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# Addressing the Urban Planning Gender Divide: An Analysis of Urban Transport and Female Mobility

## Abstract

Transportation is the lifeblood of every city, serving as the initial point of contact for practically every individual seeking healthcare, employment, or education. Despite significant progress in recent decades, women still encounter significant disparities which shape their transportation behavior and experiences as well as their access to opportunities. Analyzing current literature on gender and mobility and conducting case studies and expert interviews, this paper aims to identify the key barriers to progress and recommend innovative solutions to community members and stakeholders. The findings give insights on how to address the urban planning gender divide and its implications on society at large.

## Keywords

city planning, urban planning, urban transit, gender, transportation, equitable transportation, mobility, time poverty, pink tax, bike sharing, ride sharing, gender divide, urban studies, transit authority

## Disciplines

Business | Social Justice | Urban Studies and Planning

## Comments

# **Addressing the Urban Planning Gender Divide:**

## **An Analysis of Urban Transport and Female Mobility**

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University of Pennsylvania, Wharton Social Impact Experience

Under Guidance of Professor Prasanna Tambe

## **Abstract**

Transportation is the lifeblood of every city, serving as the initial point of contact for practically every individual seeking healthcare, employment, or education. Despite significant progress in recent decades, women still encounter significant disparities which shape their transportation behavior and experiences as well as their access to opportunities. Analyzing current literature on gender and mobility and conducting case studies and expert interviews, this paper aims to identify the key barriers to progress and recommend innovative solutions to community members and stakeholders. The findings give insights on how to address the urban planning gender divide and its implications on society at large.

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## I. Introduction

Women represent the largest share of public transport users around the world, yet they encounter several barriers limiting their mobility. While women and men have distinct mobility needs and patterns, transport policies for most countries remain gender-blind.<sup>1</sup> Findings demonstrate that, when users have to decide which mode of transport to use (private car, public transport, cycling, walking, etc.), gender is often a more robust determinant than age or income—due to concerns regarding safety and harassment.<sup>2</sup>

Historically, cities have been designed in a way that prioritizes cars, which men today use at a higher rate than women in many cities worldwide. For example 49% of men report using a car to move about urban spaces while only 36% of women surveyed say the same.<sup>3</sup> Urban planners have led efforts to discourage car traffic and accommodate pedestrians and cyclists. But the issue is not that simple; for many women, balancing work and caregiving responsibilities creates more complex transport demands than a traditional work-home commute.<sup>4</sup>

Moreover, research by the NYU Rudin Center for Transportation further finds that 75% of respondents who identify as female have experienced harassment or theft while using public transport, compared to 47% who identify as male.<sup>5</sup> Harassment is further found to have a substantial impact on women's daily and professional lives. For example, 80% of women stated that they changed how they traveled because of sexual harassment, 48% changed the way they dressed, 34% said they used other types of transport, and 9% chose not to travel alone.<sup>6</sup>

Disparities such as these create unsafe spaces for women and lead them to turn to other modes of transport—such as ride-hailing apps or taxis, often costing them up to \$76 more in transit costs per month compared to their male counterparts.<sup>7</sup> This gender gap further spans bike-share systems; Citi Bike, a bicycle sharing system serving New York City, reports around four times as many male riders compared to female cyclists.<sup>8</sup> Women cite safety, car-centric roads, as well as the cost of renting a bike as concerns.<sup>9</sup> Evidently, the lack of access to affordable, safe transportation not only limits physical mobility but also restricts upward economic and social mobility for marginalized women.

This issue largely stems from the fact that many local transportation agencies do not effectively collect and analyze adequate data on safety complaints from women using public transportation.<sup>10</sup> This data is ultimately key to ensuring that transportation systems are designed

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<sup>1</sup> Karla Gonzalez Carvajal, “Transport Is Not Gender-Neutral.”

<sup>2</sup> Ibid.

<sup>3</sup> Hadriana Carvajal, “CityLab Daily: How to Build Gender-Inclusive Transportation.” Bloomberg. Bloomberg, July 6, 2021.

<https://www.bloomberg.com/news/newsletters/2021-07-06/citylab-daily-how-to-build-gender-inclusive-transportation>.

<sup>4</sup> Ibid.

<sup>5</sup> Sarah Kaufman et al., “The Pink Tax on Transportation: Women’s Challenges in Mobility.” NYU Wagner Rudin Center for Transportation, November 2018.

[https://wagner.nyu.edu/files/faculty/publications/Pink%20Tax%20Report%2011\\_13\\_18.pdf](https://wagner.nyu.edu/files/faculty/publications/Pink%20Tax%20Report%2011_13_18.pdf).

<sup>6</sup> “Women’s Access to Safe Transport.” UN Women. United Nations, July 8, 2020.

<https://www.endvawnow.org/es/articles/1991-womens-access-to-safe-transport.html>.

<sup>7</sup> Ibid.

<sup>8</sup> Goldbaum, Christina. “Why Women Are Biking in Record Numbers in N.Y.C.”

<sup>9</sup> Ibid.

<sup>10</sup> Ania McDonnel, “Addressing Gender Disparities in Transportation.”

and built for all people in mind—not only males who have traditionally worked outside of the home.<sup>11</sup>

## II. Research Objectives and Methodology

Therefore, the aim of this study is to assess the urban planning gender divide by collecting and examining data on gender disparities as they relate to urban transportation and mobility. Specifically, the research aims to answer the following question, “Where should resources be directed in order to alleviate these disparities?” Addressing this inquiry would allow for the prioritization of gender-inclusive solutions in the city planning agenda.

My research on this topic is three-pronged. First, I conducted a literature review of existing academic research and data on gender-related transit disparities. This contextualized the issue and provided adequate background information for my research.

Next, I utilized case studies from major American cities such as Los Angeles and Philadelphia as well as local government documents as initial data points. These cities were chosen due to 1) the sheer size of both their populations and public transport systems, 2) the heightened availability of city-specific public and private information, in comparison to other American cities, and 3) the diversity in research methods they have employed to add empirical evidence to the growing body of research at the intersection of gender and mobility. This research includes the following studies:

In 2018, LA Metro published *Understanding How Women Travel*, a study which aimed to “increase understanding gender differences in travel purpose, mode, time, and experience in the Los Angeles region.”<sup>12</sup> This was one of the first research studies in the US that was undertaken by a city’s local transportation authority to understand the disparities faced by female travelers. Metro’s 2019 initiative, *Changing Lanes*, was designed to further this work, expanding its reach by prioritizing participation by women of “diverse intersectional identities, including race, ethnicity, income, and neighborhood.”<sup>13</sup> Philadelphia does not have a female-centric research project such as this one, but the city has conducted rider surveys in the past two years and launched its “Bus Revolution” project to improve transit service speed and reliability for all genders.

Finally, I supported my data and these case studies through qualitative interviews with managers at SEPTA (Southeastern Pennsylvania Transportation Authority) and Metro, the Los Angeles County Metropolitan Transportation Authority. Specifically, I spoke to a senior manager of transportation planning at LA Metro; professors in transportation planning and urban design at the University of Pennsylvania and Temple University; and experts in the following positions at SEPTA: long range planning managers, corporate sustainability initiatives manager, and strategic planners. These interviews were key in highlighting qualitative factors and expert opinions that could not be captured in a quantitative research setting.

Thus, by utilizing the aforementioned sources, this paper serves as an interdisciplinary analysis on 1) female travel patterns and barriers to mobility and progress, 2) case studies and proof of concept in major metropolitan areas, and 3) recommendations on the implementation of safety and design mechanisms going forward.

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<sup>11</sup> Ibid.

<sup>12</sup> Rep. *Changing Lanes: A Gender-Equity Transportation Study*. Los Angeles, CA: Kounkuey Design Initiative, 2019.

<sup>13</sup> Ibid.

### III. Key Findings

#### A) *Female Travel Modes and Patterns*

In examining modes of travel, it is evident that women are less likely than men to have a driver's license and access to a private vehicle.<sup>14</sup> They are also more likely to carpool or get a ride from a family member or friend than men if they do not have a driver's license.<sup>15</sup> This makes women more likely to use public transportation, making it that much more important to prioritize urban transit design with all genders in mind. In fact, on average, females are 6% more likely than men to utilize public transportation. This number increases to around 26% for the working adult age group.<sup>16</sup>

Moreover, because women have traditionally carried the burden of unpaid labor and household tasks, they are more likely to travel for domestic purposes, such as running errands for family or community members.<sup>17</sup> In fact, "mobility of care" excursions connected to housework and childcare account for 42% of women's overall weekly commuting time.<sup>18</sup> Because of this gendered division of labor, women partake in greater amounts of "trip chaining"- where multiple stops are included on a tour.<sup>19</sup> Having a young child in the house, for example, increases women's journeys by 23% since they are three times more likely than men to take children to school and 80% more likely to trip chain.<sup>20</sup> A visual example of typical travel patterns of surveyed male and female caretakers is shown below:

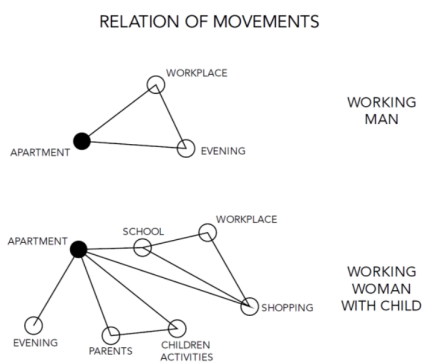


Figure 1. *Typical Travel Patterns of Surveyed Caretakers. Borrowed from Abby Granbery, "Trip Chaining and the Mobility of Care Taking." Web log. Berkeley (blog), December 5, 2018.*  
[https://www.ocf.berkeley.edu/~agranbery/author/agranbery/.](https://www.ocf.berkeley.edu/~agranbery/author/agranbery/)

<sup>14</sup> Rep. *Changing Lanes: A Gender-Equity Transportation Study*. Los Angeles, CA: Kounkuey Design Initiative, 2019.

<sup>15</sup> Ibid.

<sup>16</sup> Rahul Goel et al., "Gender Differences in Active Travel in Major Cities across the World." *Transportation*, 2022. <https://doi.org/10.1007/s11116-021-10259-4>.

<sup>17</sup> Abby Granbery, "Trip Chaining and the Mobility of Care Taking." Web log. *Berkeley (blog)*, December 5, 2018. [https://www.ocf.berkeley.edu/~agranbery/author/agranbery/.](https://www.ocf.berkeley.edu/~agranbery/author/agranbery/)

<sup>18</sup> Rep. *Gender Equality, the Pandemic and a Transport Rethink*. Washington, DC: Organization for Economic Co-operation and Development (OECD), 2021.

<sup>19</sup> Rep. *Changing Lanes: A Gender-Equity Transportation Study*.

<sup>20</sup> Sina Zhen, "Rethinking Public Transportation for Women's Safety and Security." ICLEI – Local Governments for Sustainability, March 8, 2021. [https://sustainablemobility.iclei.org/rethinking-public-transportation-for-womens-safety-and-security/.](https://sustainablemobility.iclei.org/rethinking-public-transportation-for-womens-safety-and-security/)



Not only are women more likely to trip chain, but they are also more likely to also use various modes of transportation in a single journey. As a result, when taking public transit, they frequently transfer and spend more time waiting at or walking to stops. This, combined with the fact that they frequently need to travel during off-peak hours when transit options are limited, brings up safety concerns for female passengers.<sup>21</sup>

## **B) Current Barriers to Mobility and Progress**

### **1. Safety Concerns**

When traveling, women, girls, and the LGBTQI+ community, particularly those of color, encounter considerable safety risks. Women, girls, and gender and sexual minorities are more likely to be subjected to violence or harassment while traveling, particularly after dark and in areas with limited lighting.<sup>22</sup>

Further, while commuting, walking to/from transit stations, or waiting for the bus or train, BIPOC, elderly and younger, and disabled women and LGBTQI+ people may have heightened fear perceptions. In fact, bus stop amenities like shelter, benches, lighting, and presence of security and comfort influence riders' anxiety/fear and perceived wait durations. In a study conducted by the Howard University Transportation Research Center, due to heightened anxiety, females who waited at insecure bus stops for more than 10 minutes overestimated their waiting times as compared to their male counterparts.<sup>23</sup> BIPOC and Black female riders further report feeling insecure in the presence of law enforcement or experiencing higher frequencies of policing while traveling.<sup>24</sup>

*Figure 2* shows that sexual harassment on transit is a widespread problem in cities across the United States.<sup>25</sup>

Fears and experiences of assault and harassment lead women and other gender and sexual minorities to seek other modes of private transportation like cars or rideshare, wherever possible. Lower-income women, on the other hand, are less likely to have access to private cars or have the disposable income to use car-sharing, making them more vulnerable to violence and harassment than higher-income women.

Author/date	Location	Transit Setting	Method	Sample Size	Findings
Stringer (2007)	New York	New York subway	Online survey	1,790 men and women metro riders	63 percent had been harassed; 10 percent had been assaulted on the subway; 93 percent of the people harassed were female
Natarajan et al. (2017)	New York City (NYC)	NYC transit environments	Self-administered survey	140 female college students	77 percent had experienced or witnessed sexual harassment on transit
Los Angeles Metro (2018)	Los Angeles County	LA Metro buses and rail	Onboard passenger survey	Sample size not reported; both men and women surveyed	26 percent of women and 21 percent of men had experienced harassment during rides over the past six months
Washington Metro Area Transit Authority (2018)	Washington, DC	Washington, DC, transit system	Online survey	1,000 men and women respondents	21 percent of respondents had experienced sexual harassment on transit; women twice as likely than men to be victims

<sup>21</sup> Rep. *Changing Lanes: A Gender-Equity Transportation Study*.

<sup>22</sup> Ibid.

<sup>23</sup> Stephen Arhin et al., "Patron Survey of Acceptable Wait Times at Transit Bus Stops in the District of Columbia." *Open Journal of Civil Engineering* 09, no. 04 (December 2019): 268–80. <https://doi.org/10.4236/ojce.2019.94019>.

<sup>24</sup> Rep. *Changing Lanes: A Gender-Equity Transportation Study*.

<sup>25</sup> Hao Ding et al., "Sexual Harassment and Assault in Transit Environments: A Review of the English-Language Literature." *Journal of Planning Literature* 35, no. 3 (2020): 267–80. <https://doi.org/10.1177/0885412220911129>.

*Figure 2. Rates of Sexual Harassment Victimization on Transit. Borrowed from Hao Ding et al., "Sexual Harassment and Assault in Transit Environments: A Review of the English-Language Literature."*

## 2. Design Flaws

Women are more likely to travel with children or with items such as strollers or shopping bags because of household and caregiving responsibilities; however, inaccessible design and policies such as requiring stroller folding before boarding transit renders transit systems inconvenient and inefficient for these purposes.<sup>26</sup>

Additionally, transit infrastructure, such as grab bars, handles, ramps, curbs, and seat heights are often constructed using men's bodies in mind, making them less effective for women. Even vehicle safety tests use male crash test dummies, making vehicle safety features function better for males than women.<sup>27</sup>

## 3. Financial Inaccessibility

Women and their households experience significant financial and non-financial expenditures as a result of a transportation system that fails to satisfy their demands.

For example, although men and women in Los Angeles take the same number of daily trips on average, women's travel patterns "gravitate to the extremes of the daily trip spectrum."<sup>28</sup>

That is, compared to men, women are more likely to take several trips in a given day and also more likely to take no trips at all. Women in the first group may face disproportionate travel costs, stress, safety concerns, or time poverty ("a lack of adequate discretionary time outside of sleep and paid and unpaid work to engage in activities that build social and human capital.")<sup>29</sup> Those in the latter group—those taking no trips at all—may be more isolated from opportunities.

Inadequate mobility, for example, limits the kinds of jobs open to women. In order to get to schools and employment centers, women need reliable transportation; therefore, inefficient and inflexible transit alternatives limit the types of occupations they can secure.<sup>30</sup>

Women are more likely to take part-time jobs with flexible hours and/or work close to home because of the time required to commute and perform family obligations. This is especially true for hourly or low-wage workers (who are disproportionately BIPOC), who lose potential income-earning hours due to commuting and caretaking trips. As a result, single occupancy vehicles (SOVs) are now the most efficient and flexible modes of transportation for women's travel needs in many US cities. However, for lower-income women who may have lower rates of driver's licenses and vehicle ownership, the difficulties of trip chaining contribute to further job retention problems.<sup>31</sup>

<sup>26</sup> Rep. *Changing Lanes: A Gender-Equity Transportation Study*.

<sup>27</sup> Ibid.

<sup>28</sup> Ibid.

<sup>29</sup> Ibid.

<sup>30</sup> John Pawasarat and Frank Stetzer, Rep. *Removing Transportation Barriers to Employment: Assessing Driver ' License and Vehicle Ownership Patterns of Low- Income Populations*. Milwaukee, WI: ETI Publications, 1998.

<sup>31</sup> Ibid.

Moreover, the gap in opportunity between car-owning and non-car-owning households goes beyond employment and incomes. For instance, lower-income women are more likely to miss and delay medical care if they don't have access to a car.<sup>32</sup> Lacking a car also limits children's school options, and children in car-less households are less likely to participate in school activities—resulting in lower educational achievement, lower employment chances, and lower incomes later in life.<sup>33</sup>

#### 4. Lack of Representative Data

Gender representation in data has also been lacking. Data collecting has historically reflected the gender disparities in transportation design, with women underrepresented and heterosexual, able-bodied, cisgender men overrepresented. As transportation technologies develop, this knowledge gap continues to stymie efforts to advance gender parity. Data is becoming increasingly important for transportation organizations when making infrastructure and service decisions. In the absence of data that reflects the travel needs of people and all gender identities, transportation investments and decisions may overlook certain populations, causing and perpetuating injustices.<sup>34</sup>

#### 5. Lack of Diverse City Planners

Women have historically been disregarded in transportation planning in cities across the United States. The U.S. Census Bureau American Community Survey began monitoring occupation by gender in 2000, at which time women accounted for 12.1% of transportation jobs. As of 2017, women account for 14.6% of the transportation workforce. Moreover, only 35% of city planners in the United States are women whereas 65% identify as men.<sup>35</sup> And where women do participate in the transport workforce, very few rise to managerial positions.<sup>36</sup>

As a result, city planners have traditionally used cisgender, able-bodied men's commutes as the prototype, for example, “a point-A-to-point-B commute between residential areas and commercial centers during peak hours.”<sup>37</sup>

In response to these disparities, the Mineta Transportation Institute points out that more efforts will be required to “attract, promote, and retain women” in the transportation and urban planning field.<sup>38</sup> Evidently, women's voices are crucial to design sustainable cities and incorporate diverse experiences into the design process.

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<sup>32</sup> Nicholas J. Klein, “Subsidizing Car Ownership for Low-Income Individuals and Households.” *Journal of Planning Education and Research*, 2020. <https://doi.org/10.1177/0739456x20950428>.

<sup>33</sup> Ibid.

<sup>34</sup> Ania McDonnell, “Addressing Gender Disparities in Transportation.” Gender Policy Report. University of Minnesota, November 11, 2019. <https://genderpolicyreport.umn.edu/addressing-gender-disparities-in-transportation/>.

<sup>35</sup> Jodi Godfrey and Robert L Bertini, “Attracting and Retaining Women in the Transportation Industry.” *Mineta Transportation Institute*, February 2019.

<sup>36</sup> Rep. *Gender Equality, the Pandemic and a Transport Rethink*.

<sup>37</sup> Rep. *Changing Lanes: A Gender-Equity Transportation Study*.

<sup>38</sup> Jodi Godfrey and Robert L Bertini, “Attracting and Retaining Women in the Transportation Industry.”

### C) *COVID-19 Impacts*

More recently, COVID-19 has amplified and made more widely visible several of the previously documented gender-related mobility disparities. The disparity between genders is demonstrated by a study using data from Italy, Portugal and Spain which showed that women's mobility fell by 28% three weeks after the introduction of lockdowns, while that of men declined by about 21%.<sup>39</sup>

Additionally, women, particularly low-income and BIPOC women, have suffered the greatest job losses as a result of the pandemic's economic consequences. Due to service cuts, essential workers who rely on public transportation—the majority of whom are women—will have more unsafe and difficult commutes. Inadequate access to childcare and the demands of virtual learning for children has further curtailed women's mobility and economic opportunities. COVID-19 has also increased the amount of time women spend traveling on behalf of others because of the care-taking role they frequently play.<sup>40</sup>

## IV. Case Studies and Interviews

Interviews with experts and extensive analysis on the effectiveness of interventions undertaken in two key cities—Los Angeles and Philadelphia—capture a range of perspectives and provide a lens into equitable transit initiatives in the United States.

### A) *Los Angeles*

LA Metro's *Understanding How Women Travel* and *Changing Lanes* studies have been touted as the first of their kind in the country in terms of their female-centric research approach of the city's transit systems. Los Angeles is an especially powerful case study as it is host to diverse communities and has made tangible efforts to address public transit issues over the past several years.

For the *Changing Lanes* study in 2019, the Los Angeles Department of Transportation (LADOT) focused its analysis on three Los Angeles neighborhoods—Sun Valley in the Valley region, Watts in the Central City region, and Sawtelle in the Westside region. These regions were chosen due to their high proportions of BIPOC female workers residing in zero-car households.<sup>41</sup>

Most significantly, results showed that women in the majority low-income study neighborhoods of Watts and Sun Valley use fewer modes of transportation, are less likely to have access to a car and a driver's license, and travel longer distances to reach daily destinations than women in the higher-income neighborhood of Sawtelle. Moreover, the majority of participants traveled to recreational destinations by car, implying that women's lower access to cars and driver's licenses limits their capacity to take such trips.<sup>42</sup>

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<sup>39</sup> Rep. *Gender Equality, the Pandemic and a Transport Rethink*.

<sup>40</sup> Rep. *Changing Lanes: A Gender-Equity Transportation Study*.

<sup>41</sup> Ibid.

<sup>42</sup> Ibid.

Interviewee Claudia Galicia, Manager at the LA Metro, commends the research initiative, saying, “The report is leading to real policy changes; for example, leaders have recommended implementing a transit ambassador program.”<sup>43</sup>

In other words, the report recommends that cities hire local women as community ambassadors to provide a “visible, culturally-competent safety presence in public spaces like street corners, parks, and crosswalks, and offer general assistance to transit users, particularly in low-income BIPOC communities where increased police presence may not necessarily lead to increased levels of safety.”<sup>44</sup>

Galicia further cites government partnerships and investment in infrastructure as critical steps to achieve equitable transit. For example, implementation of design elements like better street lighting needs approval and investments from the government, not just the support of transit authorities.<sup>45</sup>

## **B) Philadelphia**

While SEPTA has not undertaken a female-centric research approach as the LA Metro has, the organization released a public survey in the fall of 2020 to gather key information about how the public uses and understands the existing system.<sup>46</sup>

As interviewee Jennifer Dougherty, Manager of Long Range Planning, notes, this information is still useful to design SEPTA services with female riders in mind.<sup>47</sup>

She says, “The survey found that accurate, real-time updates were identified by riders as crucial...this is a key service that riders are looking for in our online platforms. This also helps facilitate multimodal connections, which are especially important to female riders.”<sup>48</sup>

The report further states that survey takers find the overall character of the system to be “old, gritty, and two-tier,” which further exacerbates safety concerns and poses inconveniences to riders.<sup>49</sup>

For example, Rebecca Collins, former corporate initiative manager at SEPTA, cites bus stops as one of the areas that women report feeling unsafe or uncomfortable. She says, “the bus network is expansive and it is difficult to have a police officer at every single bus station.”<sup>50</sup>

In response, SEPTA has launched Bus Revolution, an initiative to simplify routes to improve service speed and reliability. The project will be a three-year process including evaluation of SEPTA bus routes, identification of service improvements, and implementation of system changes. While the effects of long-term projects like the Bus

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<sup>43</sup> Claudia Galicia (Manager, Board Relations at Los Angeles County Metropolitan Transportation Authority) in discussion with author, May 2021

<sup>44</sup> Rep. *Changing Lanes: A Gender-Equity Transportation Study*.

<sup>45</sup> Claudia Galicia (Manager, Board Relations at Los Angeles County Metropolitan Transportation Authority) in discussion with author, May 2021

<sup>46</sup> Rep. *Septa Brand Visioning and Wayfinding Assessment Report*. Philadelphia, PA: SEPTA, 2021.

<sup>47</sup> Jennifer Dougherty (Manager of Long Range Planning at SEPTA) in discussion with author, May 2021

<sup>48</sup> Ibid.

<sup>49</sup> Rep. *Septa Brand Visioning and Wayfinding Assessment Report*.

<sup>50</sup> Rebecca Collins (Former Corporate Initiatives Manager at SEPTA) in discussion with the author, May 2021

Revolution cannot be evaluated in the short-run, administrators hope that it will spur similar women-centric initiatives in the future.<sup>51</sup>

Dougherty further admits that mechanisms to report harassment on SEPTA rides are not the most effective or up-to-date. For example, although police patrols are said to be regular and frequent in their response to surveillance camera footage, security forces are sometimes dispatched many hours after the harassment has already taken place.<sup>52</sup>

She cites the main issue with the urban transit gender divide to be a lack of data, noting “Generally there hasn’t been much research in the field. Public transit isn’t seeing itself as being in a competitive market... so they are not trying to understand our market and do market research.”<sup>53</sup>

Dougherty further points out that despite this lack of research, LA Metro’s initiative shows that going beyond the current ridership to make the system more useful is becoming a new trend in the industry.<sup>54</sup>

Collins adds to that, citing the market research she conducted in Philadelphia to develop prototypes to create more space for people—most often women—traveling with wheelchairs, grocery carts, and strollers. “This should be at the forefront of everything we do. Think: how can we make the SEPTA more accommodating for all sorts of people that are traveling today?”<sup>55</sup>

Analysis of recent surveys, initiatives like Bus Revolution, and interviews with Philadelphia-based professionals position Philadelphia as a unique case study. While the city must make several improvements to its transportation plan in order to prioritize equitability, SEPTA managers recognize the system’s deficiencies and aim to address them going forward.

## V. **Recommendations**

Addressing the aforementioned issues and catering transport to all genders will require several steps on behalf of several key stakeholders such as transportation authorities, local governments, and city planners. These implementation strategies and examples of successful interventions are explained below with a series of relevant, actionable steps.

### A) ***Close the Data Gap***

- As the LA Metro did with its *Changing Lanes* initiative, revise data collection projects and enact novel data collection efforts to include gender, race/ethnicity, income, ability, and age as valuable data points.<sup>56</sup>
- Consult and work with NGOs, community organizations, and independent transit research organizations involved in intersectional advocacy to identify critical issues related to mobility.<sup>57</sup>

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<sup>51</sup>“SEPTA Forward: Bus Revolution.” SEPTA Forward: Bus Revolution. Accessed May 10, 2022. <https://septabusrevolution.com/>.

<sup>52</sup> Jennifer Dougherty (Manager of Long Range Planning at SEPTA) in discussion with author, May 2021

<sup>53</sup> Ibid.

<sup>54</sup> Ibid.

<sup>55</sup> Rebecca Collins (Former Corporate Initiatives Manager at SEPTA) in discussion with the author, May 2021

<sup>56</sup> Rep. *Changing Lanes: A Gender-Equity Transportation Study*.

<sup>57</sup> Ibid.

- Conduct surveys and initiate mobile engagement to gather narratives about citizens' transportation experiences<sup>58</sup>
- Partner with intermediary data companies to increase data capacity, navigate data privacy laws, and manage relationships with new mobility companies<sup>59</sup>
- Create a city transportation report card to emphasize often overlooked economic disparities, lack of mode choice, and health outcomes<sup>60</sup>

**B) Design Safer, More Convenient Transit Infrastructure**

- Bring resources to lower income communities. For example, build and promote essential services, such as grocery stores, hospitals, and childcare facilities near housing<sup>61</sup>
- Partner with community based organizations to improve women's access to driver's licenses<sup>62</sup>
- Install better street lighting, build safer crosswalks, place bus stops in well lit, safe areas, include priority seating on transit, and accommodate spaces for strollers/car seats/bicycles<sup>63</sup>
- Address sexual harassment concerns through technology interventions such as surveillance cameras, real time bus arrival information, digital platforms for harassment reporting, and passenger-assist alarms on train cars<sup>64</sup>

**C) Tailor Transit Services for Marginalized Populations**

- Design weekend, point-to-point transit shuttle services or car-sharing services that connect lower income women with recreational opportunities, in an effort to combat the effects of time poverty<sup>65</sup>
- Coordinate pick-up and drop-off initiatives for youth from schools and recreation/cultural centers to reduce female obligations to travel to and from such activities<sup>66</sup>
- Increase frequency of transit services to accommodate women who travel during off-peak hours<sup>67</sup>
- Understand each community's needs and preferences in terms of mobility instead of adopting a one-size-fits-all approach

**D) Involve Diverse Perspectives in the City Planning Space**

- Implement more equitable hiring practices in the urban planning space by attracting and hiring underrepresented applicants<sup>68</sup>

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<sup>58</sup> Ibid.

<sup>59</sup> Christina Stacy et al., Rep. *Access to Opportunity through Equitable Transportation*. Washington, DC: Urban Institute, 2020.

<sup>60</sup> Ibid.

<sup>61</sup> Rep. *Changing Lanes: A Gender-Equity Transportation Study*.

<sup>62</sup> John Pawasarat and Frank Stetzer, Rep. *Removing Transportation Barriers to Employment: Assessing Driver ' License and Vehicle Ownership Patterns of Low- Income Populations*.

<sup>63</sup> Rep. *Changing Lanes: A Gender-Equity Transportation Study*.

<sup>64</sup> Hao Ding et al., "Sexual Harassment and Assault in Transit Environments: A Review of the English-Language Literature."

<sup>65</sup> Rep. *Changing Lanes: A Gender-Equity Transportation Study*.

<sup>66</sup> Ibid.

<sup>67</sup> Ibid.

<sup>68</sup> Jodi Godfrey and Robert L Bertini, "Attracting and Retaining Women in the Transportation Industry."

- Craft leadership and mentorship programs to encourage more diverse candidates to study city planning<sup>69</sup>
- Convene community leaders and survey residents to understand their transportation needs<sup>70</sup>
- Engage directly with historically underrepresented residents and riders<sup>71</sup>

## **VI. Implications**

The implications of these issues are immense. Because women take more complex trips, this can lead directly to time poverty.<sup>72</sup> Because low-income women and BIPOC women are also less likely than cisgender men and higher-income, White women to have access to a private car, they are disproportionately affected by time poverty. For example, “a working mother with a 90-minute commute might get off her evening bus before getting home to pick up her child from daycare, before she and her child walk back to the stop and wait for the bus to ride home, adding an additional hour to her daily commute and tripling her total trip fare.”<sup>73</sup>

As a result, constructing a transportation system that works for those of all genders is critical for cities to enjoy a variety of vital, untapped benefits, such as:

1. Economic development—A gender-inclusive transportation infrastructure increases a woman’s economic potential by boosting her access to work and educational options. Reduced travel time would also enable more women to seek employment further away from the home, dedicate more time to wage-earning jobs, and participate in professional growth.<sup>74</sup>
2. Racial justice—Because gender and racial justice are directly linked, a gender-inclusive transportation system is crucial to any city’s racial justice objectives.<sup>75</sup>
3. Health and wellness—Mobility has direct correlations with public health, and in the face of COVID-19, health is even more important as an indicator of a community’s success.<sup>76</sup> Gender-inclusive mobility improves a woman’s ability to obtain medical services and also frees up time to focus on other aspects of overall health, such as stress reduction and time spent developing social relationships. Furthermore, when pedestrian and bicycle infrastructure is developed with females’ needs and experiences in mind, it encourages them to use these modes more frequently, improving overall health outcomes. As women are more likely to care for others, their mobility is a determinant of the health and welfare of their families and other dependents as well.<sup>77</sup>

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<sup>69</sup> Ibid.

<sup>70</sup> Christina Stacy et al., Rep. *Access to Opportunity through Equitable Transportation*.

<sup>71</sup> Ibid.

<sup>72</sup> Rep. *Changing Lanes: A Gender-Equity Transportation Study*.

<sup>73</sup> Ibid.

<sup>74</sup> Ibid.

<sup>75</sup> Ibid.

<sup>76</sup> Rep. *Gender Equality, the Pandemic and a Transport Rethink*.

<sup>77</sup> Rep. *Changing Lanes: A Gender-Equity Transportation Study*.



## **VII. Discussion and Looking Forward**

### ***A) Research Limitations***

Because this research faced constraints on resources and time (as it was conducted over three months), this paper extensively analyzes two, case studies of American cities' transit systems. While analysis of each city adds a diverse perspective to this research on gender and mobility, a number of cities have been left out due to their lack of data or initiatives on female-centric transport.

It is also important to note that these case studies and interviews, while helpful to use as a proxy for transit-related issues and brainstorm possible solutions in other cities, may not serve as completely representative examples. As a result, transportation interventions should always be tailored to the population and its specific needs in any given city.

Moreover, while this report does recognize the disproportionate negative effects of inequitable transport on women of color and BIPOC as compared to White or higher income women, it does not explore Black and Brown experiences to the fullest extent.

Finally, due to the travel limitations posed by COVID-19, interviews for each city case study were conducted over phone call or video call. As a result, it was not feasible to travel to every city featured in this report to physically examine transit infrastructure.

### ***B) Challenges and Next Steps***

The coordination between transit authorities, local governments, residents, and other stakeholders is required yet rather difficult when addressing the urban planning gender divide. One of the key challenges that transit authorities face in providing equitable transport is insufficient funding.

Despite the fact that most urban areas have their own public transportation networks, the vast majority of these systems operate with a deficit. In 2018, only 4% of the 2,192 public transport systems in the United States had fare revenue that surpassed operating expenses. With limited resources, transit agencies must choose between providing transportation in less congested areas with more transit-dependent users and denser areas where the majority of riders reside. When transport agencies are forced to cut services, keeping the more profitable routes with higher usage typically leaves transit-dependent riders—particularly women—with even fewer options.<sup>78</sup>

Advocating for increased government and private sector investment in the urban infrastructure and policy sector is the first step to addressing these funding deficiencies. Moreover, the positive effects of these interventions likely will not be evident until several years down the line. As a result, governments must prepare themselves for heavy initial investments that will ultimately lead to long-term economic growth—moving cities closer to an equitable future.

### ***C) Questions for Future Research***

Going forward, additional research should be focused on the costs of inaccessible and unsafe transport as well as barriers to recreational travel. Efforts

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<sup>78</sup> Christina Stacy et al., Rep. *Access to Opportunity through Equitable Transportation*.

to make leisure travel more accessible and convenient would further help combat the effects of time poverty, especially on lower income women and their families.<sup>79</sup>

Moreover, it would be beneficial to explore the state of transportation systems in more American cities and compare progress and interventions to those in cities globally. While this paper focuses on the urban planning gender divide specifically in the United States, the country can adopt and adapt effective interventions implemented in cities like Vienna, London, and Singapore.<sup>80</sup>

Finally, further study should prioritize travel preferences, needs, and experiences of the LGBTQI+ and BIPOC communities to ensure that transportation is designed with all citizens at top of mind.<sup>81</sup>

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<sup>79</sup> Ibid.

<sup>80</sup> Abby Granbery, "Trip Chaining and the Mobility of Care Taking."

<sup>81</sup> Rep. *Changing Lanes: A Gender-Equity Transportation Study*.

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