



# UNDERSTANDING HOW WOMEN TRAVEL

August 30, 2019



Metro





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# EXECUTIVE SUMMARY

## Why study women's travel?

Mobility – or one's ability to get around – shapes the opportunities we can reach, and the way we interact in and with our communities. Although women comprise over half of all transit ridership in Los Angeles County, their mobility needs, concerns, and preferences have not been critically accounted for in the way our transportation systems are planned. As a result, women tend to bear outsized burdens and risks in the course of their daily travel.


Despite these conditions, women continue to make their way through a mobility environment that has not been designed with them in mind, navigating the transportation networks to get to school, to work, to run errands for and with their families. Many studies have shown that, in addition to the persistent gender wage gap, women pay more for goods and services than men. Transportation is no different. The “pink tax” does not only apply to the added cost of finding safe means of travel at night: it includes all the ways that women put in extra time and effort to make transportation work for them.

In seeking to understand how women travel, Metro is taking an important first step towards easing the disproportionate efforts women put in to making the transportation system work for them.

## What is this study?

*Understanding How Women Travel* is an effort to understand the unique and diverse mobility needs of women in LA County. For the first time in Metro's history, this study explored the experiences of women traveling by Metro through an analysis of existing data sources, such as on-board surveys, and innovative new data sources, such as ethnography in buses and trains.

Initiated by Metro's Women and Girls Governing Council and endorsed by Metro CEO Phil Washington, *Understanding How Women Travel* will form the foundation on which Metro can develop a Gender Action Plan for the future.

The background of the page is a photograph of the interior of a public transit vehicle, likely a bus or train. The perspective is from the side of the aisle, looking down the length of the vehicle. Several passengers are visible, some sitting on seats and others standing. A man in a plaid shirt is standing with his hand on a vertical pole. The lighting is somewhat dim, with overhead lights providing illumination. The overall tone is muted and realistic.

**“ The gender data gap isn’t just about silence. These silences, these gaps, have consequences. They impact women’s lives every day.”**

CAROLINE CRIADO-PEREZ, INVISIBLE WOMEN



Photo source: Metro

## Study Background

In an initiative led by Metro’s Women and Girls Governing Council, CEO Phil Washington adopted several gender-specific equity initiatives in 2018 to improve women and girls’ experiences on Metro.

Metro collects and analyzes many different datasets to inform a variety of planning and operations decisions. Some data, such as the On-Board Survey, includes gender information. Other Metro data, such as ridership counts, do not. Even in cases where gender information is collected, the agency has never disaggregated its data analysis by gender to understand the unique travel patterns and preferences of women. Despite the known gender disparities in travel behaviors, the data and analysis that inform the most important transportation planning decisions at Metro remain gender neutral. The Women and Girls Governing Council identified this gap in Metro’s work and recommended the development of this study.

This groundbreaking study is a broad, intersectional effort to identify mobility barriers and challenges that women face. This study analyzes existing data sets and activates five primary data collection methodologies to fill gaps in the existing quantitative data sets and to connect with core transit rider groups that may be difficult to reach through conventional methods. *Understanding How Women Travel* provides a foundation of knowledge upon which Metro can actively work toward enhancing the quality of the travel experience for women in LA County.

This study builds on several recent and ongoing efforts both to expand and improve Metro services and help ensure equitable outcomes for LA County

residents. These efforts include the massive infrastructure expansions planned with Measure M (and Measure R) funds and participation with County transit operators in the Ridership Growth Action Plan that will feed into the NextGen Bus Restructuring study currently underway. At the same time, Metro has taken strides to be a better neighbor for the County’s most vulnerable populations, including: partnering with Peace Over Violence in the “It’s Off Limits” and “Speak Up” campaigns to address sexual harassment on Metro services, providing outreach and services to Metro’s homeless customers, actively promoting the human trafficking hotline, providing transit passes to foster youth through Youth on the Move, and making low-income fares easier to access through the Low-Income Fare is Easy program.

Metro’s goal for this initiative of gathering and analyzing gender-disaggregated data is to have access to Metro/Los Angeles County-specific research and data that really reflects how women travel to make informed decisions and ensure that applicable departments at Metro are utilizing gender specific data to implement service changes and improvements. Metro has limited information on how women travel, which limits the consideration of women’s unique needs during planning, design, and operation of our system. Further research is needed to ensure that women’s issues are at the forefront of policy making. This will result in better information for the NextGen Study and Long-Range Transportation Plan and will lead to better, more effective and more integrated solutions to address the mobility needs of current and potential female riders.



## Why should LA Metro study women's travel?

For a long time, women's needs have been lost because they haven't been measured. The core finding of all existing evidence is that women are responsible for a disproportionate share of the household's transport burden while at the same time having more limited access to available means of transport. Women use the Metro system more. Women are a larger portion of the population. Women have different travel patterns than men and have different commute demands. While these findings are universal based on our literature review, this study references LA County-specific data to justify the business need for service improvements. The minimal attention paid to gender differences is in part due to the lack of statistics that show the differences in how women and men travel. For this reason, it is hard to understand gender differences in making trips, trip frequency, distance traveled, and mobility related challenges in accessing services and employment.

Without further research into gender specific concerns, we will only continue to receive glimpses of the overall issues women face. Furthermore, while some agencies

like Transport for London have conducted a needs assessment of women's travel patterns, the majority (unfortunately) still remain reactive. We have limited information on how women travel, which limits the consideration of women's unique needs during planning, design, and operation of our system. Today, fear and safety concerns stifle and constrict access to destinations for many female Angelenos. The "pink tax" increases women's travel costs because systems and services do not meet their safety needs, and women substitute with more expensive options to fill the gaps. Women's stories of harassment and assault have upended the way that we think about public space, including the space that we share on trains, buses, and sidewalks. In holding ourselves responsible for those transportation spaces, we redefine what an inclusive mobility network could look like in the future.

In order to reach the goal of having world-class transportation systems that meet the needs of all Angelenos, we first need to understand the ways in which women travel, how those patterns differ, and what types of solutions might have the biggest effect in reducing the travel burdens faced by women. This study is the first major undertaking by a US transportation agency to research, analyze, and publish the findings from such an effort.



Photo source: Metro



## Methods

A comprehensive and creative approach was required to understand how and why women travel on transit and using other modes in Los Angeles County—and prompted a consideration of both existing and new data. Framed by core social justice principles and methods, both traditional and non-traditional data collection methods were used to effectively capture “hard-to-reach” populations and embody the project’s intersectional approach to gender.

*Understanding How Women Travel* includes:

- 1 Conventional methods that provide statistics about women’s travel behavior
  - » Analysis of nine **existing data sources** from Metro and the National Household Travel Survey revealed gendered preferences and trends in travel behavior and transit ridership
  - » *Understanding How Women Travel* **survey** reached 2,600 respondents, oversampling women and transit riders
  - » Three **focus groups** allowed for open conversation around sensitive topics and added nuance to our understanding of gender differences in travel
- 2 Innovative methods that offer qualitative findings about the experience of women traveling by Metro
  - » Over 100 hours conducting **participant observations** on 19 Metro routes offered insight into how women are using Metro’s services
  - » Three **participatory workshops** creatively engaged the most loyal – and most vulnerable – core Metro riders: women with disabilities, women experiencing homelessness, and women who are immigrants with varying documentation status
  - » Three **pop-up engagements** expanded our data collection to catch every-day riders, in the process of using Metro’s services, to hear what makes their ride easy or difficult

## Findings

Together, these methods reveal rich and significant findings about how women travel. This report organizes findings according to five themes:

- 1 *Travel Behavior Trends*, including overall travel trends and transit-specific travel trends
- 2 *Safety*, including sexual harassment and crime, physical safety and injuries, presence of staff to manage safety concerns, and other issues that exacerbate safety concerns
- 3 *Access*, including financial access, physical access, and Access services
- 4 *Reliability*, including headways, real-time information, pass-ups, and service times
- 5 *Convenience & Comfort*, including the investment of time, cleanliness, customer service, and station and vehicle design

Each of these key themes are summarized on the following pages.



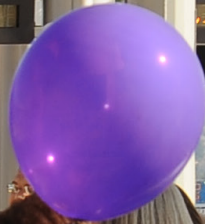
**Metro's Vision Statement includes "increased prosperity for all by removing mobility barriers."**

*With women comprising more than half of Metro's existing riders, and more than half the population in Los Angeles County, a key component of achieving the agency's vision is to understand the mobility barriers to economic opportunity that women currently face.*

↑ Exit  
Civic Center Way/ 3rd St



↑ Exit  
Civic Center Way/ 3rd St





## Travel Behavior Trends

Through the analysis in this report, key trends emerge that differentiate women's travel patterns from men's travel patterns, across all modes.

- » Across all modes, more women are making many trips (7 or more) per day than men and more women than men are not making any trips per day. This means women may experience more exposure to travel burdens (cost, stress, or safety risks), or may be more likely to be isolated or disconnected from the opportunities that travel affords.
- » Women in Los Angeles also make shorter trips than men, which is potentially driven by workforce participation rates, location of employment opportunities, and taking household-serving trips that tend to be more localized.
- » Women's trips are more varied to a broader spread of destinations, and are more likely to primarily serve the needs of someone else.
- » Women are more likely to live in a car-free or car-light household, take more trips with other people, and take fewer single-occupant car trips than men.
- » Women are also more likely to carpool or get a ride from a family member or friend if they don't have a driver's license.

These findings show that women may need to adjust their own schedule and travel needs to accommodate others, and in doing so, give up some of their own autonomy and control over when and how they travel.

Despite these challenges and tradeoffs, women show ingenuity in arranging their schedules to meet their travel needs.

- » Women are more likely to trip-chain, or make stops along the way to other destinations, and describe consolidating all their errand trips into one day where they will have access to a vehicle.
- » Women in Los Angeles are also more likely than men to travel mid-day, with a travel peak around 2 PM when transit service may be reduced.

In addition to these overall travel trends, some clear patterns emerge for women who ride transit. Currently, more than half of all bus riders are women, and more than half of all rail riders are women. The burdens and risks of transit travel, as well as the benefits of transit travel, are more pronounced for women, as they make up the majority of Metro's customers and as they ride transit frequently.

- » Among female riders, almost 90% ride the system more than three days per week.
- » 57% of women bring their children on transit.
- » Women ride transit because they do not have a car, because they want to avoid traffic, or because they do not have a license. Two of these three reasons indicate that women who ride transit do so because they have fewer transportation options, and may have less access to economic opportunities as a result.

Still, many women do use transit to access economic opportunity.

- » Over 85% of women riders use Metro to travel to work or school, and of those women, 32% also use Metro to run errands or complete recreational trips.

Among people who make household serving trips most frequently, these trips comprise the same share for women whether they use transit or not; for men, the share of household-serving trips declines if they are transit users. This shows that while men are more likely to find alternatives to using transit to complete household-serving trips (using a different mode or taking fewer trips), women are less likely to find an alternative, and instead work to make the transit system work for their needs.

Although the rate of adoption for TNCs like Uber and Lyft is the same for men and women, women are more likely than men to report that their transit use has stayed the same as they have also begun to use TNCs.

- » Women are more likely than men to say they use TNCs for trips that transit does not serve, while men are more likely to say they use TNCs to reach a transit stop or station. The trips that are not served by transit may be related to time or location, as women's needs differ from men's needs by both time of day and location.

These travel behavior findings point towards many opportunities to adjust the services provided by Metro to better meet the travel needs expressed by those who are using transit. Development of a Gender Action Plan – or a tactical plan to implement policy, design, and service changes throughout the agency – would help to articulate the immediate opportunities and

long-term goals that would create a system that better serves women. Adjustments to services, vehicle design, and policy would help minimize the time, cost, safety, and physical burdens of riding transit for the more than half of all riders who are women.

- » The findings from *Understanding How Women Travel* about women's mode choices, how likely they are to travel with others in their care, and their complex trip-chaining patterns could all inform adjustments to Metro's fare policy to make it more equitable towards women and more cost-competitive with driving and carpooling.
- » Findings about women's trip purposes and primary responsibility for household errands could all inform the way transit vehicles, transit stations, and bus stops are designed, so that space for traveling with others and carrying bags and other belongings could be better accommodated.
- » Findings about when women are traveling and average trip lengths could inform new service offerings that meet a mid-day peak travel demand and provide better direct connections over long distances while minimizing transfers.

Adjustments to services, vehicle design, and policy would help minimize the time, cost, safety, and physical burdens of riding transit for the more than half of all riders who are women.

## Safety

Women feel unsafe on public transit, and it is impacting how often they ride, when they ride, and if they ride at all. Among women, safety on transit is a top concern voiced across every mode of data collection, and their concerns center around harassment and personal security, as well as physical safety and design of vehicles, stations, and stops. These concerns collectively obstruct women's freedom of movement.

- » Women report accidents and injuries on Metro at a higher rate than men. Two-thirds of all complaints about accidents and injuries on Metro Rail or Metro buses were made by women.
- » While 60% of female riders who participated in our survey feel safe riding Metro during the day, that number plummets to just 20% at night. Safety perceptions for waiting and walking to the stop or station were even lower.

- » Concerns about safety are causing riders to alter their behavior – to consider their clothing choices, to change their routes or take routes that may be longer or more costly, to avoid taking a trip at all, or for those who have other options, simply not ride transit because they prefer the safety of a car.

The concerns that emerged in the survey are substantiated by the numerous stories our project team heard from women during the focus groups, participatory workshops, and pop-up events. Women we spoke with have endured sexual harassment and witnessed violent acts while on transit. These concerns are also borne out in the Metro crime data and reports of sexual harassment.

We asked women what would make them feel safer on transit.

- » Both current and prior riders agreed that more lighting at stops and along approaches to stations and the presence of security staff nearby would help them feel safer.
- » Current riders cited having transit police nearby.
- » Previous riders cited security cameras.
- » Two-thirds of female riders believe there are too few transit police on board the system.
- » During focus groups, workshops, and pop-up events, it was clear that riders have a more complex view of security staffing. Some felt that police were slow to react or ineffective when issues did arise, while others felt that police were too aggressive or too quick to brandish weapons.
- » Literature review studies showed that women generally preferred the presence of staff over technological solutions such as CCTV or alarms buttons.
- » The effect of bus operators on women’s perceptions of safety also emerged as a key theme. Women described having empathy for operators, who must perform many jobs at once, but also expressed their frustration that no one is expected to step in to manage conflict between passengers.

Similarly, women expressed empathy around how Metro responds to the needs of people experiencing homelessness and people who need additional mental health resources, but at the same time perceived

these populations to be contributors to the concern about riders’ unpredictable behavior on transit.

Over and over, participants in our study pointed to problems that could be solved by a deeper investment in the presence of security staff. Analysis of existing data sets revealed a preference for having transit police nearby, and further investigation through our qualitative methods showed an interest in more security staff of all types, including non-law enforcement staff.

These safety findings underscore the burden and stressors experienced by women using the transit system.

These safety findings encapsulate the need to adjust safety and security strategies, and focus time and attention on this issue in order to address the largest concerns voiced by women. Despite Metro’s investment in law enforcement over the years, safety is still a prevalent issue. Participants in our study asked for additional amenities, such as lighting at stops and along pedestrian access routes, and more frequent service to shorten long wait times at dark bus stops. These ideas and strategies also emerged in the literature review, demonstrating consistency in safety concerns and improvement ideas between other

studies and this Metro study. Creation and articulation of strategies to address safety in a Gender Action Plan would be a critical first step towards addressing these concerns. In addition, adjustments to services provided by time of day, approaches to staffing and security, and station/vehicle design changes could also help address the many safety concerns that emerged in this study.

## Access

Access concerns voiced by women include physical design of transit spaces, financial ability to pay for transit trips for themselves and those in their care, the challenges of traveling with children, and the travel needs of women with disabilities. After safety, this set of concerns were major contributors to the decisions women made about their travel choices and how they do or do not use transit to help meet their travel needs.

Access needs are substantially different for women compared to men, as a result of physical differences and preferences, household responsibilities and the burden of schlepping associated with those responsibilities, and the disproportionate impact on women who have disabilities. The physical demands of traveling are compounded when one’s needs vary even the slightest bit from the design

standard of a healthy, fit, young man. Add a stroller or a wheelchair or children or years of age, and the system works substantially worse for its riders.

Vehicle access issues disproportionately affect women.

- » Women who ride Metro are less likely to have access to a vehicle than male riders, and former female Metro riders' top response for why they used to ride transit was "I didn't own a car."

Financial access also disproportionately affects women. Low-income women, in particular, carry a disproportionate financial burden when it comes to travel.

- » Female Metro riders live below the poverty line at greater rates than male riders. 59% of female bus riders are below the poverty line, compared to 50% of male bus riders. 34% of female rail riders are below the poverty line, compared to 26% of male rail riders.
- » Low-income women in Los Angeles reported spending more 40% on ridehailing services, 28% more on transit for themselves, and 90% more on transit for others compared to higher-income women.
- » Women are more likely to be frequent riders, and although a monthly or weekly pass may save money in the long run, women reported that the up-front cost is too expensive.
- » Women seem to prefer cash for its flexibility, as TAP cards are attached to only one individual and cannot be used to pay for children that may be accompanying an adult rider.
- » Women comprise the majority of bus riders, and we heard from many women who do not take the train at all. Women bus riders reported that TAP cards are difficult to obtain and reload.
- » Women traveling with children reported that kids' fares are confusing to understand.

The physical design of vehicle and stop/station spaces also create access challenges for women.

- » Older women and women traveling with children had a difficult time maneuvering with strollers and carts on the bus. Only 20% of female riders with children say that taking their kids on transit is easy.
- » Women were observed in our study traveling with bags, carts, and strollers. Negotiating the






space on transit vehicles and at stops and stations appeared to be a challenge. Many women stored bags on the seats next to them or in the aisle, and relied more heavily on elevators and escalators to travel between the street level and the platform.

- » From women with disabilities, we heard that Access Services is a critical resource, but operates in a way that devalues women's time – hours and even an entire day could be expended on a single trip for a single purpose.
- » Based on data from the National Household Travel Survey, 9% of women reported using a mobility assistance device compared to 7% of men, and 7.5% of women reported that their medical condition limits their travel, compared to 5.5% of men.
- » Women are likely to be more dependent on Access Services because of differences in mobility, disability, and licensing, and will therefore be subject to the impacts of Access Services more than men.

The findings related to access demonstrate that the burdens of traveling are compounded by the everyday facets of women's lives: the financial burden of living in one of the most expensive cities in the country, the physical challenges faced by women with disabilities while traversing public spaces not built for them, and the responsibility women have for transporting children from place to place. The barriers to easy transit access amount to a "pink tax" on women, in the form of higher time costs for women who must maneuver the Metro system despite the challenges they face, or for women who must simply find another, more expensive, mode in order to carry out their everyday responsibilities. These costs fall disproportionately on women with children, women with disabilities, and low-income women, who report spending more than higher income women on transportation for themselves and their families. In order to reduce this "pink tax" and improve access for women across all the dimensions discussed above, Metro can consider adjustments to fare policies, services by time of day, and the design of stations, stops, and vehicles. These steps can be developed more thoroughly and specifically through a Gender Action Plan.

## Reliability

Reliable transit service means that schedule information is easily accessible, real-time updates are accurate, buses and trains run frequently throughout the day and night on weekdays and weekends, and



**“The share of women in the labor market has dramatically increased, but women are also still responsible for much of the unpaid labor associated with household tasks – and it’s difficult to accomplish both with transit.”**

DR. EVELYN BLUMENBERG

Photo source: Metro






buses and trains arrive when expected. For women in Los Angeles who rely on Metro to get to work, go to doctor's appointments, and pick kids up from school, reliable transit service is a lifeline.

- » The top three complaints filed by female Metro bus riders are all related to reliability – pass-ups, no shows, late buses, and unreliable or absence of real-time information.
- » At our pop-up events, in the focus groups, and in the participatory workshop discussions, we heard time and time again stories of women stuck waiting for a late bus, of being passed up and waiting an hour for the next bus, and of unreliable real-time information on station signs and cell phone apps.

**For women who rely on transit, an unreliable system has real consequences.** A late train can mean daycare fines, a pass-up can mean a missed medical appointment, and infrequent early morning or late night service can limit employment opportunities.

These experiences cause women to alter their travel behavior – sometimes leaving hours ahead of time due to unreliable service, using ridesharing services instead of transit due to infrequent service at night, carrying a flashlight to ensure that they are not passed up by operators while waiting in the dark, or even sleeping at the bus stop because service does not start running until several hours after they get off work.

The primary concerns related to reliability are concerns in and of themselves, and exacerbate safety concerns. When headways are long, and real time information is unreliable, women's safety concerns are amplified and women who have the financial ability switch to a different mode, such as ridehailing. Others who do not have that luxury simply endure the exposure and stress of added wait times. Real time information and tools designed to help ease the stress of waiting for infrequent service often fail. These challenges become even more difficult when traveling with children or trip-chaining, or for women with jobs or household responsibilities



that require travel during mid-day, late night or early morning periods, or on the weekends.

For women who rely on transit, an unreliable system has real consequences. A late train can mean daycare fines, a pass-up can mean a missed medical appointment, and infrequent early morning or late night service can limit employment opportunities. Reliability issues can render a system unusable for women, render the stressors they experience intolerable, and exacerbate women's safety concerns. Reliability issues also place a disproportionate burden on women living in poverty and those who are dependent on transit. For these women, other options for travel may be limited and the consequences of being late may be more costly.

**Reliability issues exacerbate women's safety concerns and financial burdens.**

The reliability findings point to service improvements that would clearly reduce the time burden for women who rely on Metro and improve safety concerns as well. Workshop and pop-up participants pointed to increased bus and train service as a strategy that would improve women's safety and comfort. Service that is specifically timed to meet the travel needs and preferences of women would directly address the issues of infrequent service and long wait times. Women reported that more mid-day service would help them complete errands and pick up children. They also reported feeling especially vulnerable waiting for long periods late at night, and affordable late-night travel options would help those who work night shifts. Increased service would also reduce issues of overcrowding and improve dependability, safety and comfort. Metro can articulate reliability and service improvements through the development of a Gender Action Plan.

## Convenience & Comfort

Convenience and comfort are important considerations in order to build a system that women want to use, enjoy using, and would continue using even as they have other options available to them. Reliability issues render the system usable or not; comfort and convenience issues render the system pleasant or not. For women on transit, issues of convenience and comfort are inextricably linked to issues of access, safety, and reliability.

Many women we spoke with for this study recognized and embraced the convenience inherent in taking

transit. They described the stresses of driving in Los Angeles due to traffic and parking, and the relief they felt from those stressors by taking transit. They characterized Metro as a "lifeline" that enabled them to access work, health care, school, and errands, when they did not have a vehicle available or were unable to drive.

However, many women described another type of inconvenience – the investment of time they had to make in order to ride transit – whether it was a daily commute that started very early in the morning or a trip that involved several transfers just to reach Union Station.

Issues of comfort on transit can run the gamut from the physical comfort of waiting for and riding transit, to the emotional comfort that can come from positive interactions and communal experiences in a public setting like riding transit.

- » Fewer than 40% of female riders surveyed for this study felt that transit is comfortable or that transit vehicles have the space they need for their belongings.
- » In our observations and discussions with women about the Metro system, it became clear that lack of space for carts, strollers and bags on buses, lack of shade at stops, dirty stops and stations, and push buttons and pull-cords located too high all contributed to women's discomfort on Metro.
- » While we observed that women were hesitant to sit next to men they did not know, when women sat next to each other, they often struck up conversations and many noted a sense of community they felt on transit.

If they have limited transportation choices, a transit system that is not comfortable or convenient makes the trips we know women are taking more than men – household-serving errands and trips to transport someone else – the most difficult.



- » Women also described negative interactions with other riders and operators, and instances where they experienced a lack of etiquette among riders, causing discomfort.
- » Half of female riders who responded to our survey described Metro operators as courteous, and less than one-third felt that other riders were courteous.

The findings related to comfort and convenience directly connect to the choice some women make when deciding to take transit or not. For most women, a comfortable and convenient transit system would allow them to wait for their bus in the shade, easily load their TAP card or charge their phone while they wait, and provide ample space for their grocery bags, their strollers, or their walkers. Also, the operator will greet them, and another rider may offer their seat. When they sit down, they don't feel trapped by the person sitting next to them. A system map with transfer information is easy to read from their seat. When it's time to get off the bus, the push button is easy to reach and they are able to stand and move down the aisle to the back door with ease. They alight easily and their destination is just a short distance away.

For women on transit, issues of convenience and comfort are inextricably linked to **issues of access, safety, and reliability.**

Whether the policy that states strollers must be folded on the bus, or the lack of space on board for multiple grocery bags, inconveniences and discomforts are present throughout the Metro system. When women have a choice in transportation, they are more likely to pick the one that offers the most comfort and convenience, if they can afford to. If they have limited transportation choices, a transit system that is not comfortable or convenient makes the trips taken disproportionately by women the most difficult. In order to attract more women to transit and better serve current female riders, Metro can prioritize changes to make these trips comfortable and convenient by providing customer service, station and stop amenities, vehicle designs, and policies that respond to how women travel and use the system.





## Next Steps

This report is the first step in Metro's process to better understand and better serve the needs and preferences of women riders. With the findings from this study, Metro is equipped to begin considering policy, design, and service improvements that can improve the travel experience for women.

### ***Create a Gender Action Plan***

Metro can create a Gender Action Plan to pivot from research findings into actionable changes. Adopting a Gender Action Plan would allow Metro to align goals from its work, such as transit operations, systemwide planning, setting fares, and designing stops and stations, along with other initiatives to introduce new changes specifically intended to improve travel experiences for women.

**The Gender Action Plan will focus on the following:**

### ***Staffing and Safety***

Safety is a key concern for women who ride Metro and women who don't. Metro can reassess the approach to staffing, scheduling, operations, communications, and the design of space throughout the Metro system to create an environment that prioritizes safety and customer service, reduces sexual harassment, and encourages women to report instances of harassment.

### ***Fare Policies***

From traveling with children to making household trips on the bus, the disproportionate burden that women carry in their everyday travel is amplified for lower-income women. Metro can ease this burden by exploring fare options that accommodate families and provide affordable options for trip-chaining, such as fare-capping that can minimize the daily financial burden on lower-income women.



### *Station, Stop, and Vehicle Design*

Women's challenges in navigating buses, trains, stops, and stations are common, and can be exacerbated for older women or women with disabilities. Metro can investigate changes to station, stop, and vehicle designs to address the needs and concerns of women for elements like pull cords, push buttons, seating configurations, and elevator locations. Some design concerns can also be addressed with policy changes, such as Metro's stroller policy.

### *Services Provided by Time of Day*

Women are traveling just as often during the midday period as they are during morning and afternoon peak periods, and often trip-chaining. Women with disabilities sometimes dedicate an entire day to making a single trip because Access services and fixed-route services do not run the direct routes or times they need. Metro can evaluate services provided by time of day to understand how services can be adjusted to meet women's travel needs.

### *Future Investments*

In addition to the five steps identified above, Metro should consider the implications of this study on future investments. As the largest transportation provider in Los Angeles County, Metro is positioned to shape the region's future of transportation technology.

Innovation already infiltrates Metro's many offered services, from e-bikes in the Metro Bike Share fleet to the new MicroTransit pilot. As travel modes and trends shift, Metro's opportunities for investment and experimentation will expand, and should take into account the needs, preferences, and concerns of women.

Through ongoing, intentional data collection and analysis, Metro can continue to gain a better understanding of the nuances and differences within the diverse and heterogeneous population of women riders. Connecting this understanding to future planning and service changes will enable Metro to build off this groundbreaking study and progress towards a system that truly meets everyone's needs.



*As travel modes and trends shift, Metro's opportunities for investment and experimentation will expand, and should take into account the needs, preferences, and concerns of women.*



CH.1

# BACKGROUND

*Glancing behind her and adjusting her backpack, a high school student sees the 14 bus come around the corner of Beverly Boulevard and runs to the stop to catch it.*

*A few miles away in Culver City, a professional walks from the Expo Line station to her office, habitually avoiding the streets with all the broken sidewalks.*

*A caretaker in South Gate is mid-way through her shift, when she gets on to the Blue Line with her patients and realizes that the accessible seats are already taken.*

*When an older woman in San Gabriel boards the 78 bus, she thanks the riders who give her a seat and enough room for her grocery cart.*

*When the high school student gets home in Rampart Village and the sun starts to set, she walks with her mom to the laundromat along the well-lit streets.*

*These ordinary images inspire a simple question:  
How do women travel?*





Photo source: Metro

In 2017, Metro CEO Phil Washington established the Women & Girls Governing Council (WGGC) to analyze how Metro’s programs, services and policies impact the lives of women and girls in LA County. This volunteer council is a diverse group of 60 Metro employees. In February 2018, the CEO approved seven recommendations presented by the WGGC to improve women and girls’ experiences on Metro and to cultivate inclusive hiring practices at Metro.

*Understanding How Women Travel* is the WGGC’s initiative to help gather and analyze Metro-specific and Los Angeles County-specific research and data that reflect how women travel, in order to make informed decisions and ensure that applicable departments at Metro are utilizing gender specific data to implement policy changes, service changes, station design improvements, and vehicle design improvements.

Currently, Metro collects and analyzes many different datasets to inform a variety of planning and operations decisions. Some data, such as the On-Board Survey, includes gender information. Other Metro data, such as ridership counts, do not. Even in cases where gender information is collected, the agency has never disaggregated its data analysis by gender to understand the unique travel patterns and preferences of women. Despite the known gender disparities in travel behaviors, the data and analysis that inform the most important transportation planning decisions at Metro remain gender neutral.

The WGGC identified this gap in Metro’s work and recommended the development of this study.

This groundbreaking study is a broad, intersectional effort to identify mobility barriers and challenges that women face. This study analyzes existing data sets and activates five primary data collection methodologies to fill gaps in the existing quantitative data sets and to connect with core transit rider groups that may be difficult to reach through conventional methods. *Understanding How Women Travel* provides a foundation of knowledge upon which Metro can actively work toward enhancing the quality of the travel experience for women and girls in LA County.

## Project Goals

As noted throughout this report, women are more likely to make many daily trips, but travel fewer miles, are less likely to be licensed to drive, are more likely to make trips with the purpose of serving others (such as taking children to activities or other adults to medical appointments), and more likely to link or chain trips together than men. In spite of these gender disparities in travel behaviors, the data and analysis that inform the most important transportation planning decisions at Metro remain gender neutral. Historically, transit service providers and decision-makers assumed that transport projects and service delivery equally benefit both men and women and that there are no significant differences between travel needs and patterns based on gender. In reality, women experience mobility differently. This is deeply rooted in community-driven gender roles that are influenced by economic, social, and lifestyle factors.

Not only do women travel differently, they experience the built environment differently and care about different things. Trip chaining, sexual harassment, stroller access, and long wait times are just a few areas where qualitative and quantitative research suggest that women have different needs and preferences than men. The fundamental issues that this study aims to address through the collection and analysis of data include:

- » Ensuring that the concerns of women commuters are incorporated into planning and operations of the LA Metro system
- » Ensuring that the concerns of women are incorporated into the design of both public transport infrastructure such as bus stops as well as the rolling stock
- » Increasing access to reliable service that meets the needs of women commuters and transit riders
- » Improving service for women
- » Increasing safety for women

## Why should LA Metro study women's travel?

For a long time, women's needs have been lost because they haven't been measured and because transportation decisions have remained gender neutral. The core finding of all existing evidence is that women are responsible for a disproportionate share of the household's transport burden while at the same time having more limited access to available means of transport. Women comprise over half of all transit ridership in LA County. Women have different travel patterns than men and have different commute demands. While these findings are universal based on our literature review, this study references LA County-specific data to justify the business need for improvements in how we plan, design, and operate our transit system. The minimal attention paid to gender differences is in part due to the lack of statistics that show the differences in how women and men travel. For this reason it is hard to understand gender differences in making trips, trip frequency, distance traveled, and mobility related challenges in accessing services and employment.

Without further research into gender specific concerns, Metro will only continue to receive glimpses of the overall issues women face. Furthermore, while some agencies like Transport for London have conducted a needs assessment of women's travel patterns, the majority (unfortunately) still remain reactive. Metro has limited information on how women travel, which limits the consideration of women's unique needs during planning processes. Further research is needed to ensure that women's issues are at the forefront of policy making. After all, women comprise the largest percentage of public transit users.

**“ We get what we measure – perhaps what you measure is what you get. More likely, what you measure is all you'll get. What you don't measure is lost. ”**

MANAGEMENT GURU H. THOMAS JOHNSON

Today, reliability, convenience, cost, fear, and safety concerns stifle and constrict access to destinations for many female Angelenos. The “pink tax” increases women's travel costs because systems and services do not meet their needs, and women substitute with more expensive options to fill the gaps. Women and girls' stories of harassment and assault have upended the way that we think about public space, including the space that we share on trains, buses, and sidewalks. In holding ourselves responsible for those transportation spaces, we redefine what an inclusive mobility network could look like in the future.

In order to reach the goal of having world-class transportation systems that meet the needs of all Angelenos, we first need to understand the ways in which

women travel, how those patterns differ from other people, and what types of solutions might have the biggest effect in reducing the risks and burdens faced by women. This study is the first major undertaking by a US transportation agency to research, analyze, and publish the findings from such an effort.

## National Trends

The following excerpts are summarized from our review of the literature that existed prior to this study. This information covers national-level trends, reflecting an array of academic studies that have been conducted over the past several decades. The full literature review can be read in Appendix A.

### National Average Public Transit Use by Gender

The majority of the people who use public transit in the United States are women. Women are more likely to ride public transportation to work than men. Men are more likely to drive to work.

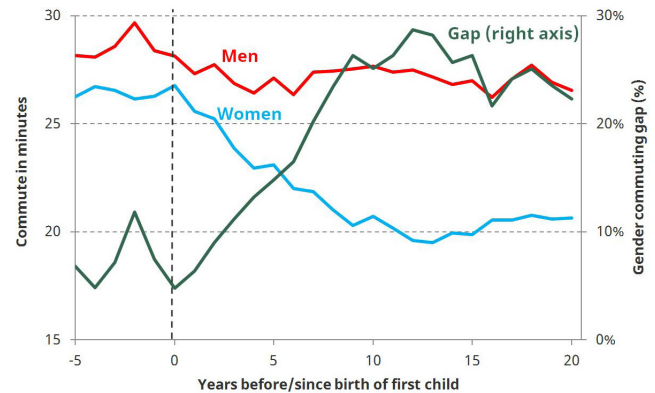
The latest data from the American Community Survey of the U.S. Census show: Of the people, who take public transportation to work, 55 percent are women and 45 percent are male. In some places, the proportion of women riders is even higher. That might not seem like a difference worth mentioning until you consider the workforce overall. The American adult workforce is mostly male, and by a decent amount: 53 percent male to 47 percent female.

### Commute Trip Length

Gender influences the spatial location of employment opportunities, shapes women's access to the labor market, and, accordingly, influences women's transportation needs. Research shows a relationship between occupational sex segregation and commute distance, with women in female-dominated jobs traveling shorter distances and working closer to home than men (Gilbert, 1998; Hanson & Pratt, 1992, 1995; Johnston-Anumonwo, 1988). Some scholars attribute this relationship to the spatial dispersion of feminized occupations (Gordon et al., 1989; Hanson & Johnston, 1985). In other words, it may be easier for women to find local jobs compared to men. Though these sources are decades old, they form the foundation for the study of gendered commute patterns.

So why do women work closer to home? Statistics suggest it has a lot to do with who takes on the primary caregiver role. As the chart shows, before the birth of their first child, women had slightly shorter commutes than men on average. But in the decade after having a first child, the average commuting time among women fell while remaining largely the same for fathers. The presence of children—particularly young children—increases the number of caring trips and the need for routes to accommodate these

Average Time Spent Commuting by Time to/Since Birth of First Child



Source: The Institute for Fiscal Studies, "The 'gender commuting gap' widens considerably in the first decade after childbirth" (Joyce and Norris Keiller, 2018). Data from British Household Panel Survey 1991-2008 and Understanding Society 2009-15.

needs (Crane, 2007). These findings have continued to be replicated by more recent ongoing studies into gender differences in labor participation.

Among low-income women, short commutes may be due to a reliance on place-based information networks. Some studies show that low-income women with children, rely on informal, neighborhood-level networks to connect them to employment (Chapple, 2001; Gilbert, 1998; Hanson & Pratt, 1995). Many low-income women engage in localized job searches to minimize the high costs associated with distant and dispersed job vacancies (Holzer & Reaser, 2000).

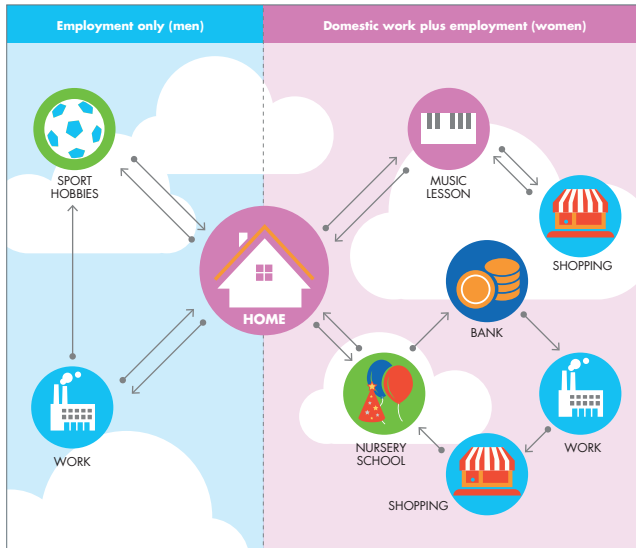
### Trip Chaining

A simplistic definition of a "trip" describes each trip as a journey from a single starting location to a single destination, typically using a single form of transportation. The concepts of "trip chaining" and "multipurpose trips" expand on this definition by recognizing that trips often involve a sequence of destinations and are multimodal (McGuckin et al., 2005b; Hanson, 1980). Research on trip chaining has examined the directions of trips, timing of travel, and purpose of the stops with attention to gender and other factors intersecting with sex and gender.

The available research around this topic is limited. The topic of trip-chaining is complex, and is best understood through the analysis of travel diary data, which can be expensive to collect and unreliable.

Although the National Household Travel Survey provides the most robust available travel diary data, the sample size for transit users is too small to derive statistically significant findings for those who trip-chain on transit. As a result, no published studies have analyzed trip-chaining specifically for transit users.

### A Normal Day (for a Woman from Western Europe)



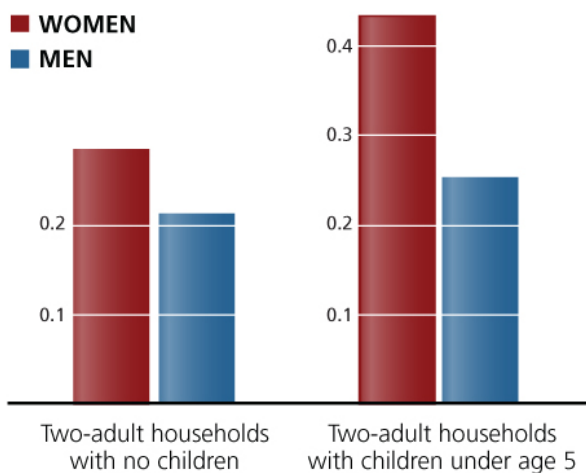
Source: Civitas Policy Note, *Smart Choices for Cities: Gender equality and Mobility: Mind the Gap!* (2014). Data and concept from Lehner Lierz (2003).

Analyzing gender in transportation requires challenging underlying concepts and identifying gaps in the way data are collected. It also requires introducing new concepts and theories that model the complex routes taken by real people. A study of travel in the United States between 1995 and 2001 using the concept of trip chaining has produced the following insights regarding women's and men's travel patterns:

- » A greater number of women than men make multiple-stop trips when traveling between their homes and workplaces. This difference between women and men is decreasing, however, mainly as a result of an increase in trip chaining among men (between 1995 and 2001, the number of stops men made while returning home from work increased by 24%).
- » Women make more short stops on the way to or from work than do men to perform household-sustaining activities, such as shopping and family errands, and working women in two-worker families were twice as likely as men in two-worker families to pick up and drop off school-age children at school during their commute.
- » Other demographic variables interact with gender in predicting trip chaining. For example, having a child under age 5 increases trip chaining by 54% for working women and 19% for working men as shown in the adjacent chart (McGuckin et al., 2005a).
- » Women working part-time are more likely to trip chain than others. 26% of women working part-time include trips for other purposes (e.g. taking children to school) as part of the journey to work. These trip chains involve more than one link.

### Trip Chaining by Women and Men During Commutes

Average number of stops per commute, United States, 2001



Source: *Differences in Trip Chaining by Men and Women. In Research on Women's Issues in Transportation* (McGuckin et al., 2005a).

Proportion of working adults going from home to work via another destination during the weekday morning peak:



Source: National Travel Survey Factsheet: England, 2002-2014

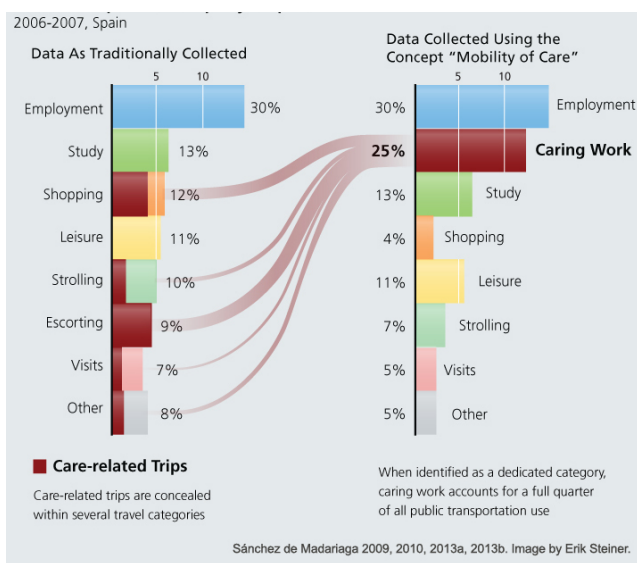


## Mobility of Care

This gendered innovation is a summary of Ines Sánchez de Madariaga’s research (2009, 2010, 2013a, 2013b). Time Use Surveys provide a perspective for evaluating transportation surveys. The Harmonised European Time Use Survey codes time use into forty-nine categories and provides sex-disaggregated data on time usage within fifteen countries. In Spain, women spend more time than men performing the three explicit categories of childcare coded in the Survey. This pattern holds in the U.S. as well—in 2010, the average U.S. woman spent 32 minutes caring for and helping children in her household, twice as much as the average U.S. man’s 16 minutes (United States Bureau of Labor Statistics, 2011). It is important to recognize that men’s caring work has increased over time. That women spend significantly more time than men performing caring work implies that consideration of caring work is a key to gender equality in transportation; many forms of caring work rely on public transportation.

Regular transit surveys obscure the number of trips caregivers (particularly parents or, more likely, mothers) take; that serial trips, which women make more often than men, aren’t sufficiently defined; and that aggregated ridership figures, particularly by race, create incomplete pictures of the riding public. These true numbers, the researchers conclude, should encourage transit systems to redesign facilities to accommodate the transport needs of women.

### Public Transportation Trips by Purpose



Source: Sanchez de Madariaga 2009, 2010, 2013a, 2013b

The innovative concept “mobility of care” reveals significant travel patterns otherwise concealed in data collection variables (Sánchez de Madariaga, 2013; Sánchez de Madariaga, 2009). The charts below to the left represent public transportation trips made in Spain in 2007. The first chart (left) shows transportation data as traditionally collected and reported. It privileges paid employment by presenting it as a single, large category. Caring work (shown in red) is divided into numerous small categories and hidden under other headings, such as escorting, shopping and leisure.

The second chart (right) reconceptualizes public transportation trips by collecting care trips into one category. Visualizing care trips in one dedicated category recognizes the importance of caring work and allows transportation engineers to design systems that work well for all segments of the population, improve urban efficiency, and guard against global warming (Sánchez de Madariaga, 2013).

A number of innovations in transportation design have been implemented to support the mobility of care. In London, for example, these include:

- » Step-free access to trains, subways, and buses. Transportation authorities are removing steps from streets to platforms to accommodate baby carriages, luggage, wheelchairs, and similar devices. By 2007, the London Underground had developed 47 step-free stations.
- » Wide aisle gate access to transportation.
- » Level access from platforms to trains (Transport for London, 2007).

## Differences in Driving

For women, mode choice can be a manifestation of their preferences, concerns, and needs. Due to a persistent gender gap in wages and women’s restricted access to labor markets (Nunn & Mumford, 2017), men often have greater economic power and historically, have had higher levels of household car access in two-parent households (Matthies, Kuhn, & Klöckner, 2002; Pickup, 1984).

However, recent evidence suggests that this is no longer the case. Some studies have found that vehicle priority goes to the household member whose travel needs are the least likely to be met by modes other than the automobile (Scheiner & Holz-Rau, 2012). Since women tend to engage in more complicated trip patterns than men, they tend to get priority use of the household car in single-vehicle households.

## Biological Differences

Standards and reference models are integral to science, health & medicine, engineering and design standards often default to male. For example, in the 1970s the majority of automobile crash test dummies modeled only the 50th percentile U.S. man. By the 1980s and 1990s, a wider range of dummies—representing diverse heights and weights—were used in vehicle safety tests. By expanding the modeling base, engineers took the safety of women, men, and multi-ethnic populations into consideration.

Typically, transit vehicles are designed for men, with taller steps or high grab bars and with little space for goods or strollers.

- » In their household-serving trips, women carry large shopping bags or push strollers, more often than men (McKnight, 1994). If transit vehicles do not have dedicated space to store bags or strollers, women may find transit travel too inconvenient and choose another mode.
- » Some transit operators in Europe (such as Transport for London) allocate space on transit vehicles for strollers. However, U.S. buses typically do not have such dedicated space; strollers may be parked in seats but only if they are not in use (Coale, 2015).
- » Many U.S. transit companies, such as New York City's MTA, allow only folded strollers on the bus, a decision that forces parents to fold strollers,



Photo source: Metro

while also handling their children. This is not an easy task, and doing so in a crowded bus is a potential safety hazard (Lowry, Furfaro, & Brown, 2017).

## Psychological Factors

Women also experience perceptual or psychological barriers that constrain their mobility. Parents are more likely to give their sons larger latitude for movement across city spaces than their daughters, who are perceived more susceptible to the threat of 'stranger-danger' (Loukaitou-Sideris & Sideris, 2009). As a result, girls tend to be more confined in a circumscribed use of spaces (Young, 1990). Such social attitudes transcend childhood into adulthood and result in women's underrepresentation in public spaces and their more limited use of cycling as compared to men (Rosenbloom & Fraissard, 2009).

Sexual harassment (verbal or physical conduct of sexual nature) is widespread (Fenster, 2005), including in transit settings and affects women's travel patterns and behavior. Such behavior against women is pervasive around the world. Fear of harassment cuts across the experiences of women in cities. A 2007 survey of subway riders in New York City found that 63% of respondents had been sexually harassed in the subway. Nevertheless, 96% of those harassed did not contact the NYPD and/or the MTA to file a report (Stringer, 2007). While the #MeToo movement seems to be slowly altering women's willingness to report harassment, women have historically often been embarrassed and reluctant to report sexual offenses against them, in a public culture that often blames the victim (Hall, 1985).

- » Women's fears about possible victimization in public settings vary across groups; for example, older women feel less safe than younger women (St. John & Healdmoore, 1995).
- » Low-income women and women of color often experience higher levels of fear walking in their neighborhoods than white women (Madriz, 1997; Ross, 2000).
- » Similarly, women with physical or mental disabilities and lesbian women are more fearful of assault in public spaces (Morrell, 1996; Valentine, 1996).

Women without resources may respond by shifting how they use their usual mode of travel. For example, they may only travel during daylight hours or with others (Loukaitou-Sideris, 2015). For women with higher incomes and greater choices, safety fears may

influence their preference for private automobiles or taxis relative to other modes (Loukaitou-Sideris, 2014; Stanko, 1990; Wekerle & Whitzman, 1995). In some instances, women may completely avoid using certain public spaces or visit them only if accompanied by boyfriends, spouses, or friends (Loukaitou-Sideris & Sideris, 2009). As a result, research reveals an under-representation of women in public spaces (Cooper & Francis, 1990; Cranz, 1980).

### Physical Environment Factors

Women's fears are closely linked to the characteristics of the physical environment. Researchers find that women and men respond to similar environmental conditions differently. Women are typically more fearful than men in public settings because they perceive higher risks. Some empirical studies also show that women tend to be more sensitive than men to signs of danger and social disorder, graffiti, and unkempt and abandoned buildings (Wekerle & Whitzman, 1995) that sometimes surround transit stops, especially in low-income neighborhoods.

The type of design, layout, and environmental conditions of the built environment can make walking or waiting at transit stops/stations uncomfortable or perceived as unsafe particularly for women.

- » Women express more fear than men having to wait for the bus or having to walk along poorly lit routes in their travel to and from transit stops (Loukaitou-Sideris, 2014). Desolate transportation settings can generate anxiety that no one will be there to help if a crime occurs. This includes empty bus stops and train stations; parking lots and garages; dark walkways connecting station platforms to park-and-ride facilities, and situations where there is only one male passenger in a car (Lynch & Atkins, 1988).
- » With respect to transit, women report feeling safer on the bus than waiting at the bus stop because the presence of a bus operator is more reassuring than the unpredictability of the more open bus stop setting (Loukaitou-Sideris & Sideris, 2009).
- » Safety fears are elevated for low-income and minority women, who are more likely to live in high-crime neighborhoods, may return home from work in the late evening, and have fewer private transportation options than more affluent women.

### The Relationship between Vehicle Access and Economic Opportunity

Income is a strong determinant of women's travel behavior. Adults in low-income households are less likely to own and drive automobiles than adults in higher-income households (Blumenberg & Pierce, 2012) and are, therefore, more likely to use other modes such as public transit. In most neighborhoods in the U.S., automobiles provide far greater access to opportunities within a reasonable commute time than public transit (Shen, 2001). Consequently, low-income adults in households without cars can be at a disadvantage in the labor market (Gautier & Zenou, 2010; Raphael & Stoll, 2001).

The need for convenient transportation is even greater in female-headed single-parent households, in which the woman has ultimate responsibility for all aspects of household maintenance. The research on female-headed households suggests that those without cars can have trouble finding and keeping jobs. A growing number of studies on welfare recipients (largely female-headed single parent households with children) find a strong positive relationship between auto ownership and employment (Baum, 2009; Cervero, Sandoval, & Landis, 2002; Ong, 2002; Sandoval, Cervero, & Landis, 2011).

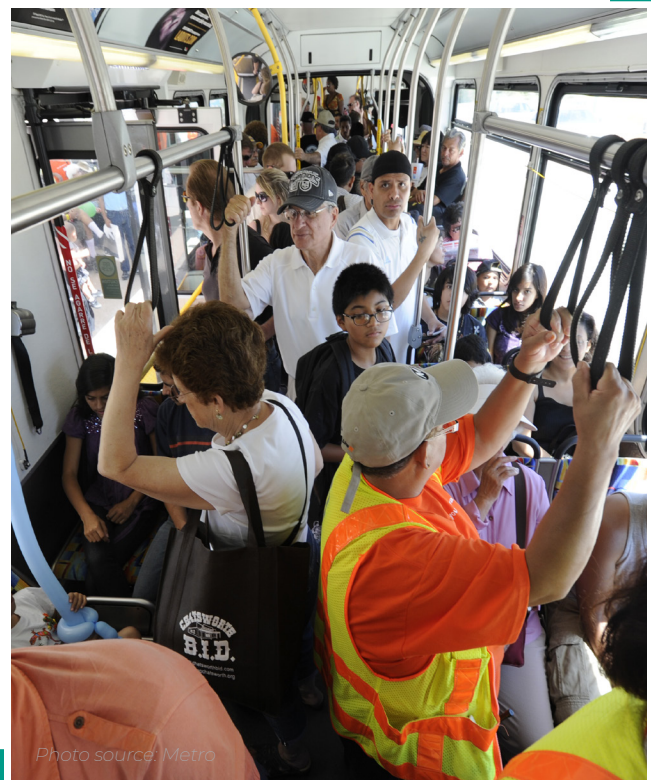


Photo source: Metro

## Policy and Practice to Address Women’s Transportation Needs

Despite the growing global attention to gender differences in travel behavior (Blomstrom, Gauthier, & Jang, 2018; Hasson & Polveoy, 2011; Maffii, Malgieri, & De Bartolo, 2016; Peters, 2013), very few transportation agencies have adopted programs and services to address these issues.

There are some notable exceptions; transit agencies in the U.K, Sweden, Canada, Chile, and a few other countries have enacted policies to respond to the transportation needs of women, including:

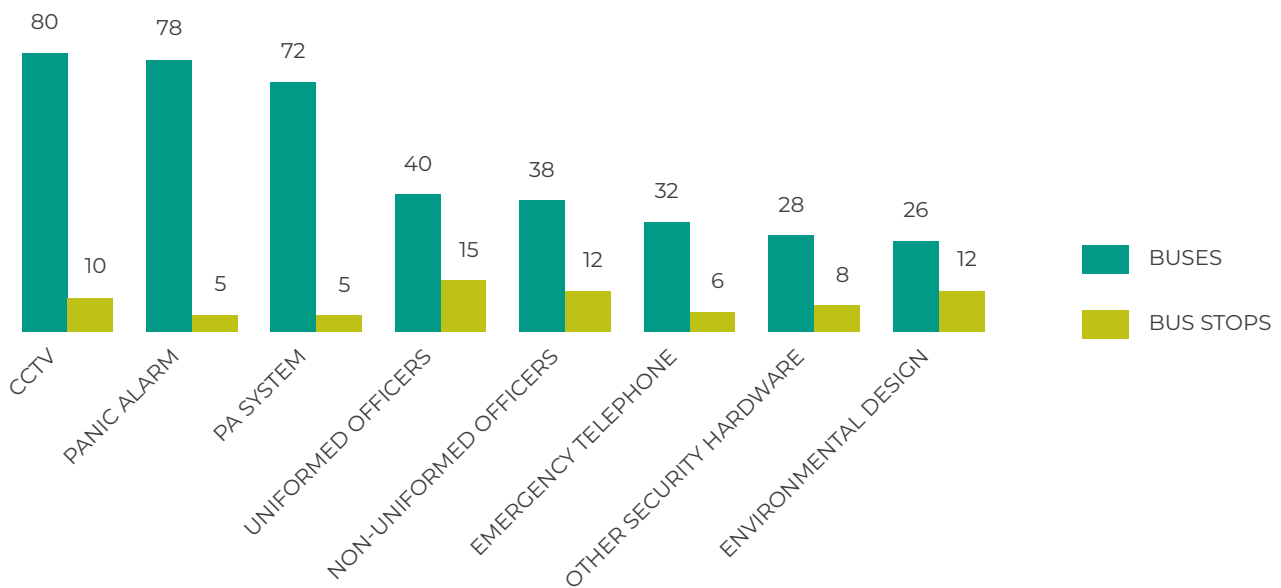
- » Data analysis requirements that standardize disaggregation by gender in all studies
- » “Best fare” policies that avoid penalizing customers who inadvertently spend more for their trips than they would if they had purchased a pass
- » “Request Stop” programs that allow riders to request a stop between designated bus stops at night
- » Priority seat campaigns that help communicate seating needs between riders and clearly define the corresponding priority space on the transit vehicle.

However, these types of initiatives have been slow to appear in the U.S., where transit agencies have focused on safety and security, issues uniquely pertinent to women. The security strategies of transit agencies tend to focus on the transit vehicle and, to a certain extent, the railway platform, but tend to ignore the bus stops, the location that elicits the most fear among female passengers (Loukaitou-Sideris & Fink, 2009). Transit agencies also privilege technological (e.g. surveillance cameras, CCTV, alarm buttons) over human security measures (police officers or staff) (Loukaitou-Sideris & Fink, 2009). The findings from this survey of transit operators mirror those from a study of the Chicago Transit Authority. In Chicago, security cameras had a smaller effect on women’s feelings of safety compared to men, even as safety-related issues affected women significantly more than their male counterparts (Yavuz & Welch, 2010).

In recent years, some transit operators have begun to address sexual harassment issues; such efforts are particularly timely given the increased attention to sexual harassment in the #MeToo era. London is leading all global cities in both understanding and operationalizing gendered mobility differences and launching major anti-harassment initiatives. Over the last 30 years, Toronto also has implemented a number of gender-oriented transportation efforts, which include anti-harassment programs and women’s safety efforts.

For a review of relevant academic literature, see Appendix A.

### U.S. Transit Agency Security Strategies



Source: Web-based transit survey of 245 agencies; *How to Ease Women’s Fear of Transportation Environments: Case Studies and Best Practices*

## Our Approach

A comprehensive and creative approach was required to understand how and why women travel in Los Angeles County—and prompted a consideration of both existing and new data. Framed by core social justice principles and methods, the project team used both traditional and non-traditional data collection methods that effectively captured “hard-to-reach” populations and embodied the project’s intersectional approach to gender.

### EXISTING DATA ANALYSIS



Literature Review



Metro Data



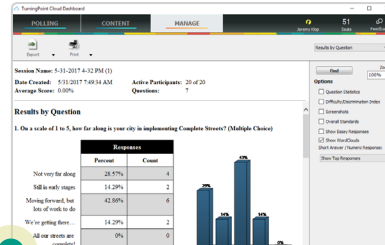
2017 National Household Travel Survey

### ROBUST MIXED-METHODS DATA COLLECTION EFFORT

#### CONVENTIONAL METHODS

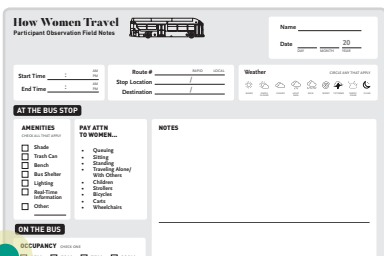


Focus Groups



Survey

#### INNOVATIVE METHODS



Participant Observation



Participatory Workshops & Pop-Ups

To North Hollywood


To Wilshire/Western

To North Hollywood

/Metrolink/Amtrak ↑

To Wilshire/Western

To Union Station



## What is included in this study?

The following chapters in this report describe the methods of data collection that were used in this study, key themes that emerged through the course of the data collection and analysis, and next steps for Metro to consider to build upon this foundation. The chapters are as follows:

### Chapter 2: Research Methods

- » Conventional methods including existing data sets, a new survey, and three focus groups
- » Innovative methods including participant observation, participatory workshops, and pop-up events

### Chapter 3: Findings

- » Travel behavior
- » Safety
- » Access
- » Reliability
- » Convenience & Comfort

### Chapter 4: Next Steps

- » Gender Action Plan
- » Additional research needs

### Appendices

- » Literature Review
- » Summary Statistics from Primary Data Collection Efforts
- » *Understanding How Women Travel* Survey Questions
- » *Understanding How Women Travel* Focus Group Guide
- » Ethnographic Methods
- » *Understanding How Women Travel* Participant Observation Tool



CH.2

# RESEARCH METHODS

*A comprehensive and creative approach was required to understand how and why women travel in Los Angeles County. The project team built upon Metro’s existing data sources by collecting supplemental quantitative and qualitative data that provided greater nuance in understanding women’s travel on Metro services. The selected data collection methods allowed for a clear focus on women, resulting in a dataset organized by gender. Framed by core social justice principles and methods, the project team used both **conventional** and **innovative** data collection methods that effectively captured “hard-to-reach” populations and embodied the project’s intersectional approach to gender.*







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# EXISTING DATA

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The project team reviewed existing research and analyzed existing data sources to understand trends in women’s travel behavior overall, as well as women’s choices and perceptions related to transit use. This review included analysis of the 2017 National Household Travel Survey (NHTS) data for the Los Angeles region, and a new gender-disaggregated look at existing Metro data. Each method and data source is described in more detail on the following pages.



Photo source: Metro

# NATIONAL HOUSEHOLD TRAVEL SURVEY

National Household Travel Survey data are collected from a stratified random sample of U.S. households. This represents both transit riders and non-riders. To account for disproportionate sampling and/or response rates, sampling error and bias, and in order to produce valid population-level estimates, the National Household Travel Survey weights the raw data to be consistent with independent controls based on various demographic categories. The source for the controls was the 2015 American Community Survey; the controls consist of characteristics such as geography, race, ethnicity, and the number of household vehicles. Different weights are developed for households, person, trips, and vehicles. In evaluating the National Household Travel Survey data for this study, weighted rather than raw data was used to interpret results. For this study, the subset of respondents from the Los Angeles-Long Beach-Anaheim Metropolitan Statistical Area (MSA) were used. This data set includes 3,494 female respondents and 3,119 male respondents.





# REVIEW OF EXISTING DATA

In addition to the National Household Travel survey summarized previously, the following existing data sources were analyzed and disaggregated by gender. Details about the data year, sample size, and geographic extent are described below.

## Metro Customer Satisfaction Survey (2017)

The Metro Customer Satisfaction Survey was a one-time survey effort conducted by the Office of Extraordinary Innovation. The survey sampled transit riders and non-riders within LA County, with a total of 7,985 female respondents and 6,833 male respondents.

## Metro Customer Complaint and Tracking System (CCATS) Incident Reports (July 2013-September 2018)

Metro CCATS data are not reported by gender; however, the person filing the complaint or comment can select a gendered pronoun, if they choose to do so. Therefore, the data analyzed in this section reflects only the complaints and comments that had a gendered pronoun selected. CCATS data is separated by bus and rail. The bus data set includes 35,028 female records and 40,835 male records. The rail data set includes 4,597 female records and 4,307 male records.

## Metro Crime Reports (2017-2018)

Metro Crime data are not reported by gender. In this section, we included a small number of findings related to crimes that often have a gendered skew, such as sexual harassment and rape. This data set represents crimes that have been reported to occur within the Metro system, including on buses, trains, and within stations. The data set includes 47,864 records over the 12-month period between October 2017 and September 2018.

## Metro Fare Evasion and Citation Records (FY 2018)

Metro Fare Evasion and Citation records reflect a simple count of the number of citations issued to men and women for fare evasion. The data do not include a record of the number of men and women who were asked to demonstrate whether they had paid a fare. This data set includes 10,542 records of female citations and 34,879 records of male citations over the 12-month fiscal year period for 2018.

## Metro General Public Survey (2013)

The Metro General Public Survey is conducted periodically, on an approximately five-year cycle. The 2013 survey was the most recently-available survey for use in this study. The survey sampled the general public, including transit riders and non-riders, within LA County. The data set includes responses from 927 female respondents and 882 male respondents.

## Metro Bike/Bus Interface Study Survey (2017)

The Metro Bike/Bus Interface Study survey was a one-time survey effort conducted to support the Metro Bus/Bike Interface Study. This survey sampled people within LA County who ride a bicycle. The data set includes responses from 837 female respondents and 1,614 male respondents. The data set also includes 15 responses from people identifying as transgender male-to-female or transgender female-to-male. Given this small sample size, those responses have been excluded from this analysis.

## Metro On-Board Survey (Spring 2018; 2010-2017)

Metro conducts an on-board survey to sample Metro riders, approximately twice a year. Reported findings are primarily drawn from the Spring 2018 survey, and in some cases a historical perspective is shown for the previous eight years of data. The survey is conducted in multiple languages. In this study, we have evaluated the results from the English survey as well as the other languages; for the purposes of sample size, we have aggregated the non-English survey responses into a single non-English category. The non-English survey responses are predominantly surveys taken in Spanish (in 2018, 3,640 surveys were taken in Spanish and 150 surveys were taken in other languages; 10,466 surveys were taken in English). The 2018 data set includes 6,797 female responses, 5,774 male responses, and 248 responses from people identifying as non-binary. For some of the questions analyzed, we have excluded the non-binary responses due to small sample sizes across the response categories.

## Ridership Growth Action Plan Surveys (2018)

These surveys were a one-time survey effort conducted to support the Los Angeles County Municipal Operators Association (LACMOA) Ridership Growth Action Plan. The two surveys associated with this effort included a survey targeted at transit riders and a survey targeted at non-riders in LA County. The Rider data set includes 710 female respondents, 645 male respondents, and 16 respondents identifying as non-binary. The Non-Rider data set includes 719 female respondents, 698 male respondents, and 23 respondents identifying as non-binary. Given the small sample size, the non-binary responses have been excluded from this analysis.



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# CONVENTIONAL METHODS

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The project team employed conventional data collection and analysis methods: a new *Understanding How Women Travel* survey and three focus groups conducted for this study. These methods engaged regular Metro riders, infrequent riders, previous riders, and non-riders, and sought participants' perceptions and assessments of travel on Metro services. Each method is described in more detail on the following pages and in Appendix B.





Photo source: Metro



Photo source: Metro



Photo source: Metro



Photo source: Fehr & Peeler

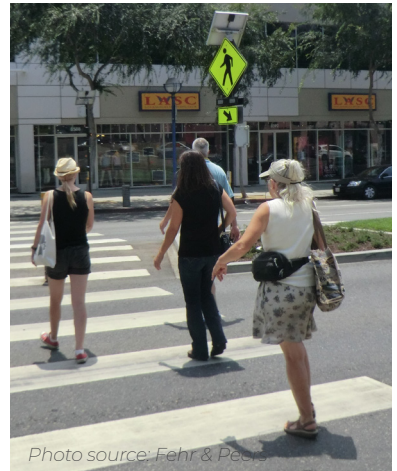


Photo source: Fehr & Peeler

# SURVEY

The project team designed a survey to fill the remaining quantitative gaps that were not covered by other available data sources. This survey was distributed online to over 2,600 respondents, oversampling women (1,600 women) and transit riders. The sample was otherwise representative of Los Angeles County for characteristics such as household income, race, ethnicity, and age. The survey was available in English, Spanish, and Chinese. Appendix C includes the full survey questionnaire.

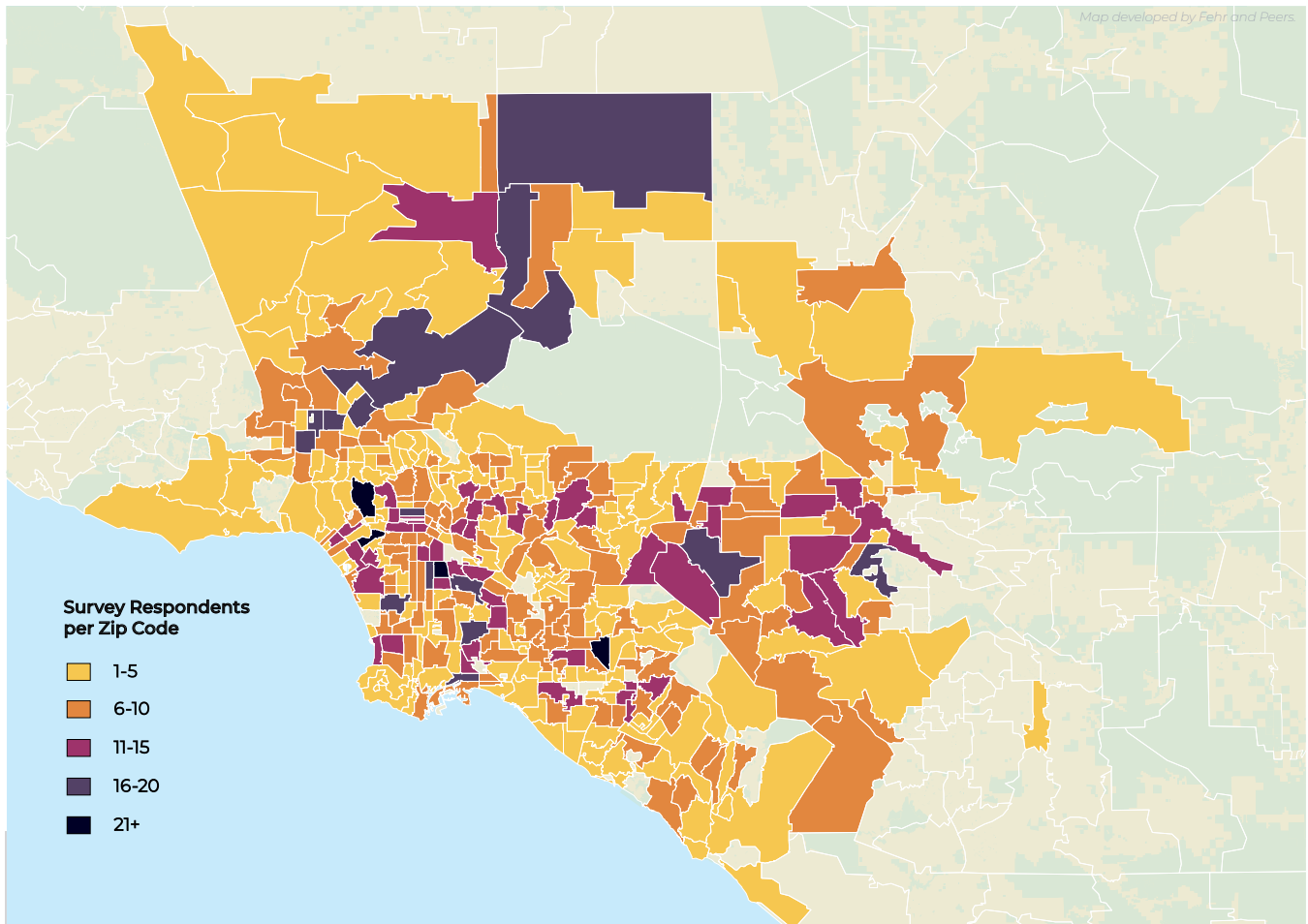
As Metro's existing data sources primarily cover rider trends, non-riders were surveyed as part of this effort. Survey sample demographics do not match those of Metro's overall ridership, particularly in categories of income and race/ethnicity, but rather match the demographic distribution across LA County.

As shown in the map below, survey responses were received from people living in over 400 zip codes,

including nearly every zip code in Los Angeles County. More than two-thirds of respondents live in Los Angeles County, with the remaining respondents living in Orange County, western Riverside County, and western San Bernardino County.

Surveys targeted regular, occasional, and potential riders with questions relevant to each group. Themes explored in the survey include:

- » Travel mode choices
- » Regular trip types
- » Perceptions of safety on transit
- » Challenges to using transit
- » The connection between ridehailing services and transit.





# FOCUS GROUPS

Focus groups are a tool that allow researchers to gain insight into the perspectives of participants based on their specific experiences, which otherwise may not be possible to understand through methods such as surveying. In this study, focus groups illuminated the experiences of women and men who use Metro, uncovering nuances, opportunities, issues, and challenges that may not be represented in the quantitative or observational data. Focus groups serve as important resources for understanding participants' experiences, and although they do not represent the experiences of all people in Los Angeles County or all Metro riders, they were selected to reflect a representative sample of Metro riders.

The project team conducted three focus group sessions lasting approximately 90 minutes each, held in December 2018.

People were recruited to participate in the focus groups in order to represent diversity in age, ethnicity, income, language, and transit use frequency. The focus groups were conducted with women and men in separate groups to allow for open conversation around sensitive topics, such as safety and sexual harassment. The focus group facilitators asked similar questions of all three groups to discern where each group had similar or different points of view about how they travel, why they ride transit (or why they don't) and their perspectives on other topics, such as:

- » Overall trip making and trip chaining patterns
- » Mode choice decisions
- » Experiences on and perceptions of transit
- » Transit use with others, including children
- » First experiences on transit
- » Safety and security
- » Perceptions and preferences for other modes, including biking and ridehailing

Participants highlighted personal stories related to travel, provided anecdotal support for findings from other sources, and added nuance to the project's themes. Appendix D includes the full focus group guide.



Photo source: Fehr & Peers

# INNOVATIVE METHODS

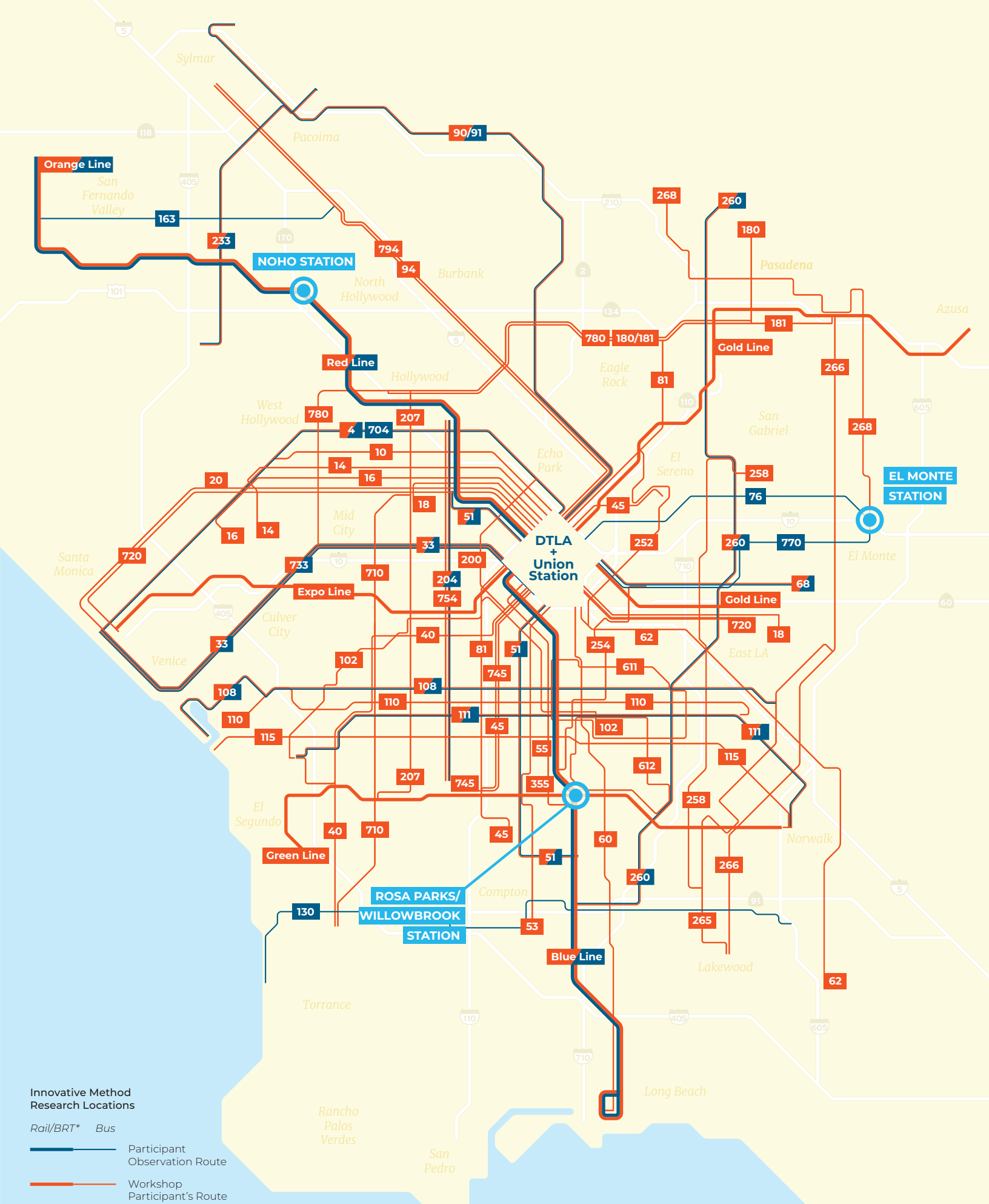
The project team conducted three types of innovative qualitative data collection that combined the approaches of participatory planning and cultural anthropology:

- » Participant Observation
- » Participatory Workshops
- » Pop-Up Engagements

Anthropologists study networks of people, places, and things, using methods that are useful for understanding urban transportation and that complement participatory planning methods. Participatory planning focuses on community-informed processes and outcomes. These methods prioritize regular female transit riders as well as specific sub-group populations of female transit riders who experience financial, social, and physical vulnerabilities. These sub-groups comprise some of Metro's core riders, those who have been using the transit system most consistently and loyally. Each method is described in more detail on the following pages.



Photo source: Pueblo



**Innovative Method Research Locations**

Rail/BRT\* Bus

Participant Observation Route

Workshop Participant's Route

Pop-Up Engagement Location

\* Bus Rapid Transit

Map adapted by Fehr and Peers from a map designed by Mehmet Berkar on behalf of Pueblo.

# USING INNOVATIVE METHODS TO UNDERSTAND HOW WOMEN TRAVEL

Developing the innovative community-based planning methods that we used in *Understanding How Women Travel* required expanding beyond the conventional methods of surveying and conducting focus groups. A review and description of ethnographic methods is included in Appendix E.



# PARTICIPANT OBSERVATION

Ethnography is a qualitative research method used by anthropologists and consumer researchers that aims to capture the experience of individuals and groups as they interact within a particular environment or with a product. In this study, qualitative data was collected using participant observation in order to uncover revealed preferences and behavioral patterns that surveys may miss, and to collect details that illustrate the diversity of women’s transit experiences and humanize the findings.

Developed by the project team’s experts in anthropology, participant observers used a data collection tool (Appendix F) that included vehicle diagrams to note seat preferences, check boxes for bus amenities and features, and room for written notes to record observations at stops and stations, on vehicles, and during boarding and alighting. Observations were conducted on Metro buses and trains that span Los Angeles County and serve diverse communities.

Participant observers rode 19 Metro routes, including three Rapid bus routes, one bus-rapid transit route, two rail lines, and 13 Local bus routes. Most observations were conducted during the AM peak period (6–9:30 AM), the midday period (9:30 AM–2 PM), the PM peak period (2–6:30 PM), and the late evening period (6:30 PM–12 AM), with additional observations between the hours of 12 AM and 6 AM. Observers made over 2,200 unique observations over more than 100 hours in transit. Our observations yielded textual, visual, and observational data on women’s physical design needs and responses to various social situations. Thematic categories of the most common observations include:

- » Seating choices
- » Interactions among riders and with operators
- » Alighting
- » Bus stop amenities
- » Traveling with children
- » Phone use
- » Standing on vehicles
- » Waiting at stops and stations



Ethnographic observation worksheet

**How Women Travel**  
Participant Observation Field Notes

Name \_\_\_\_\_

Date \_\_\_\_\_ / \_\_\_\_ / 20\_\_\_\_

Start Time : \_\_\_\_\_ AM/PM

End Time : \_\_\_\_\_ AM/PM

Route # \_\_\_\_\_ (Rapid/Local)

Stop Location \_\_\_\_\_

Destination \_\_\_\_\_

Weather

CIRCLE ANY THAT APPLY

☀️ ☁️ ☔️ ❄️ 🌧️ 🌨️ 🌪️ 🌋 🌊 🌪️ 🌪️ 🌪️

**PAY ATTN TO WOMEN...**

- Waiting
- Queuing
- Sitting
- Standing
- Interaction with Proximity to Others
- Traveling Alone/With Others
- Children
- Strollers
- Bicycles
- Carts
- Wheelchairs

**AT THE BUS STOP**

**AMENITIES** CHECK ALL THAT APPLY

Shade

Trash Can

Bench

Bus Shelter

Lighting

Real-Time Information

Other: \_\_\_\_\_

**NOTES**

---

**ON THE BUS**

**OCCUPANCY** CHECK ONE

25%  75%

50%  100%

CCTV Live Video

**PAY ATTN TO WOMEN...**

- Waiting for Bus to Stop
- Queuing @ Rear Door
- Exiting via Front Door
- Interacting with Others
- Getting up from Their Seats

**STOP REQUEST** CHECK ONE

Button (Aisle)

Button (Wall & Aisle)

Cable (Wall)

UNDERSTANDING HOW WOMEN TRAVEL

44

# PARTICIPATORY WORKSHOPS

Participatory workshops are a community-embedded form of engagement that addresses some of the most persistent biases in conventional data collection methods. Even the most nuanced, thoughtful survey and focus groups have limitations: some populations are very difficult to reach, including those who are linguistically isolated, illiterate, or digitally disenfranchised.

In the winter of 2019, the project team facilitated three participatory design workshops in partnership with community-based organizations to engage directly with some of Metro’s most vulnerable core riders who rely on transit services as a lifeline. A total of 70 women, 10 children, and one man participated. Workshop participants were asked to craft collages in response to the prompt, “what is your experience taking public transit?” and generously shared their experiences as riders. Using emojis, abstract shapes, images of transit, and other materials, they constructed collages and then talked about those collages, sharing what parts of their transit experiences they enjoy, as well as what they believe could be improved.

The participatory workshops were held in partnership with three community organizations:

- » Southern California Resource Services for Independent Living Center, a disability rights organization run by and for people with disabilities, offering support, advocacy, and information on empowerment in the attainment of independence.
- » Downtown Women’s Center, the only organization in Los Angeles that focuses on serving and empowering women experiencing homelessness and provides housing, medical, and mental health services, social networks, and financial security.
- » Padres Líderes en Acción, a community-based organization located in southeast Los Angeles that organizes local residents to discuss, inform, and advocate for issues that impact them and their families, from transit to schools.

Spanish interpretation and child-friendly activities allowed for full participation at times and locations convenient to the women, who said they – collectively – frequent 65 of Metro’s 165 bus routes and ride on all six Metro train lines.



Photo source: Pueblo



Photo source: Pueblo

# POP-UP ENGAGEMENTS

Pop-up engagements in transit stations were designed to gather the perspectives of women travelers. While waiting for their train or bus, riders were asked, “What makes your ride difficult?” and “What would make your ride easy?” In turn, they were asked to write their answers on a note card, or dictate to pop-up facilitators, who were proficient in English and Spanish. In the winter of 2019, the project team

held three “pop-up” engagement activities in Metro stations. The locations were selected in an effort to reflect a diversity of geography, ridership, and transfers to and from bus service. The three sites included Rosa Parks/Willowbrook Blue Line Station, El Monte Silver Line Station, and North Hollywood Red Line Station. Each pop-up lasted three hours.

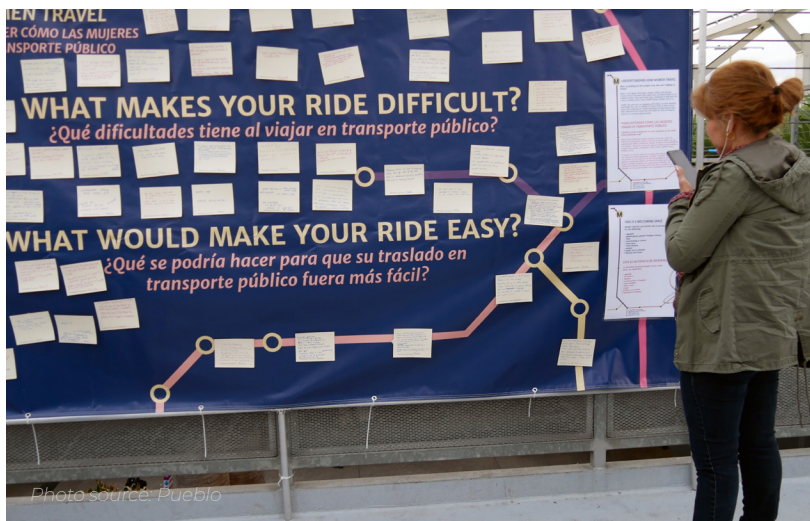


Photo source: Pueblo



Photo source: Pueblo



Photo source: Pueblo

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# LIMITATIONS OF DATA

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Many existing Metro datasets cannot be disaggregated by gender because they do not include gender categories. In addition, many datasets that do include gender categories do not specifically ask questions that would illuminate the differences between how women travel and how others travel. Our data collection efforts for this study were constructed to fill those gaps.

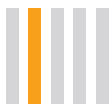
However, there are still limitations to the data we have. For example, in our online survey, even after oversampling transit riders, some demographics are still underrepresented compared to the Metro On-Board Survey. Our methods prioritized multi-lingual access, but did not cover all languages spoken in LA County nor reach all non-English monolingual individuals. We do not have any data sets that specifically speak to the experience of girls on transit. Additional focus groups or participatory workshops could continue to shed light on the specific needs of subgroups of women, such as the LGBTQIA community.

Limitations in using existing travel diary data to understand the nuances of trip-chaining also persist. NHTS data can be used to provide some information

about women's trip-chaining patterns, but the sample size for chained transit trips is too small to be meaningful. Similarly, attempts at collecting this information through qualitative means such as the focus groups proved imprecise and difficult to capture.

Additionally, while most quantitative datasets analyzed in this report were developed to provide a statistically representative sample of the population, no statistical significance tests have been conducted on the findings that are reported.

Moving forward, Metro should aim to incorporate gender and other demographic variables in all datasets, so that our understanding of the intersectional differences in the needs and preferences of women can deepen and broaden. Metro should set this expectation for any survey work or project evaluation that is conducted by contractors and consultants, as well.









CH.3

# FINDINGS

*This chapter outlines the findings from the research methods described in the previous chapter. Across all research methods, similar themes arose, with each additional inquiry providing more nuance, depth, and understanding. In the pages that follow, the themes are further explored using charts, graphs, photos, and quotes.*





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# OVERALL TRAVEL BEHAVIOR

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We know that women travel differently than men – for different reasons, at different times of day, and with more people in tow.

The first place to start in developing an understanding of how women travel is with overall travel patterns on all modes. These foundational questions – How are women traveling? When are women traveling? By what mode? How long are their trips? – set the groundwork for the next layers of inquiry about transit-specific patterns, about women’s travel choices and tradeoffs that influence those patterns, and about the differences in women’s travel choices and preferences. Exploring these topics allows Metro to have a fundamental understanding of women’s trip-making patterns, even among women who choose not to, or who cannot, use transit due to existing barriers. By looking at the travel choices women are making outside the Metro system, the agency is able to understand potential existing gaps in service.

Through the analysis detailed in the following pages, key trends emerge that differentiate women’s travel patterns from men’s travel patterns. Reported as an average, women and men in Los Angeles take the same average number of trips per day. However, more women take many trips per day and more women take no trips at all. This means women may experience more exposure to travel burdens (cost, time, stress, or safety risks), or may be more likely to be isolated or disconnected from the opportunities that travel affords. Women in Los Angeles also make shorter trips than men, which is potentially driven by workforce participation rates, location of employment

opportunities, and taking household-serving trips or caring trips that tend to be more localized.

Women’s trips are more varied to a broader spread of destinations, and are more likely to primarily serve the needs of someone else. Women are more likely to live in a car-free or car-light household, take more trips with other people, and take fewer single-occupant car trips than men. They are also more likely to carpool or get a ride from a family member or friend if they don’t have a driver’s license. These findings show that women may need to adjust their own schedule and travel needs to accommodate others, and in doing so, give up some of their own autonomy and control over when and how they travel.

Despite these challenges and tradeoffs, women show ingenuity in arranging their schedules to meet their travel needs. Women are more likely to trip-chain, or make stops along the way to other destinations, and describe consolidating all their errand trips into one day where they will have access to a vehicle. Women in Los Angeles are also more likely than men to travel mid-day, with a travel peak around 2pm, at a time when transit service may be reduced in some areas of the County. As an agency that funds and operates travel services across all modes, these overall travel pattern findings are critical to enable Metro to better serve women’s travel needs, regardless of how they choose to get around.





“The share of women in the labor market has dramatically increased, but women are also still responsible for much of the unpaid labor associated with household tasks – and it’s difficult to accomplish both with transit.”

DR. EVELYN BLUMENBERG

Photo source: Fehr & Peers

## METHODS USED



### Existing Data

- Literature Review
- NHTS
- Metro Data



### Conventional Methods

- Survey
- Focus Groups



### Innovative Methods

- Participatory Workshops

## TOPICS

- How many trips do women take?
- How and why are women traveling?
- Trip chaining and complexity
- How far and when are women traveling?
- How many women have driver’s licenses?
- Vehicle Access



Women's mobility constraints vary significantly. More women than men are not traveling at all, and more women than men are hypermobile.

# HOW MANY TRIPS DO WOMEN TAKE?

This section presents findings from the analysis of existing data, providing foundational information on the average number of trips taken by women and the modes used for those trips.



## Existing Data Analysis

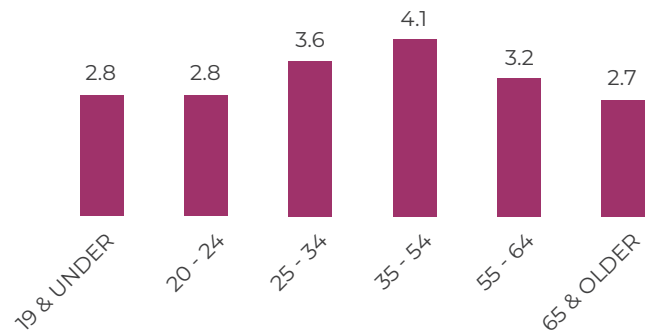
In the United States, the number of daily trips taken has been decreasing since 1995. Factors that may contribute to that decline include telecommuting and online shopping. Each National Household Travel Survey since 1983 has shown that men and women generally take the same number of daily trips on average, with women making slightly more trips in some survey years (1990, 2009, 2017) (McGuckin and Fucci, 2018)

The National Household Travel Survey allows us to compare the share of women with the share of men making trips across all modes. In analyzing this data for the Los Angeles region, we found:

- » On average, women and men in the Los Angeles region make the same number of trips per day, averaging out at 3.35 trips per day. This finding is very similar to national trends. Nationally, women make an average of 3.4 trips per day, and men make an average of 3.3 trips per day.
- » However, more women than men make zero trips per day, and more women than men make 7 or more trips per day.

According to the National Household Travel Survey, when looking at trip rates by age and gender, women in the 35-54 age group reported the highest trip rate of 4.1 trips per day, while women in the 65 or older age group reported the lowest trip rate at 2.7 trips per day.

Average Trips per Day for Women Living in the LA Region, by Age Group



Source: National Household Travel Survey (2017)



Photo source: Fehr & Peers

# HOW ARE WOMEN TRAVELING?



Women take fewer solo car trips than men, but more car trips with other people. As a result, women's travel may be constrained by the schedules and needs of others.



## Existing Data Analysis (continued)

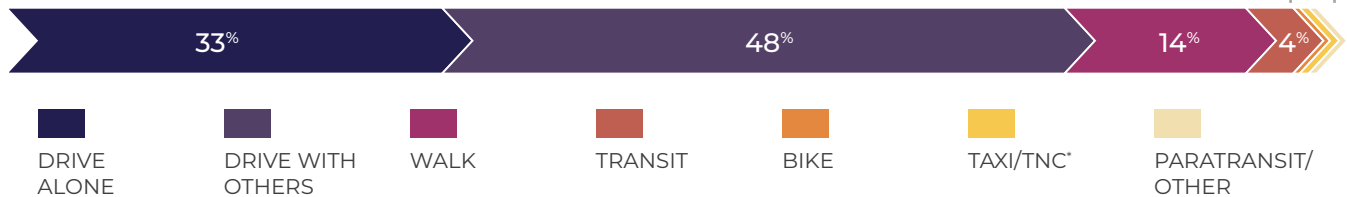
The National Household Travel Survey includes data on mode split for all trips, allowing us to compare the share of women's trips with the share of men's trips in eight different mode categories for the Los Angeles region.

» Car trips - including trips alone and with others in the car - comprise roughly the same share of trips for both men and women. However, women are more likely than men to take those trips with other people, such as family members, in the vehicle.

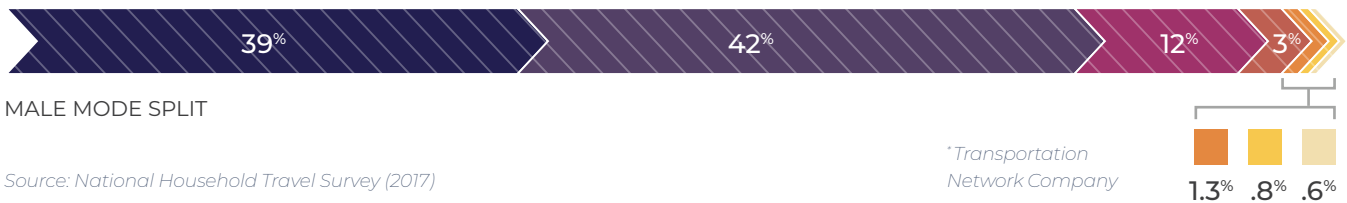
- » Walk trips comprise 14% of trips for women, compared to 12% of trips for men.
- » Transit trips comprise 4% of trips for women, compared to 3% of trips for men.

### LA Region Mode Split

#### FEMALE MODE SPLIT



#### MALE MODE SPLIT



Source: National Household Travel Survey (2017)

\*Transportation Network Company

# WHY ARE WOMEN TRAVELING?



Women travel to more varied destinations, including work and household errands.



## Existing Data Analysis

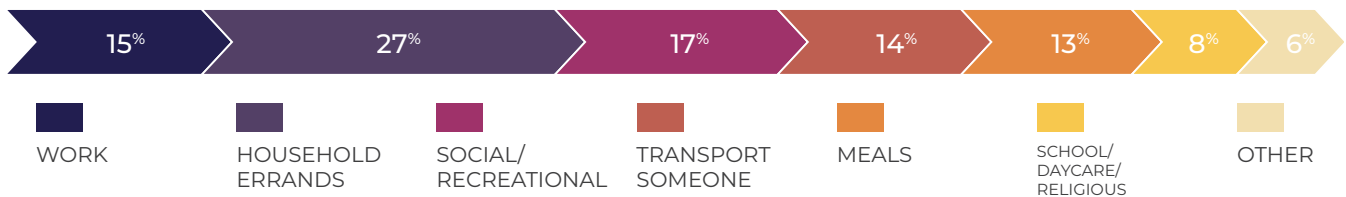
The 2017 NHTS offers insight into trip purposes for women and men in the Los Angeles region. Across all modes, a distinct difference in travel purpose emerges between men and women, specifically in the share of household-serving or household-supporting trips and the share of work trips. Women reported making more trips for shopping and family errands compared to men, which are likelier to occur outside traditional commute hours. Men reported more work trips than women.

Key findings include:

- » Work trips account for a smaller share of women's trips than men's trips.
- » Work trips only account for 15% of all trips for women, and 24% of all trips for men. The large majority of trips are taken for non-work purposes.
- » Household-serving trips (household errands, transporting someone, meals, school/daycare) together account 62% of women's trips compared to 54% of men's trips.
- » Social and recreational trips account for an equal share of women's trips and men's trips.

### LA Region Trip Purpose

#### FEMALE TRIP TYPES



#### MALE TRIP TYPES

Source: National Household Travel Survey (2017)

Notes: The above chart omits trips that people took to travel home from a location in one of these categories. The Household Errands category includes trips to buy goods (e.g. groceries, clothing, appliances, gas), trips to buy services (e.g. dry cleaners, banking, service a car, pet care), and trip for other general errands (e.g. post office, library).







Household structure has a substantial impact on the types of trips women make.

One potential explanation for differences between men and women’s travel patterns seen here is the need to balance responsibilities for the household and paid work (Hanson & Johnston, 1985; MacDonald, 1999). While men are slowly increasing the number of hours that they devote to household responsibilities, data from the American Time Use Survey shows that women still shoulder a far greater burden for home-related chores than men, including transporting others.

The trip-making differences between women and men are more pronounced when segmented by household structure.

- » Across all household types, work trips comprise a smaller share of women’s travel than men’s travel. In single-parent households, the difference between women and men is narrowest.

- » Across all household types, household errand trips comprise a larger share of women’s travel than men’s travel. In single-parent households, the difference between women and men is greatest.
- » Across all household types, trips to transport others comprise a greater share of women’s travel than men’s travel. In households with no children, this difference nearly disappears.
- » Across all household types, school/daycare/religious trips comprise the same share of women’s travel and men’s travel. In single-parent households, these types of trips comprise a much smaller share of women’s travel than men’s travel.

In addition, regardless of employment category (employed or unemployed), household errand trips and trips to transport others comprise a larger share of women’s travel than men’s travel.

### LA Region Trip Purpose by Household Structure

TRIP TYPES	ALL HOUSEHOLD TYPES		HOUSEHOLDS WITH NO CHILDREN		SINGLE-PARENT HOUSEHOLDS		TWO-PARENT HOUSEHOLDS	
	F	M	F	M	F	M	F	M
WORK	15%	24%	19%	26%	12%	15%	12%	22%
HOUSEHOLD ERRANDS	27%	23%	31%	27%	24%	17%	23%	19%
SOCIAL/RECREATIONAL	17%	17%	19%	18%	15%	11%	16%	17%
TRANSPORT SOMEONE	14%	10%	5%	5%	22%	16%	21%	15%
MEALS	13%	13%	14%	15%	13%	12%	12%	12%
SCHOOL/DAYCARE/RELIGIOUS	8%	8%	5%	4%	9%	24%	11%	12%
OTHER	6%	5%	8%	6%	5%	5%	5%	4%

Source: National Household Travel Survey (2017)

Notes: The above chart omits trips that people took to travel home from a location in one of these categories. The Household Errands category includes trips to buy goods (e.g. groceries, clothing, appliances, gas), trips to buy services (e.g. dry cleaners, banking, service a car, pet care), and trip for other general errands (e.g. post office, library). Trip types may not total to 100% due to rounding.



The highest share of women's transit trips are taken for work; the lowest share of women's transit trips are taken when transporting others.



## Conventional Methods

### Survey

Over 65% of women who responded to our *Understanding How Women Travel* survey said that they are the person in their home primarily responsible for household errands, such as grocery shopping and taking kids to school. The gulf in responsibility between men and women is most prominent in two-parent households with no other adults present. In these homes, 70% of women who responded say that they have the primary responsibility for household errands, compared with 47% of men.

We also asked women responding to our survey to think back to their most recent trips, and tell us which mode they took for which trip purpose. As we have seen in previous data, women are making most trips in private vehicles.

- » For work trips, 72% are taken in a private vehicle.
- » For household trips, 78% are taken in a private vehicle.
- » For trips transporting others, 83% are taken in a private vehicle.

### Women's Trip Purpose and Mode

#### TRIPS FOR WORK



#### TRIPS FOR HOUSEHOLD ERRANDS



#### TRIPS TRANSPORTING OTHERS



DRIVE

TRANSIT

TNC

WALK/BIKE

Source: *Understanding How Women Travel Survey (2019)*





Photo source: Fehr & Peers



Photo source: Fehr & Peers



Photo source: Fehr & Peers

# TRIP CHAINING & COMPLEXITY



Women make complex trips, such as trip-chaining on the way home from work or saving errands to do all at once on the weekend. Time, cost, and space constraints make these trips more difficult on transit.



## Existing Data Analysis

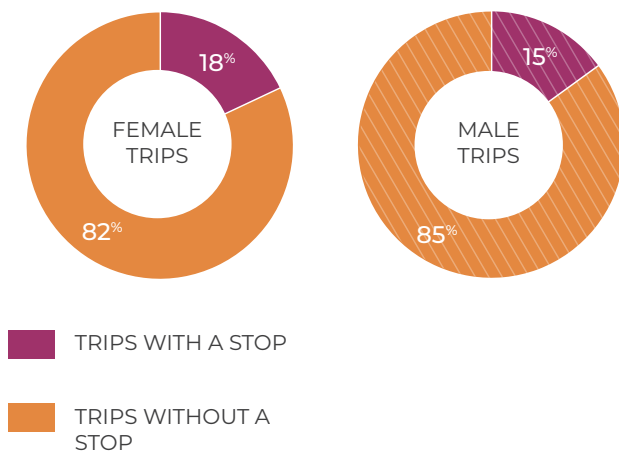
Trip-chaining has become a clear trend of women’s travel behavior and has been linked to women’s private car use, particularly in commuting. In most U.S. cities, making complex trips is currently easier and faster in a private car than on transit.

Women make complex, household-serving trips on transit anyway, often out of necessity. Trip-chaining patterns are commonly cited as the primary reason to plan, design, and operate transit to better fit women’s needs, like planning transit routes into areas with many childcare and school options and widening station gates to accommodate women with strollers and bags. Trip-chaining has also been named as a potential guide for transit-oriented development; pharmacies and grocery stores next to train stations or bus hubs could make trip-chaining on public transportation easier. The National Household Travel Survey began collecting travel data

that showed trip-chaining in 2001, but trips related to caretaking and supporting a family may still be underestimated, particularly on transit. NHTS data for the Los Angeles region demonstrates that:

- » Women in Los Angeles are more likely than men to trip chain.
- » While women and men stop off on the way to work at the same rate, women are more likely than men to trip chain on their way home from work.

*Trip-Chaining by Gender in the LA Region*



Source: National Household Travel Survey (2017)

*Trip-Chaining Differences by Specific Trip Type in the LA Region*

CHAINED TRIP TYPES	FEMALE	MALE
Home to Work	18%	18%
Work to Home	19%	15%
Between Home and Another Destination	19%	16%
Between Work and Another Destination	19%	12%

Source: National Household Travel Survey (2017)

# HOW FAR ARE WOMEN TRAVELING?



Women take more short trips than men. These short trips could be made by modes other than driving if time, cost and convenience barriers were addressed.



## Existing Data Analysis

Overall “the spatial range of women’s daily mobility is smaller than men’s” (Hanson, 2010). Early research into this subject has shown a relationship between occupational sex segregation and commute distance, with women in female-dominated jobs traveling shorter distances and working closer to home than men (Gilbert, 1998; Hanson & Pratt, 1992, 1995; Johnston-Anumonwo, 1988).

The National Household Travel Survey data from the Los Angeles region allows us to compare the share of women’s trips with the share of men’s trips based on trip length, and confirms this research.

- » Compared to men’s trip patterns, a larger share of women’s trips are short (less than five miles) and a smaller share are long (more than 15 miles).
- » Women’s commute trips also tend to be shorter than men’s commute trips.

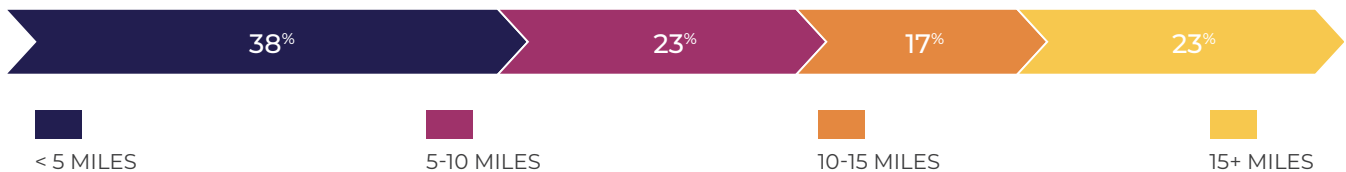
### LA Region Trip Length

#### FEMALE GENERAL TRIP LENGTHS



#### MALE GENERAL TRIP LENGTHS

#### FEMALE COMMUTE TRIP LENGTHS



#### MALE COMMUTE TRIP LENGTHS

Source: National Household Travel Survey (2017)

# WHEN ARE WOMEN TRAVELING?



Women's travel has a midday peak, at the same time Metro's service drops off.

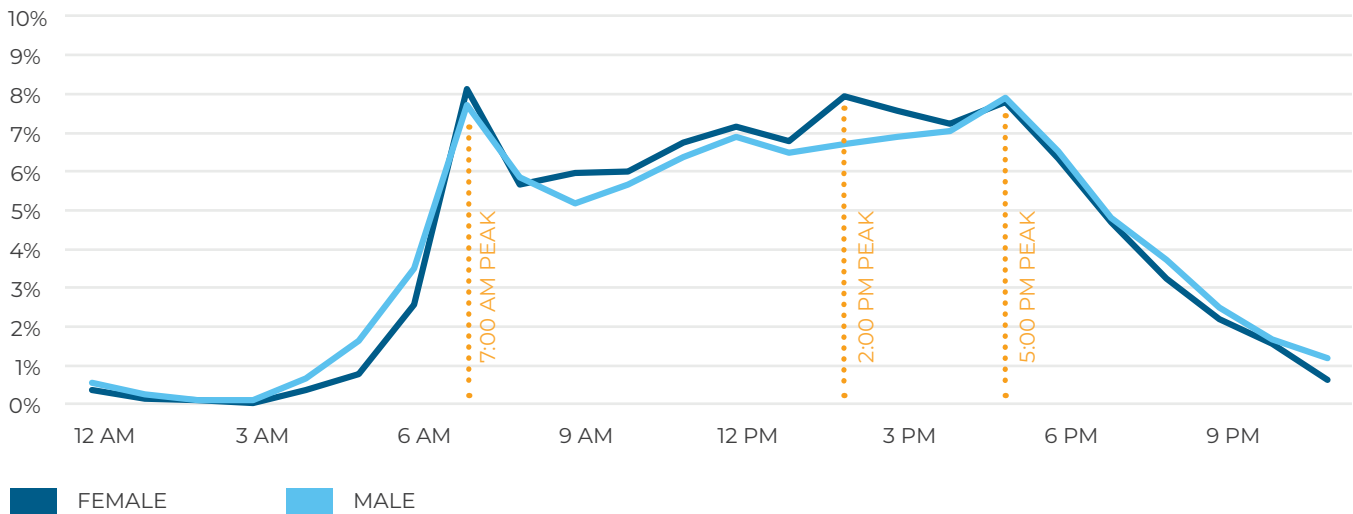


## Existing Data Analysis

In the United States, women are slightly more likely than men to travel during off-peak hours when transit service can be limited, with the largest difference occurring mid-day. The data show that women are slightly less likely than men to travel in the early morning or late night, slightly more likely to travel during the peak morning period (6:00 to 9:00 am), and more likely than men to travel during the middle of the day (10:00 to 4:59) (U.S. Department of Transportation, 2017).

The National Household Travel Survey data from the Los Angeles region illustrates travel by time of day, showing what share of women's trips started in a given hour, compared to the share of men's trips. Women's travel peaks at 7:00 AM and 5:00 PM during standard commute times, and also has a third peak at 2:00 PM. Approximately 8% of women's trips occur in the 2:00 PM hour, compared to 6.7% of men's trips.

Share of trips by Time of Day in the LA Region



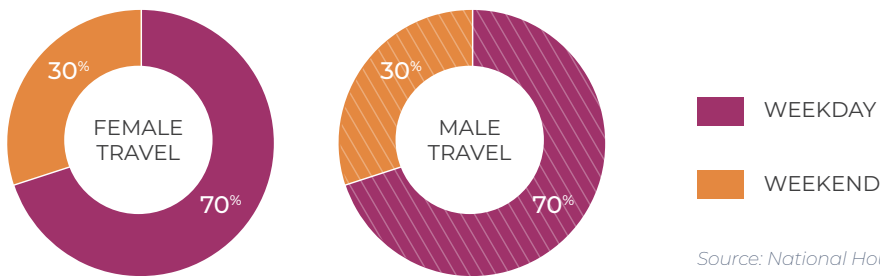
Source: National Household Travel Survey (2017)



## Existing Data Analysis (continued)

The National Household Travel Survey data from the Los Angeles region helps us understand what share of trips are made on weekdays versus weekends, across all modes. Both men and women take the majority of their trips during the week, but still take almost a third of their trips on the weekend.

Share of Trips by Week and Weekend in the LA Region



Source: National Household Travel Survey (2017)

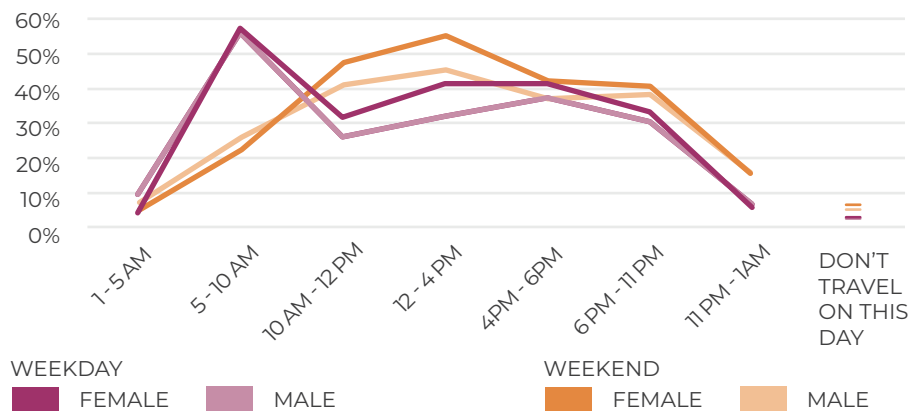


## Conventional Methods

### Survey

Among respondents to the Understanding How Women Travel Survey, female respondents were more likely than male respondents to say they travel during mid-day hours. The largest differences in time of day travel patterns can be seen between noon and 4:00 PM, when 41% of female respondents say they travel on weekdays (compared with 32% of men) and 55% of female respondents say they travel on weekends (compared with 46% of men).

Share of Trips by Time of Day



Source: Understanding How Women Travel Survey, 2019

# HOW MANY WOMEN HAVE DRIVER'S LICENSES?



Women who have transportation limitations, such as lack of a driver's license, often rely on an informal network of family and friends for their travel needs.

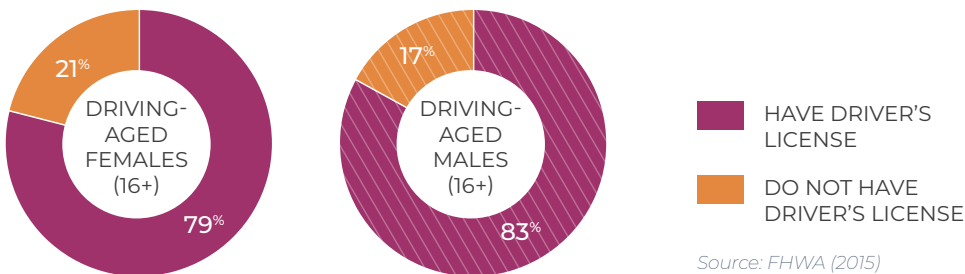


## Existing Data Analysis

Nationally and in California, women are less likely than men to have a driver's license. According to the most recent available data from the FHWA, 86% of driving-aged men have licenses, while 83% of driving-aged women have licenses. In California, licensing rates are lower; 83% of driving-aged men and 79% of driving-aged women have licenses (FHWA, 2015).

Prior research has shown the gender gap is almost entirely accounted for by people 60 or older, the age at which licensing rates start to drop off more dramatically for women than for men (FHWA, 2016). This suggests that older women in particular may be most dependent on modes such as carpooling or transit, and highlights the need for public transportation to help older women remain mobile when they can no longer drive.

### Driver's License Rates in California



Source: FHWA (2015)

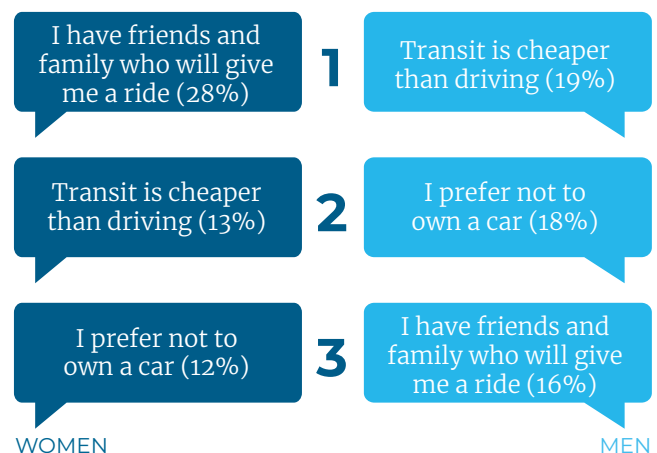


## Conventional Methods

### Survey

Through the *Understanding How Women Travel* survey, we explored the reasons that women do not have driver's licenses locally. Among Los Angeles area residents who don't have a driver's license, the top three reasons given by women and men are the same, but the order of importance is different.

More than one quarter of female respondents said they do not have a driver's license because they have family and friends who will give them a ride. Only 16% of male respondents gave this reason.



Source: Metro Understanding How Women Travel Survey (2019)





Women are less likely than men to have a vehicle available for their transit trip.

# VEHICLE ACCESS



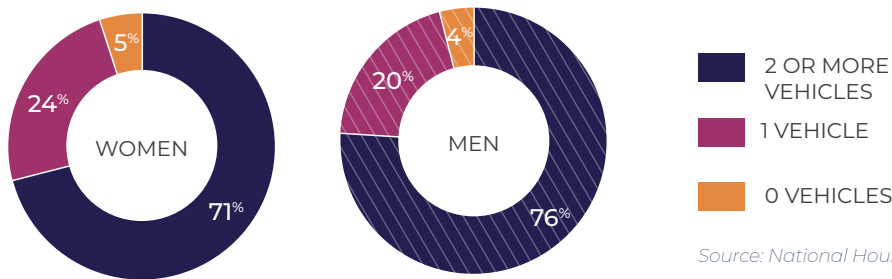
## Existing Data Analysis

In most neighborhoods in the U.S., automobiles provide far greater access to opportunities within a reasonable commute time than public transit (Shen, 2001). Consequently, low-income adults in households without cars can be at a disadvantage in the labor market (Gautier & Zenou, 2010; Raphael & Stoll, 2001).

To understand this access to opportunity, the National Household Travel Survey data from the Los Angeles region allows us to compare the share of women and men living in households with zero, one, or two or more vehicles, and what modes women and men are using when they live in zero-vehicle households.

- » Women are more likely than men to live in households with zero vehicles or one vehicle.
- » Most women and men live in households with two or more vehicles.
- » Women without a vehicle are more likely to walk than take transit.
- » In households without a vehicle, both women and men still take some auto trips, including shared rides, such as ride-hailing services with family or friends (“Auto HOV”) taxis, or TNCs (included in “Other”).

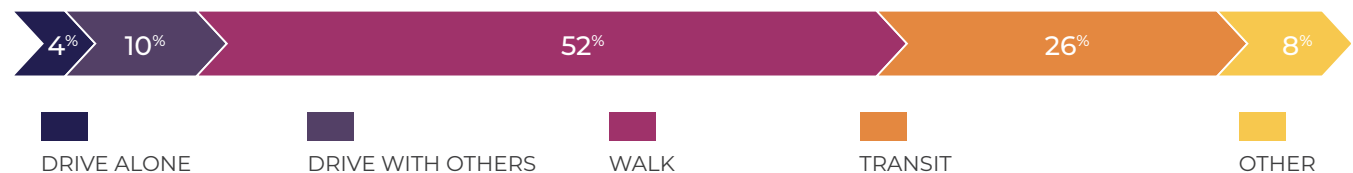
### LA Region Number of Vehicles per Household



Source: National Household Travel Survey (2017)

### Traveling Without Access to a Vehicle in the LA Region

#### FEMALE TRIP MODE IN ZERO VEHICLE HOUSEHOLDS



#### MALE TRIP MODE IN ZERO VEHICLE HOUSEHOLDS

Source: National Household Travel Survey (2017)



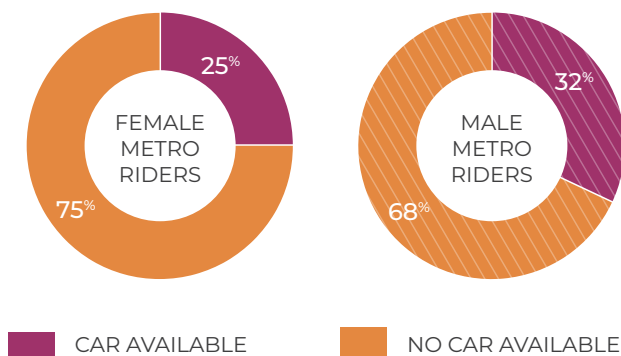


## Existing Data Analysis (continued)

Metro’s Spring 2018 On-Board Survey asked how many Metro riders had a vehicle available to them for the trip they were taking at the time of the survey. Both men and women who were both bus and rail riders responded. While most women in the Los Angeles region live in a household with at least one vehicle, the vast majority of female Metro riders did not have access to a vehicle for their trip at the time of the On-Board Survey.

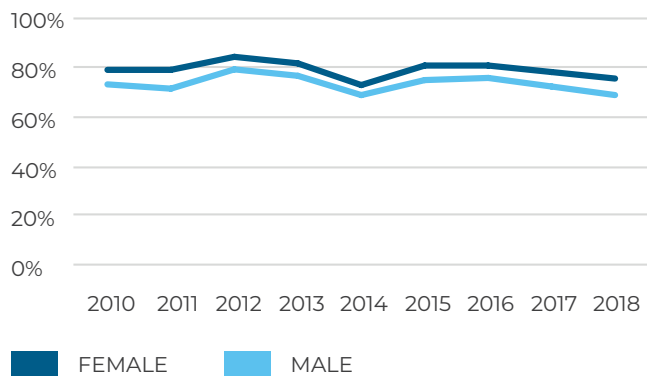
- » Overall, women who ride Metro are less likely than men to have access to a vehicle for their trip.
- » People who responded to the Metro On-Board Survey in a language other than English have even lower rates of access to a vehicle for their trip
- » Over time, female Metro riders have had relatively stable – and limited – access to a car for their transit trips.
- » Consistently since 2010, more women than men have not had access to a car for their transit trip.

*Metro Riders Who Had a Car Available for Their Trip*



Source: Metro On-Board Survey (2018)

*Metro Riders Who Did Not Have a Car Available for Their Trip*



Source: Metro On-Board Survey (2010-2018)

Note: 2014 was an aberration for both bus and rail for this question, but no other questions had a dramatic shift that year.



## Conventional Methods

### Focus Groups

Discussions in our focus groups revealed trends that align with the existing available data, showing that women have less access to private vehicles than men. For several female participants, public transit was the most viable option because they either live in a single-car household where their partner or co-parent takes the car or they do not have a car.

### Survey

Among respondents to our survey, 59% of women said they always have access to a vehicle. Among people with household incomes less than \$25k, 38% of women always have access to a household vehicle for their personal transportation needs, compared with 29% of men. 53% of women said they are the person in their household using a car most often, while 61% of men said they used the car most often.

Among women surveyed who previously rode Metro but no longer do, the top reason they used to ride transit was because they did not own a car.



Photo source: Metro

WHAT WE'VE LEARNED FROM STUDYING

# OVERALL TRAVEL BEHAVIOR

These findings point towards many opportunities to adjust policies, services, and design standards for Metro spaces that would better appeal to those who do not use transit, and better serve those who do.

Given that women account for more than half of Metro's customers on both buses and trains, Metro must account for women's different travel needs in all facets of the agency's work, from service planning to policy setting. Metro can increase the attractiveness of transit as an option by aiming to serve the overarching travel preferences and patterns exhibited by women regardless of mode.

Development of a Gender Action Plan would help to articulate the immediate opportunities and long-term goals that would create a system that better serves women.

Findings about women's trip purposes and primary responsibility for household errands could all inform the way transit vehicles, transit stations, and bus stops are designed, so that space for traveling with others and carrying bags and other belongings could be better accommodated. Findings about when women are traveling and average trip lengths could inform new service offerings that meet a mid-day peak travel demand and provide better direct connections over long distances while minimizing transfers.



Photo source: Ficht & Peers

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# TRANSIT TRAVEL BEHAVIOR

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Women travel differently than men, regardless of mode. On transit, women make up more than half of all riders, and demonstrate different needs and preferences than men.

Metro has an opportunity to improve services for women already riding the system. Currently, more than half of all bus riders are women, and more than half of all rail riders are women. Among female riders, nearly 90% ride the system more than three days per week. The burdens and risks of transit travel, as well as the benefits of transit travel, are more pronounced for women, as they make up the majority of Metro's customers and as they ride transit frequently.

The top three reasons for riding transit offered by female riders are 1) because they do not have a car, 2) they want to avoid traffic, and 3) they do not have a license. Two of these three reasons indicate that these women have fewer transportation options, and potentially as a result have less access to economic opportunities.

Still, women do use transit to access economic opportunity. Over 85% of women riders use Metro to access work or school, and of those women, 32% also

use Metro to run errands or complete recreational trips. Among people who make household serving trips most frequently, these trips comprise the same share for women whether they use transit or not; for men, the share of household-serving trips declines if they are transit users. This shows that while men are more likely to find alternatives to using transit to complete household-serving trips (using a different mode or taking fewer trips), women are less likely to find an alternative, and instead work to make the transit system work for their needs.

Although the rate of adoption for TNCs like Uber and Lyft is the same for men and women, women are more likely than men to say they use TNCs for trips that transit does not serve, while men are more likely to say they use TNCs to reach a transit stop or station. The trips that are not served by transit may be related to time of day or location, and as we saw in the prior section, women's needs differ from men's needs across both time of day and location.



“Es rara la vez que escojo conducir en vez de tomar transporte público.”  
 (It’s very rare that I choose to drive over using public transportation.)”

FEMALE FOCUS GROUP PARTICIPANT

Photo source: Fehr & Peers

## METHODS USED



### Existing Data

- Literature Review
- Metro Data



### Conventional Methods

- Survey
- Focus Groups



### Innovative Methods

- Participatory Workshops

## TOPICS

- What share of Metro riders are women?
- How frequently and how far are women riding Metro?
- When, why, and where are women riding Metro?
- Traveling with Children
- General Satisfaction
- How does women’s TNC use relate to transit?



More than half of all Metro riders are women.

# WHAT SHARE OF METRO RIDERS ARE WOMEN?



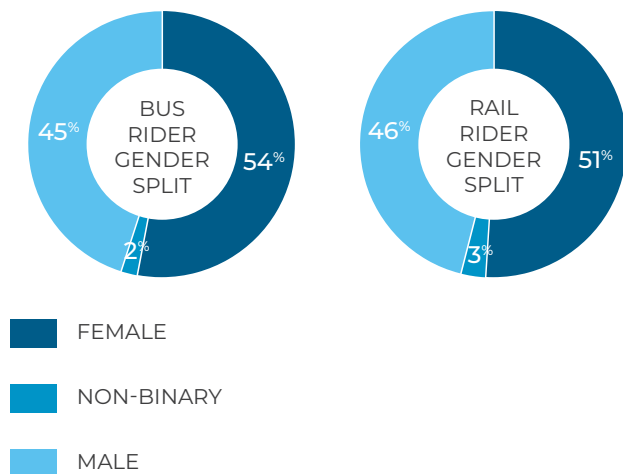
## Existing Data Analysis

According to the American Public Transportation Association's 2017 Public Transportation Passenger Demographics and Travel, women ride more public transit than men. This is true for most of the United States, with women comprising 55% of ridership.

Metro's Spring 2018 On-Board Survey provides the gender breakdown for bus and rail riders, reflecting national trends.

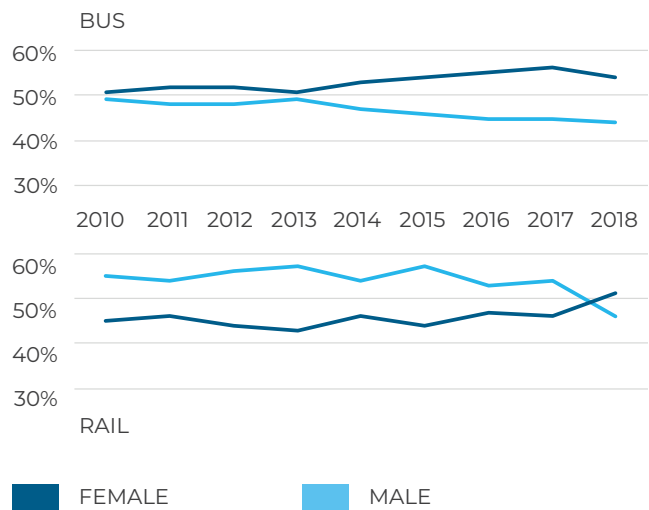
- » Women account for 54% the ridership on Metro bus and 51% of the ridership on Metro rail service.
- » Women account for a larger share of Metro bus and rail ridership now than they did in 2010, while male ridership has decreased.

Gender Split of Metro Bus and Rail Riders



Source: Metro On-Board Survey (Spring 2018)

Gender Split of Riders Over Time



Source: Metro On-Board Survey (2010-2018)



# HOW FREQUENTLY ARE WOMEN RIDING METRO?

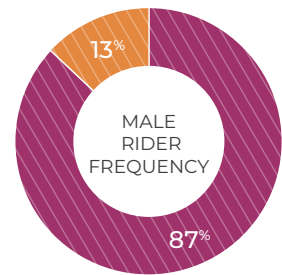
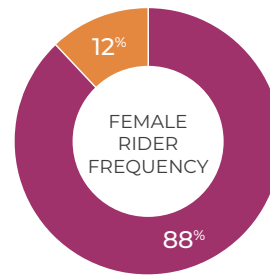


## Existing Data Analysis

According to the 2017 National Household Travel Survey, 462 million transit trips are made each year in the Los Angeles–Long Beach–Anaheim area. Over 250 million of those trips are made by women, or 54% of all transit trips.

In addition to comprising more than half of Metro’s ridership and more than half of the region’s transit trips, women also ride Metro slightly more frequently than men. Metro’s Spring 2018 On-Board Survey data shows that a slightly higher share of Metro’s female customers are frequent riders (3+ days/week) compared to men.

### Metro Bus and Rail Rider Frequency



■ 3+ DAYS/WEEK      ■ FEWER THAN 3 DAYS/WEEK

Source: Metro On-Board Survey (Spring 2018)



Photo source: Metro



Women are more likely than men to take short transit trips.

# HOW FAR ARE WOMEN TRAVELING ON TRANSIT?



## Existing Data Analysis

Women are more likely than men to take short transit trips, with trips under 10 miles accounting for 74% of women's transit travel and 67% of men's. Transit trips over 10 miles account for 26% of women's transit trips and 33% of men's trips.

Despite taking shorter trips, many transit trips for women still involve a transfer between buses or between the train and a bus. Nearly half of all female bus riders require a transfer during their trip, and nearly 60% of female rail riders require a transfer during their trip. These transfers add more time to their trip, with over 1/3 of female bus riders and over 1/4 of female rail riders reporting that they expect to wait more than 15 minutes to complete their transfer. More information on transfer activity can be found on page 141.

### Trip Distance for Transit Trips in the LA Region

#### FEMALE TRIP DISTANCE



#### MALE TRIP DISTANCE

Source: National Household Travel Survey (2017)



Women are more likely than men to travel on transit mid-day.

# WHEN ARE WOMEN TRAVELING ON TRANSIT?



## Conventional Methods

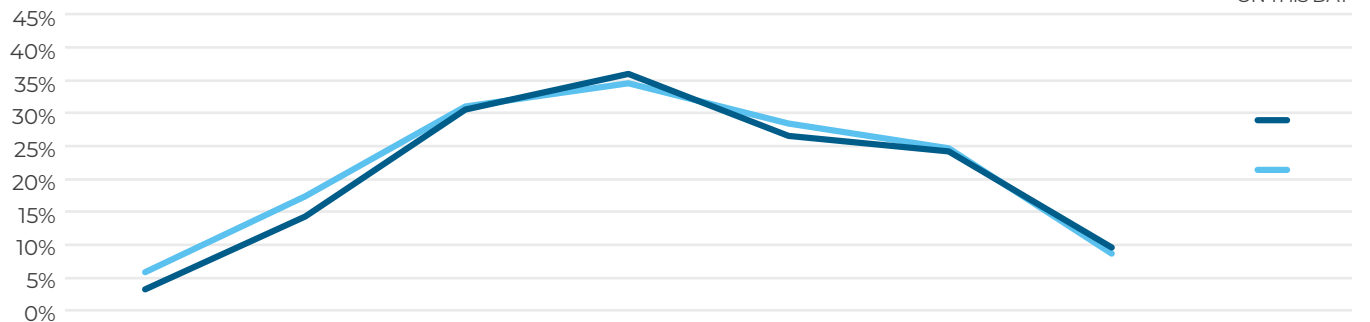
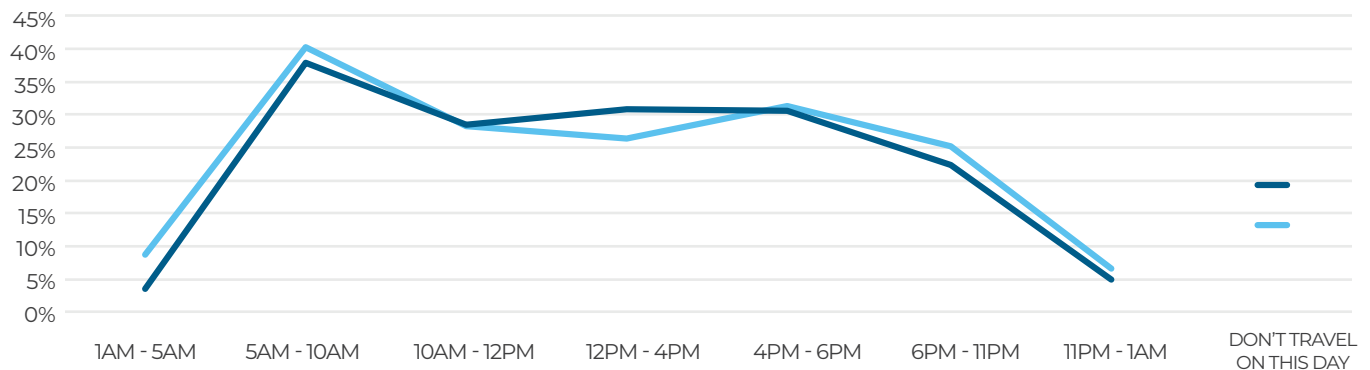
### Survey

Among respondents to the Understanding How Women Travel Survey, female respondents were more likely than male respondents to say they travel during weekday mid-day hours (12:00 PM through 4:00 PM) via transit, but less likely than men to travel via transit after 6:00 PM or before 10:00 AM on weekdays.

In addition, women are more likely than men to say they don't travel at all on a given day, for both weekdays and weekends.

### Share of Transit Trips by Time of Day

#### WEEKDAYS



#### WEEKENDS

■ FEMALE ■ MALE

Source: Understanding How Women Travel Survey, 2019

# WHY ARE WOMEN RIDING TRANSIT?



Women ride transit primarily because they do not have a car, they want to avoid traffic, or they do not have a driver's license.



## Existing Data Analysis

The 2018 Los Angeles County Municipal Operators Association (LACMOA) Ridership Growth Action Plan included survey data collection among local bus riders. Within the survey, LA transit riders were asked, “When you use public transit, what is the main reason for using it?” and given 15 different options for their answers. Within these options, women most commonly say they ride transit because they do not have a car, they want to avoid traffic, or they do not have a license.

### Top Reasons for Riding Transit in LA Region

#### FEMALE RIDER REASONS FOR RIDING TRANSIT



#### MALE RIDER REASONS FOR RIDING TRANSIT



Source: Ridership Growth Action Plan Surveys (2018)



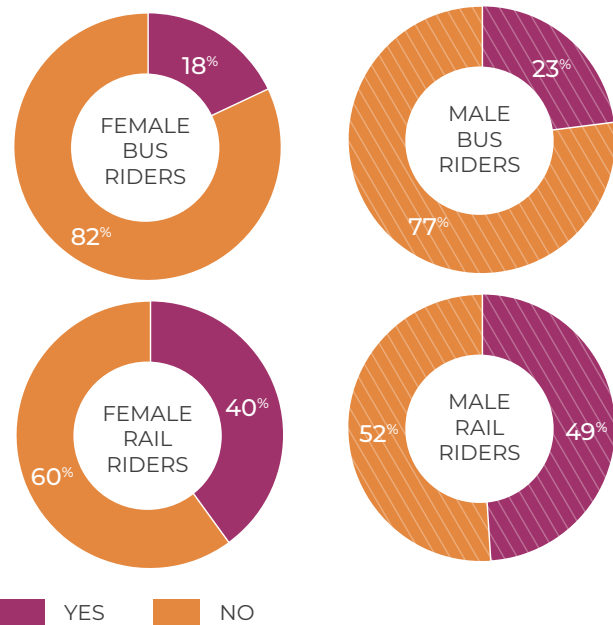
Most female bus and rail riders do not have a car available for the trip they are taking on transit.



## Existing Data Analysis (continued)

Metro's Spring 2018 On-Board Survey offers information on vehicle availability, which is the number one reason women gave for riding transit (as shown on the prior page). Female Metro riders are less likely to have access to a car than male riders. Over 80% of female Metro bus riders and 60% of female Metro rail riders do not have a vehicle available to complete their trip, compared with 77% of male bus riders and 52% of male rail riders.

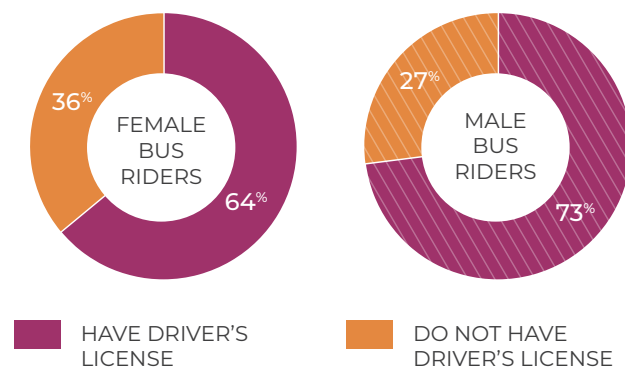
Current Metro Riders: Do you have a car available to make this trip?



Source: Metro On-Board Survey, Spring 2018

Data from the 2018 Ridership Growth Action Plan Survey shows a comparison in driver's licensing rates among female and male bus riders in the LA region. Among LA County bus riders, 36% of women do not have a driver's license. This finding from Los Angeles corresponds to trends we see nationally. Given these findings, Metro should look into addressing older women's needs through paratransit, micro-transit, and public transportation services.

Driver's Licenses Among LA Region Bus Riders



Source: Ridership Growth Action Plan Surveys (2018)



Women's reasons for riding transit vary depending on their preferences and circumstances.



## Conventional Methods

### Focus Groups

For several female focus group participants, public transit was the most viable option because they either live in a single-car household or they do not have a car. Many of the women in the focus groups used the bus as their main form of transportation.

Women in the focus groups described why they like taking the bus. One woman said that she enjoyed the freedom she felt while taking the bus, while another said she liked having the opportunity to take the bus because she was able to get some exercise during her walk to the bus stop.

Reported taking transit because they did not have another option or because they preferred to, despite the time cost.

WOMEN

Reported taking transit only when it was efficient and convenient, and preferred rail service.

MEN



*Para mí, es más cómodo el transporte público. Siempre eso escojo primero, pero hay tiempos que necesito cargar muchas cosas para mi trabajo. O si sé que voy a estar fuera de casa bien noche, y no pienso que es un tiempo seguro para andar en transporte público...entonces, en esos tiempos, sí conduzco. **Es rara la vez que escojo conducir en vez de tomar transporte público.***

*(For me, public transportation is more comfortable. I always choose it first, but there are times that I have a lot of stuff to carry for work. Or if I know I'll be away from home very late, and I don't think it's a safe hour to be riding public transit... then those are the times I do drive. **It's very rare that I choose to drive over using public transportation.**)*

FEMALE FOCUS GROUP PARTICIPANT



## Innovative Methods

### Participatory Workshops

In the participatory workshops, many women discussed their individual circumstances and why they use transit to travel.

- » Women with disabilities who cannot drive shared that they use transit and Access services as a way to maintain their independence in getting to medical appointments and connecting to a variety of services that kept them healthy and socially connected.
- » Women who are parents reported using transit to take their children to and from school when they did not have a vehicle available.
- » Women experiencing homelessness viewed transit as a way to connect to services and jobs, as an extension of public space, and as a reliable safe haven.





Photo source: Metro

# WHERE ARE WOMEN GOING ON TRANSIT?

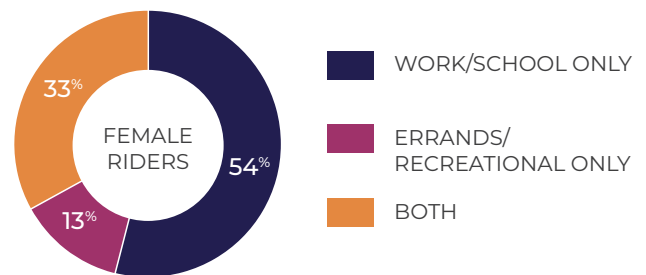


## Existing Data Analysis

The complexity of women's trip making shapes their travel mode. Auto use is higher for individuals who trip chain as part of their work commute than for those who travel directly between home and work (McGuckin et al., 2005). Hensher and Reyes (2000) find that trip chaining is a barrier to transit use. Drawing on data from a Sydney Travel Survey, they show that supporting the activities of children (child care, school, extracurricular activities) greatly increases trip complexity. The increased complexity of trip chains is associated with the utility of car use and, conversely, the disutility of transit.

Metro's Spring 2018 On-Board Survey includes the primary trip type women are taking on Metro. The chart includes responses from both bus and rail riders. More than half of female riders take Metro primarily to travel to and from work or school, which aligns with findings from the research that show that there are barriers to riding transit for trips that are more complex than commute trips.

Primary Trip Type for Female Metro Riders



Source: Metro On-Board Survey (Spring 2018)



## Conventional Methods

### Focus Groups

Female focus group participants described choosing their travel mode based on the complexity of their day. Women described saving errands to do all at once on the weekends when they would be more likely to have access to a car. One female participant described her preference for transit, but noted she would drive if she had to carry a lot of things or would be out late. Others described reluctance to travel on transit while carrying multiple bags, such as groceries, because of the difficulty in getting home from the stop or station (i.e. making the "last mile" connection).

Male and female focus group participants reported differences in how they spend their time and resources traveling, confirming what we have seen in national studies that look at unpaid household responsibility.

- » Mothers cited planning their days around picking up/dropping off children at school and the different appointments the children may have as determinants for travel mode.





Women who use transit as their primary mode often use other modes to make household-serving trips because of the limitations of transit: lack of service, unreliable service, and inaccessible stations or stops.



## Conventional Methods (continued)

### Focus Groups (continued)

- » Female focus group participants described choosing their travel mode based on the complexity of their day.
- » Women were more likely to ride transit if they could complete their errands on foot near their origin or destination.



*I try to combine [trips] so I don't have to make many trips on the bus. For example, if I leave work, I take advantage of whatever is close by."*

FEMALE FOCUS GROUP PARTICIPANT



*Si tengo que hacer muchos mandados, prefiero manejar. **Se me hace más conveniente.**"*

*(If I have many errands to run, I'd rather drive. **It's more convenient for me.**"*

FEMALE FOCUS GROUP PARTICIPANT

### Survey

In our survey, we asked women what they considered to be their primary mode. Among women who identify transit as their primary mode of travel and overwhelmingly use transit for their commutes, 80% make their work trips on transit, 42% make their household errand trips by transit, and 32% make trips to transport others (e.g. taking kids to school) by transit.

### Trip Purpose and Mode for Women Transit Riders

#### TRIPS FOR WORK



#### TRIPS FOR HOUSEHOLD ERRANDS



#### TRIPS TRANSPORTING OTHERS



DRIVE

TRANSIT

TNC

WALK/BIKE

Source: Metro Understanding How Women Travel Survey (2019)



Among people who use transit as their primary mode, responsibility for frequent household-serving trips falls disproportionately on women.



## Conventional Methods (continued)

### Survey (continued)

Among all survey respondents, women are slightly more likely to frequently make household-serving trips – running errands or transporting others three or more days per week.

Among survey respondents who identified transit as their primary mode, the gulf between women and men widens.

- » 34% of women who primarily travel via transit make errand trips three or more times per week, compared with 29% of male transit riders.
- » 21% of women who primarily travel via transit make trips to transport others three or more times per week, compared with 12% of men.

	ALL PEOPLE		PRIMARY MODE TRANSIT		PRIMARY MODE DRIVING	
	F	M	F	M	F	M
ERRANDS 3+ DAYS/WEEK	35%	34%	34%	29%	36%	35%
TRANSPORTING OTHERS 3+ DAYS/WEEK	25%	23%	21%	12%	27%	27%

Source: Metro Understanding How Women Travel Survey (2019)



## Innovative Methods

### Participatory Workshops

During the participatory workshop with Padres Líderes en Acción, participants shared that they use transit to run errands, take children to school, and go to work. Many of the participants described trip-chaining in order to complete these trips, and remarked that trip-chaining on the bus can be particularly costly and time-consuming. A lot of time is spent waiting for each subsequent bus to complete the next part of the trip, and any delays can greatly expand the overall amount of time that

the journey takes. Even if the trip-chain is short in distance, limitations of one-way transfers means the rider must pay again to return home. Some women expressed preference for cash over TAP cards, which eliminates a free transfer and makes the process even more costly, potentially requiring three fares to make three legs of a journey.

# TRAVELING WITH CHILDREN



## Existing Data Analysis

Research has shown that the presence of children in a household can impact women's unpaid household work and travel patterns. Among parents in households with children, gender disparities in the number of hours dedicated to household chores are even more pronounced than in households overall. Women in households with children spend 38 hours per week on unpaid household work compared to 21 hours among men (Krantz-Kent, 2009). Such responsibilities affect women's mobility (Turner & Niemeier, 1997), potentially leaving them less time for discretionary activities, increasing the need to be hypermobile and trip chain, and influencing women's access to well-paid jobs far from home.



## Conventional Methods

### Focus Groups

Only some women in the focus groups had children. They described many challenges related to traveling with children on transit. Many described the challenge of managing children and all the things they need to carry when traveling with children – strollers, bags, toys, snacks. They recounted that some operators made them fold the stroller, while others allowed them to board with it open.

“**It's hard on the train. I have the two-seat stroller for the two-month-old and a two-year-old, so it would be hard. So now I'm trying to figure out how to get a smaller stroller and carry the newborn.**”

FEMALE FOCUS GROUP PARTICIPANT

They also expressed anxiety about causing inconvenience to other riders by getting in their way, taking up too much space, making too much noise, or taking too long to board or alight with children in tow.

Some also mentioned the bus stop environment and the long waits for the bus as an added challenge. Lack of shade at the bus stop caused them to worry about their children getting sunburned while they wait.

Most said they have the most responsibility for planning their children's' travel. They also said they worry most about safety and security of their children on transit. They all said they would not let their children ride transit alone until they were older, due to these concerns.



Though nearly 60% of female riders with children bring their kids on transit, many women expressed difficulty in riding Metro with children and strollers.



## Conventional Methods (continued)

### Survey

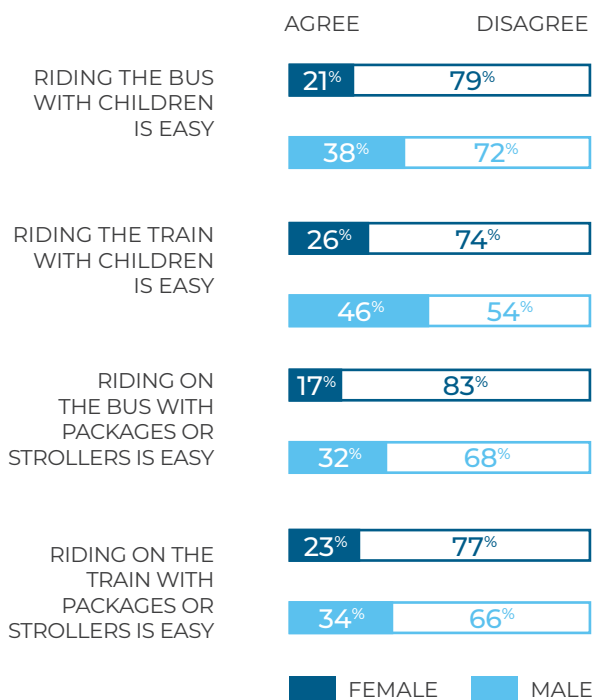
Responses to our survey confirmed what we heard from female focus group participants. Among female riders with children, few say that riding the bus or train with kids is easy. Just over 40% of female riders with children don't bring their kids on transit, citing "it's too difficult" as the top reason. Women also find it difficult to take strollers or other large packages and bags on transit.

# 57%

OF FEMALE RIDERS WITH CHILDREN BRING THEIR KIDS ON TRANSIT

Source: Metro Understanding How Women Travel Survey (2019)

### Metro Rider Perceptions on Traveling with Children



Source: Metro Understanding How Women Travel Survey (2019)





## Innovative Methods

### Participant Observation

Children travel almost exclusively with women. If men were observed traveling with children, they were typically also traveling with an adult woman. Women (and men) traveling with children almost always had other items they were carrying: strollers, bags, and/or multiple children. Families generally sat in reserved seating at the front of the bus. If these seats were not available, they sat in a pair of seats with the child in the window seat or, alternatively, on an adult's lap. Occasionally, adults sat separate from their children, or seated a child in a side-facing bench seat or aisle seat and stood next to them.

People traveling with children, predominantly women, usually carried other items such as strollers, bags, and/or multiple children. Only umbrella strollers can manageably be brought onto a bus, while larger strollers may be easier to bring onto trains. The Metro Code of Conduct states that customers must fold large strollers, and if a bus is too crowded to accommodate a small stroller, the customer must wait for the next bus. Typically, those traveling with strollers folded them and sat with them partially blocking the aisle.

### Participatory Workshops

In the participatory workshops, we heard that many women struggle to travel with children, especially those with special needs. One woman at the workshop stated that she would love to be able to use Access to travel with her son. Women who are traveling with non-neurotypical children or children with disabilities find it incredibly difficult to navigate public transit.



*Its extremely difficult for me to travel with my [autistic] son because I feel embarrassed when other passengers who do not know my son's situation stare at us."*

FEMALE WORKSHOP PARTICIPANT



Photo source: Fehr & Peers

# HOW DOES WOMEN'S TNC USE RELATE TO TRANSIT?



## Conventional Methods

### Focus Groups

Some female focus group participants described their decisions related to last-mile transfers on transit. Some women used local bus services such as DASH, but if the bus was not running, they described substituting with Uber or Lyft as the next best option. Factors such as time of day, whether they were carrying bags, or whether the last mile was uphill or not also influenced their decision to supplement with Uber or Lyft.

Financial considerations also contributed to using Uber or Lyft instead of transit. Participants described using TNCs when they had extra money, since it was faster and more convenient with door to door service. However, many also reported that the cost ballooned quickly - a \$5 trip home from work added up, compared to a more affordable transit fare, which was convenient if they could get a ride to the bus stop.

“ I did Uber for the last two years, it’s a lot. **Hundreds of dollars I’ve used.** ”

FEMALE FOCUS GROUP PARTICIPANT

### Survey

Of the women who participated in our *Understanding How Women Travel* survey, 70% have used a ride-hailing service like Uber or Lyft. This rate of adoption is the same for women regardless of income. When asked why they use ride-hailing services instead of transit, the top reason given by women is “It’s faster than transit.” Women were also more likely than men to say they took ride-hailing services because they felt safer at night, compared to traveling on transit. Before ride-hailing services were available, women most often said they got a ride from a friend or family member.

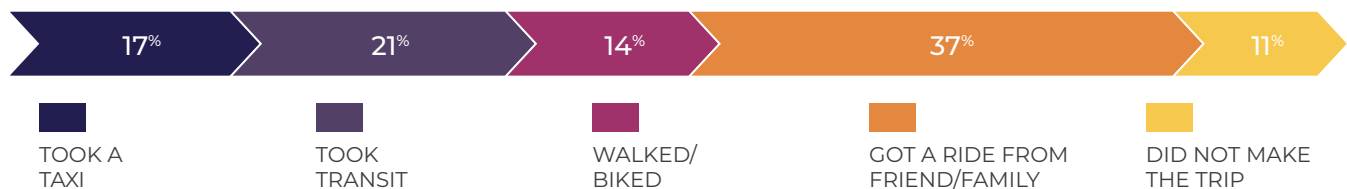
70%

OF WOMEN SURVEYED HAVE USED A RIDE-HAILING SERVICE LIKE UBER OR LYFT AT LEAST ONCE BEFORE

Source: Metro Understanding How Women Travel Survey (2019)

### What Did You Do Before Ride-Hailing Services Were Available?

#### WOMEN'S RESPONSES



#### MEN'S RESPONSES



Source: Metro Understanding How Women Travel Survey (2019)



For current Metro riders, women are less likely than men to use Uber or Lyft as a complementary service to, or in conjunction with, public transit.



More than half of current female riders use ride-hailing services for trips that they could not otherwise take on transit.



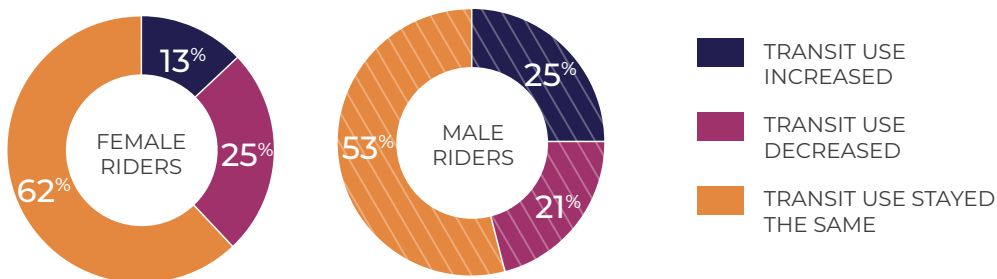
## Conventional Methods (continued)

### Survey (continued)

In our survey, we explored how Metro riders are using ride-hailing services in relation to transit. When asked to consider how their transit use has changed with their use of ride-hailing services, we saw that women's transit use has largely stayed the same, though 25% responded that their transit use has decreased. More than half of female riders

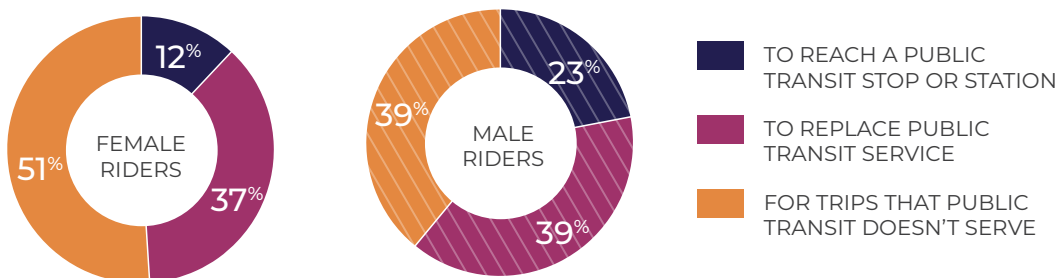
reported that they are using ride-hailing services for trips that transit does not serve, while 37% reported using ride-hailing to replace transit trips. 23% of men reported using ride-hailing to reach their transit stop or station, compared with just 12% of women.

### Current Metro Riders: How has your use of transit changed with your use of ride-hailing services?



Source: Metro Understanding How Women Travel Survey (2019)

### Current Metro Riders: How do you use ride-hailing services in relation to public transit?



Source: Metro Understanding How Women Travel Survey (2019)

WHAT WE'VE LEARNED FROM STUDYING

# TRANSIT TRAVEL BEHAVIOR

These findings point towards many opportunities to adjust the services provided by Metro to better meet the travel needs expressed by those who are using transit. This section and the section prior outline the main trends in women's travel patterns, but do not dive deeply into the

motivations or explanations behind these patterns. In the sections that follow, the motivating factors of safety, accessibility, reliability, and comfort and convenience are explored. The analysis in these sections add depth to our understanding of how and why women travel on transit.





*Photo source: Jason Leung on Unsplash*

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# SAFETY

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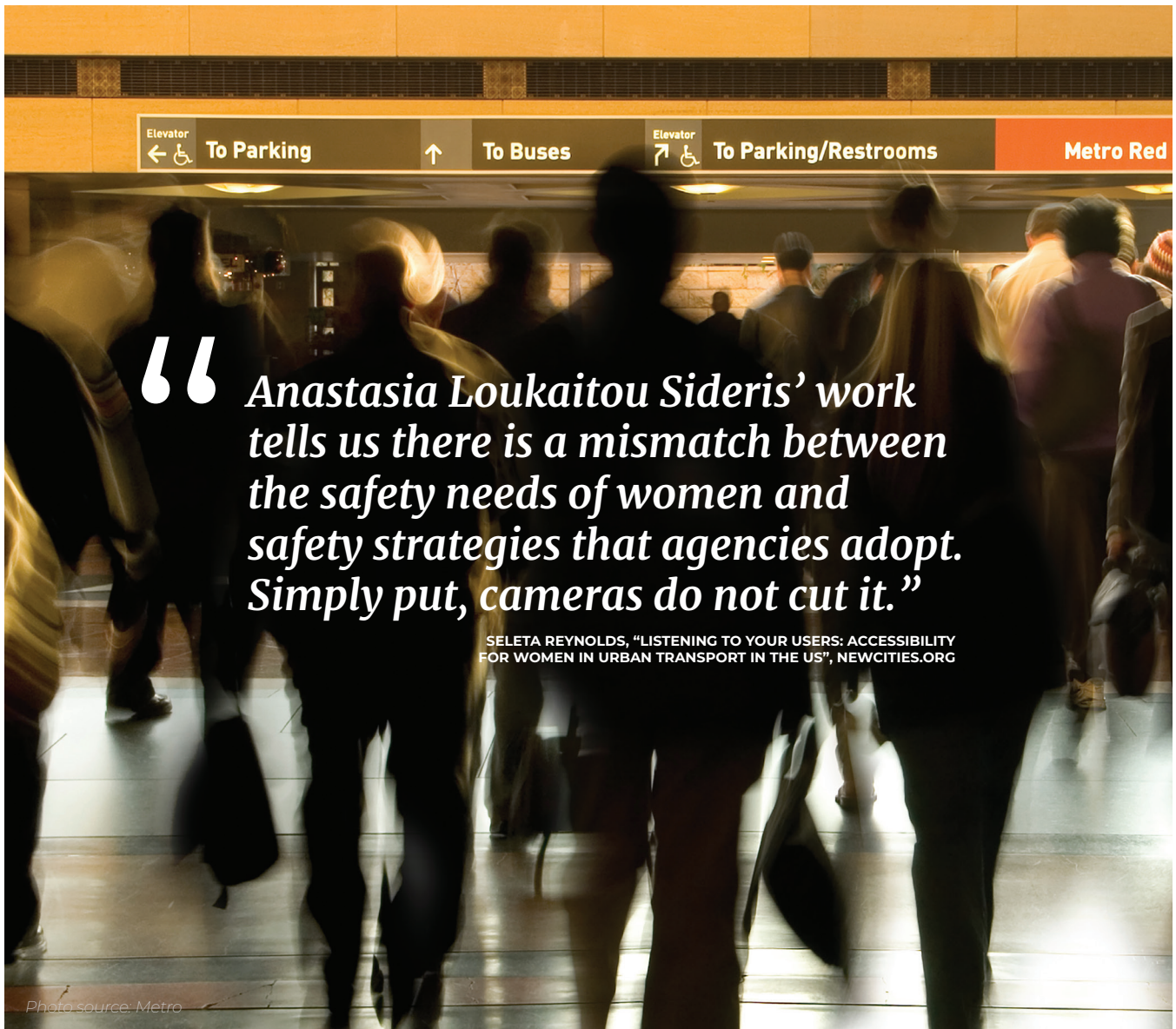
## Women often feel unsafe on transit, and it is impacting how often they ride, when they ride, and if they ride at all.

Among women, safety on transit is a top concern voiced across every mode of data collection, and their concerns center primarily around harassment and personal security. We also found that women are reporting accidents and injuries on Metro at a higher rate than men. The women who responded to our survey identified safety concerns as the top barrier to riding transit, for current Metro riders, former Metro riders, and people who have never ridden Metro. Safety was not the top concern among men. 60% of female riders who participated in our survey feel safe riding Metro during the day, but that number plummets to just 20% at night. Safety perceptions for waiting and traveling to the stop or station were even lower. Concerns about safety are causing riders to alter their behavior – to consider their clothing choices or, for those who have other options, simply not ride transit. These safety concerns are keeping women from riding Metro and exposing those who do ride Metro to stress and fear of being victimized. The persistent safety concerns are also affecting the agency’s ability to achieve policy goals in areas ranging from the environment to economic opportunity.

These concerns are substantiated by the numerous stories we heard from women during the focus groups, participatory workshops, and pop-up events. Women we spoke with have endured sexual harassment and witnessed violent acts while on

transit. These concerns are also borne out in the Metro crime data and reports of sexual harassment, though we know that these incidents are significantly underreported. We asked women what would make them feel safer on transit. Both current and prior riders agreed that more lighting and the presence of people nearby would help them feel safer. Current riders also cited having transit police nearby, while previous riders cited security cameras. This answer aligns with data from our survey showing that two-thirds of current and previous female riders believe there are too few transit police on board the system. However, in our conversations during focus groups, workshops, and pop-up events, it was clear that riders have a nuanced view of security staffing. Some felt that police were slow to react or ineffective when issues did arise, while others felt that police were too aggressive.

Women described having empathy for operators, who must perform many jobs at once, but at the same expressed their frustration that no one steps in when tense situations occur on the bus or train car. Similarly, women expressed empathy around how Metro responds to the needs of people experiencing homelessness and people who need additional mental health resources, but at the same time perceived these populations to be contributors to the concern about riders’ unpredictable behavior on transit.



## METHODS USED



### Existing Data

Literature Review  
Metro Data



### Conventional Methods

Survey  
Focus Groups



### Innovative Methods

Participant Observation  
Participatory Workshops  
Pop-Up Engagements

## TOPICS

- How safe do women feel on transit?
- Time of day
- Sex offense crimes
- Sexual harassment
- Presence of staff to manage safety
- Physical space and injuries

# HOW SAFE DO WOMEN FEEL ON TRANSIT?



Women who use the Metro system have a better perception of safety than those who do not use the system.



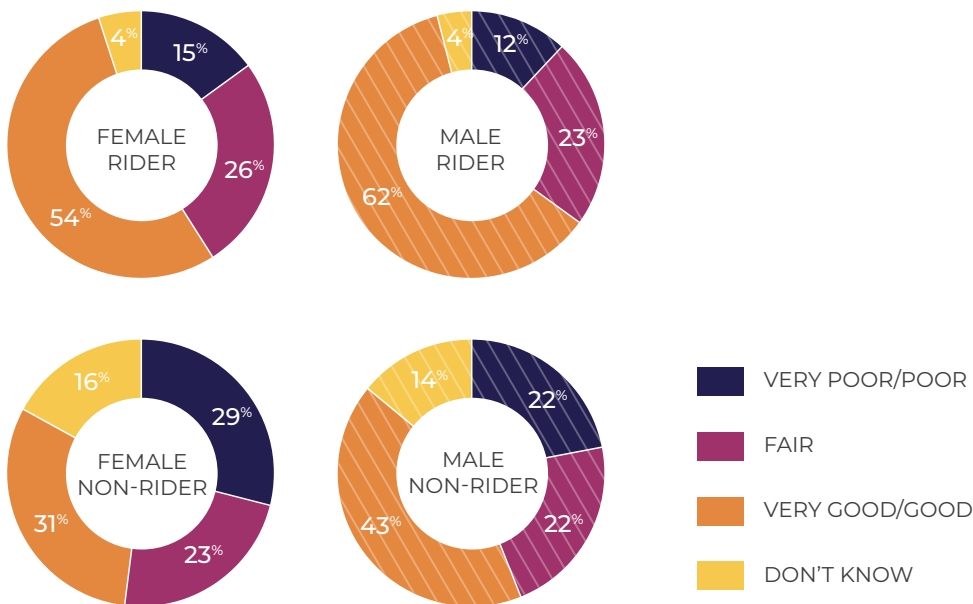
## Existing Data Analysis

Data from the 2018 Ridership Growth Action Plan Survey illustrates a comparison in perceptions of safety while riding and waiting for the bus among female and male bus riders in Los Angeles. This summary also allows for a comparison between riders and non-riders.

- » 80% of female bus riders say their perception is fair, good or very good, compared to 85% of men.
- » 54% of female non-riders say their perception is fair, good, or very good, compared to 65% of men non-riders.

Overall, those who ride transit perceive transit to be safer than those who do not ride transit. This finding has two likely causes: those who think it is unsafe do not ride, and those who used to ride but stopped riding after an experience where they felt unsafe.

### LA Region Perception of Safety While Waiting for and Riding the Bus



Source: Ridership Growth Action Plan Surveys (2018)



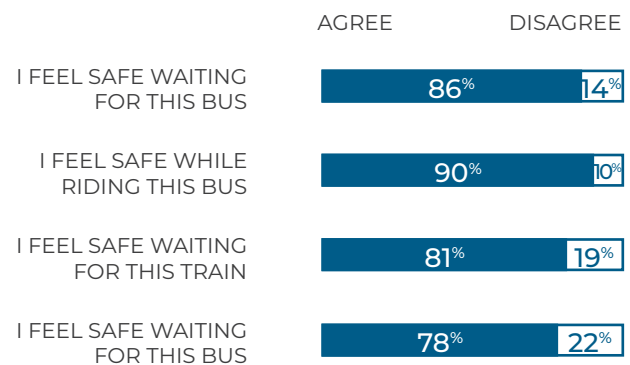
Safety is the primary barrier to riding transit for women.



## Existing Data Analysis (continued)

Metro's 2018 Spring On-Board Survey demonstrates similar results as the RGAP study findings, with 86% of female bus riders responding they felt safe waiting for the bus and 90% responding they felt safe while riding the bus. For rail riders, 81% of women said they felt safe waiting for the train and 78% said they felt safe while riding the train.

### Metro Rider Perception of Safety While Waiting for and Riding the Bus



Source: Metro On-Board Survey (2018)



## Conventional Methods

### Survey

When asked about the greatest difficulty in riding transit or the reason people were not riding transit, "I don't feel safe" was the top response given across all groups of women - current riders, previous riders, and women who have never ridden transit.

### The Largest Barrier to Riding Transit in the LA Region



Source: Metro Understanding How Women Travel Survey (2019)



Both female riders and non-riders say that additional lighting and the presence of people nearby would make them feel safer on the Metro system.



## Conventional Methods (continued)

### Survey (continued)

In our survey, we asked current and previous female riders what would make them feel safer on Metro. Both current and previous riders cited “lighting” and “other people nearby.” While “transit police” was the top answer among current riders, it is not among the top three responses for previous riders.

#### Top Changes That Would Make Female Riders Feel Safer

CURRENT FEMALE RIDERS		PREVIOUS FEMALE RIDERS
Transit Police Nearby	1	Other People Nearby
Lighting	2	Security Cameras
Other People Nearby	3	Lighting

Source: Metro Understanding How Women Travel Survey (2019)

### Focus Groups

In the focus groups, both women and men expressed safety concerns when riding public transit. Male participants expressed worries of violent attacks. For women, safety concerns were inextricably related to the fact that they are women traveling in public space.

Female focus group participants felt that Metro security and staff, including bus operators, do not intervene often enough in tense situations on public transit, especially those involving sexual harassment.

Women reported making intentional choices about their purses, shoes, and clothing when riding Metro. They also reported switching to Lyft/Uber if it was late at night and there was a long wait for the bus.

Some women reported wearing sneakers on the bus or train in case they unexpectedly need to run from an assailant. They also said they would avoid wearing skirts because they did not want their bare skin to touch the seat and out of fear that men would sexually harass them. Women reported that they hide their jewelry on public transit due to fear that it may be stolen, and many shared stories of seeing people robbed on public transportation.

The male participants overwhelmingly noted that they carry weapons on public transit in case of an emergency, including knives, Tasers, and Mace.





## Innovative Methods

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### Participatory Workshops

The general consensus among the women was that riding alone after dark feels dangerous. Poor lighting at bus stops was highlighted as a concern and many women stated that improved lighting would make them feel safer while waiting for the bus or train. Many women shared that they feel particularly unsafe when there are long wait times, and feel safer when there are other people around or when bus stops are located near businesses.

Specific observations and experiences about safety were shared in each of the three workshops:

- » Even though many women with a disability said that they can get around faster on public transit than on Access, they expressed fear about using the system because some did not feel secure boarding or could be preyed upon by thieves. One woman mentioned that she feels particularly vulnerable with a cane because she is not able to navigate the space as freely as others and may be a target for theft. Another person who uses a wheelchair recalled a particular encounter on the Blue Line: “I got off the train and quickly got back on and returned home, not making it to my final destination, because there were two other women on the train who followed me and were speaking loudly about taking my purse.” That was the last time she rode the train and now relies upon family or Access for rides.
- » Women experiencing homelessness shared that the bus was both a place of refuge and place where they sometimes feel scared. Sometimes they feel the bus is dangerous because of people who may be intoxicated or need care for mental health issues. The women expressed that there are a lot more people with mental health needs now than there were 10 years ago. Additionally, some of the women shared that they have had “run-ins” with law enforcement in these spaces, such as being told to leave an area or being stopped and ticketed.
- » At the workshop with immigrant parents and their children, two young adults in high school expressed that they are sometimes wary when traveling from school with laptops, books, and other belongings because they fear theft. Some of the women shared that they had witnessed violence on the bus such as fights between people. Additionally, one woman shared that she had seen a man exposing himself on a bus. There have also been a handful of cases where the women have seen beer being sold or consumed while riding transit. A number of women mentioned that they sometimes feel nervous when taking the bus alone or with friends in areas that are unfamiliar to them. Additionally, when the bus is empty or a station is empty they sometimes feel scared or nervous. These types of experiences lead some women to feel uncomfortable sitting by men, so they seek out seats near other women.
- » When asked if they were aware of Metro’s safety app, none of the women knew about it. When asked the follow up question of how they submit their complaints to Metro, they said that they do not do so because “it is not worth it” due to the time it would take to submit without any guarantees that the issue would be addressed. Some women also stated that they do not know how to submit complaints. Women who acknowledged that they do not always feel safe taking transit also shared that they knew someone who had been unfairly targeted by law enforcement on public transit.

# TIME OF DAY



Female riders feel much less safe on the Metro system at night than during the day.



## Existing Data Analysis

Women's safety concerns are particularly elevated at night. Women express more fear than men having to wait for the bus or having to walk along poorly lit routes in their travel to and from transit stops (Loukaitou-Sideris, 2014). Desolate transportation settings can generate anxiety that no one will be there to help if a crime occurs. This includes empty bus stops and train stations; parking lots and garages; dark walkways connecting station platforms to park-and-ride facilities, and situations where there is only one male passenger in a car (Lynch & Atkins, 1988). Safety fears are elevated for low-income and minority women, who are more likely to live in high-crime neighborhoods, may return home from work in the late evening, and have fewer private transportation options than more affluent women.

Women without resources may respond by shifting how they use their usual mode of travel. For example, they may only travel during daylight hours or with others (Loukaitou-Sideris, 2015). For women with higher incomes and greater choices, safety fears may influence their preference for private automobiles or taxis relative to other modes (Loukaitou-Sideris, 2014; Stanko, 1990; Wekerle & Whitzman, 1995). In some instances, women may completely avoid using certain public spaces or visit them only if accompanied by boyfriends, spouses, or friends (Loukaitou-Sideris & Sideris, 2009). As a result, research reveals an under-representation of women in public spaces (Cooper & Francis, 1990; Cranz, 1980).



## Conventional Methods

### Focus Groups

For both men and women, using ride-hailing services was perceived as a safer option than transit when riding at night, though use of such services was much lower among male participants. Most women described having a cut-off time, usually around 8 or 9 PM, after which they would consider Lyft or Uber instead of transit.

Safety at night was a primary concern for both women and men. Female participants often cited feeling unsafe at night as their top reason for not taking transit, and expressed an interest for additional lighting at bus stops. Women said they feel safer using transit at night if there were other people around or if they waited near an open business, while men did not identify specific built environment characteristics that would make them feel safer.



*I do think 8:30 or 9:00 is about my limit too. I think then the train, especially the Red Line or the Purple Line, it goes to like 20 minutes sometimes. It's just like, **I could take the Lyft and be home in that time.**"*

FEMALE FOCUS GROUP PARTICIPANT





Female riders feel less safe traveling to and waiting at their stop or station than they do while on board.



Just 13% of current female riders feel safe waiting for Metro after dark.

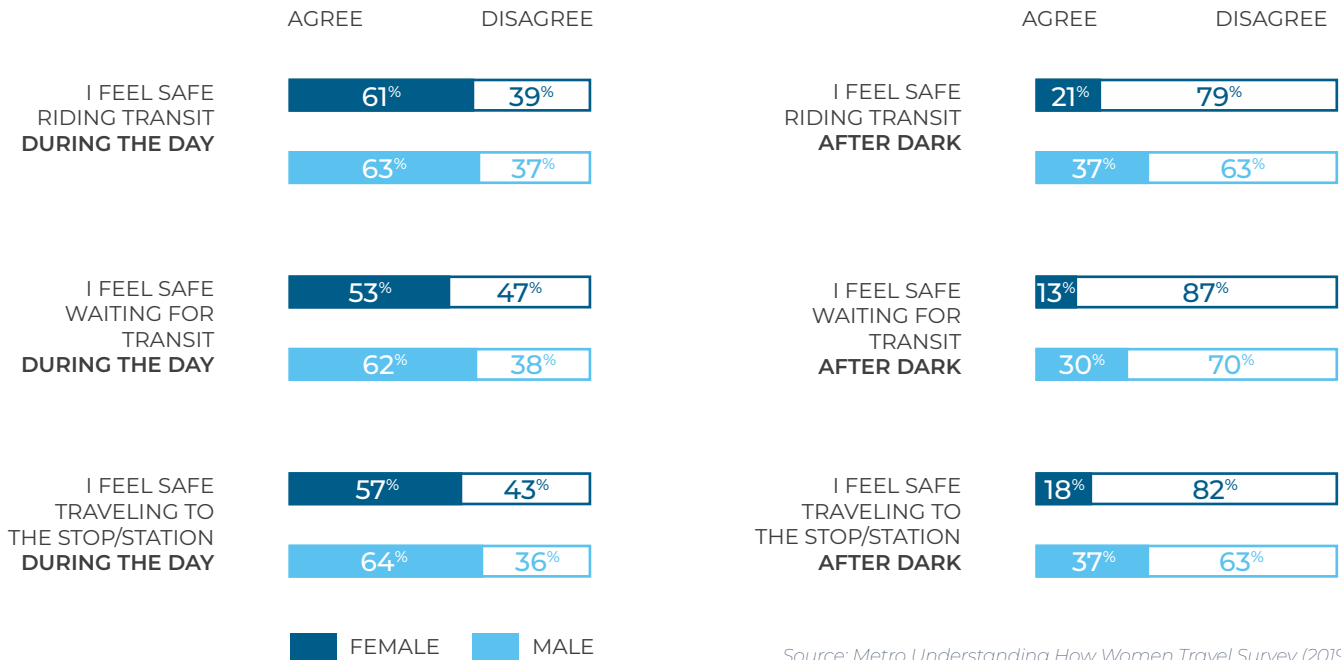


## Conventional Methods (continued)

### Survey

The survey results illustrate the concerns we heard from women in the focus groups. Female riders are less likely than male riders to feel safe riding Metro, waiting for their train or bus, and traveling to their stop or station. More than half of female riders feel safe during the day, but less than a quarter feel safe at night.

### Current Metro Riders' Perception of Safety During the Day and Night



Source: Metro Understanding How Women Travel Survey (2019)



Women substitute TNCs for transit at night due to safety concerns.



## Innovative Methods

### Participant Observation

Riders were often waiting alone at their bus stop during late evening hours. Additionally, female riders noted many times that they were the only woman on the bus, usually at night or early in the morning.

### Participatory Workshops

Women who participated in our workshop discussions confirmed what we had heard at the focus groups and through our survey. Workshop participants expressed feeling unsafe when using bus stops that are dark, especially on shorter days when it gets dark earlier.

Many of the women participating in our workshops described how their work schedules require them to travel to work very late at night and very early in the morning. Late night and early morning experiences such as walking long distances to a bus line that runs overnight, or waiting 1-2 hours for a bus make them feel unsafe and vulnerable.

Children participating in the immigrant parent workshop shared many of the same sentiments as their parents, and recalled feeling scared at times when traveling at night because some “strangers” they sit near “are scary.”

“ I don’t usually ride late because I’m scared.”

FEMALE POP-UP PARTICIPANT

### Pop-Up Engagements

Women engaged at pop-ups shared that there is a lack of adequate early morning and late night service, which can contribute to feeling unsafe.

Another woman at the North Hollywood Station shared, “Sometimes the night options are sparse. So, I’d rather take Uber or Lyft because buses are always late at night and there is no one to call.”

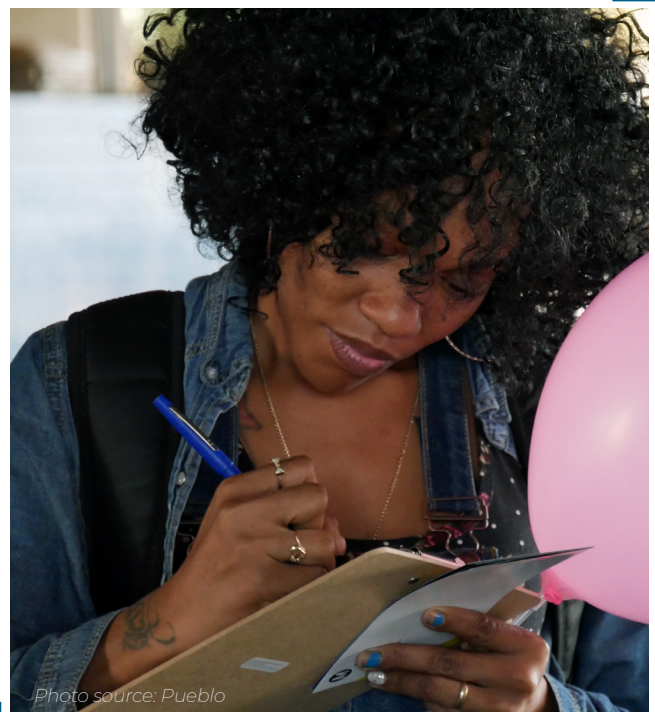


Photo source: Pueblo



# SEX OFFENSE CRIMES



Although women and men both report experiencing sexual harassment, women are more likely to be victims of sex offense crimes, based on national trends.



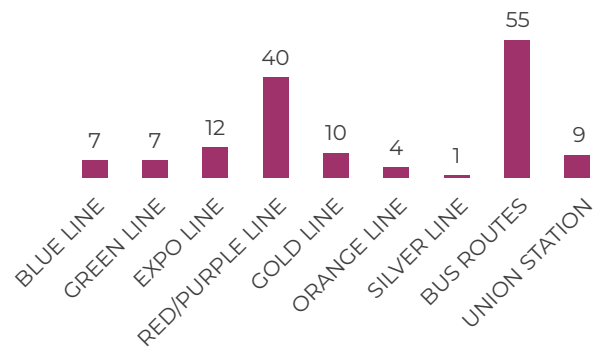
## Existing Data Analysis

According to the U.S. Department of Justice, female victims account for 94% of all rapes, and 89% of all sexual assaults. Although Metro's Crime Report data was not summarized in a way that identified the gender of victims or perpetrators, these are gendered crimes because women are overwhelmingly the victims of rape and other sex offense crimes.

The following sexual crimes were reported on Metro and at Union Station over the past year, based on Metro crime records from law enforcement partners.

- » Between October 2017 and September 2018, 145 sex offense crimes were reported on Metro transit lines or in Union Station. The Red Line had the most sex offense crimes (40) of any other rail/bus-rapid transit line.
- » Between October 2017 and September 2018, there were 14 rapes reported on Metro transit lines and in Union Station.

Reported Sex Offense Crimes on Metro (Oct '17–Sept '18)



Source: Metro Crime Report (October 2017 – September 2018)

Reported Rapes on Metro (Oct '17–Sept '18)



Source: Metro Crime Report (October 2017 – September 2018)

# SEXUAL HARASSMENT



Women experience higher rates of sexual harassment than men, but lower rates than people who identify as non-binary.



## Existing Data Analysis

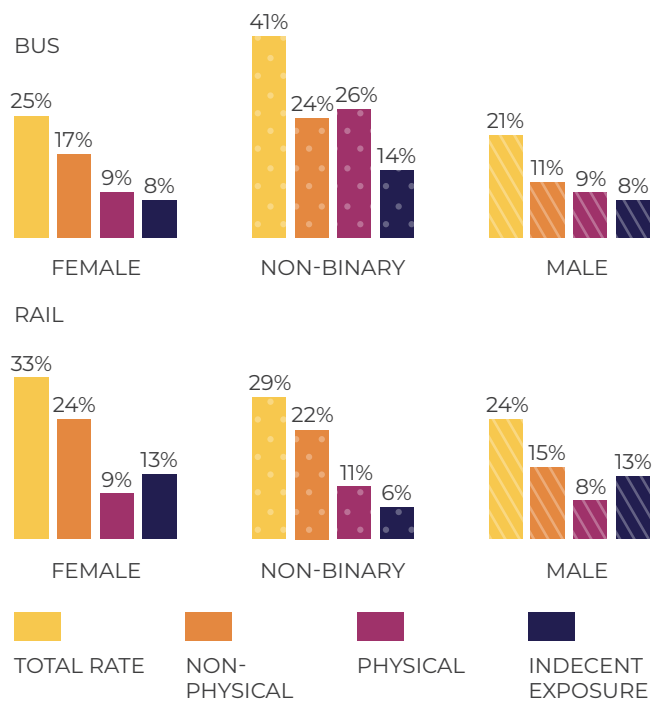
In 2015, Metro and Peace Over Violence, a sexual and domestic violence prevention center, launched a system-wide messaging campaign, “It’s Off Limits,” to make it clear that sexual harassment is not tolerated on the transit system. Metro has several different avenues through which sexual harassment can be reported, including the Metro Transit Watch mobile app, the It’s Off Limits hotline, the CCATS customer comment online and telephone systems, and emergency intercoms at stations. However, research shows that instances of sexual harassment are widely underreported. A 2007 survey of subway riders in New York City found that 63% of respondents had been sexually harassed in the subway. Nevertheless, 96% of those harassed did not contact the NYPD and/or the MTA to file a report (Stringer, 2007). Studies have shown that fear of harassment and victimization leads to behavioral adjustments and precautions by women travelers: not walking alone, avoiding travel in the evening, avoiding certain settings (such as crowded buses) completely, or not wearing certain types of clothing, etc. (Loukaitou-Sideris, 2014).

Metro’s Spring 2018 On-Board Survey reports the share of female riders, male riders, and non-binary riders who had been sexually harassed on transit within the six months prior to taking the survey. The charts include responses from both bus and rail riders.

- » 1/4 of women bus riders and 1/3 of women rail riders report experiencing sexual harassment in the past six months.
- » Those who identified their gender as non-binary are the most likely to have been harassed on the bus within the past six months, across all categories of sexual harassments.

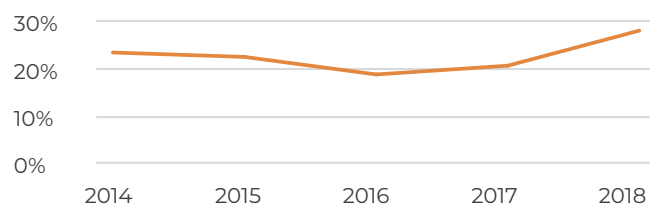
The share of female riders who report experiencing sexual harassment within the past six months is higher in 2018 than it was when Metro first began asking riders in 2014.

*Metro Riders Who Have Been Sexually Harassed in the Past 6 Months*



Source: Metro On-Board Survey (Spring 2018)

*Women Experiencing Sexual Harassment on Metro Over Time*



Source: Metro On-Board Survey (2014-2018)



## Conventional Methods

### Focus Groups

Many of the women in the focus groups stated that they had experienced sexual harassment and men said they had seen it happen.

“*La mujer corre siempre más peligro, por lo mismo porque somos mujeres.*”  
 (“Women are always more at risk, because of the fact that we’re women.”)

FEMALE FOCUS GROUP PARTICIPANT

“*I had somebody who, he had sat on the outside and he would not get up to let me out and he literally spread his legs and I had to literally go between his legs...He knew what he was doing. **He was trying to whisper in my ears.** There was nobody doing anything about it. I’ve had too many incidents like that.”*

FEMALE FOCUS GROUP PARTICIPANT



Photo source: Metro



Our project team observed and experienced sexual harassment and unwanted attention targeted at women during the course of data collection for this study.



## Innovative Methods

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### Participant Observation

Our participant observers, most of whom were women, witnessed and experienced instances of unwelcome attention. Although the instances depicted below seem mild, they are representative examples of common experiences whereby men make women notably uncomfortable by staring, verbally engaging, and invading their personal space:

- » A man on the bus leered at one of our participant observers, as well as several other women on the bus
- » Two teenage boys began talking loudly about one of our participant observers, speculating to each other when she would get off the bus
- » A young man sat on the reserved bench across from an older woman and stared, making her visibly uncomfortable
- » A middle-aged man stood very close to one of our participant observers at the bus stop
- » A middle-aged man leaned down to say something to two women sitting in the reserved section, and was visibly rebuffed by them
- » A man boards the bus and begins to flirt with the operator, blocking other passengers from boarding

We also noted that station announcements about sexual harassment were recorded with a male voice, were only offered in English, and did not provide information on how to report sexual harassment.

### Pop-Up Engagements

Some women shared that they have been sexually harassed or know a woman who has been harassed on the train or bus. One woman recalled seeing men accosting women or sexually advancing on women. One woman at the North Hollywood Station shared, “I have seen women in window seats get trapped by men in aisle seat. So, now I always sit in the aisle seat. We need a way to text security or the bus driver from our phone.”



*I have seen women in window seats get trapped by men in aisle seats. So, now I always sit in the aisle seat.”*

FEMALE POP-UP PARTICIPANT



# PRESENCE OF STAFF TO MANAGE SAFETY



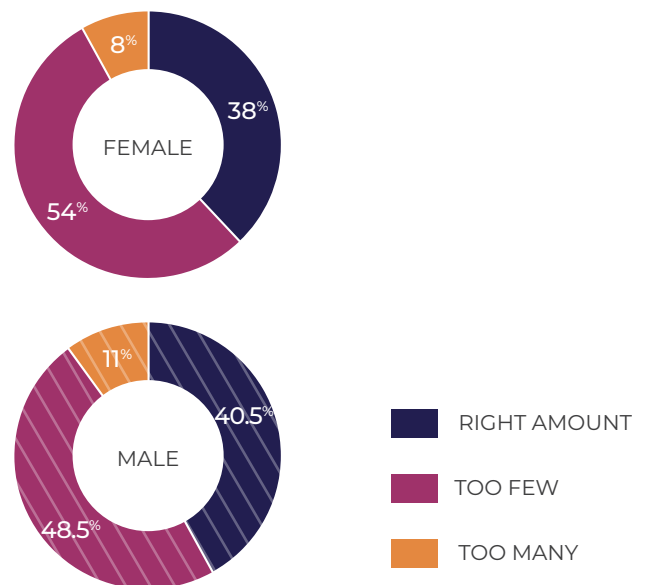
## Existing Data Analysis

The presence of staff on transit to manage safety issues helps to ease some of women's concerns about feeling unsafe. In a national survey, women reported feeling safer on the bus than waiting at the bus stop because the presence of a bus driver is more reassuring than the unpredictability of the more open bus stop setting (Loukaitou-Sideris & Sideris, 2009).

As of July 1, 2017, Metro amended its law enforcement structure to include a multi-policing model inclusive of Metro's Transit Security Officers (TSOs) and contract security personnel. Metro's law enforcement model includes the Los Angeles Police Department, Los Angeles County Sheriff's Department and Long Beach Police Department. This multi-agency approach was implemented with the goal of providing higher visibility, enhanced response time, improved customer experience, and deployment of specifically trained officers to engage patrons with mental illness and/or experiencing homelessness. Metro is also spending an additional \$151 million (2017-2022) for security guards to check fares and patrol some station areas, including the Rosa Parks/Willowbrook Metro station and bus hubs in El Monte and Harbor Gateway. The plan increases the number of officers patrolling the system, to about 314 for each 24-hour period. The Sheriff's Department now provides 140 to 200 deputies during the same time frame.

Metro riders were surveyed in 2018, after the Metro policing change had gone into effect. Metro's Spring 2018 On-Board Survey data reports that more than half of women (54%) and nearly half of men (48.5%) think there are too few officers on Metro.

*Metro Riders' Perceptions on the Number of Police Officers On-Board*



*Source: Metro On-Board Survey (Spring 2018)*



Despite changes to Metro's security and law enforcement structure, a majority of women feel that there are too few police officers throughout the system.



## Conventional Methods

### Survey

In our Understanding How Women Travel survey, the proportion of women who think there are too few officers on board is higher than Metro's Spring 2018 On-Board Survey. Women who currently ride Metro have similar opinions on the amount of officers on board and at stations or stops. The findings - that the majority of women believe there are too few officers on board Metro - underscore the findings from Metro's Spring 2018 On-Board Survey.

#### Current Riders Who Think There are Too Few Officers on Board

2/3

Of current female riders think there are **too few** officers on board Metro buses and trains. The same is true of women who used to ride Metro, but have stopped.

Source: Metro Understanding How Women Travel Survey (2019)

#### Current Riders Who Think There are Too Few Officers at Stops and Stations

2/3

Of female riders think there are **too few** officers at Metro stops and stations. The same is true of women who used to ride Metro, but have stopped.

Source: Metro Understanding How Women Travel Survey (2019)

### Focus Groups

In our focus groups, we asked participants their opinions on how Metro security and staff manage safety issues throughout the system. Female focus group participants felt that Metro security and staff, including bus operators, do not intervene often enough in tense situations on public transit, especially those involving sexual harassment.

Some female participants felt that operators are too passive, allowing dangerous behavior to continue. However, participants also recognized that the challenges of driving a vehicle safely should take priority for an operator, and ensuring safety from violence or harassment may require additional security.

All participants shared concerns of mentally ill riders as perceived dangers when they ride transit. Multiple participants also shared stories of being attacked or witnessing an attack while riding public transit. The majority of stories included a person perceived to be mentally ill threatening or physically harming a rider. Women expressed empathy in addition to fear, and voiced a desire to see Metro take a stronger approach, building on the success of existing programs that provide services to people experiencing homelessness.







Women believe additional Metro staffing is necessary, though they also feel that infrastructure, like lighting, would improve safety.



## Innovative Methods

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### *Participant Observation*

During our participant observations, we observed several instances of police presence and activity on buses and rail. The following examples illustrate these instances:

- » Two officers were observed on an overnight bus route at 1:30am. The bus seemed calm and quiet. The officers were friendly to our observer and said hello when he boarded.
- » Two officers boarded the Orange Line at 4:00pm, remaining on board the entire time our participant observer was on board. They were not observed speaking to anyone during that time.
- » An incident on the Orange Line with a young man screaming and causing commotion resulted in the bus operator calling the police. The police met the bus at the next station, where they escorted him off the bus.
- » Police were observed mid-day on the Expo Line. It appeared unrelated to any particular incident, and the officers did not converse with any passengers.
- » Several officers were observed arresting a young man at the 7th/Metro Center Station, on the street level. Officers were also observed at the gates, checking fares at this same station.

### *Participatory Workshops*

Women who participated in the workshop with Padres Líderes en Acción acknowledged that they do not always feel safe taking transit. Some also shared that they knew someone who had been unfairly targeted by law enforcement on public transit, and had mixed feelings about police presence as a result.

### *Pop-Up Engagements*

Some women engaged in pop-ups spoke of wanting increased security. Some expressed concern about police presence, particularly around visible or brandished weapons. Others reported seeing different types of police engagement depending on where they were, with more aggressive presence in some places and more friendly presence in other places.

# PHYSICAL SPACE & INJURIES



Women report being involved in injuries or accidents on Metro at a higher rate than men, which may be related to traveling with more bags and strollers, or due to station and vehicle design issues.



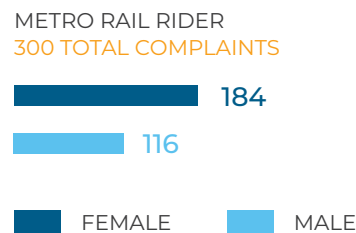
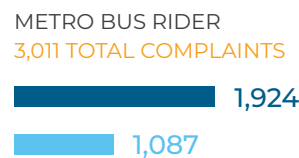
## Existing Data Analysis

Men and women file complaints with Metro at roughly the same rate, with women accounting for slightly more bus complaints and men accounting for slightly more rail complaints.

Metro data was used to summarize the categories of complaints filed over an approximately five year period. The findings summarized here only reflect complaints submitted through Metro's Customer Comment channels, which include a webform, by email, and by phone.

Accident/injury complaints are made more often by women than men, across both bus and rail riders. While the complaint categories included in this analysis do not provide detailed insight into why women are reporting more injuries and accidents on Metro than men, we heard some potential explanations through our Pop-Up Engagements and Participatory Workshops, described below.

### Metro Accident/Injury Complaints (2013-2018)



Source: Metro Customer Complaint and Tracking System (CCATS) Incident Reports (July 2013-September 2018)  
Complaints without an associated gendered prefix (e.g. Mr., Ms., Mrs.) were removed for the purposes of this analysis.



## Innovative Methods

### Participatory Workshops

Some women shared that drivers sometimes pull away from a stop without waiting for riders with disabilities to board or before riders have found a place to sit. Some women reported getting hurt when this happens.

### Pop-Up Engagements

Women with disabilities reported feeling physically unsafe when Access drivers get impatient with traffic and drive aggressively. Overcrowding makes it particularly difficult for those with disabilities to get a seat or have space for their mobility devices.



## Innovative Methods (continued)

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### *Participatory Workshops*

During our participant observations, we observed several instances of women taking actions to prevent incurring injuries. The following examples illustrate these instances:

- » A middle-aged woman boards the bus and is jolted as the bus starts to move before she has found a seat. She falls into a seated man, apologizes, and finds a seat on the rear bench by the window.
- » A woman on the bus stands to anticipate alighting and stumbles as the bus makes a jerking motion.
- » A woman enters the train car with her bicycle and a bag in one hand. She has trouble holding her bike up, and it falls over at one point as the train moves.



# WHAT WE'VE LEARNED FROM STUDYING SAFETY

Across every study method, we found that safety is a concern that influences women's transit behavior. They ride less at night when they can avoid it. They are substituting more expensive modes for transit. These safety concerns are impacting women's mobility, making their travel more expensive, and even limiting their employment opportunities. Their concerns are nuanced and there is not a silver bullet solution. Metro's female riders described their experiences with sexual harassment or assault while riding and their fear of male riders, but they also explained that they feel much safer when they are surrounded by other people. In our survey, we heard that female riders feel there are not enough transit police to respond to incidents, but women also felt that transit police were too aggressive in some locations. Women expressed empathy for how many tasks bus operators must juggle, but wished that someone on board buses could respond to threatening behavior and illegal activity

when it occurs. Over and over, participants in the workshops and pop-ups pointed to problems that could be solved by a deeper investment in lighting, more frequent service to produce shorter wait times, and other solutions at stops and stations.

These findings underscore the burden and stressors experienced by women using the transit system. They encapsulate the need to adjust safety and security policies, and focus time and attention on this issue in order to address the largest concerns voiced by women. Despite Metro's multi-million dollar investment in law enforcement over the years, safety is still a prevalent issue. The core riders that we engaged for this study agreed. Participants in our study asked for additional amenities, such as lighting at stops and along pedestrian access routes, and more frequent service that would shorten long wait times at dark bus stops.



“

*What opportunities are women missing because they can't get around the city safely or cheaply?”*

AARIAN MARSHALL, WIRED MAGAZINE, ON NYU PINK TAX STUDY

TO TICKETING & TRAINS

METROLINK SERVICE      AMTRAK TICKETING & BA

Photo source: Metro

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# ACCESS

*Being able to get to what you need*

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## Women have concerns about access from multiple angles and perspectives.

Access concerns voiced by women include physical design of transit spaces, physical design of sidewalks and roads used to get to transit stops or stations, financial ability to pay for transit trips for themselves and those in their care, the challenges of traveling with children, and the travel needs of women with disabilities. After safety, this set of concerns were major contributors to the decisions women made about their travel choices and how they do or do not use transit to help meet their travel needs.

Access needs are substantially different for women compared to men, as a result of physical differences and preferences, and the disproportionate impact on women who have disabilities. The physical demands of traveling are compounded when one's needs vary even the slightest bit from the design standard of a healthy, fit, 30-year-old man. Add a stroller or a wheelchair or 25 years of age, and the system works substantially worse for its riders.

Low-income women in Los Angeles carry a disproportionate financial burden when it comes to travel. Female Metro riders live below the poverty line at greater rates than male riders, and low-income women in Los Angeles reported spending more on ridehailing services and transit than higher-income women. While women are more likely than men to have an employer subsidize part or all of their transit use, women who do not have an employer subsidy seem to be relying

more often on cash to pay their bus fare. For women, who we have seen are more likely to be frequent riders, using a pass may also save them money, but a larger up-front investment is required. Cash is more flexible than a pass or a TAP card, which is attached to only one individual and cannot be used to pay for children that may be accompanying an adult rider. More women ride bus than rail, and although TAP cards are sold at over 450 locations throughout the County, women expressed that it still feels difficult to obtain or reload since most TAP vending machines are located at rail stations.

The design of physical transit spaces is also not working well for women. In particular, older women and women traveling with children expressed difficulty getting to transit stops and stations, maneuvering with strollers and carts getting on and off vehicles, and negotiating shared space once they were on the bus or train. Only 20% of female riders with children say that taking their kids on transit is easy.

We heard that Access Services is a key resource for women with disabilities, but operates in a way that devalues women's time – hours and days expended on a single trip for a single purpose. More women report having a disability and women will be more dependent on Access Services as they age and give up their licenses, at greater rates than men.



“ You read about, ‘Oh, we’re having bike shares, we’re having scooters, you can walk.’ It’s like that’s great, but not everyone with a disability can do that.”

FEMALE FOCUS GROUP PARTICIPANT

Photo source: Metro

## METHODS USED



### Existing Data

- Literature Review
- NHTS
- Metro Data



### Conventional Methods

- Survey
- Focus Groups



### Innovative Methods

- Participant Observation
- Participatory Workshops
- Pop-Up Engagements

## TOPICS

- Financial access
- Physical access
- Access Services and serving women with disabilities

# FINANCIAL ACCESS



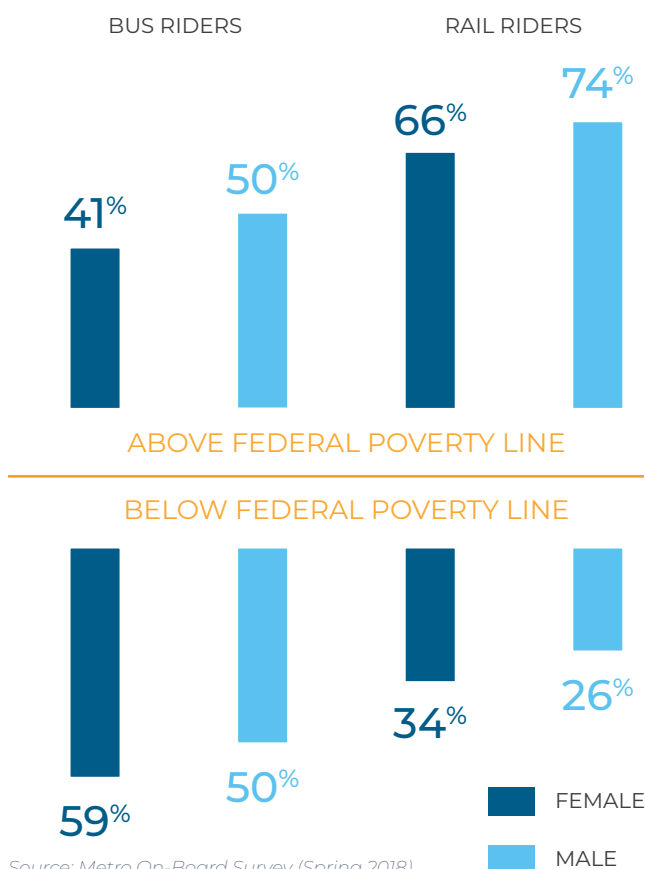
Women who ride Metro are living in poverty at a greater rate than male riders.



## Existing Data Analysis

Income is a strong determinant of travel behavior. Data from the 2012–2016 American Community Survey shows that 80 percent of adults in poverty live in households with at least one automobile (Ruggles et al., 2018). However, adults in low-income households are less likely to own and drive automobiles than adults in higher-income households (Blumenberg & Pierce, 2012) and therefore are more likely to use other modes such as public transit.

### Poverty Status of Metro Riders



Source: Metro On-Board Survey (Spring 2018)

Metro’s Spring 2018 On-Board Survey data illustrates the proportion of low income riders on Metro bus and rail. These findings underscore the financial access challenges that are encountered by Metro riders, and the extent to which financial burdens are greater for female riders.

- » Both women and men who ride Metro buses are below the poverty line at much higher rates than people who ride Metro rail.
- » Female Metro bus and rail riders are below the poverty line at higher rates than male Metro bus and rail riders.
- » The median household income for female bus riders is \$16,623, compared to male bus riders at \$19,549.
- » The median household income for female rail riders is \$31,400, compared to male rail riders at \$42,291.

For women in poverty, transit fares comprise a greater share of disposable income than for those who have higher household incomes.

- » They are less likely to have the upfront cost of a monthly pass on hand.
- » They are more price sensitive to the cost of a single transit trip, so are less likely to buy a monthly pass unless they are certain it will be financially beneficial (riders need to make at least 57 one-way trips in a month for the monthly pass to be cost effective).

Paying with cash is also a burden to those in poverty. Free transfers on Metro or to municipal operators are not available with a cash fare. For those who pay with stored value on a TAP card, any potential savings from exceeding 57 trips per month are lost.





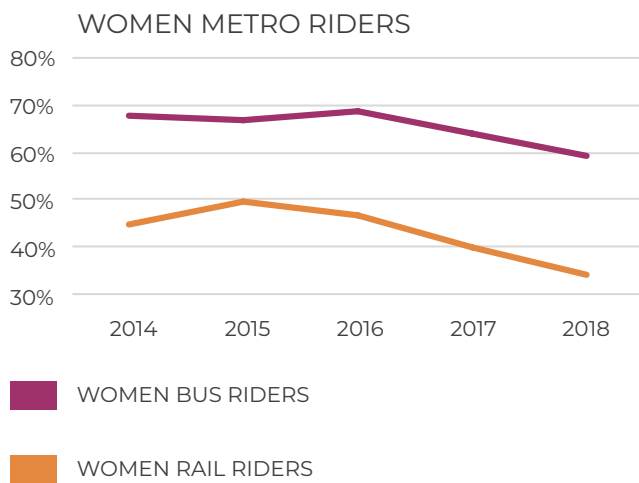
The share of women bus and rail riders living below the poverty line has been declining over time.



## Existing Data Analysis (continued)

Since 2014, the share of female Metro riders living below the poverty line has fallen, from 68% to 59% of female bus riders and from 45% to 34% of female rail riders.

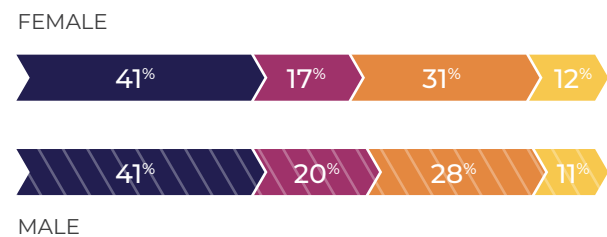
### Metro Riders Below the Poverty Line



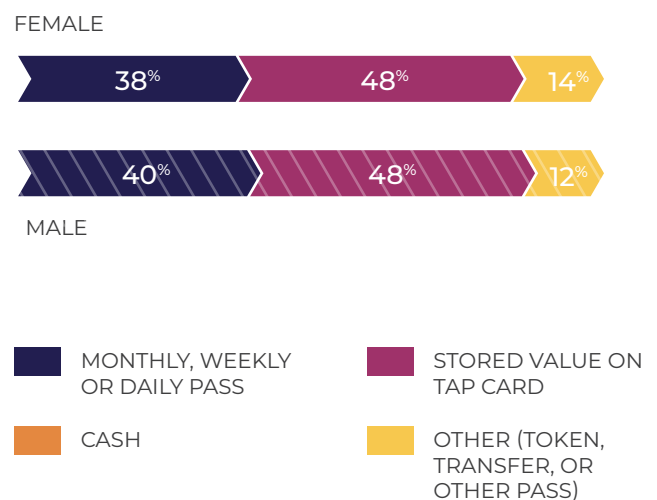
Source: Metro On-Board Survey (2014-2018)

Metro's Spring 2018 On-Board Survey shows the primary payment method among female and male Metro bus and rail riders. Approximately 40% of women on bus or rail use passes. Nearly one-third of women pay for the bus with cash (cash is not a payment option on rail).

### Metro Bus Riders Payment Type



### Metro Rail Riders Payment Type



Source: Metro On-Board Survey (2018)

Note: Numbers may not add to 100% due to rounding.



Nearly half of all female fare discounts are senior/disabled/Medicare discounts.



## Existing Data Analysis (continued)

Metro offers discounted fares to seniors, customers with disabilities, or customers on Medicare, as well as student discounts and discounts for low-income riders through the Low Income Fare is Easy (LIFE) program. Customers must apply and provide proper documentation to qualify for Reduced Fare Programs.

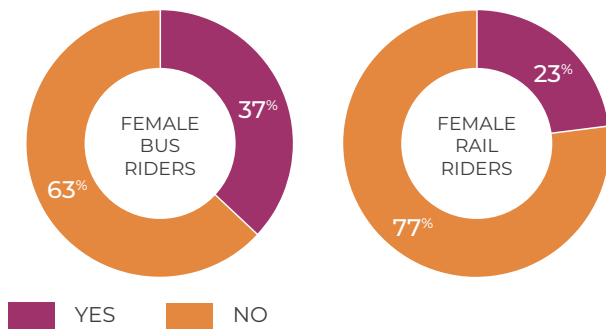
In addition to Metro's Reduced Fare programs, several public subsidy programs are available, including the LA County Transit Subsidy Program and 33 individual cities' subsidy programs.

According to data from Metro's Spring 2018 On-Board Survey, 37% of female Metro bus riders report receiving a discount on their fare. Of these riders:

- » 48% receive a senior or disability fare discount
- » 46% receive a student discount
- » 6% receive a discount through the LIFE program

For rail riders, 23% of female Metro rail riders reported receiving a discount on their fare. Of these riders, 49% receive a senior or disability fare discount, 41% receive a student discount, and 10% receive a discount through the LIFE program.

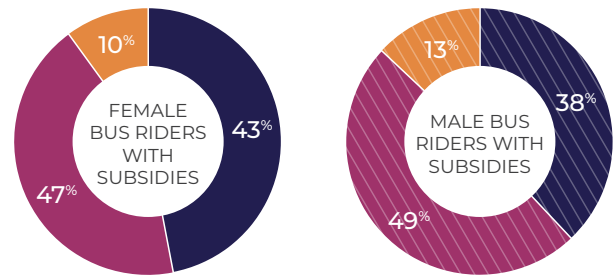
**Current Metro Riders: Did you receive a discount on your fare?**



Source: Metro On-Board Survey (2018)

Among Los Angeles bus riders, women are more likely than men to have their employer pay for part or all of their public transit use.

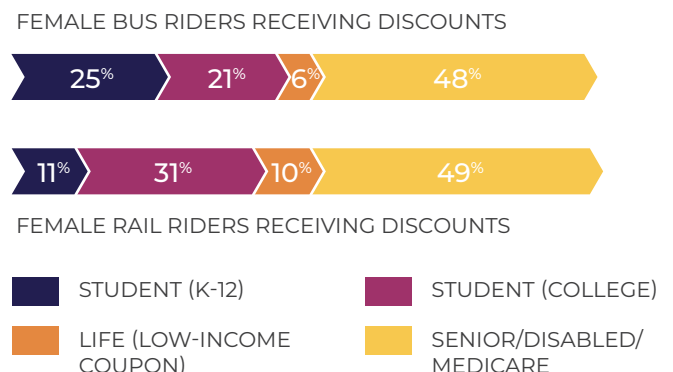
**LA Region Bus Riders with Employer Subsidies for Transit Use**



- EMPLOYER SUBSIDIZES ALL OR PART
- EMPLOYER DOES NOT SUBSIDIZE
- DON'T KNOW

Source: Ridership Growth Action Plan Surveys (2018)

**If you received a discount, what type of fare did you receive?**





Across all types of transportation spending, low-income women report spending more than higher-income women.



## Conventional Methods

### Survey

Lower-income women (with household incomes less than \$25k) are shouldering a disproportionate transportation cost burden. They report spending more on monthly transit expenses for themselves and others, as well as spending more on ride-hailing services, when compared to higher-income women.

The women currently riding transit are doing so most often for financial reasons. We asked Metro riders participating in our survey about the most important reason they ride transit. Current female Metro riders' most important reason for riding transit is "to save money."

### Monthly Spending on Transportation

AVERAGE MONTHLY SPENDING ON TRANSIT FOR SELF  
WOMEN RIDERS SURVEYED



AVERAGE MONTHLY SPENDING ON TRANSIT FOR OTHERS  
WOMEN RIDERS SURVEYED



AVERAGE MONTHLY SPENDING ON RIDE-HAILING  
ALL WOMEN SURVEYED



■ WOMEN WITH HH INCOME < \$25K
 ■ WOMEN WITH HH INCOME \$25K+

Source: Metro Understanding How Women Travel Survey (2019)



Monthly passes are cost-prohibitive for women, especially those with more unpredictable travel needs.



## Conventional Methods (continued)

### Focus Groups

On the topic of paying for transit, female focus group participants mentioned loading TAP cards as they go. Participants shared that they are uncertain if pre-paying for a monthly pass would be worth the cost by the end of the month. Riders load their TAP cards with enough stored value so that they can hop on a bus or train, but not so much that they feel their money will be just sitting on the TAP card. Many riders also mentioned just paying in cash on the bus when they did not have a chance to refill their TAP card. Some also described that it was difficult to coordinate one TAP card per person with the correct values on each TAP card, when traveling with children or other family members.

Participants also expressed confusion with Metro's child fare structure. Metro policy states that two children under age 5 may travel free with each fare-paying adult on bus or rail, and school-aged children are eligible to apply for discounted student passes. Women expressed difficulty traveling with young children on transit, and perceived that this difficulty was exacerbated by discourtesy from other riders.

However, female focus group participants expressed confusion around children's age and fare requirements, stating that bus operators enforce different policies for children's fares with a great deal of discretion.



*I mean, I feel like we pay a fare and **we're not getting the service that we're paying for completely, I would say.***

FEMALE FOCUS GROUP PARTICIPANT



*Me parece que ya cuando los niños tienen siete años, ya es cuando pagan normal. (I think that when the kids are seven years old, that's when they pay normally.)*

[Response] Cinco. (Five.)

¿Cinco? (Five?)

[Response] Cinco. (Five.)

*Quando nació mi niña es cuando pregunté. **Me dijeron que hasta siete años, pero ahora no sé.** (I asked when my daughter was born. **They told me that it was until she was seven years old, but now I don't know.**)*

CONVERSATION WITH A FEMALE FOCUS GROUP PARTICIPANT





Women bus riders reported that TAP cards can be difficult to access and recharge with cash.



## Innovative Methods

### *Participatory Workshops*

Women in the participatory workshops suggested lower fares or different fare structures for mothers because of the amount of errands and other trips they take on behalf of their household. The participants thought that transit-dependent mothers, in particular, probably take public transit more than the average person does.

Many women who participated at the participatory design workshops reported paying their fares with cash or with stored value on a TAP card, and very few reported purchasing the monthly pass. For women who take many trips to support their household and pay with cash, they bear an outsized cost associated with this travel – they do not benefit from transfers or potential cost efficiencies of using a monthly pass.

Cost was the main barrier to purchasing the monthly pass. Women at the workshops described the difficulty of paying the upfront cost to purchase a monthly pass, and considered it to be too expensive. They also described the uncertainty of whether the pass would be worth the expense by the end of the month, since many participants described opting out of transit whenever they could get a ride from family or friends.

Women also spoke about the difficulty of accessing TAP cards and recharging them with cash. Many of the women use TAP cards with stored value, but expressed that it was difficult to refill since the machines are not conveniently located for those who rely primarily on buses. They also recounted experiences where the machines reject their cash and change. Several spoke about their preference for the old Metro tokens, which were easy to purchase and weren't susceptible to technical difficulties.

Women also shared experiences in which bus operators discriminated against patrons experiencing homelessness and women paying

their fare with coins. One immigrant woman recounted a bus operator getting angry and yelling at her for using coins to pay her fare. She felt embarrassed as the other riders stared at her.

When asked, many of the workshop participants did not know about the Low-Income Fare is Easy (LIFE) program provided by Metro to reduce fares. Those who were aware of the program did not think they were eligible for enrollment. In this case, the local municipality provided a deeper fare discount than the LIFE program. However, no one at the workshops was aware of the difference or knew where to look to find out more information. They expressed that if the LIFE program were better advertised, in multiple languages and in spaces they already occupy such as buses, transit stops, and digital transit apps, women who ride transit would be better informed about how and where one could learn more about the LIFE program and what would qualify a rider for assistance.

### *Pop-Up Engagements*

Women engaged at all three pop-up events shared that they often have difficulty loading their TAP cards, especially when using cash or coins. Older participants also shared that they are confused about how to load their senior cards, while others expressed that Metro fares are too high, which makes it more challenging for them to travel.



## Innovative Methods (continued)

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### *Participant Observation*

Many observations were made about how people paid when boarding the bus:

- » About twice as many observations were made about people paying with cash compared to people paying with TAP cards.
- » Several observations were made about women refilling their TAP card with the operator's assistance. In one case, the observer overheard the woman remark to the operator, "That was so easy, thank you!"
- » Negotiating payment with children in tow was observed to be a challenge. In several cases, women went to get their children seated and then returned to the fare box to pay their fare and their child's fare.
- » Observations were made about people who could not pay, and were either permitted on the bus or refused service by the operator. Only one instance was observed where a young man was refused service due to his inability to pay, while many instances were observed where female and male patrons were permitted on despite their inability to pay.
- » Negotiating payment seemed to be something that created small moments of interaction between riders both on and off the bus. In one instance, our observer noted that people paying with cash waited until people paying with TAP cards had boarded before getting on the bus. In many cases, patrons were observed talking to the operator as they paid, and many patrons were observed "fumbling" for cash or coins as others looked on.

Only two observations were made about how women paid when boarding the train:

- » A woman was observed experiencing difficulty with her TAP card at the turnstiles
- » A woman and man traveling together were observed crossing the turnstiles without tapping.

# PHYSICAL ACCESS



Women are more likely than men to walk to their bus stop, and less likely to walk to their train station.



## Existing Data Analysis

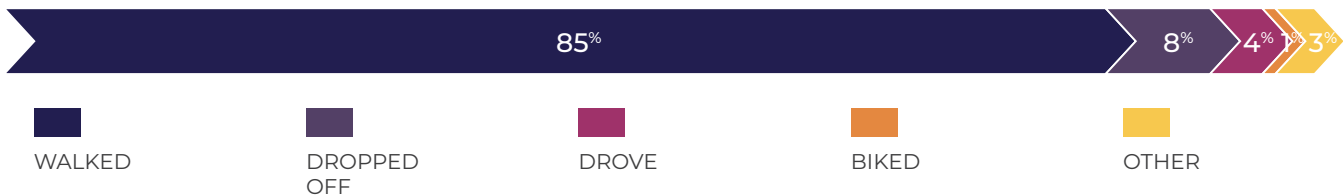
Issues of access are key to the rider experience, including safe and comfortable first/last mile connections to transit and how easily women move around buses, trains, stations and stop. Metro's Spring 2018 On-Board Survey includes data on the mode Metro riders used to get to their bus stop or rail station for the transit trip they were on at the time of taking the survey.

Among bus riders:

- » 85% women arrive at their bus stop on foot.

### Metro Bus Stop Arrival Mode

FEMALE BUS STOP ARRIVAL MODE



MALE BUS STOP ARRIVAL MODE

### Metro Rail Station Arrival Mode

FEMALE RAIL STATION ARRIVAL MODE



MALE RAIL STATION ARRIVAL MODE

Source: Metro On-Board Survey (Spring 2018)

Among rail riders:

- » 55% of women arrive at the station on foot.
- » 16% of women are dropped off, compared to 10% of men.
- » 2% of women arrive by bike, compared to 5% of men.

Female Metro riders take 10 minutes to walk to the first transit stop or station on their trip, on average.



Over 80% of complaints related to strollers are made by women.

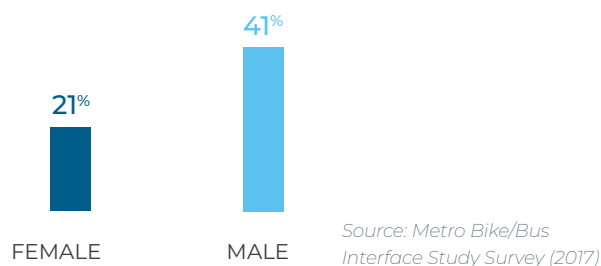


## Existing Data Analysis (continued)

In the OEI 2018 Survey, nearly half of women who previously rode Metro Rail but do not ride anymore said their top reason was because it was too difficult to get to and from the stations. Among women who never rode or ride infrequently, nearly 60% said it was because it was too difficult to get to and from the stations.

Using data from the recent Metro Bike/Bus Interface Study Survey, we explored further why women are less likely to access transit by bike. We found that women in LA are less likely than men to say they are willing to ride on almost any street, regardless of traffic.

### Willingness to Ride on Any Street



In analyzing Metro’s customer complaint data about issues related to physical access, some key differences between women and men emerged.

- » Out of the total 381 complaints related to strollers, women submitted 81% of the comments.
- » Out of the total 483 complaints related to elevators, women submitted 53% of the comments.
- » Out of the total 3,214 complaints related to wheelchairs, women submitted 48% of the comments.

Source: Metro Customer Complaint and Tracking System (CCATS) Incident Reports (July 2013-September 2018)  
Complaints without an associated gendered prefix (e.g. Mr., Ms., Mrs.) were removed for the purposes of this analysis.

### Stroller-Related Complaints

309 FEMALE 72 MALE 381 TOTAL

### Elevator-Related Complaints

257 FEMALE 226 MALE 483 TOTAL

### Wheelchair-Related Complaints

1,540 FEMALE 1,674 MALE 3,214 TOTAL





## Innovative Methods

### Participant Observation

Issues of access were apparent in our participant observations at stops, at stations, and on board.

*Women were more likely than men to use elevators and escalators, as well as benches and other seating, and were observed to be traveling more frequently than men with bags, carts, strollers, and other items and people in their care.*

*In some cases, Local and Rapid service on the same route don't share stops, forcing riders to choose between one or the other (and potentially miss the first arriving bus).*

*Older women and women with limited mobility had difficulty moving through the aisle while the bus was in motion. These groups were more likely to wait for the bus to come to a full stop before alighting or queuing at the door. They were also more likely to take the first seats that were available from the front of the bus. Some operators seemed aware and accommodating of people's needs in this way: they waited a few seconds before departing a bus stop to let someone get to a seat. Others drove more aggressively or were more conscious of their schedule.*

*Many female riders had trouble reaching the stop cables and buttons from a seated position.*

*Older women and women traveling with children had a difficult time maneuvering with strollers and carts on the bus.*

### Participatory Workshops

In discussing access issues on board buses and trains, women experiencing homelessness shared that they often travel with their belongings in bags, luggage, and carts. Women traveling in wheelchairs also spoke of the lack of space for their chairs and bags. There is no safe place to put these belongings, and bus operators often ask riders to collapse carts that are filled with items. Participants shared that many bus operators do not assist those in wheelchairs or carrying strollers.

### Pop-Up Engagements

On the topic of station access, we heard from women at our Pop-Up Engagements that elevators and escalators were particularly prone to breakdown and poor cleanliness.

“*The elevators are always broken and people who don't need them jump in front of me.*”

FEMALE POP-UP PARTICIPANT

“*The elevators are dirty and they stink. I'm concerned about my health in these spaces as a pregnant woman.*”

FEMALE POP-UP PARTICIPANT

# ACCESS SERVICES & SERVING WOMEN WITH DISABILITIES



## Conventional Methods

### Focus Groups

In our focus groups, several women with disabilities expressed frustration with the lack of first/last mile options and direct transit connections that would not require multiple transfers. One woman described the difficulty she experienced in finding an accessible seat on the bus because her disability is not visible.



*I feel like they really need more assistance for people with disabilities, especially with Last Mile stuff. You read about, ‘Oh, we’re having bike shares, we’re having scooters, you can walk.’ It’s like that’s great, but **not everyone with a disability can do that.**”*

FEMALE FOCUS GROUP PARTICIPANT



*If I’m sitting, there are times when people are giving me the death stare, because they see me sitting and I have plenty of documentation, but you don’t want to be having to flash your disabled card or your Social Security disability thing on the bus...I’ve even had drivers give me attitude, like, ‘Why aren’t you getting up?’ It’s like I would if I could. I did when I was healthy, but now I can’t.”*

FEMALE FOCUS GROUP PARTICIPANT



## Innovative Methods

### Participant Observation

On buses, we observed that riders who were sitting in reserved seating were generally responsive to a request from the operator to vacate their seat, but usually had to be asked to do so. Bus operators were largely helpful in accommodating people in wheelchairs, though some individuals took more time to board and get secured, sometimes causing queuing at the front door.

On the 204 one morning, we observed that a man in a wheelchair was told **he could not board the bus** because there were already too many people on board with walkers in the wheelchair area and the wheelchair would not fit.

On the 76 one afternoon, a participant observer saw a person in a wheelchair board, which caused some congestion among the existing riders: an older woman got up from the reserved bench to make room for the wheelchair but couldn’t move past a woman with a walker jutting halfway into the aisle. The woman attempting to change seats also had a wheeled cart and could neither lift it over the walker nor maneuver it around. **The bus operator finally intervened**, told the standing woman to find her seat, and then brought her the cart.



Women with disabilities reported that both Access Services, bus services, and bus operators can be unreliable and unaccommodating.



Women who use Access Services spend enormous amounts of time planning their trip, waiting for their ride, and taking their trip.



## Innovative Methods (continued)

### Participatory Workshops

Input on Access Services was provided at our workshop at the Southern California Resource Services for Independent Living Center. Women with disabilities reported that they must make sure they are visible when an Access van arrives because van drivers sometimes leave, claiming that nobody was available for pick up. Sometimes drivers do not arrive on time, while at other times, they do not arrive at all. They shared that both paratransit drivers and bus operators sometimes make them feel unwelcome and as if they are an inconvenience to the driver. Occasionally, bus operators do not secure riders' wheelchairs, leaving them feeling unsafe. Finally, they reported that Access is not reliable in honoring specific needs. For example, one participant spoke about requesting a van without a ramp because she uses a walker and finds it difficult to navigate ramps, but this request was ignored, even though she made the request at the time of her reservation.

The process of requesting an Access ride and how Access rides are routed was an area of great frustration for women who use the service. One rider that has been using Access since the 1990s expressed that the service had declined in recent years.

Many expressed a need for route efficiency in order to shorten the duration of their time on Access and ensure they arrive at their destination on time. Most women budget approximately 2-3 hours for travel, even though their destination may only be 30 minutes away, because they are often driven around in the van picking up and dropping off others for several hours before being dropped at their destination.

Women with disabilities also expressed appreciation for Metro's services, including Access paratransit, which affords them freedom of movement and opportunities to get out and interact with others. They expressed feeling happy when they have a chance to interact with others, including friendly drivers.



*I used to be able to call for an Access van the same day and it would arrive in 45 minutes and take me to my destination. **Today, I have to call at least 24 hours in advance to schedule a pick up time.***

FEMALE WORKSHOP PARTICIPANT



*It is better to use regular transit, as opposed to Access, because it gets you there in a generally predictable amount of time.*

FEMALE WORKSHOP PARTICIPANT

## WHAT WE'VE LEARNED FROM STUDYING

# ACCESS

The burdens of traveling are compounded by the everyday facets of women's lives – the financial burden of living in one of the most expensive regions in the country, the physical challenges women with disabilities face when traversing public spaces not built for them, and the responsibility women have for transporting children from place to place while keeping them safe. Women must contend with these pressures, all while navigating transit spaces where elevators are routinely out of service, TAP card machines don't work, they struggle to keep their balance on the bus while paying fare and

juggling grocery bags, and the stop request button is just out of reach. These barriers to easy transit access amount to a “pink tax” on women, in the form of higher time costs for women who must maneuver the Metro system despite the challenges they face, or for women who must simply find another, more expensive, mode in order to carry out their everyday responsibilities. These costs fall disproportionately on women with children, women with disabilities, and low-income women, who report spending more than higher income women on transportation for themselves and their families.



Photo source: Metro

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# RELIABILITY

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## Reliability is a key issue for women riding the Metro system.

Reliable transit service means that schedule information is easily accessible, real-time updates are accurate, buses and trains run frequently throughout the day and night on weekdays and weekends, buses and trains show up when expected, and operators do not pass up riders waiting at stops. For women in Los Angeles who rely on Metro to get to work, go to doctor's appointments, and pick kids up from school, reliable transit service is a lifeline. Throughout this section, issues of reliability will be explored using existing Metro data sources, along with what we heard and saw through our focus groups, participatory workshops, pop-up events, and participant observations. For women, unreliable service exacerbates other concerns about employment, childcare, appointments, and personal safety. For Metro, understanding women's experiences with reliability can help the agency to serve riders better across many different aspects of its service.

Reliability is a key issue for women riding the Metro system. The top three complaints filed by female Metro bus riders are all related to reliability – pass-ups, no shows, and late buses. At our pop-up events, in the focus groups, and in the participatory workshop discussions, we heard time and time again stories of women stuck waiting for a late bus, of being passed up

and waiting an hour for the next bus, and of unreliable real-time information on station signs and cell phone apps. These experiences cause women to alter their travel behavior – sometimes leaving hours ahead of time due to unreliable service, using ridesharing services instead of transit due to infrequent service at night, carrying a flashlight to ensure that they are not passed up by operators while waiting in the dark, or even sleeping at the bus stop because service does not start running until several hours after they get off work.

The primary concerns related to reliability are concerns in and of themselves, and exacerbate other concerns about safety. When headways are long, and real time information is unreliable, women's safety concerns are amplified and women who have the financial ability to switch to a different mode, such as ridehailing, do so. Others who do not have that luxury simply endure the exposure and stress of added wait times. Real time information and the accuracy of tools designed to help ease the stress of waiting for infrequent service often fail. These issues are further exacerbated when traveling with children, or for women with jobs or household responsibilities that require travel during mid-day, late night or early morning periods, or on the weekends.

“The opportunity costs of holding half of the population back from access to economic mobility affect all of us.”

SELETA REYNOLDS, "LISTENING TO YOUR USERS: ACCESSIBILITY FOR WOMEN IN URBAN TRANSPORT IN THE US", NEWCITIES.ORG



Photo source: Fehr & Peers

## METHODS USED



### Existing Data

Metro Data



### Conventional Methods

Focus Groups



### Innovative Methods

Participant Observation  
 Participatory Workshops  
 Pop-Up Engagements

## TOPICS

- Reliability concerns
- Service times and frequency
- Service improvements

# RELIABILITY CONCERNS



Women riding Metro buses most frequently submitted complaints related to reliability. Reliability issues can exacerbate the safety concerns that women have about waiting for transit.

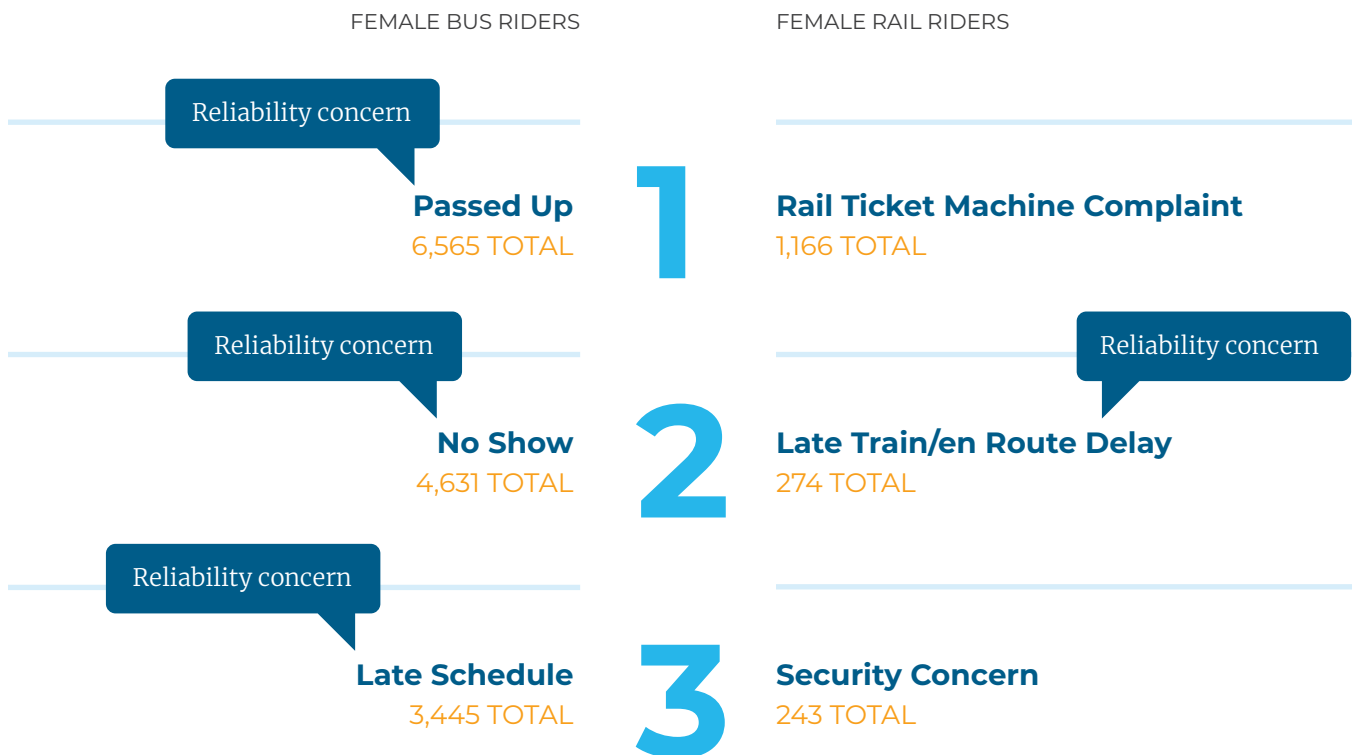


## Existing Data Analysis

In analyzing Metro’s customer complaints, we found that reliability issues are a key concern for women, particularly those riding the bus. On Metro’s Customer Comment channels, riders can submit complaints regarding both bus and rail travel. As part of this project, we analyzed comments submitted through a

webform, by email, and by phone, between July 2013 and September 2018. The top three complaint categories for female bus riders all relate to reliability of the system. For female rail riders, far fewer complaints are lodged, and within the top three complaint categories, one is related to reliability.

### Female Metro Rider Top Complaint Categories



Source: Metro Customer Complaint and Tracking System (CCATS) Incident Reports (July 2013-September 2018)  
Complaints without an associated gendered prefix (e.g. Mr., Ms., Mrs.) were removed for the purposes of this analysis.





Women are frustrated that real-time arrival and schedule information is not always available or accurate.



## Conventional Methods

### Survey

We asked respondents to our Understanding How Women Travel Survey to list the top three reasons they found it difficult to use transit. Many of the top responses we heard were concerns related to reliability.

- » 25% of current female transit riders identified travel time reliability as a top concern
- » 20% of current female transit riders said that the unpredictability of real-time arrival information was one of the top issues that made it difficult for them to ride transit

### Focus Groups

In our focus groups, we heard from women that reliability issues cause concerns about how long they may have to wait, especially in the dark, exacerbating safety concerns. Infrequent service and pass-ups by bus operators can result in people waiting up to an hour for their bus. One focus group participant described carrying a flashlight with her to signal for the bus while she waited in the dark, to ensure she would not be passed up. Many women also expressed frustration that real-time information is often incorrect.

### Reasons Women Find it Difficult to Ride Transit

TRAVEL TIME/UNRELIABLE



REAL-TIME ARRIVAL UNPREDICTABLE



Source: Understanding How Women Travel Survey (2019)



## Innovative Methods

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### *Participant Observation*

Participant observers noted that real-time information was often incorrect, that some real-time displays were out of order, and that some displays were positioned in a way that made them hard to read for customers.

Our observers noted that some customers asked people nearby for information about stops and transfers, while others asked bus operators; this pattern did not appear to be different based on gender. One observer noted that a malfunctioning destination sign on the bus caused confusion for riders.

### *Pop-Up Engagements*

Similar to concerns heard in the focus groups, many women expressed frustration that posted schedules shown on Metro and other apps are often incorrect. They would like to see Metro announce train delays and provide real-time updates on platforms and in the app. Some women also suggested a text message option to receive real-time data about a bus arrival.

### *Participatory Workshops*

Most of the women who participated in our team's participatory design workshops expressed frustration with late buses, expressing that they could not depend on the transit system to get them to where they needed to go on time. When a bus is late and they miss transfers, long-distance trips become even lengthier. To mitigate this, they reported that they often try to leave extra time for their trip, sometimes an extra 2-3 hours than they would otherwise need to ensure they get to their destination on time. The women estimated that they often wait 20-30 minutes for a late bus and consistently run about 15 minutes late to their appointments. Some women shared that this is a particularly difficult situation when traveling with children, as children often grow impatient and start to get bored or misbehave.

Many of the women in our workshops used the Metro app when planning trips, and overwhelmingly agreed that the app rarely shows accurate scheduled times. They expressed frustration that the app does not reflect real-time information correctly. Many buses arrive 15 minutes late, making transfers difficult and extending travel time by up to 30 minutes.

# SERVICE TIMES & FREQUENCY



Women overwhelmingly responded that their bus or train was generally on time.



## Existing Data Analysis

According to data from Metro's Spring 2018 On-Board Survey, female Metro bus riders waited 8 minutes and female rail riders waited 7 minutes for the first bus or train on their trip to arrive, on average.

In addition, 83% of female Metro bus riders and 87% of female rail riders say their bus or train is generally on time. These responses are slightly higher for male riders, where 85% and 87% say, respectively, their bus or train is generally on time.

In Metro's 2018 Office of Extraordinary Innovation (OEI) survey, women who ride the bus 1-2 days/week cited more frequent bus service as the top change that would get them to ride more. Women who ride the train 1-2 days/week cited new rail lines as the top change that would get them to ride more. For women who do not ride buses, their top reason was because it took too long/was too slow. For women who do not ride the rail, their top reason was because it was too difficult to get to.

### Metro Female Rider Wait Time

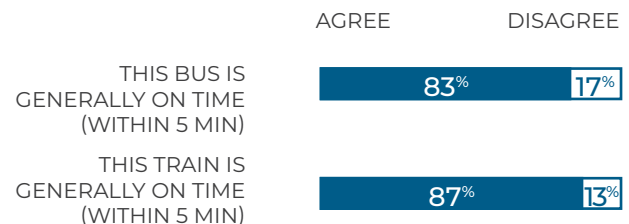
7

Minutes waiting for the first bus

8

Minutes waiting for the first train

### Metro Female Rider Perception of Timeliness While Waiting for and Riding Transit



Source: Metro On-Board Survey (2018)



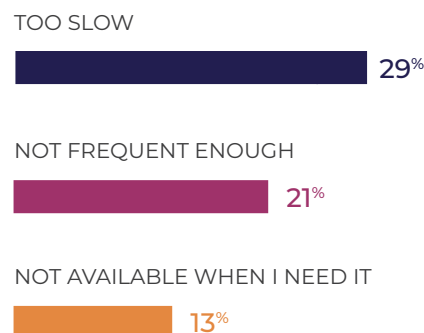
## Conventional Methods

### Survey

We asked respondents to our Understanding How Women Travel Survey to list the top three reasons they found it difficult to use transit.

- » 29% of current female transit riders said that one of the main difficulties with riding transit is that it is too slow
- » 21% listed service frequency as a top concern
- » 13% said that transit is not available when they need it.

### Reasons Women Riders Find it Difficult to Ride Transit



Source: Understanding How Women Travel Survey (2019)



Early morning, late night, and weekend service is inadequate to meet women's needs, particularly those with non-traditional work schedules. Infrequent or unreliable transit service can impact women's employment opportunities.



## Conventional Methods (continued)

### Focus Groups

In our focus groups, both women and men considered both time of day and safety when planning travel modes. They described knowing that they would endure long waits at the stop if they rode early in the morning, late at night, or on the weekends. If they knew they would be leaving somewhere after dark or waiting for a bus or train in an area they perceived as dangerous, participants are more likely to consider ride-hailing services (primarily in the women's focus groups) or driving (primarily in the men's focus group). Women in particular discussed their propensity to take Uber or Lyft at night for safety reasons, resulting in an additional financial burden.



**Si es domingo, el día más complicado para mí en el autobús, tengo que esperar más. Como dicen ellas, no hay luz en las paradas. Nunca se sabe – a veces, dice que va a llegar a la hora, y no llega. Es más inseguro estar allí parada, esperando. Hasta una vez, un hombre me dice si necesito un ride. Digo, ‘No.’**

**“If it’s Sunday, the busiest day for me on the bus, I have to wait longer. As they say, there is no light at the stops. You never know – sometimes, it says that it will arrive on time, and it does not arrive. It is more unsafe to be there standing, waiting. Once I even had a man ask me if I need a ride. I said, ‘No.’”**

FEMALE FOCUS GROUP PARTICIPANT



**Se pasa. No me ve. Ya me quedo otra hora allí. Si no me pasó algo en esa primera hora, pues, me puede pasar algo más tarde.”**

**“They keep going. They don’t see me. Then I stay another hour there. If nothing happened to me the first hour, then something could happen to me later.”**

FEMALE FOCUS GROUP PARTICIPANT





Women budget extra time to travel, with the expectation that Metro services will be delayed.



Those that can afford to, prefer to use ride-hailing services instead of Metro at night. Those that can't afford ride-hailing services endure long waits or long walks.



## Innovative Methods

### Participatory Workshops

Workshop participants at the Downtown Women's Shelter (DWC) often work multiple jobs at odd hours and rely on transit for their commutes. Because their work schedules require them to travel in the early morning hours or late at night, when service frequencies are low, they experience long waits and tiring work-arounds. One woman shared that she has to walk 1.5 miles to and from her bus every day to get to her job at UCLA, because she travels when there is not much service. Just riding the bus takes up most of her day. Another woman shared that her shift ends at 1am, but she has to wait until 4am to catch the bus, so she is often forced to sleep at the bus stop.

Women expressed that bus schedules and routes do not accommodate them. There was a sentiment that those who work 9-to-5 jobs are given priority as riders, while those with a different schedule must make do. Many of their work schedules require them to travel to work at 4am or earlier and travel home very late at night. The lack of frequent service at those times makes their commutes challenging. One woman stated that "the Metro system is not for the working poor," because there aren't many buses available before 5am and buses that run at night pass only once every hour.



*The Metro system is **not** for the working poor."*

FEMALE WORKSHOP PARTICIPANT

### Pop-Up Engagements

Many of the women engaged at pop-up events reported waiting 40-60 minutes on weekends. In addition to long wait times, there is a lack of adequate early morning and late night service. Some expressed that bus schedules begin too late; they need service earlier than 4am. Other women expressed a need for more frequency on weekends because they rely on bus service for work or to run errands on the weekend.

While some women spoke of using ride-hailing services to avoid taking public transit at night, not all have the financial means to make such a choice. Those who do rely on Metro in the late night hours are often left stranded, waiting at their stops for long periods of time or else have to walk long distances in the dark.



*We take the bus to work now and have to wait for the bus from 2am-4am (#76) on the street with a lot of homeless people on benches. We are exposed to cold weather. **Would be nice to have more frequent service on buses.**"*

FEMALE POP-UP PARTICIPANT



*Sometimes the night options are sparse. So, I'd rather take Uber or Lyft because **buses are always late at night and there is no one to call.**"*

FEMALE POP-UP PARTICIPANT

# SERVICE IMPROVEMENTS



The bus service improvement that would have the highest positive impact on women riding the bus is increased direct service options.



## Existing Data Analysis

Using existing Metro data, we can start to understand how reliability improvements may improve non-riders' perceptions of transit. The 2018 Ridership Growth Action Plan Survey included questions related to how much certain service improvements would

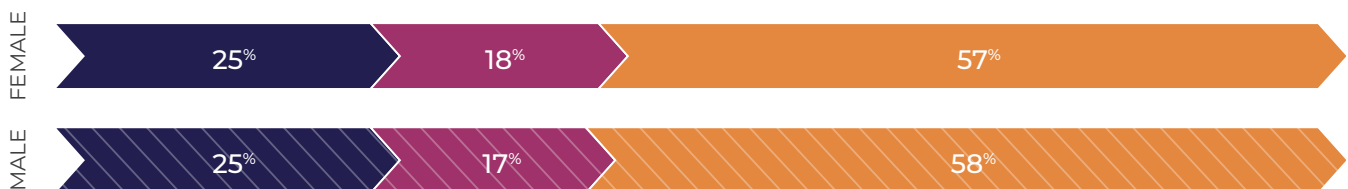
impact female non-riders' willingness to try transit. Women's top requested improvements are: direct service, expanded bus priority lanes, and buses at least every 15 minutes.

### Improvements That Would Make Transit More Appealing

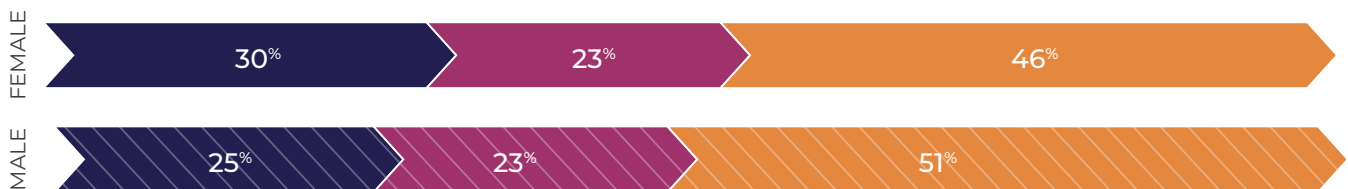
IMPROVEMENT #1: INCREASED DIRECT SERVICE WHERE I NEED TO GO



IMPROVEMENT #2: EXPANDED BUS PRIORITY LANES WHICH CUT TRAVEL TIME BY 20%



IMPROVEMENT #3: BUSES AT LEAST EVERY 15 MINUTES



■ LOW IMPACT    ■ NEUTRAL    ■ HIGH IMPACT

Source: Ridership Growth Action Plan Surveys (2018)



## Conventional Methods

### Survey

We asked people to identify the primary reason riding transit was difficult as part of our Understanding How Women Travel Survey.

The top three responses we heard from current female riders were:

- » They do not feel safe on public transit
- » Transit does not go where they need to go
- » Transit is too slow

Women who have never ridden transit provided the same top three responses.

### Top Primary Reasons Women Find Riding Transit Difficult

#### CURRENT FEMALE RIDERS

Don't Feel Safe

Doesn't Go Where I Need to Go

Too Slow

1

2

3

#### FEMALES WHO DON'T RIDE

Don't Feel Safe

Doesn't Go Where I Need to Go

Too Slow

Source: Metro Understanding How Women Travel Survey (2019)

## WHAT WE'VE LEARNED FROM STUDYING

# RELIABILITY

For women who rely on transit, an unreliable system has real consequences. A late train can mean daycare fines, a pass-up can mean a missed medical appointment, and infrequent early morning or late night service can limit employment opportunities. Reliability issues can render a system unusable for women, render the stressors they experience intolerable, and exacerbate women's safety concerns. Reliability issues also place a disproportionate burden on women living in poverty and those who are dependent on transit. For these women,

who we have seen previously in this report spend more on transit and TNCs than higher-income women, other options for travel may be limited and the consequences of being late may be more costly.

Workshop and pop-up participants pointed directly to a need for increased bus and train service as a measure toward women's safety and comfort. Increased service would directly address the issues of infrequent service and long wait times, which many women reported as making them feel vulnerable when using Metro, as well as issues of overcrowding.





Photo source: Metro

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# CONVENIENCE & COMFORT

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Even if a system is safe, reliable, and accessible, that won't be sufficient to convince people to try and then keep using Metro's transit system.

Comfort and convenience, while not as urgent or ever-present an issue as safety, are important considerations in order to build a system that women want to use, enjoy using, and would continue using even as they have other options available to them. Reliability issues render the system usable or not; comfort and convenience issues render the system pleasant or not.

For women on transit, issues of convenience and comfort are inextricably linked to issues of access, safety, and reliability, previously explored in this report. The type of design, layout, and environmental conditions of the built environment can make waiting for or riding transit particularly uncomfortable or inconvenient for women, which may exacerbate issues related to access, safety and reliability.

To explore the issues of convenience and comfort, we pull from existing data as well as the new study methods we employed for this report. Many women we spoke with for this study recognized and embraced the convenience inherent in taking transit. They described the stresses of driving in Los Angeles due to traffic and parking, and the relief they felt from those stressors by taking transit.

However, many women described another type of inconvenience – the investment of time they had to make in order to ride transit – whether it was a daily commute that started very early

in the morning or a trip that involved several transfers just to reach Union Station.

Issues of comfort on transit can run the gamut from the physical comfort of waiting for and riding transit, to the emotional comfort that can come from positive interactions and communal experiences in a public setting like riding transit. Fewer than 40% of female riders surveyed for this study feel that transit is comfortable or that transit vehicles have the space they need for their belongings. In our observations and discussions with women about the Metro system, it became clear that lack of space for carts, strollers and bags on board buses, lack of shade at stops, dirty stops and stations, and push buttons and pull-cords located too high all contributed to women's discomfort on Metro.

We observed that women were hesitant to sit next to men they did not know while riding transit and many described issues with crowding. When women sat next to each other, they often struck up conversations and many noted a sense of community they felt on transit. Negative interactions with other riders and operators, on the other hand, can cause discomfort. Many women described instances where they experienced a lack of etiquette among riders or between operators and riders. Half of female riders who responded to our survey described Metro operators as courteous, and less than one-third felt that other riders were courteous.



“Now, it’s two buses and two trains. It takes triple the time...it gets to the point that it’s not worth it to take the trip when you have to transfer three times.”

FEMALE FOCUS GROUP PARTICIPANT

Photo: Bob D'Amico/Alamy

## METHODS USED



### Existing Data

Metro Data



### Conventional Methods

Survey

Focus Groups



### Innovative Methods

Participant Observation

Participatory Workshops

Pop-Up Engagements

## TOPICS

- Time and stress
- Transfers
- Cleanliness
- Customer service
- Stations and vehicles

# GENERAL SATISFACTION



Female Metro riders are overwhelmingly satisfied with Metro service.

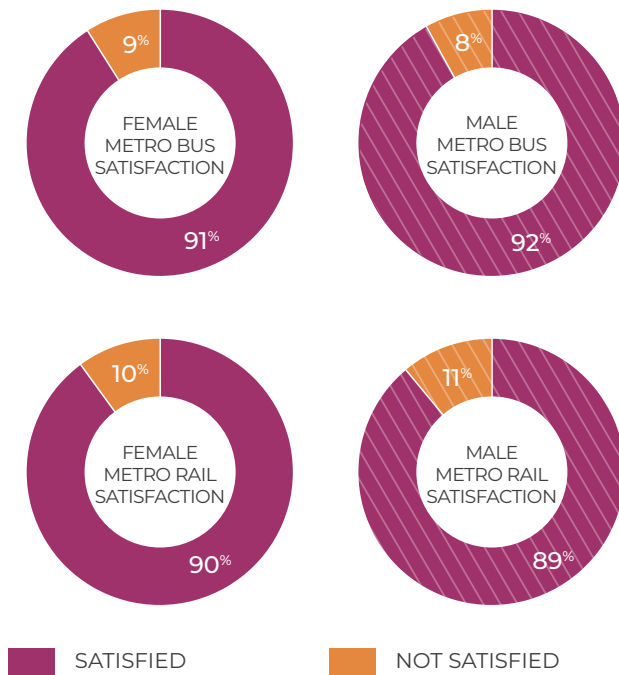


## Existing Data Analysis

In exploring customer service perceptions, we can examine current Metro riders' overall satisfaction with the system using Metro's Spring 2018 On-Board Survey data. Metro riders overwhelmingly say they are satisfied with Metro service. This measure reflects only current riders' perceptions, and not those of riders who may have left the system due to dissatisfaction.

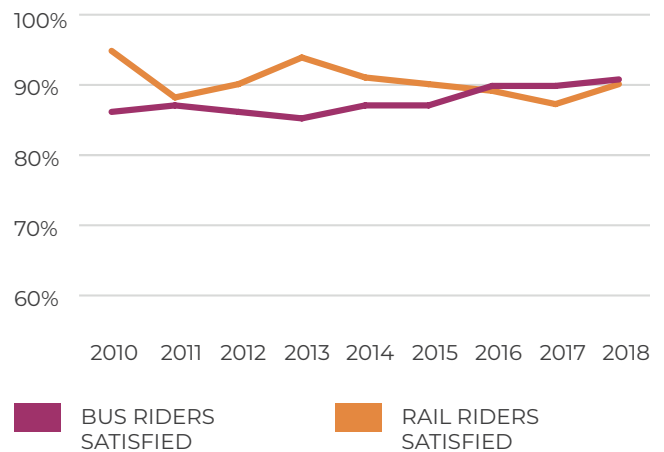
The share of female bus riders who are satisfied with Metro bus service has grown since 2010, from 86% to 91% in 2018. During that same time, the share of female rail riders satisfied with Metro service fell, from 95% to 90%.

### General Satisfaction with Metro Service



Source: Metro On-Board Survey (Spring 2018)

### Female Riders' Satisfaction with Metro Over Time



Source: Metro On-Board Survey (2010-2018)

# TIME AND STRESS



## Existing Data Analysis

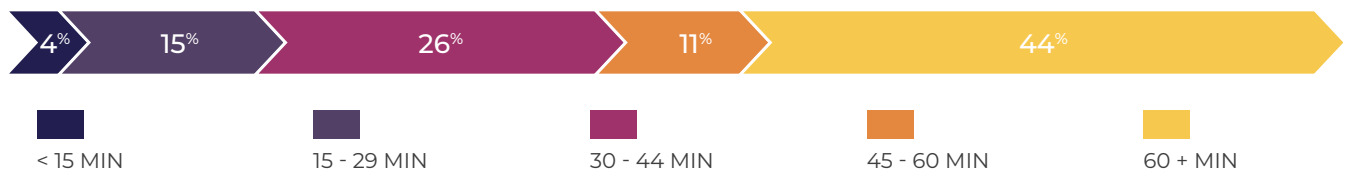
Research has shown that travel time is an important predictor of mode choice, and in many cases can even outweigh the importance of cost associated with choosing one mode over another. In the Los Angeles region, 44% of women’s car trips are shorter than 15 minutes. In contrast, the same share – 44% – of women’s transit trips are longer than an hour. However, women are not covering much more distance for that extra time on transit. As mentioned on page 73, about 3/4 of women’s transit trips are less than 10 miles.

In the OEI 2018 Survey, over half of women who were bus riders but stopped riding said their top reason for not riding was because it took too long/was too slow.

Furthermore, transit riders – especially women – perceive wait times to be longer than they actually are, because of the anxiety and stress that are caused through concerns over personal safety (Fan, Guthrie, and Levinson, 2016). Amenities such as lighting, bus shelters, real-time travel information, and benches can reduce the perceived wait time by reducing the stress of waiting at a bus stop that feels isolated, unattended, and unsafe.

### Duration of Women’s Trips in the LA Region, Driving vs. Transit

#### TRANSIT TRIPS



#### DRIVING TRIPS



Source: National Household Travel Survey (2017)



Women take transit to avoid the stress of driving, traffic, and parking.



## Conventional Methods

### Focus Groups

In the focus groups, women cited the stress of driving, traffic, or parking as a factor for choosing to use transit. Women expressed that they liked the opportunity to get some exercise while walking to or from their stop, they liked meeting new people and having interesting conversations, and they enjoyed the public art at stations. One female participant said she liked that transit gave her “freedom” and another said that riding transit as a young person was “formative in my independence.” However,

participants in all three focus groups mentioned that they experienced a different type of stress and inconvenience while using transit, such as safety concerns as highlighted in the previous section.

“*I like that it’s way less stressful than driving. It’s more relaxing. I can read a book or zone out. I don’t have to be gripping the steering wheel.*”

FEMALE FOCUS GROUP PARTICIPANT



## Innovative Methods

### Participatory Workshops

Women in the participatory workshops described their reliance on public transit, the need to start their days very early, and the number of transfers their trips require. Since many of the women find themselves on public transit for much of the day, either traveling to work or appointments, they said they would love to have access to wifi on all of Metro’s services and would appreciate access to outlets to charge their phones. These amenities would enable women to make better use of the time they spend on the Metro system. Many of them use their cell phone GPS to navigate around the county and require wifi to be able to use their phones. Additionally, having places to charge their phones on public transit, at bus stops, and platforms would allow them to stay connected and navigate more easily.

### Pop-Up Engagements

Women who participated in the pop-ups offered input related directly to the time they spend on transit:

- » Many women mentioned the wait times for buses and trains were too long or that the real-time information was inaccurate.
- » Several women mentioned the new amenities such as wifi and outlets, and considered them to be helpful because they spend so much of their day on transit.
- » Women also mentioned that when the travel time was the same as driving, they preferred transit because they could sleep, watch shows, or spend time other ways.
- » Several women remarked that they allocated extra time to take a transit trip, just in case there were delays.



# TRANSFERS



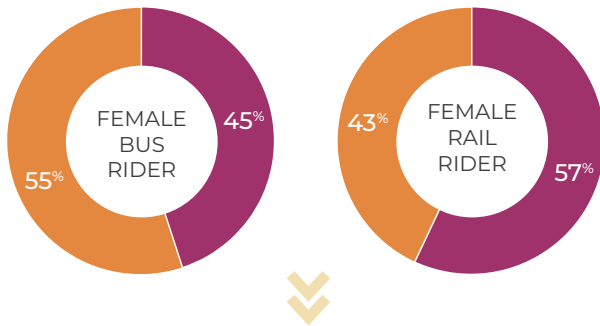
More than half of female rail riders need to transfer to complete their trip.



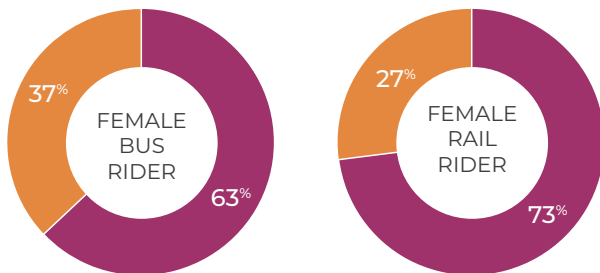
## Existing Data Analysis

According to Metro's Spring 2018 On-Board Survey, 45% of female Metro bus riders transferred during their trips, and 57% of female Metro rail riders transferred during their trips, slightly higher than male bus and rail riders.

*Current Metro Riders: Will you have to transfer to complete this trip?*



*If yes, is your transfer scheduled to arrive within 15 minutes?*



■ YES    ■ NO

Source: Metro On-Board Survey (2018)

Based on the expected schedule, 37% of female Metro bus riders and 27% of female Metro rail riders expected to wait more than 15 minutes for their transfer, also slightly higher than male bus and rail riders. Experiencing long delays or gaps at transfer stops contributes to people reducing their transit use more than twice as strongly as delays or gaps at the origin stop (Carrel, Halvorsen, and Walker, 2013).



Photo source: Metro



Nearly 1/4 of women feel they need to make too many transfers.



## Conventional Methods

### Survey

We asked respondents to our Understanding How Women Travel Survey to list the top three reasons they found it difficult to use transit.

- » 24% of current female transit riders said one of the top difficulties was having to make too many transfers
- » 20% said that it was difficult to make multiple trips on transit

### Focus Groups

In the focus groups, many women described relying on public transit and starting their days early in the morning, taking long trips with several transfers for their regular commutes. Participants shared that multiple transfers create longer wait times and inconsistent travel for their commutes. Another passenger shared that, after a service change, it now takes her two buses and two trains to access Union Station from her home.

### Reasons Women Find it Difficult to Ride Transit

TOO MANY TRANSFERS



DIFFICULT TO MAKE MULTIPLE TRIPS



Source: Understanding How Women Travel Survey (2019)



*I take my first bus at 6:20 in the morning, 6:23. To go to Downtown Los Angeles, Union Station. I transfer to the Metro Purple Line. From there, I get to Western and Wilshire, where the Purple Line ends. From there, I transfer to the 720.”*

FEMALE FOCUS GROUP PARTICIPANT





# CLEANLINESS

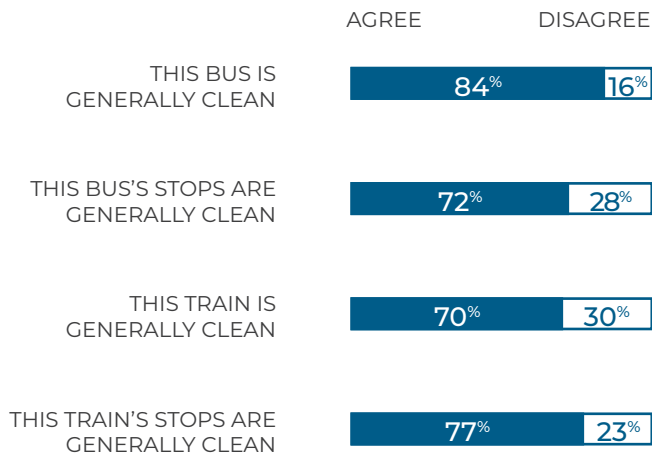


## Existing Data Analysis

In Metro's Spring 2018 On-Board Survey, 84% of female bus riders think their bus is generally clean and 72% think the bus stops are generally clean.

Among female rail riders, 70% think their train is generally clean and 77% think their bus stops are generally clean.

### *Metro Female Rider Perception of Cleanliness While Waiting for and Riding Transit*



Source: Metro On-Board Survey (2018)



Photo source: Metro



Body odor, marijuana smoke, and other bad smells have a negative impact on women's transit experience.



## Conventional Methods

### Survey

We asked respondents to our Understanding How Women Travel survey to list the top three reasons they found it difficult to use transit. Nearly 1/4 of current female riders and nearly 1/4 of former female riders said that one of the top three difficulties they faced in using transit was that it does not feel clean.

### Focus Groups

The condition of facilities, including vans, buses, stops, and stations, provides a first and lasting impression for those riding Metro. Metro staff and facilities should be welcoming to all riders. Women participating in focus groups consistently brought up the issue of cleanliness at bus stops, train platforms, on trains and buses, and in elevators and on stairs. A common issue was how body odor on trains and buses makes for an unpleasant experience, while

### Reasons Women Find it Difficult to Ride Transit

CURRENT RIDERS - DOESN'T FEEL CLEAN



PREVIOUS RIDERS - DOESN'T FEEL CLEAN



Source: Understanding How Women Travel Survey (2019)

many also spoke about marijuana smoke on trains. Some women spoke about regularly moving from train car to train car to find a space free from such odors. Women perceive that Metro does not clean stations and buses regularly enough. They cited bad smells and trash as their main issues with cleanliness at Metro facilities, which in turn made their trip more stressful and unpleasant.



## Innovative Methods

### Participatory Workshops

Women participating in the workshops discussed a lack of cleanliness on Metro trains and buses, sharing similar opinions to those in the focus groups. Women experiencing homelessness also spoke about how cleanliness issues and bad smells negatively affect their experience of Metro services. They shared that

they try to keep the bus and bus stops clean since they spend so much time in these spaces and they want to keep them looking nice and pleasant for themselves. They shared that sometimes the bus interiors or bus stops are dirty. They also mentioned that sometimes the odors on the bus make for an unpleasant ride.



# CUSTOMER SERVICE



Fewer than 1/3 of female riders feel that other riders are courteous.



## Existing Data Analysis

Between July 2013 and September 2018, women submitted 2,309 commendations for bus operators - 40% more than men submitted over the same time period. Over the same period, women submitted 3,720 comments related bus operator discourtesy and conduct.

CCATS data also includes the category "Carried Past Stop" - a key customer frustration. More women than men file complaints about being carried past their stop on the bus, meaning the rider was unable to get off at their stop. This points to potential difficulty women have in alighting - issues which could be exacerbated for women with disabilities or traveling with bags, carts or strollers.

### Metro Bus Rider Complaints (2013-2018)

CARRIED PAST STOP

1,130 TOTAL

FEMALE  717

MALE  413

Source: Metro Customer Complaint and Tracking System (CCATS) Incident Reports (July 2013-September 2018) Complaints without an associated gendered prefix (e.g. Mr., Ms., Mrs.) were removed for the purposes of this analysis.



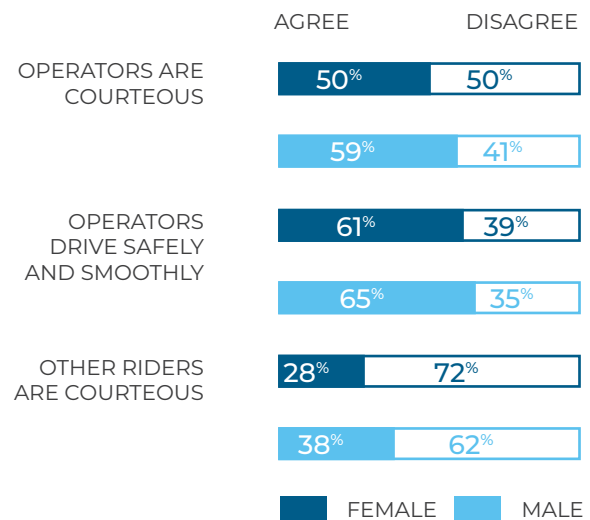
## Conventional Methods

### Survey

In order to better understand current Metro riders' perception of customer service and their experience on the system, we surveyed them about operator courtesy, operator driving, and rider courtesy. Half of female riders say that Metro operators are courteous. Just over a quarter of female riders think that other riders are courteous. Female riders were less likely than male riders to say:

- » Operators are courteous
- » Operators drive safely and smoothly
- » Other riders are courteous

### Metro Rider Perceptions on Customer Service



Source: Metro Understanding How Women Travel Survey (2019)



Women expressed empathy for operators and other riders, but also described negative customer service experiences.



## Conventional Methods (continued)

### Focus Groups

Participants in focus groups shared frustrations regarding negative experiences with Metro bus operators. Participants shared different stories of operators being rude, unaccommodating, and disrespectful. Many reflected that they wish the operators were more engaged with their customers on the bus, but recognized that it is distracting and they need to focus on safely operating the vehicle.

Focus group participants also shared experiences of positive interactions with Metro bus operators. One woman mentioned she likes when the operator on her bus greets her or likes to talk.



## Innovative Methods

### Pop-Up Engagements

A theme at the pop-ups was negative interactions with operators. We heard that this makes women feel unwelcome in transit spaces. Others shared that sometimes drivers pull away without waiting for disabled passengers, or before the riders have found a place to settle in, resulting in getting hurt. The problem seems especially acute for transit users with physical mobility issues, but was also mentioned by others simply weighed down by things they were carrying.

### Participatory Workshops

Workshop participants expressed appreciation and empathy for bus operators, who they see navigating many difficult interactions. They understand that bus operators may have bad moments or bad days, but unfortunately, such attitudes have negative impacts on riders. They suggested that bus operators need assistants to help with onboarding riders, giving directions, securing wheelchairs, and dealing with disruptive behavior. They also suggested that operators need support from their peers, supervisors, and counselors to help alleviate stress. When women do see bus operators helping those in need, their experience on transit is much more pleasant. Women experiencing homelessness shared experiences of being discriminated against.

“*Bus drivers have eight different jobs because of all the things they have to handle.*”

FEMALE WORKSHOP PARTICIPANT



# STATIONS & VEHICLES



## Existing Data Analysis

In addition to customer service factors, vehicle design may influence women's ease of using particular modes of travel. In their household-supporting trips, women carry large shopping bags or push strollers, more often than men (McKnight, 1994). If transit vehicles do not have dedicated space to store bags or strollers, women may find transit travel too inconvenient and choose another mode. Some transit operators in Europe (such as Transport for London) allocate space on transit

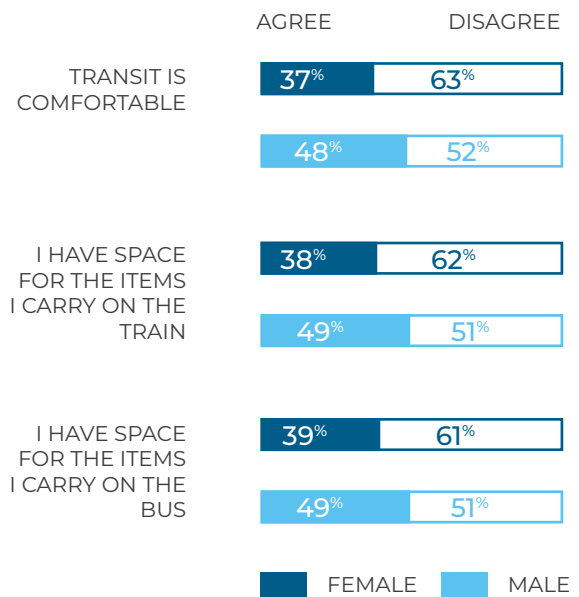
vehicles for strollers. However, U.S. buses typically do not have such dedicated space; strollers may be parked in seats but only if they are not in use (Coale, 2015). Many U.S. transit companies allow only folded strollers on the bus, a decision that forces parents to fold strollers, while also handling their children. This is not an easy task, and doing so in a crowded bus is a potential safety hazard (Lowry, Furfaro, & Brown, 2017).



## Conventional Methods

### Survey

Our survey results reflect the issues highlighted in existing research. Fewer than 40% of female riders feel that transit is comfortable or that transit vehicles have the space they need. Female riders were less likely than male riders to say:



Source: Metro Understanding How Women Travel Survey (2019)



Some women had difficulty reaching stop buttons and pull-cords while seated, or keeping their balance while paying their fare as the bus was in motion.



## Innovative Methods

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### Participant Observation

Aside from major transit centers, such as the El Monte Bus Station, bus stops were generally observed to be poorly maintained, dirty and with few amenities. Waiting female riders improvised to find shade or seating. Even when a bus shelter was present, it often only provided protection when the sun was directly overhead. Activity seemed to provide a sense of comfort; street vendors, businesses, and crosswalks all draw foot traffic.

*On the 204 one morning, when the temperature was nearly 85 degrees, a participant observer stood in the hot sun at a bus stop without shade or seating for 15 minutes with a visibly pregnant woman.*

### Boarding & Payment

We observed riders that stood at the farebox to consult the bus operator about stops and destinations, transfers, loading TAP cards, and other questions. When boarding, those paying with cash and, particularly, dollar bills, held up others waiting to board. The farebox screens are small, hard to read, and don't provide much information (such as the balance of a stored value TAP card). Observers noted a lack of information on how to use TAP cards when transferring train lines.

### Seating

We observed most people traveling alone on buses and trains. However, most of the seating on both buses and trains is designed for pairs of riders. Women seemed reluctant to have to share seats with strangers. Women were more likely to scan the bus or train, mapping out and weighing their seating options. Women seemed more cognizant of their personal space, typically choosing to sit next to other women, and often women of similar race, ethnicity, or age as themselves.

Women and older adults tended to sit towards the front of buses and towards the ends of train cars. They moved to the back of the bus or the center of the train car when necessary. Men tended to sit towards the back of buses, unless they had mobility assistance devices or other belongings with them. Younger people – particularly young men, but also young women – were more likely to sit in the very back of the bus. When men and women rode together and shared a pair of seats, the woman was more likely to sit in the window seat, while the man sat in the aisle seat. When traveling alone, women were more likely to sit in the aisle seat, while men were slightly more likely to sit in the window seat. Both women and men traveling longer distances seemed more likely to take window seats.

Women who showed unfamiliarity with a bus route, as well as those traveling with bags, carts, or strollers, were more likely to use the reserved bench seats at the front of the bus. When a bus was not crowded, the reserved bench also served as a waystation for those riding only a short distance. On trains, riders of all ages and abilities were more likely to occupy the reserved seats.





Lack of designated space for riders' bags creates frustration for everyone involved.



## Innovative Methods (continued)

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### *Participant Observation (continued)*

#### **Space for Belongings**

In our observations, women were more likely than men to be traveling with bags or purses, carts, and other items. They tended to keep their bags in their laps or in the seat next to them. Occasionally, people brought large garbage bags full of recyclables or other items on board. They tended to sit in the reserved seating at the front of the bus. Those traveling with suitcases were also likely to use the reserved benches at the front of the bus. Suitcases, large bags, and wheeled carts often blocked the aisle. Sometimes people used the front wheel well, opposite the bus operator, to store their bags.

Older women were the most likely to be traveling with wheeled carts. Like riders with carts, riders with walkers typically chose to sit in the side-facing reserved bench at the front of the bus. If occupied, they often sat with the carts in the aisle seat with them, partially blocking the aisle. During the day, buses could get so crowded and congested with carts and walkers blocking the aisle that riders had difficulty moving through the bus.

#### **Standing**

On crowded buses, we observed that female riders chose to stand first in the spaces near the bus operator and the rear exit. Men were more likely than women to hold onto the overhead horizontal poles, while women were more likely to use vertical poles that allowed them to keep their arms close to their bodies. Men also stood in the rear exit with their backs to the wall. When women stood in this space, they were more likely to stand against the front of the space, allowing people to pass behind them when alighting. When buses were very full and there was standing room only, it was mostly men who stood. Sometimes, people chose to stand even when seats were available. In trains, women were more likely to stand with their backs against a wall or door.

Notable observations on the Red Line indicated that more women consulted Metro's maps; however, they seemed uncomfortable doing so, as they had to position their bodies near the passenger sitting in the aisle seat in order to look at the map located above the window. They usually curved their bodies, trying to create distance, but thrusting their head forward to see. A couple of men were observed looking at the map and placed their bodies right next to the seated passenger to get a good view of the map.

### *Participatory Workshops*

In our workshops, we heard that a lack of accommodations for bags and belongings is frustrating for both women traveling with such items and those who must share space with them and their belongings.

### *Pop-Up Engagements*

Many individuals engaged at the pop-up sites shared that they do not feel comfortable on transit when it is too crowded; there is too little physical space between the riders. Some women brought up that when the bus or train is crowded, it can be difficult for those with disabilities to get a seat or those with walkers to navigate through the space.

# WHAT WE'VE LEARNED FROM STUDYING CONVENIENCE & COMFORT

On a comfortable and convenient transit system, women can wait for their bus in the shade. They can easily load their TAP card or charge their phone while they wait. When they board, they find ample space for their grocery bags, their strollers, or their walkers. The operator greets them and another rider may offer their seat. When they sit down, they don't feel trapped by the person sitting next to them. A system map with transfer information is easy to read from their seat. When it's time to get off the bus, the push button is easy to reach and they are able to stand and move down the aisle to the back door with ease. They alight easily and their destination is just a short distance away.

A system that is not comfortable or convenient makes the trips we know women are taking more than men – household-serving errands and trips to transport someone else – the most difficult. Whether it be the policy that states strollers must be folded on the bus, or the lack of space on board for multiple grocery bags, these inconveniences and discomforts are present throughout the Metro system. In order to attract more women to transit and better serve current female riders, we must make these trips comfortable and convenient by providing the customer service, station and stop amenities, vehicle designs, and policies, such as those around taking strollers on transit, as friendly towards women as possible.





Photo source: Metro



## CH.4

# NEXT STEPS

*This report is the first step in Metro's process to better understand and better serve the needs and preferences of women riders. With the findings from the previous chapter, Metro is equipped to begin considering policy, design, and service changes that can improve the travel experience for women.*

*This section summarizes the top next steps that can be explored to have the most positive impact on women riders, based on the findings and themes discussed in this report. Examples of policy, design, and service changes from other cities have been included to illuminate the range of options that have been tested and shown to improve the quality of the travel experience for women. Metro's Equity Platform Framework adopted in February of 2018 recognizes that inequity exists when there are fundamental differences in access to opportunity not just in where you begin but in your capacity to improve from that starting position. Much of this report has presented inequities in women's access to opportunity because of a transportation system that is not tailored to meet their needs. Gender differences in travel patterns, mode choice, access, safety, and affordability need to be considered moving forward.*






Photo source: Metro



# GENDER ACTION PLAN

*Metro can create a Gender Action Plan to pivot from research findings into actionable changes.*

The Gender Action Plan would allow Metro to align its work, such as systemwide planning, setting fares, and designing stops and stations to introduce new changes specifically intended to improve travel experiences for women and girls. There is also an opportunity to align changes that are already under consideration, through projects like the NextGen Bus Study, with the findings in this report, ensuring the perspectives of women are considered. The Gender Action Plan can introduce changes that are specifically intended to improve the transit and travel experience for women. In undertaking this effort, Metro can be the first transit agency in the United States to create a Gender Action Plan exploring the following themes:

- » Safety
- » Fare Policy
- » Station, Stop and Vehicle Design
- » Services, Frequency and Reliability

## Models from Other Cities

In 2012, **Transport for London** created a gender equality policy approach in their “Single Equality Scheme,” which prompted a study to understand women and girls’ travel patterns, among other groups of riders. The Single Equality Scheme brought the agency’s goals around disability, gender, race, and sexual orientation equality into a single document. In 2016, Transport for London set out new equality commitments in their “Action on Equality.”

Since the 1990s, the **City Women’s Office in Vienna** has adopted several street improvements, including additional lighting and wider sidewalks to accommodate strollers, specifically focused on women. As of 2017, the City had implemented more than 60 projects around gender mainstreaming in urban design and inspired other European cities to adopt similar projects.

## Safety

*Reassess communications on board, at stations, and at stops to create an environment that prioritizes safety and customer service, reduces sexual harassment, and encourages women to report instances of harassment.*

For both women who ride Metro and those who don’t, safety is their primary concern. This concern causes women to alter their travel behavior, only traveling at specific times, getting off the bus or train mid-trip to avoid harassment, taking more expensive travel options, or spending more time traveling.

Women’s perceptions of safety on transit are affected by many different elements of their experience, including:

- » Built environment elements, such as lighting at or along their route to the bus stop
- » The presence and behavior of other passengers or people nearby on board and while waiting
- » The presence and behavior of Metro staff and security
- » Frequency of service and pass-ups, which impact how long women may wait for a train or bus to arrive in a place where they may feel unsafe, along with the accessibility and accuracy of real-time information while waiting for transit
- » The availability of information and accessibility of ways to report incidents, including sexual harassment, on transit
- » Traveling at night compounds women’s safety concerns related to items listed above

Metro security staff are empowered to create a more comfortable environment; additional customer-oriented staffing on buses and trains may help to create a greater focus on customer service, comfort, and safety for women throughout the system.

## Models from Other Cities

**Toronto Transit Commission's** Request Stop program allows riders to request a stop between designated bus stops to minimize walking distances between 9 PM and 5 AM. Any rider feeling vulnerable at night or at designated stops may use this program. This program was originally available to women traveling alone, but has since been expanded to all riders in recognition of other vulnerable groups, including older people, people with disabilities, and people in the LGBTQIA community.

Women traveling in **Quito, Ecuador** can text “acoso” (“harassment”) to a number, and after speaking with a phone operator, the bus operator is notified to trigger an alarm that notifies police and sounds an anti-harassment announcement.

In September 2018, **BART** directors asked BART staff to explore hiring unarmed “transit ambassadors” to patrol the system. They turned to a local program in **San Francisco**, Muni Transit Assistance Program (MTAP), to further explore this option. Muni staffers are unarmed and trained in conflict resolution and are hired from the community. Daisy Avalos, acting manager of the Muni Transit Assistance Program, shared with BART officials approaches to handling bad behavior on transit and highlighted “Respect and de-escalation are key. Instead of approaching the homeless, mentally ill or rowdy passengers from a position of authority, they approach by offering assistance first.”

## Fare Policies

*Explore alternatives to the current fare policy to better accommodate families and low-income riders, and provide affordable options for trip-chaining.*

In many ways, women carry a disproportionate burden when it comes to travel on Metro – traveling with children, the responsibility for household errand trips that cannot be done easily on transit, traveling midday during off-peak service times, and relying on costlier options like ride-hailing services due to safety concerns.

For low-income transit riders, these concerns are particularly pronounced. Women riders are more likely to be in poverty than male riders, with 59% of female bus riders below the poverty line and 34% of female rail riders below the poverty line.

Three findings from a 2011 Mineta Institute study (Agrawal, et al, 2011) show:

- » Low-income residents tend to worry about paying for transportation. Car owners worry about gas prices, maintenance, and other auto-related costs, while transit riders worry about transit fares and the ready cash necessary to purchase transit passes that could save them money in the long term. Low-income individuals who receive transportation subsidies (such as free transit passes) have the fewest concerns, but they still report anxiety about maintaining their subsidies.
- » In deciding whether to drive, get a ride, take transit, bike, or walk, low-income travelers—like higher-income travelers—carefully evaluate the time and money costs of travel against the benefits of each mode available to them.
- » Although low-income households find ways to cover their transportation expenditures, many of these strategies have negative effects on their lifestyles. These negative effects include heightened stress and anxiety, reduced expenditures on necessities such as food, inability to participate in discretionary activities, and spatial entrapment in the neighborhood around their homes.

This study confirms these findings. The high up-front cost of a monthly pass is difficult for low-income women, and the potential cost-savings of the pass are uncertain since one would need to ride nearly every day, twice a day, in order to realize a cost savings over pay-per-ride.

Metro's one-way transfer policy also disadvantages women who take children to school or run household errands on transit. If a woman takes her child to school on transit, she must pay for a one-way fare for herself and her child, and another one-way fare to return home, since transfers do not cover round trips on bus or rail.

In addition, the study found that many women who are likely eligible for the LIFE program were not aware of it. Extensive outreach and communication is recommended to promote the reduced fare program and assist transit riders with the application process.

Payment for Metro services is a critical interaction that every rider must have with the system. By prioritizing a fare structure, payment options, and enforcement strategies that do not penalize women for their unique travel patterns and responsibilities, Metro can help to relieve some of the disproportionate burden.

Key areas for further exploration include:

- » Simplified fare and transfer structure
- » Outreach to increase usage of the LIFE program
- » Fare policies that make it easy for families to ride together
- » Easier access to TAP reloading and pass purchasing options
- » Fare enforcement that demonstrates dignity and respect for all riders

### Models from Other Cities

In **Chicago**, up to seven people can share the same card with Ventra, and not everyone needs to start riding at the same place; you can meet up with someone on the way and pay for them with your card. Riders can even ask the operator or station attendant to pay a reduced fare for a qualifying rider traveling with them.

**Portland's TriMet** was the first major U.S. transit operator to institute a fare-capping system in 2017. TriMet estimated a decrease in fare revenue between 1 and 1.5%, coupled with a reduction in fare evasion.

Starting in September 2019, children under 11 will ride transit for free in **Paris**, and other groups of riders will have discounted fares. This action contributes to Paris' plan to make public transportation cheaper for people with mobility challenges.

## Station, Stop and Vehicle Design

*Investigate changes to station, stop, and vehicle designs to better address the needs and concerns of women, including elements like better lighting, seating at stops and stations, clearer sight-lines, and more space on transit vehicles to accommodate strollers and carts.*

Many female riders do not feel comfortable on board and do not feel they have space for the items they need to carry on the bus or train. Women have cited cleanliness issues and unpleasant odors that make for an uncomfortable experience. Additionally, some women struggle to reach the stop request button, stretch to make sense of a small map posted too high to read, stabilize themselves while trying to pay their fare on a moving bus, search for makeshift shade at bus stops without shelters, and work to juggle carts, bags, strollers and children on board. These issues can be exacerbated for older women or women with disabilities, who may have



Photo source: Metro

mobility limitations and use mobility assistance devices like walkers, canes, and wheelchairs, which are critical to many women's trips.

Changes to Metro station and stop amenities and vehicle design should prioritize improving the experience for female customers.

Key areas of improvement include:

- » Bus stop and station amenities, like shade, benches and trash cans, along with regular cleaning, can improve the comfort of waiting and riding. These changes could be accomplished through partnerships with local jurisdictions and with the establishment of Metro bus stop design guidelines.
- » Easily accessible and properly working elevators and escalators can ease the difficulty of transit travel for women with carts, bags, strollers, and mobility assistance devices.
- » Vehicle interior design changes can help relieve overcrowding that may make women feel vulnerable or uncomfortable, provide room for strollers and other items women carry, increase the number of railings and poles that are within reach, and allow for more reserved seating and seating options for families.
- » Policy changes to make it easier to bring strollers on board or help children or women with non-visible disabilities find a seat more easily.

## Models from Other Cities

In the **San Francisco Bay Area**, **BART's** new rail cars will increase the number of seats by 70% when fully deployed. Seats will be lighter and more easily cleaned with more leg room than the cars' current design.



Photo source: Fehr & Peers

In **Portland**, **TriMet** allocates \$800–900,000 annually for bus stop development, to meet its goal of 3,000 stops having an amenity. Bus stop amenities include quality lighting, seating, a trash can, or a shelter.

**Santa Monica Big Blue Bus** recently updated their stroller policy to allow for riders to park their strollers in the wheelchair securement area of the bus. Strollers do not need to be folded and children can remain in their stroller.

## Services, Frequency and Reliability

*Evaluate services provided by time of day to understand how they can be adjusted to better meet women's travel needs during midday and evening off-peak hours, including on-demand services such as Access.*

Metro service hours and frequency should reflect the needs of diverse riders. Currently, Metro service is planned around traditional peak periods of the day, around 7AM and 5PM. Service frequency drops off during the midday hours, and is reduced significantly at night and on the weekends.

This study shows that women are equally likely to travel midday as they are to travel in the morning and evening peak hours. Female riders also expressed hesitation to ride Metro at night due to safety concerns exacerbated by long waits at dark or isolated stops and empty stations without access to reliable real-time information. Some women talk of a personal transit "cut-off time." Improved frequency during the midday period, expanded service times, reliable and accessible real-time information, and more options for safe, convenient, and affordable on-demand, first/last mile, and door-to-door public transit options can help address the travel needs of women.

Metro's Access services are a true lifeline for female riders with disabilities. However, women reported allocating an extra four hours of time to make one trip, booking their ride in advance to accommodate delays, shared-route diversions, and out-of-direction travel. This investment of time demonstrates that the existing Access services are not efficiently designed to serve their needs. Exploring opportunities to enhance Access services, such as taking advantage of new technologies to improve the efficiency of routing, matching shared rides, and providing flexibility for booking on-demand, could address key concerns voiced by women who use Access services.

## Models from Other Cities

**Seattle's King County Metro** has seen an eight-percent increase in bus riders over the past nine years, including three percent between 2016 and 2017. In 2014 alone, investment in service resulted in roughly 270,000 additional annual hours of bus service spread across 68 routes, aimed at relieving crowding, improving on-time performance, and boosting the frequency of high-traffic routes at peak hours as well as night and weekend service. The percent of Seattle households within a 10-minute walk of 10-minute or better transit service, the city's established metric for judging success, grew from 25% in 2015 to 64% in 2017.

**Portland TriMet** is the first transit agency in the country to release a multi-modal trip planning tool, combining ride-hailing, carsharing, and bikesharing data and options into their app. The app helps riders piece together single trips using multiple modes, providing several different options for transit riders to make key first/last mile connections.

## Future Data Sources

Metro can use powerful and expanding data sources and metrics to improve travel for women and girls. However, without intentionally incorporating gender into future data collection efforts, it would be easy to omit the gender variable as more data comes from external sources. Private companies now collect "passive" data every day through social media and smartphone applications. Metro should collect gender information for all surveys and data gathering efforts, and analyze such data by gender. Through proactive partnerships with data vendors and technology companies, and the specification that all data from these vendors and companies can be disaggregated by gender, Metro can center the experience and the needs of women and ensure their perspectives are collected and leveraged for future decision-making.

As new questions arise, Metro should collect and analyze additional focused gender data. Metro should aim to incorporate gender and other demographic variables in all datasets, so that all future planning and service changes incorporate a growing understanding of the needs and preferences of women and girls. Metro should set this expectation for any survey work or project evaluation that is conducted by contractors and consultants.



*Photo source: Fehr & Peers*



# ADDITIONAL RESEARCH NEEDS

Even with the breadth and depth of data collected and analyzed in this project, limitations and additional research needs remain. As Metro continues to investigate this question through the Women and Girls Governing Council and other efforts such as the Equity Platform and the Long Range Transportation Plan, additional efforts can be undertaken to help develop an intersectional understanding of how women travel.

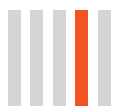
Additional research needs include:

- » Travel diaries to obtain more detailed information regarding How Women Travel, in particular the trip chaining and mobility of care topics.
- » Surveying of groups that are under-represented in the data compared to their representation on transit services (Hispanic, Latinx, or Spanish origin bus riders; African-American transit riders; low-income transit riders)
- » Surveying in languages other than English, Chinese, and Spanish, and sampling intentionally to get non-English monolingual responses
- » Surveying or workshops with older adults
- » Focus groups or participatory design workshops to generate or validate new design ideas for vehicles and stations that meet the needs of women

*Through ongoing, intentional data collection and analysis, Metro can continue to gain a better understanding of the nuances and differences within the diverse and heterogeneous population of women riders. Connecting this understanding to future planning and service changes will enable Metro to build off this groundbreaking study and progress towards a system that truly meets everyone's needs.*

# SUMMARY OF OPPORTUNITIES FOR GENDER ACTION PLAN

KEY FINDINGS	OPPORTUNITIES
<p><b>SAFETY</b></p> <p>Safety is the primary barrier to riding transit for women. Women’s perceptions of safety on transit are lower than men’s, just 13% of current female riders feel safe waiting for Metro after dark.</p> <ul style="list-style-type: none"> <li>» Both female riders and non-riders say that additional lighting and the presence of people nearby would make them feel safer on the Metro system</li> <li>» Female riders feel much less safe on the Metro system at night than during the day.</li> <li>» Female riders feel less safe traveling to and waiting at their stop or station than they do while on board</li> <li>» Although women and men both report experiencing sexual harassment, women are more likely to be victims of sex offense crimes, based on national trends</li> </ul>	<p>Conduct a full Safety Audit using gender specific lens. Safety audit seeks to identify key concerns of women safety. Identify safe and unsafe spaces and recommend how the unsafe spaces can be improved.</p> <ul style="list-style-type: none"> <li>» Revisit Metro Rail Design Criteria for improved lighting levels at stations, plaza and approaches; Conducting safety audits of our transit system similar to METRAC (Toronto’s Transit Commission)</li> <li>» Improving stations/stops design to avoid blind spots and improve visibility; Working with cities create guidelines for key elements or consideration for bus stop design including lighting, shelter and CCTV cameras</li> <li>» First Last Mile Guidelines should address safe design considerations for pedestrians approaches to the station and consider Crime Prevention Through Environmental Design (CPTED) principles</li> <li>» System Safety and Security and WGGC partner to implement an effective reporting, reviewing and responding process and revamping the off-limits program; Implementing a Standard Operating Procedures (SOP) in place to track number of harassment complaints filed with Bus &amp; Rail Operators or via emergency call boxes unless a crime is in progress and the law enforcement is dispatched.</li> </ul>
<p>Despite changes to Metro’s security and law enforcement structure, a majority of women feel that there are too few police officers throughout the system.</p>	<p>Consider adding more security personnel to surveillance the system, especially bus lines ; however, women are conflicted about the best approach to providing increased security, and some suggested that unarmed Metro ambassadors may provide a solution. Women passengers feel safer being watched by a police officer than by the lenses of CCTV cameras..</p>



## KEY FINDINGS

## OPPORTUNITIES

### FARE POLICY

63% of female bus riders and 77% of female rail riders do not receive a discount on their fare. Only 6% of female bus riders and 10% of rail riders are part of the LIFE (low-income coupon) program. Yet the median annual household earning for female bus riders is \$16k and \$31k for female rail riders.

Monthly passes are cost-prohibitive for women, especially those with more unpredictable travel needs. 31% female bus riders pay with cash. Paying with cash does excludes passengers from benefiting from the transfer policy. Increasing their travel cost. Across all types of transportation spending, low-income women report spending more than higher-income women.

Kids' fares confuse even the most regular riders. Current policy allows two children under age 5 to travel free with each fare-paying adult on bus or rail; however, the policy is not clear for kids in the age group of 5 to 7 and for families with more than 4 kids.

Women bus riders reported that TAP cards can be difficult to access and recharge with cash.

Explore potential improvements to Fare Policies.

Explore Fare capping that can remove upfront cost barrier associated with monthly passes.

Explore improvements to LIFE program.

Consider clarifying the fare policy to address kids in the age group of 5 to 7. Fare policies can be revisited to make it easy for families to ride together, encouraging more families to use the Metro system.

Install TAP vending machines at key bus stops and transfer locations.

Enhance outreach efforts to explain TAP cards and benefits to communities that have low usage of TAP.

### VEHICLE, STATION AND STOP DESIGN

Overcrowded spaces and vehicles impact women more negatively. Women passengers with children, packages, strollers as well as older passengers avoid getting on overcrowded vehicles potentially increasing their trip time.

Overcrowded spaces also create an environment for unwanted physical contact.

Older women and women traveling with children had a difficult time maneuvering with strollers and carts on the bus; Though nearly 60% of female riders with children bring their kids on transit, many women expressed difficulty in riding Metro with children and strollers including have to fold the stroller while entering the bus.

Engage a vehicle design consultant to provide guidance on:

- » Design and layout of seats
- » Handicap and stroller designated areas
- » Designated areas for packages and groceries
- » Low-floor and step-free buses

Work with cities to upgrade and design bus stops to ensure that they are compatible with the low-floor, step-free transit vehicles.

Revisit Rail Station Design guided by Metro Rail Design Criteria to ensure escalators/elevators are in a convenient location

Revisit stroller policy to allow for open strollers on the bus.

Utilize periodic audio public service announcements about yielding seats to elders and those with disabilities and reminding people to share space.

## KEY FINDINGS

## OPPORTUNITIES

### VEHICLE, STATION AND STOP DESIGN (CONTINUED)

Some women had difficulty reaching stop buttons and pull-cords while seated or keeping their balance while paying their fare as the bus was in motion.

Lack of designated space for riders' bags creates frustration for everyone involved.

Women prefer to sit next to other women, or sit in the aisle seat with their bags on the seat next to them.

Engage a vehicle design consultant to provide guidance on:

- » Rail and bus design that considers biological differences. For example, handrails could have a split design or stop button placement along aisles for buses could be at different heights
- » Transverse seats versus aisle seats, and different seating arrangement options

### SERVICES, FREQUENCY AND RELIABILITY

Travel time is an important predictor of mode choice. 44% of women's car trips are shorter than 15 minutes. In contrast, the same share - 44% - of women's transit trips are longer than an hour. Women make more trips and are negatively impacted by the time burden more.

Women frequently travel outside rush hours and have a midday peak, at the same time Metro's service drops off.

Women's participation in the labor force is at an all-time high, but women's patterns in travel to work are different from men's patterns, and they vary with family and life-cycle status.

Early morning, late night, and weekend service is inadequate to meet women's needs, particularly those with non-traditional work schedules.

Infrequent or unreliable transit service can impact women's employment opportunities.

Women are making multiple transfers to complete their trips. 24% of current female transit riders said one the top difficulties was having to make too many transfers. 57% of female riders and 45% of bus rider reported having to half to transfer to complete their trip. About 30% of female riders expect to wait more than 15 minutes for their transfer; two transfers can add 30-45 minutes of waiting to a trip.

The Next Gen Study can consider headways and frequency adjustments that include consideration of women's peak periods, and consider safety concerns during non-peak periods, including reconsidering the peak period of 7 AM in the morning and 5 PM in the evening, and considering more direct routes.

Planning - First Last Mile Guidelines should consider pedestrian improvements especially at/near stops and stations to address women needs.

Joint Development and Transit-Oriented Communities Policy should evaluate the success of providing childcare centers, medical offices, grocery stores at transit stations

## KEY FINDINGS

## OPPORTUNITIES

### SERVICES, FREQUENCY AND RELIABILITY (CONTINUED)

Women trip chain: The limited data shows that women continue to make more trips to perform household-sustaining activities such as shopping and family errands to a greater extent than men.

Women, especially with children in the household, are more likely to chain these household-sustaining trips to the trip to and from work.

Women work trips are likely to be to the same destination each day, household shopping and errand trips may be more complex, less predictable, and not as easily served by fixed-route transit.

Those that can afford to, prefer to use ride-hailing services instead of Metro at night. Those that can't afford ride-hailing services endure long waits or long walks.

More than half of current female riders use ride-hailing services for trips that they could not otherwise take on transit, especially during night when transit service is sparse.

On average women with household income under \$25k spend \$32 a month on ridehailing.

Real-time arrival and schedule information is not always available or accurate. Missing a bus or trains due to wrong real-time information in unsafe locations with long wait times creates a stressful experience. Women perceive wait times to be longer than they actually are, because of the anxiety and stress that are caused through concerns over personal safety.

Women with disabilities reported that both Access Services and bus services can be unreliable, and some bus operators are unaccommodating.

Women who use Access Services spend enormous amounts of time planning their trip, waiting for their ride, and taking their trip.

More data needs to be collected on this topic to understand nature, time and associated cost of these trips

- » Collect more information on trip chaining patterns of our women riders through travel diaries surveys
- » On-board survey to collect data on trip chaining

Findings from this more in-depth study will provide operations a better understanding of the travel patterns of women.

Micro transit should consider:

- » Women travel needs during non-peak;
- » Make sure to accommodate strollers and car seats ensure stop locations are in a well light area to ensure women's safety at night; and
- » Allow options to request women drivers.

Explore Request Stop program to allow riders to request a stop between designated bus stops to minimize walking distances between non-peak periods and night time.

Expand the countdown clocks pilot program currently underway to provide arrival prediction information improvements including vehicle location, data improvements and information sharing improvements. The pilot is being implemented at the following locations;

- » Blue Line Arrival Information: FY19, Q4
- » Gold and Green Line Information: FY20, Q1
- » Expo Line Arrival Info: FY20, Q2

Based on the success of this pilot it could be implemented systemwide.

Explore opportunities to enhance Access services, such as taking advantage of new technologies to improve the efficiency of routing, matching shared rides, and providing flexibility for booking on-demand.

# APPENDICES

## **APPENDIX A**

LITERATURE REVIEW

## **APPENDIX B**

SUMMARY STATISTICS FROM PRIMARY DATA COLLECTION EFFORTS

## **APPENDIX C**

*UNDERSTANDING HOW WOMEN TRAVEL SURVEY QUESTIONS*

## **APPENDIX D**

*UNDERSTANDING HOW WOMEN TRAVEL FOCUS GROUP GUIDE*

## **APPENDIX E**

ETHNOGRAPHIC METHODS

## **APPENDIX F**

*UNDERSTANDING HOW WOMEN TRAVEL  
PARTICIPANT OBSERVATION TOOL*

# ACKNOWLEDGMENTS

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## **CONSULTANT TEAM**

FEHR & PEERS

WITH

PUEBLO | ETHNOGRAPHIC RESEARCH, PARTICIPATORY DESIGN WORKSHOPS, AND POP-UPS

REDHILL GROUP | SURVEYS AND FOCUS GROUPS

DR. EVELYN BLUMENBERG, MADELINE BROZEN, AND DR. ANASTASIA  
LOUKAITOU-SIDERIS, UCLA | RESEARCH ADVISORS & LITERATURE REVIEW

## **SPECIAL THANKS TO**

INVESTING IN PLACE

PADRES LÍDERES EN ACCIÓN

DOWNTOWN WOMEN'S CENTER

SOUTHERN CALIFORNIA RESOURCE SERVICES  
FOR INDEPENDENT LIVING

METRO WOMEN & GIRLS GOVERNING COUNCIL

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