 2016

<sup>53</sup> Christina Condori, interview by Abigail Watkins, Caritas Village, July 7, 2016

Within the category of knowledge, we find two barriers to public transportation: language and a lack of materials. In Shelby County a majority (64%) of Hispanics speak Spanish in their home.<sup>54</sup> There are no resources in Spanish online, at bus stops, via the phone line, or anywhere else. MATA responds to this by claiming that the Tennessee Department of Transportation “provides tools for us,” and the city of Memphis’ multicultural office “helps us.” After contacting both of these organizations, I determined that they do not provide useful materials for Spanish speakers. The Tennessee Department of Transportation has a map of the bus routes laid over a map showing Hispanic demographics (figure 14)<sup>55</sup>, but this is not helpful information for Hispanic people interested in riding the buses. MATA is required to translate title six documents, and this can be found on their website. This is a 209 page document explaining minority rights which is required. MATA is also required to provide a translator at a community meeting if someone requests one ahead of time.<sup>56</sup>

Materials that would be useful for bus riders include translated maps and timetables, or explanations of the logistics of using the bus, such as information about the fares. These have not been translated due to “cost and low ridership by Hispanic riders,” furthering a failed system as MATA looks “to increase [their] offerings based on usage.”<sup>57</sup> In addition to the lack of understanding, the language barrier can sometimes cause frustration between bus drivers or other riders, who may not understand why the language barrier exists. Several interviewees commented on this obstacle, and studies conducted on other resources such as health care show

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<sup>54</sup> Mendoza, Marcela. "Latino Immigrant Women in Memphis." (2002).

<sup>55</sup> Email correspondence with Tennessee Department of Transportation, Liza M Joffrion Director of the Division of Multimodal Transportation Resources; John C Lancaster, Director of Planning and Scheduling, Memphis Area Transit Authority 7/5/2016

<sup>56</sup> Scarlet Ponder, interview done by Abigail Watkins, Café Eclectic, July 25<sup>th</sup>, 201

<sup>57</sup> Email correspondence with Tennessee Department of Transportation, Liza M Joffrion Director of the Division of Multimodal Transportation Resources; John C Lancaster, Director of Planning and Scheduling, Memphis Area Transit Authority 7/5/2016

similar findings.<sup>58</sup> It is therefore difficult for anyone without adequate English language skills to utilize public transportation. The language barrier often prevents Hispanic people from taking the first step towards using transit, which is figuring out how.

The lack of ridership within the Hispanic community also stems from a lack of precedent. Barriers to public transportation decline, and “tolerance for even fairly complicated transit routes rises once a routine is established, and familiarity can lead to a diminished perception of barriers.”<sup>59</sup> In addition to route familiarity, knowledge of when buses will come is important. If people are unsure about how long they have to wait, they are likely to think that it is longer than it actually is and become less willing and more frustrated.<sup>60</sup> Data on MATA are not widely distributed, and are only available online and at three transit centers. Another way to spread the word of public transportation is through word of mouth. In Boston, for example, “most new residents learn to use public transportation by word of mouth” according to refugee settlement and immigrant agencies.<sup>61</sup> However, in order for word of mouth to travel through a community, there has to be a precedent of using public transportation. Unfortunately, this familiarity is seldom established among Spanish speakers. During our interview, Christina Condori made the point that there has to be some initial contact in Spanish to involve people in the community. Even if the Spanish element is minimal, it is necessary to create initial contact. If this interests people, they will make a further effort to learn more on their own. MATA does not provide any

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<sup>58</sup> Deeb-Sossa, Natalia, and Jennifer Bickham Mendez. 2008. "Enforcing Borders in the Nuevo South: Gender and Migration in Williamsburg, Virginia, and the Research Triangle, North Carolina". *Gender & Society*. 22 (5): 615. Deeb-Sossa, Natalia. "Helping the “Neediest of the Needy” An Intersectional Analysis of Moral-Identity Construction at a Community Health Clinic." *Gender & Society* 21.5 (2007): 749-772.

<sup>59</sup> Blumenberg, Evelyn, and Michael Manville. 2004. "Beyond the Spatial Mismatch: Welfare Recipients and Transportation Policy". *Journal of Planning Literature*. 19 (2): 182-205

<sup>60</sup> Mishalani, Rabi G., Mark M. McCord, and John Wirtz. "Passenger wait time perceptions at bus stops: Empirical results and impact on evaluating real-time bus arrival information." *Journal of Public Transportation* 9, no. 2 (2006): 5.

<sup>61</sup> "Foreigners forced to muddle through transit system". 1994. *Boston Globe (Pre-1997 Fulltext)*. 1.

familiarity, and for this reason very little contact exists between MATA and the Hispanic community.

Christina Condori is well connected to the Hispanic community but could only name one other person she knows that had used public transportation more than a couple times.<sup>62</sup> People in the Hispanic community, she said, fear getting lost and not being able to figure out where they are because of the language barrier. Hispanic riders do not know where to begin, from knowing to have exact change to being able to communicate with the bus drivers. Another interviewee, Reyna Mendoza said that she simply got on a bus in hopes that it would take her where she wanted. She did not know how to access the information, nor did she know how to communicate with the bus driver to ask for directions and if she was on the correct bus.<sup>63</sup> The trip took an hour and a half and did not take her to where she was trying to go. She stated that the biggest barrier was the shortage of information, such as whether she was allowed to bring her children and where to find a map.<sup>64</sup> In addition to knowing English, one must either have determination and map-reading skills, or access to a smart phone to be able to navigate MATA.

### **Financial Barrier**

MATA's fare for a daily pass is \$3.50. At this price, a person that relies on public transportation to get to a job five days a week will pay \$17.50 weekly or \$910 annually. For a person who makes minimum wage (\$7.25/hour) working full time (40 hours a week), the cost of taking public transportation to and from work every day would be 6% of their total income. This percentage could prevent people from relying on public transportation. MATA does not offer reduced fares based on income. MATA's flat fare system "can be inequitable because riders

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<sup>62</sup> Christina Condori,, interview by Abigail Watkins, Caritas Village, July 7, 2016

<sup>63</sup> Reyna Mendoza, interview done by Abigail Watkins, phone, July 16<sup>th</sup>, 2016

<sup>64</sup> Reyna Mendoza, interview done by Abigail Watkins, phone, July 16<sup>th</sup>, 2016

traveling shorter distances—who tend to be low income subsidize those who travel farther.”<sup>65</sup>

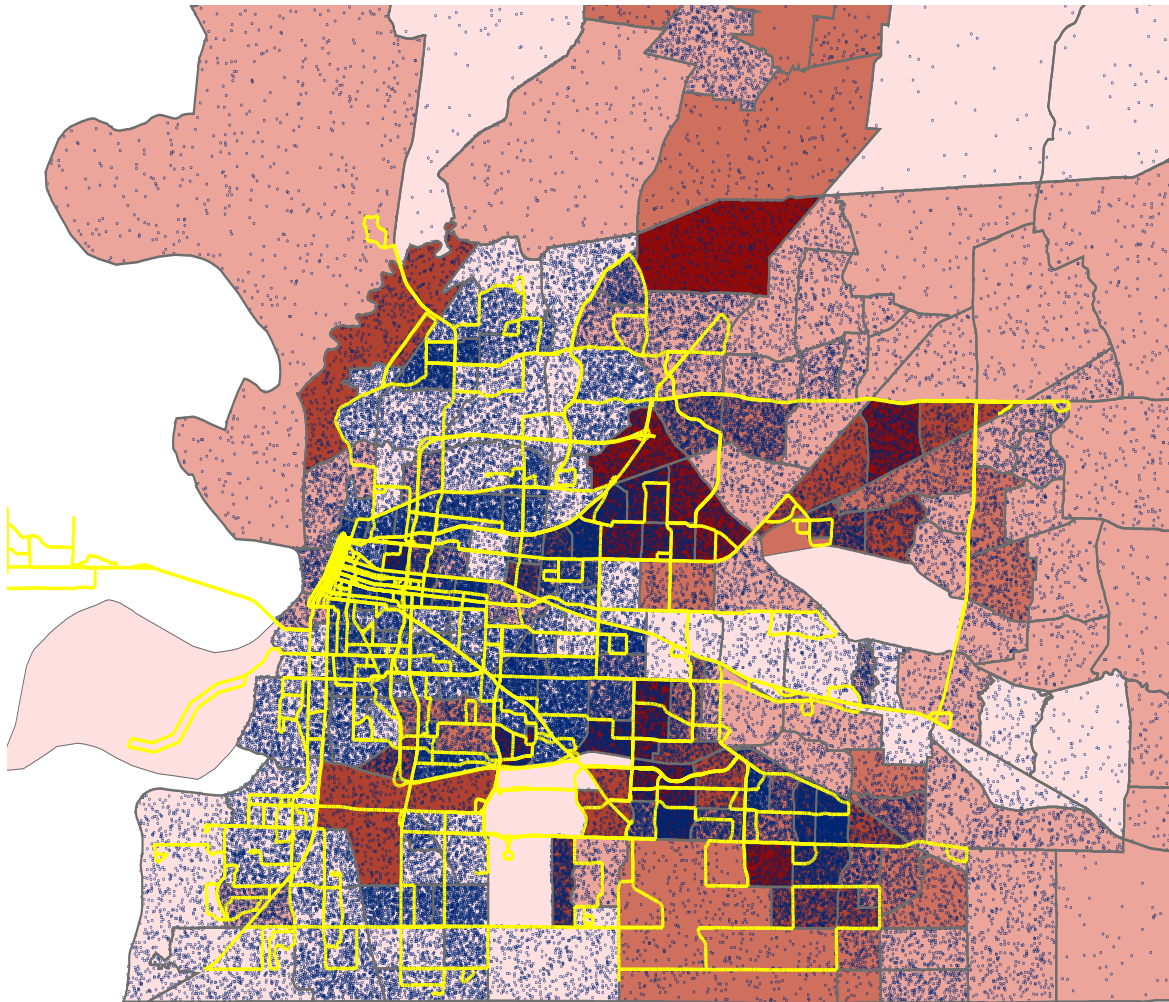
MATA does offer a more long-term option, which is the “MATApplus” card. While this \$60 card is a slightly cheaper option for a 21 day pass (\$13.50 difference), this is not a viable option for people who are unable to pay \$60 at one time.<sup>66</sup> In addition, these can be purchased at only three places throughout Memphis or through the mail, which requires an additional fee for postage and handling, as well as a seven-day waiting period.<sup>67</sup> The money one would save riding the bus is not significant enough to encourage ridership among the Hispanic community, and most families choose to spend significant amounts of money on private transportation. Beyond the financial aspect of the fare, the logistics can also be difficult. Bus riders must know to have exact change and be able to figure out how much it costs—all in another language. Each of these factors discourages Hispanic ridership.

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<sup>65</sup> Blumenberg, Evelyn, and Michael Manville. 2004. "Beyond the Spatial Mismatch: Welfare Recipients and Transportation Policy". *Journal of Planning Literature*. 19 (2): 182-205

<sup>66</sup> Bennett Foster, interview by Abigail Watkins, July 16, Caritas Village

<sup>67</sup> <http://www.matatransit.com/services/mataplus/fares/>



## Legend

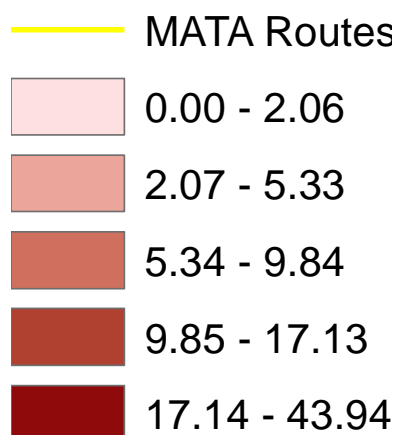


Figure 1 compares three integral parts of access to public transportation –income, race and distance. Each blue dot represents one person who makes under \$20,000 per year. The routes are shown by the yellow lines, and the color of the tract represents the percentage of people who are Hispanic in that census tracts. There is a lack of routes in Hispanic areas further away from downtown. The poverty in Memphis is more evenly distributed than the public transportation routes.



## Walkability Barrier

Proximity is the most important aspect of walkability. Because of bus stop density, this is more likely in the downtown area. Carolina Quintana is a resident of downtown and had a much easier time accessing buses because they are much more prevalent downtown.<sup>68</sup> In order for the buses to be useful, one would have to live downtown or on a busy road. In contrast people in neighborhoods are more isolated. As you can see from figures two and three, the areas covered by bus stops diminish further away from the inner city.

Besides proximity, sidewalks and crosswalks are the two factors influencing how safe and walkable a bus stop is. In the census tracts below sidewalks are present, but crosswalks are sparse and not necessarily near the bus stops. The city's dilapidated infrastructure becomes clear when travelling around Memphis to collect data. Sidewalks throughout these bus routes are often overgrown, cracked, and extremely narrow (View Appendix, figures 15 and 16). Crosswalks seldom have a light, and are often a faint line at an intersection. The upkeep on the road and sidewalk infrastructure around Memphis is clearly poor. The standard for what is considered walkable is often 400 meters,<sup>69</sup> and figures two and three reveal how much of Memphis is walkable by this distance. A map of a two-block radius around bus stops is also included, because I thought this was more realistic, as noted previously. Large portions of these maps are not covered by this radius around bus stops, and these are areas without walking access to public transportation.

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<sup>68</sup> Carolina Quintana, interview done by Abigail Watkins, phone, June 16<sup>th</sup>, 2016

<sup>69</sup> Murray. A. R Davis, R Stimson, and L Ferreira. 1998. "Public Transportation Access". *Transportation Research Part D: Transport and Environment*. 3 (5): 319-328.

Many of the available jobs are on the outskirts of the city.<sup>70</sup> Without more adequate coverage by bus stops, it can be difficult for people to commute, as you can see below. A much-needed and safer option for Hispanic residents of Memphis, and the broader community would be to expand service.

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<sup>70</sup> Bennett Foster, interview by Abigail Watkins, July 16, Caritas Village. Blumenberg, Evelyn, and Michael Manville. 2004. "Beyond the Spatial Mismatch: Welfare Recipients and Transportation Policy". *Journal of Planning Literature*. 19 (2): 182-205

Figure 2: Figure 2 demonstrates the areas that are walkable, which is often defined as a quarter mile, or 400 meters. These 400 meter buffers are represented by the pink circles around each bus stop. Public transportation is walkable downtown (mid left), and as the map moves further out of the city, the area that is uncovered grows. The blue coloring represents the percent of the census tract that is Hispanic.

**Legend**

- 400 M around bus stops
- Areas with >20% Hispanic Population
- 0.00 - 2.06
- 2.07 - 5.33
- 5.34 - 9.84
- 9.85 - 17.13
- 17.14 - 43.94

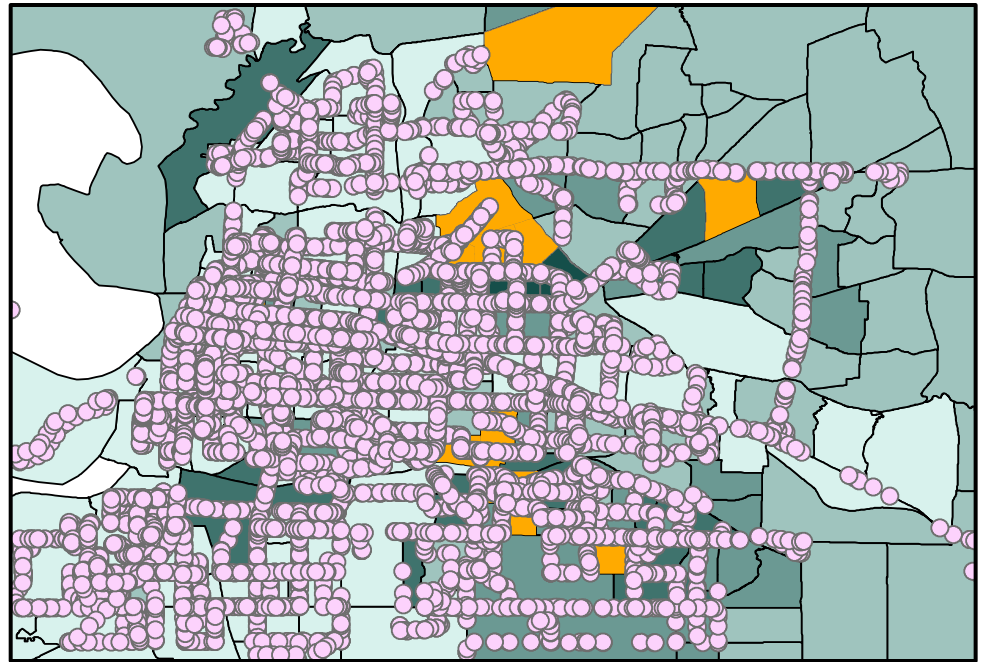
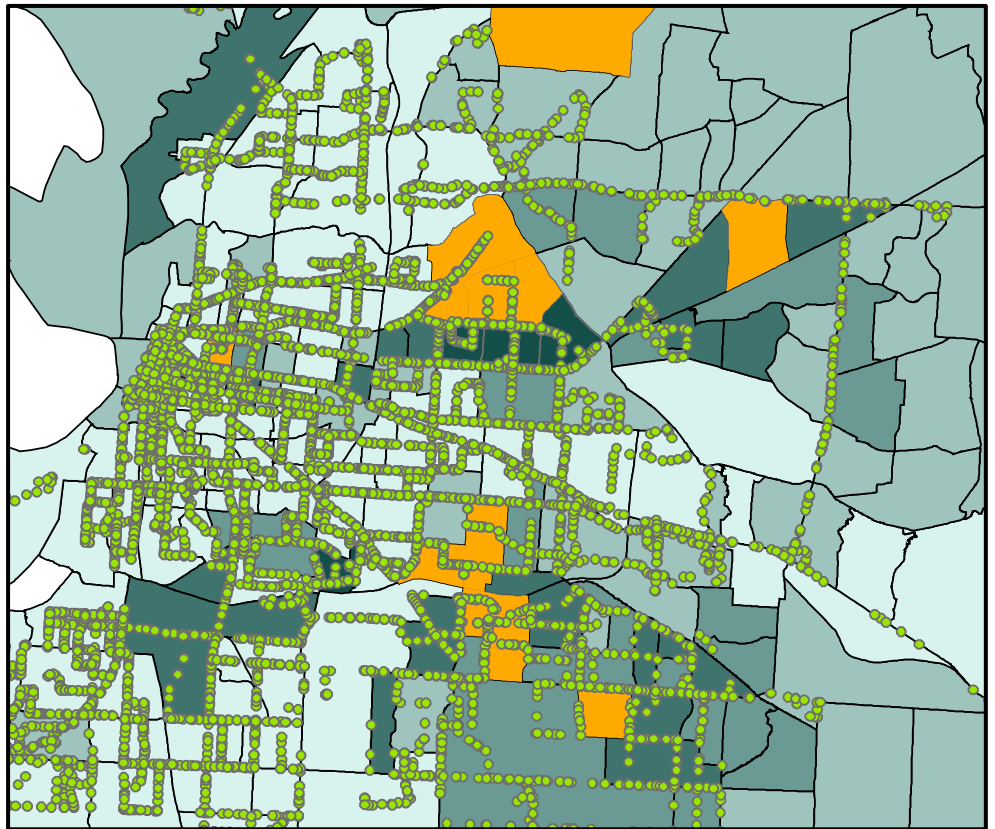


Figure 3: Although studies often define walkability as 400 meters, I think this is a poor indicator, especially in the somewhat extreme temperatures in Memphis. I created a map to show what I think is a more realistic walkability index – 2 blocks, or 520 feet. As you can see, this isolates much more of Memphis. The blue areas represent the percent of the census tract that is Hispanic.

**Legend**

- 2 block radius around stops
- Areas with >20% Hispanic Population
- 0.00 - 2.06
- 2.07 - 5.33
- 5.34 - 9.84
- 9.85 - 17.13
- 17.14 - 43.94



## Comfort Barrier

To determine the comfort of bus stops, I examined whether there is a physical cover or bench present at each stop. When thinking about the amount of time people have to wait for a bus, it is important to keep in mind that weather affects how long people are willing to wait for public transportation.<sup>71</sup> Especially in the summer, this is a problem for people waiting extended periods of time without shade or cover. Inclement weather such as rain or snow can also hinder access when stops have no protection.

There are a total of 6,371 stops in Memphis. Fifty-two of these have benches, and 362 have shelter. When looking at the placement of these shelters, it is important to note that while MATA has a criterion for where shelters are located solely based on user ship, they outsource many of their shelters to a private company, Lamar, which has a different criterion. According to Lamar's website, the bus shelters are "strategically located along busy streets in major metropolitan cities" in order to "provide excellent exposure to pedestrian and vehicular traffic."<sup>72</sup> These shelters are placed strategically for marketing purposes, rather than for serving the community.

Another aspect of comfort is social ease. Carolina Quintana<sup>73</sup> talked about a stigma against using the buses and tension between the African American community and the Hispanic community. For this and the other barriers to access, she felt like the only Hispanic person to ever ride the bus.

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<sup>71</sup> Kuby, Michael, Anthony Barranda, and Christopher Upchurch. 2004. "Factors influencing light-rail station boardings in the United States". *Transportation Research Part A: Policy and Practice*. 38 (3): 223-247.

<sup>72</sup>"Lamar Advertising Company." Bus Shelter Ads. Accessed July 22, 2016.  
<http://www.lamar.com/Memphis/Products/Shelter>.

<sup>73</sup> Carolina Quintana, interview done by Abigail Watkins, phone, June 16<sup>th</sup>, 2016

Figures 4 through 9 below show the comfort of the stops in areas with high Hispanic populations of twenty percent or over. The stops with benches or shelters are scarce, making a majority of stops uncomfortable.

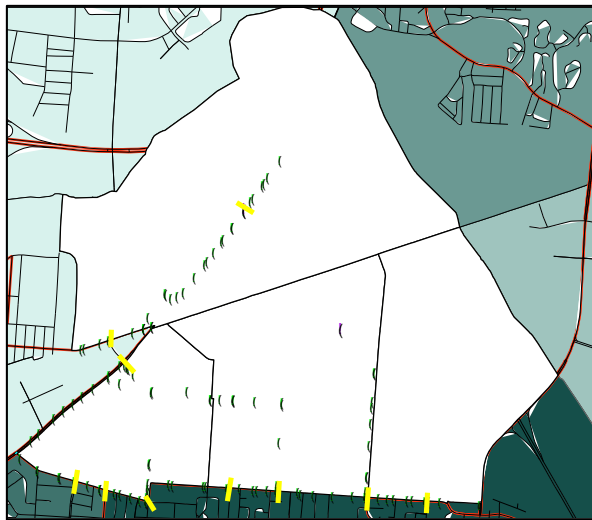
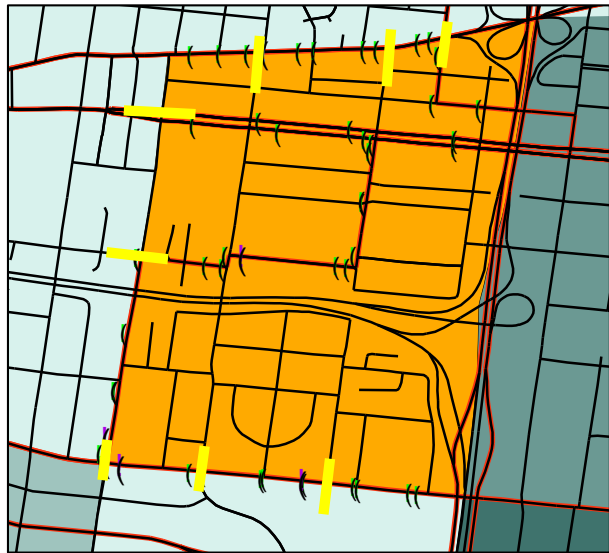


Figure 4: Census tract 11, 88, 89, and 91 combined is 5.38 square miles. In this area, there are 123 stops, and only 2 shelters, with no benches.

Figure 5: Census tract 24 is .48 square miles, 52 total stops, with only 4 shelters and 1 bench.



**Legend**

- ( Sign post
- ( Crosswalk
- ( Bench
- ( Shelter
- Shelby County Roads
- MATA\_Routes
- Areas with >20% Hispanic Population
- 0.00 - 2.06
- 2.07 - 5.33
- 5.34 - 9.84
- 9.85 - 17.13
- 17.14 - 43.94

Figure 6: Census tract 217.13 is 1.16 square miles, with 32 stops, 3 shelters and no benches

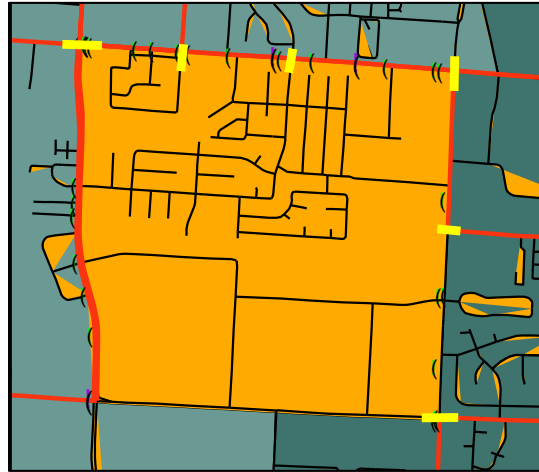


Figure 7: Census tracts 118 and 82 are a total of 3.04 square miles, with 81 total stops and only 5 shelters and no benches.

Figure 8: Census tracts 106.10 and 106.30 area a total of 2.21 miles, with 75 stops, 5 shelters and only one bench.

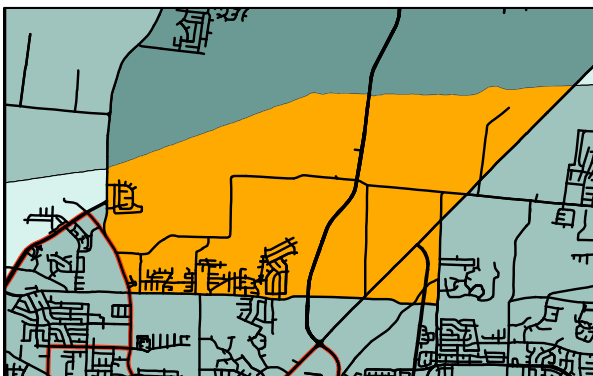
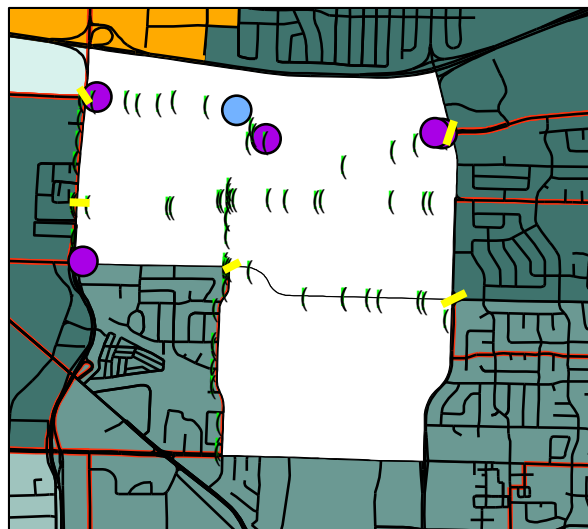


Figure 9: Census tract 205.31 is a total of 6.79 miles, with no stops, shelters or benches.

### **Timing Barrier**

The excessive time it takes to travel somewhere on a MATA bus is a severe barrier. Because of the placement of routes, transfers are often necessary, and people have to take several different buses and a roundabout way to reach their destinations. If someone has non-standard work hours, it would be impossible to use public transportation, because of the hours that MATA runs. Often these non-standard work hours are required by low wage jobs held by many Hispanic women.<sup>74</sup> Some MATA routes stop at six in the evening; thus, people who rely on public transportation are often immobile after this time. Interviewees commented on the fact that the buses did not run when they need to use them – at night and on the weekends. Some interviewees commented that if there were more stops and buses, more people would use them, but as it is they do not know Hispanic people who use the bus system, especially as a main form of transportation.

The following chart shows the number of stops made per day by buses that intersect the census tract made up of a Hispanic population over 20 percent. If the number of times that a bus stops varies based on which way the bus is going (inbound vs outbound), the number is the mean of these 2 numbers. The table also displays when buses make their earliest and latest stop on the route. It is important to consider that not all of the stops have buses running at these times. Additionally, the number representing the number of stops was the one where the bus stopped the most, so not all bus stops have that number of buses stopping. The final column displays whether the bus operates during the weekend, and if it does the number of stops it makes each day is indicated. This information is represented in figures twelve and thirteen.

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<sup>74</sup> Mendoza, Marcela. "Latino Immigrant Women in Memphis." (2002).18.

Bus Route/Name	# stops per day	Start time (am)	Finish time (pm)	Weekend
6	8.5	5:40	5:37	Sat, 5
9	7	5:01	5:57	Sat, 6
19	14	5:00	6:51	Sat, 6.5
36	24	4:46	11:37	Sat, 9.5
40	15	5:49	12:12 am	Sat,13/Sun 4
50	48	4:57	12:04	Sat,21/Sun 11
52	41	5:00	11:51	Sat, 21/Sun 7
53	24.5	5:07	11:55	Sat 12.5/Sun 5
56	36	4:45	11:57	Sat 18/Sun 14
57	23.5	4:41	12:06 am	Sat 17/Sun 10.5
69	15	5:57	7:57	Sat 10.5

## Gender

Gender plays an important role in transportation. Hispanic women immigrants are affected disproportionately by immobility. As explained throughout the literature review, men often use their cars to drive to work, while women are immobilized in their home. During an interview with employees of Su Casa, they commented on many of the challenges of the women and families they serve. When it is raining, the number of people who attend ESL classes is reduced by half, due to the number of people in the community who rely on walking and lack reliable public transportation.

A strong connection exists between transportation and education. Being without a ride is a major barrier for parents and community members who are interested in volunteering at their child's school or becoming involved in community organizations. Christina Condori said she never suggests public transportation as a means to access to these organizations; but rather arranges rides between people interested in the same destination or offers them a ride herself. She explained that it is common for people to carpool and share cars. When this is not a possibility, people are less able to leave their houses. There was a time when Christina took public transportation and commonly made the trip from home to her daughter's school to be



involved with her education and volunteer. Her commute, which was a 10 minute drive by car, took her about one and a half hours, including a 50 minute walk from her final bus stop to the destination of her daughter's school. An hour and a half trip or more is common when using MATA. She gave several examples of friends who have plenty of time during the day that could be spent taking English classes or volunteering at their children's school, but are unable to engage in these activities because they have no way to get there.<sup>75</sup> I then interviewed one of these friends, Reyna Mendoza, and she confirmed that she would love to take ESL classes, but it is difficult for her to find a consistent ride to class.<sup>76</sup>

### **Self-help Strategies**

Since Hispanics do not use public transportation in general, they have found other options. A common solution for working Hispanics is to carpool to work. More than half of Hispanic workers in Shelby County do just that.<sup>77</sup> As discussed earlier, some women are forced to simply stay at home.<sup>78</sup> Some people choose to walk every where, specifically many people that Su Casa works with are confined to approximately one mile radius around their house because walking is their method of transportation.<sup>79</sup> Other people choose to drive without a license or insurance. A much-needed and safer option for Hispanic residents of Memphis, and the broader community, would be to make public transportation a viable option.

### **Conclusions**

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<sup>75</sup> Christina Condori,, interview by Abigail Watkins, Caritas Village, July 7, 2016

<sup>76</sup> Reyna Mendoza, interview done by Abigail Watkins, phone, July 16<sup>th</sup>, 2016

<sup>77</sup> Mendoza, Marcela. "Latino Immigrant Women in Memphis." (2002).

<sup>78</sup> Reyna Mendoza, interview done by Abigail Watkins, phone, July 16<sup>th</sup>, 2016

<sup>79</sup> Harris, Helene & Boyd, Grace Anne, interview done by Abigail Watkins, Su Casa, July 18, 2016

The public transportation system entails general barriers to access, which include long waits, long walks, discomfort, and high costs. The Hispanic community is affected by these and limited English proficiency. The social, economic, and familial effects of limited mobility are wide-reaching. Often women are forced to stay home during the day, with little or no means of transportation, unable to work or further their education. This lack of mobility causes individuals to be less economically productive. If people do own a car, this is an additional economic drain on low income families.

MATA could enact several strategies to increase Hispanic ridership, and after this it becomes an issue of expanding services more generally. The initial solution to include more Hispanic riders would be to translate materials into Spanish. This is relatively simple solution that would reduce the initial barrier to transportation that Hispanic people face. To increase ridership, the translated materials could be more widely distributed, both online and in print. Adding a Spanish tab to the website would be an easy way to include diverse communities. By asking local gas stations and convenient stores to sell maps, knowledge on how to ride the buses could be more widespread. Bus stations should also include a map, so that someone could simply walk to a bus stop and figure out how to get somewhere, as opposed to having to look it up ahead of time and remember it or being required to own a smart phone. MATA could also hold events to make public transportation less daunting. A “Hispanic riders day” would involve translators helping people navigate the bus system, so that in the future more people would be able to do it on their own, setting a precedent and spreading the word to others. MATA could also have a “kids day” to make families and mothers more comfortable with the public transportation system. Events like these would help initiate a relationship between new riders

and MATA and make public transportation less intimidating. Little effort by MATA to engage the Hispanic community would have a large impact.

After this, solving transportation problems becomes more difficult and costly, because it is a matter of expanding service and building and repairing infrastructure. The roads and sidewalks need to be repaved, and many of the cross walks need to be repainted. More bus stops should have covers and benches to encourage ridership and make public transportation more accessible. One solution to the problem of the inequality of the buses is to locate routes and stops solely based on ridership. This would be the fairest way to ensure that the bus system is serving the communities that need and use it the most.

As it is right now, the Memphis public transportation system is lacking. Because of the dispersed nature of the location of the Hispanic population, most issues with the bus system apply to broad areas and are not specific to Hispanic communities. Hispanics disproportionately lack access to public transportation, because of a lack of precedent and because of the language barrier. In interviews with Hispanic residents, people repeatedly claimed to not want to take public transportation because they did not know how to figure it out and because it took too long. The same conclusion was reached by every person with whom I talked: it is difficult and not worth it. For this reason I agree with conclusions drawn by scholars who argue that “policies and programs that increase migrants' (especially women's) access to transportation and affordable child care could greatly enhance the potential both for migrants' more full participation in public life and for their collective action.”<sup>80</sup> Meeting the mobility needs of the

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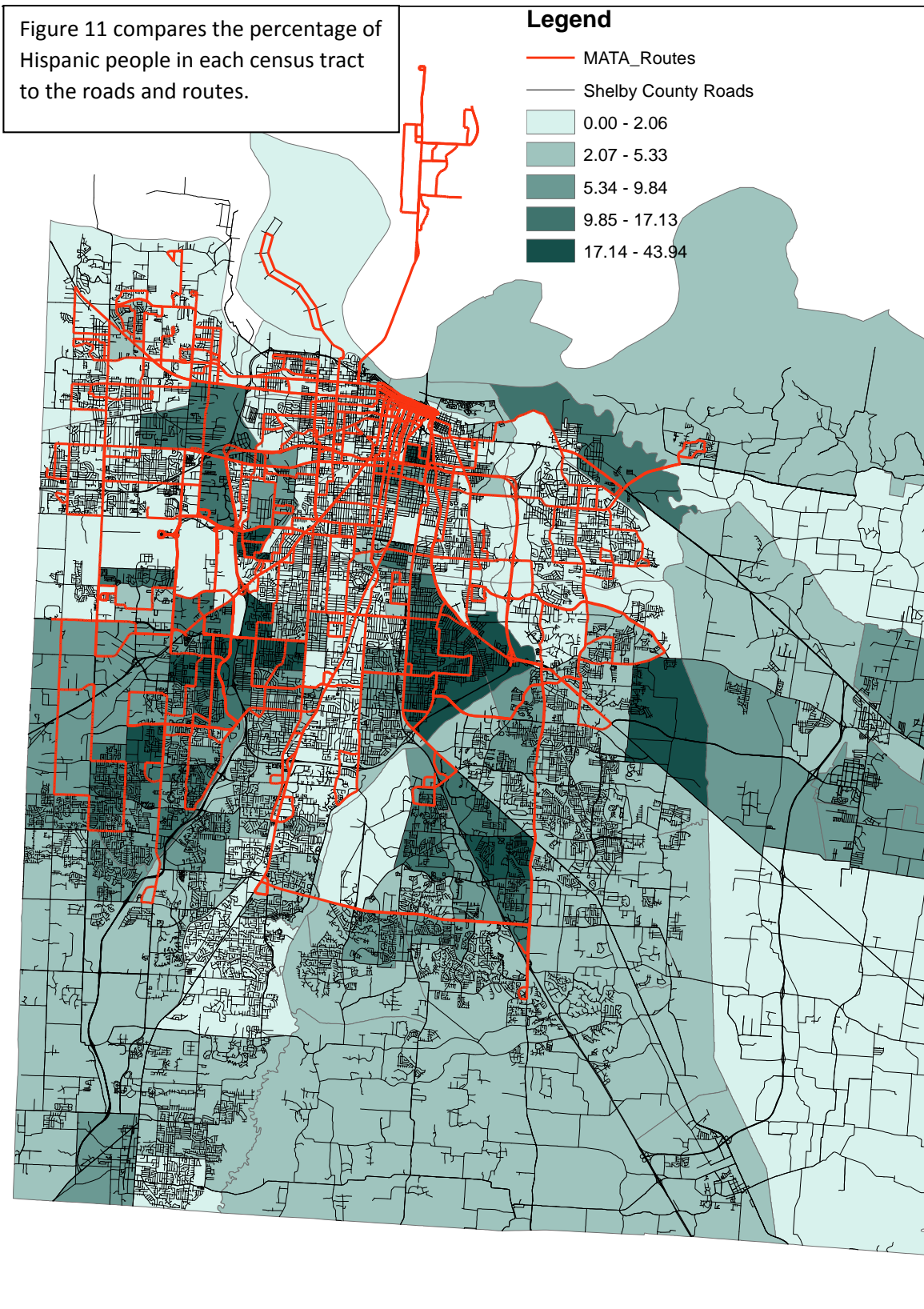
<sup>80</sup> Deeb-Sossa, Natalia, and Jennifer Bickham Mendez. 2008. "Enforcing Borders in the Nuevo South: Gender and Migration in Williamsburg, Virginia, and the Research Triangle, North Carolina". *Gender & Society*. 22 (5): 615.

Hispanic community would benefit the Memphis overall, through more education and employment of this important sector of our community and economy.

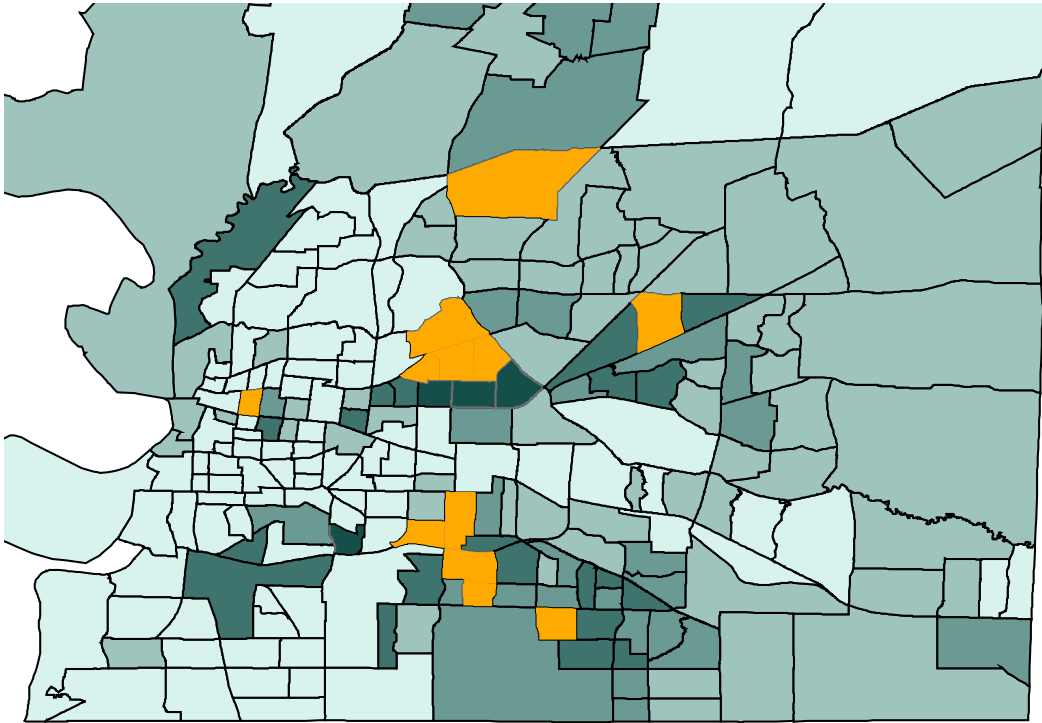
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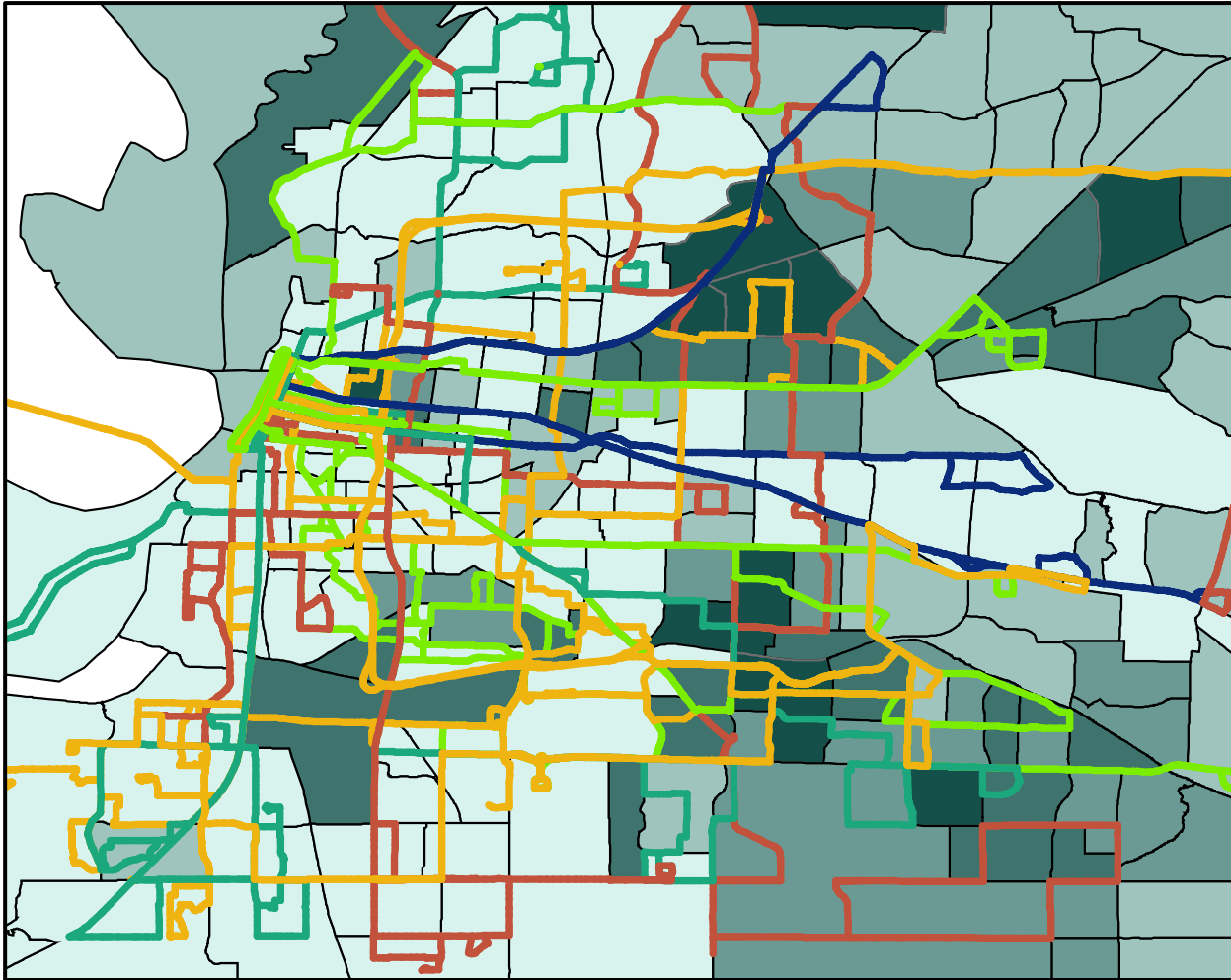


Hispanic Census Tracts by Percentage



**Legend**

-  Areas with >20% Hispanic Populator
-  0.00 - 2.06
-  2.07 - 5.33
-  5.34 - 9.84
-  9.85 - 17.13
-  17.14 - 43.94



### Legend

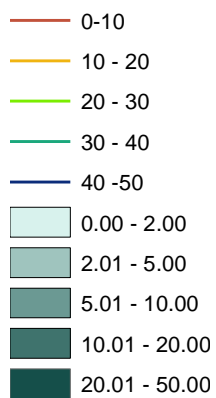
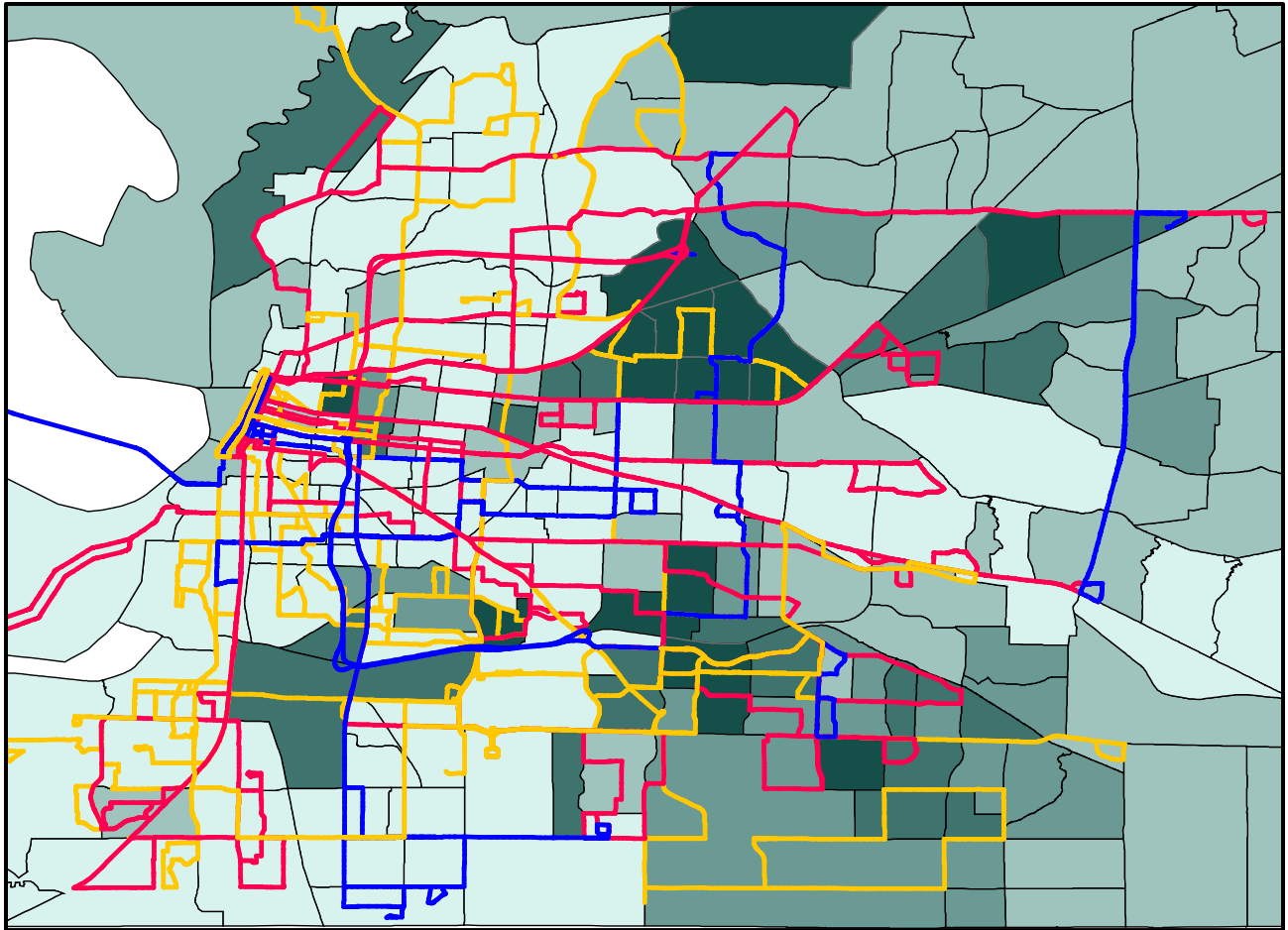


Figure 12: This map shows the frequency of the routes on weekdays. There are 9 routes that run less than 10 times per day, 13 that run 10-20 times per day, 8 routes that run 20-30 times per day, 7 in the 30s, and 3 in the 40s. The average of these stops is 20 per day. This makes the average wait time a little over half an hour, adding to the inaccessibility of the buses.





### Legend

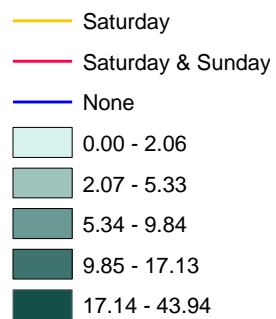


Figure 13: Nine routes do not run on weekends at all; 14 of them run on both days; and the other 17 routes run only on Saturday. Access to the buses on the weekends is very limited.

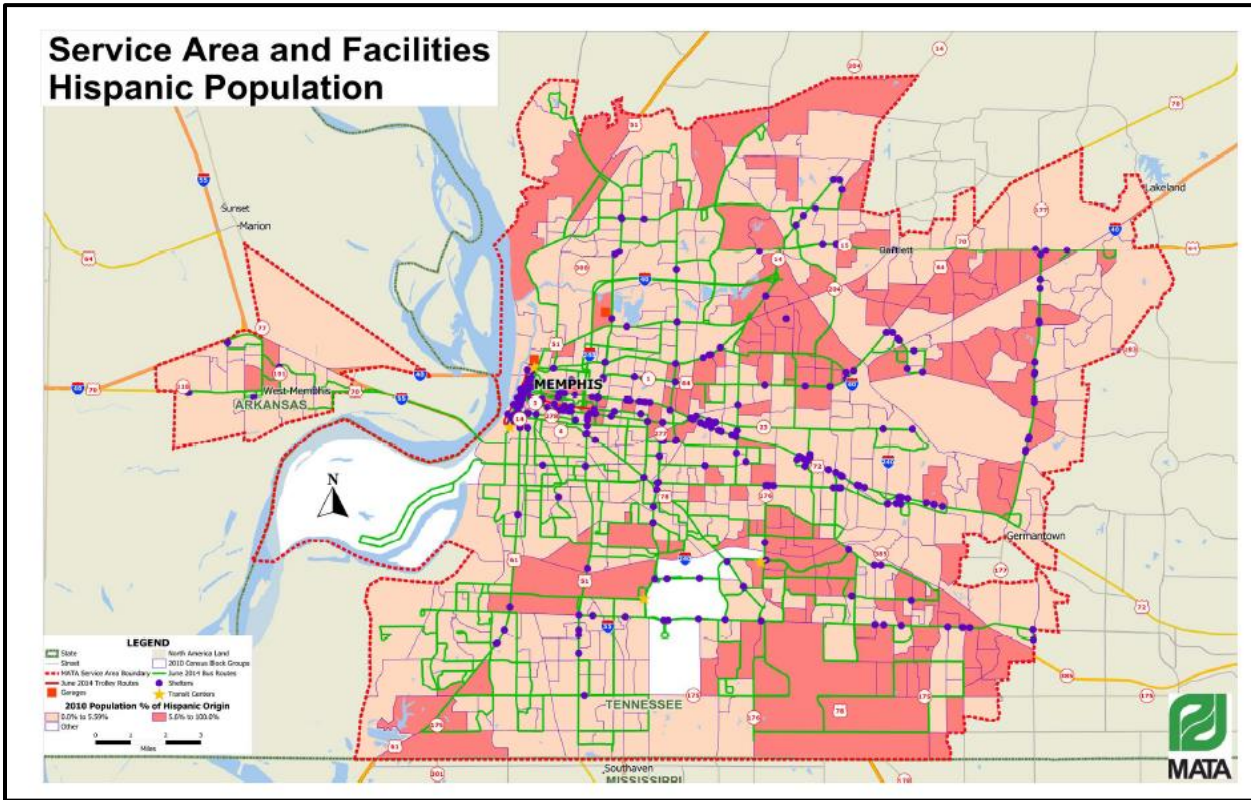


Figure 14: The map above is one of the resources that MATA provides to Hispanic riders.

Crosswalks and Sidewalks in Memphis



Figures 15 and 16 show sidewalks on Ayer St and display the rundown state of some infrastructure in parts of these Hispanic tracts.

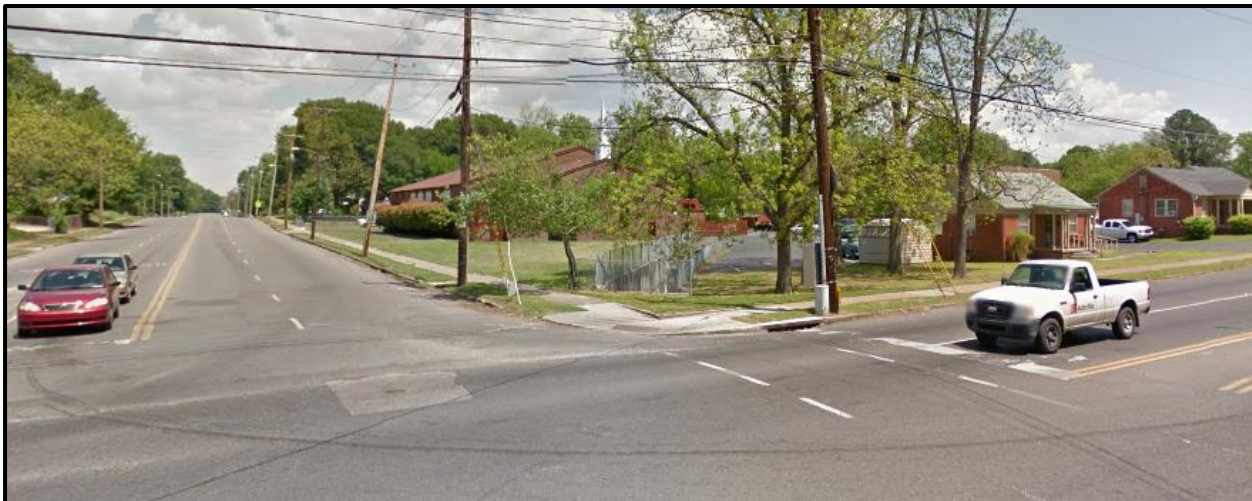


Figure 17: The intersection of North Graham and Macon road is an example of how minimal the definition of a crosswalk is. Most crosswalks are simply another fading line.

### Bus Stops in Memphis

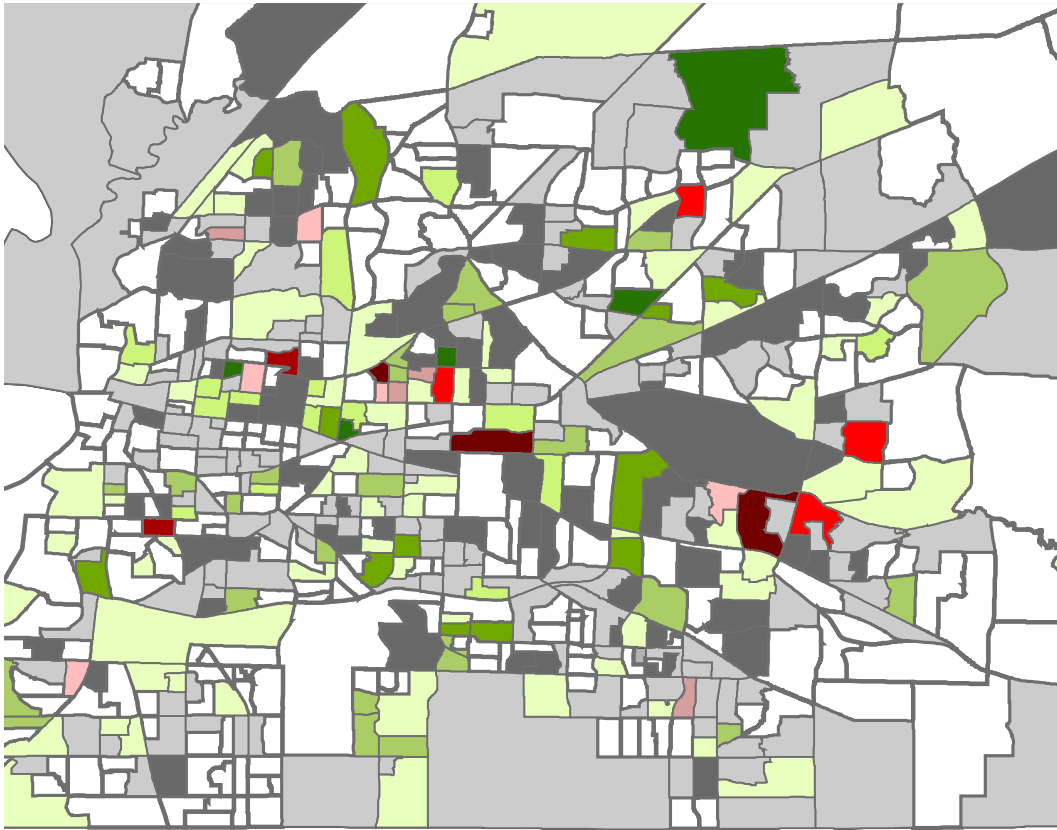


Figure 18: This picture, taken from MBRU's twitter page, is another example of a make shift bus stop.

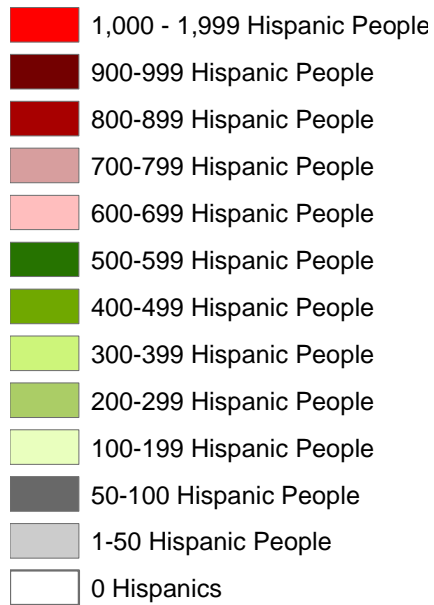


Figure 19: This is the intersection on North Hollywood and Jackson. As you can see, a makeshift bus stop has been created, revealing a need that is not being met. Additionally, it is very difficult to see the sign marking this location as a bus stop from every angle besides straight on.

Figure 20: Hispanic Population by Block Group Data



### Legend



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