LA METRO POSSIBLE RIDERSHIP DECLINE CAUSES AND RECOMMENDATIONS TO REVERSE THE TREND

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ABSTRACT

For the past five consecutive years Los Angeles County Metropolitan Transportation Authority (Metro) has experienced a ridership decline. Metro seeks to develop and implement creative and feasible programs and marketing campaigns that may help reverse this trend. Metro has tasked the Metro Commute Services Department (MCS) to spearhead this effort. This project seeks to identify possible causes of ridership decline in Los Angeles County and around the United States to recommend programs and marketing campaigns to help Metro reverse this trend. Through the compilation of literature review of transit ridership related journals entries, case studies and news articles, the following set of recommendation were determined: target single occupancy commuters, offer free transit for a day or week, target the millennial generation using social media, work with transportation network companies (TNC’s), work with employers to provide incentives for riding public transit, and target low-income individuals. Based on the findings in this project, these recommendations may prove to be successful in increasing ridership for Metro.
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CHAPTER 1: INTRODUCTION

In 2016, public transit services provided 10.4 billion unlinked person trips in the U.S (APTA, 2018). This mobility option serves many people across the U.S. and benefits society in many ways. Public transit, including bus, paratransit, vanpool, and rail modes help people get to work and school, go shopping, and receive medical care. In 2007, 59% of transit trips were for commuting to work, 10% were for trips to school, 9% were for shopping and dining, 7% for social purposes, 6% for personal business, and 3% for medical trips according to the American Public Transportation Association (APTA, 2010). Agencies routinely plan fixed route transit, non-paratransit, which constitutes over 90% of total transit cost and ridership (USDOT). Besides serving as a mobility option for people who are not able to own their own car, these services alleviate congestion from single-occupant vehicles on roadways by attracting choice riders. Benefits of transit range from economic, to environmental, to social. However, fewer, and fewer people are using transit for mobility. According to APTA, 2014 was the latest in a series of transit ridership peaks in the last few decades, marking the highest ridership level since 1957 at 10.74 billion unlinked passenger trips. Since 2014, though, ridership has seen multi-consecutive year declines – 1% in 2015, 2.2% in 2016 and 2.4% in 2017. Likewise, per capita transit ridership has decreased from 37.7 annual trips to 31.2 annual trips, or 17%, since 1980 (APTA, 2018).

Transit ridership is essential for policymaking and the success of any transportation system. Automobile dependence is a concern for many reasons, including congestion in urban areas, pollution, and environmental damages caused by pollution. Public transit is an efficient means to move large numbers of people within cities, and
transit systems play an important role in combating traffic congestion, reducing carbon emissions, and promoting compact, sustainable urban communities (Taylor). The 2008 financial crisis led nationwide transit ridership to fall through 2010, but it then recovered along with the economy for a few years. Since 2014, however, ridership has been steadily falling in almost every urban area despite a strengthening economy. Figure 1 shows that ridership is declining whether it is bus or rail and whether it is in large, medium, or small urban areas (O’Toole).

![Ridership decline by mode and urban area population between fiscal years (July to June) 2014 and 2018](image)

*Figure 1: Ridership decline by mode and urban area population (O’Toole)*

Spending for public transit has never been higher and operations have not slowed down. According to APTA, transit vehicle revenue miles increased by 53% between 1995 and 2014. Because of the service expansion between 1992 and 2014, inflation-adjusted capital and operating investment (2017 dollars) in U.S. transit has grown from 39.8
billion to 66.0 billion, or 39.8%. That is also equivalent to an additional 1.2 billion dollars per year increase, which has resulted in a disappointing per capita ridership increase of 0.025 trips per person per year. According to the National Transit Database, from 2014 to 2017 service has grown by 4.3% while ridership has decreased by 5.5% (APTA, 2018). Investment and service are increasing despite decreasing demand. Service cuts are, at least nationwide, not the reason for the ridership decline.

Facing the worst congestion in the nation, notoriously bad air quality, and climate change, Los Angeles County is pouring billions of dollars into expanding its public transit system. But despite the completion of several expensive new rail projects, transit ridership is plummeting. Boarding's for Southern California’s largest transit carrier, the Los Angeles County Metropolitan Transit Authority (Metro), dropped around 17% in the past five years from just under 473 million in 2013 to around 391 million in 2018 (Metro).

Metro leadership has been trying to find the causes of the decline. There have been many hypotheses of the causes. Factors like the economy, changes in county demographics and immigration are just a few of the assumptions. Trying to determine the one source of the decline has proven to be difficult since data has shown that it is most likely a combination of different variables. Developing an effective policy response to this trend depends upon first understanding its causes. It is imperative that Metro and other transit agencies understand the factors which affect ridership to better serve the needs of their riders. Knowing their riders and the factors which causes them to ride their system or not can have an immense effect on congestion and the quality of life for their residents.
This project seeks to determine possible causes of Metro’s ridership decline which will allow them to implement pass and marketing programs to help reverse this trend. By utilizing literature reviews, this project outlines a variety of causes affecting transit ridership and uses these examples to develop recommendations.

About METRO

Los Angeles County Metropolitan Transportation Authority (Metro) is unique among the nation’s transportation agencies. They serve as transportation planner and coordinator, designer, builder and operator for one of the country’s largest, most populous counties. More than 9.6 million people – nearly one-third of California’s residents – live, work and play within their 1,433-square-mile service area (Metro).

The Metro Commute Services Department (MCS) oversees, promotes, manages, and develops various transportation pass programs and campaigns. Their main objective is to offer county residents alternatives to commuting in single occupancy vehicles and to help increase Metro system ridership. They also focus on offering county employers transit pass programs to help reduce the need for parking at their worksites and help reduced the traffic congestion. They have been responsible for major transit campaigns to encourage county drivers switch over to riding public transit for at least a day out of the week, such as their “Rideshare Thursdays” campaign.

The MCS department has been tasked with researching the possible causes of Metro’s ridership decline to help develop programs and/or marketing campaigns that will reverse the trend. They would like to develop targeted transit programs that can be utilized promote public transit to non-riders and entice previous rider to start riding once again. MCS’s main objective is to gain an insight into why their ridership has been
declining for the past several years to develop effective programs that will directly target those factors. They would like to make sure that when developing future programs that their efforts will be directed at the proper county residents. The recommendations generated from this report may be used as the basis for future pilot transit programs or marketing campaigns.

Per Metro’s request, this report includes the following:

1. Review of possible causes of ridership decline
2. Transit pass program recommendations
3. Marketing campaign recommendations

These recommendations entail ideas, promotions and target demographics that may help increase Metro’s ridership. Recommendations include marketing campaigns that target specific demographics to maximize Metro’s marketing efforts.
CHAPTER 2: METHODOLOGY

The methodology for this project began with a literature review of journal and case studies which looked at the causes of ridership declines in various metropolitan areas across the United States. Journal and case studies were chosen based on their transit ridership relevance. Each of them offered different perspectives into the causes of public transit ridership declines. The journal and case studies used also had applicable transit program information that may be relevant to Metro. They were pulled from academic databases such as JSTOR and Science Direct. Qualitative data to determine which demographics and factors have affected ridership at other transit agencies within the United States. The databases allowed for sources to be pulled based on specific subjects and topics.

Newspaper and transit website articles were also utilized for this project. The newspaper articles were from both local and national publications. Each article content was analyzed to ensure that it was relevant to transit ridership current events. These newspaper and transit articles helped shed some light into current trends surrounding transit ridership within the region. Using current events as a source helped gain a better understanding into why ridership is down across the country and the Los Angeles region. It allowed for a better view of what factors are currently affecting Metro’s riders and why they are deciding on other transit alternatives. These articles were effective in showing how various promotional programs at other transportation agencies affected ridership. Through this analysis it was determined why some programs at other agencies were effective in increasing ridership or why they were not. It provided an insight into whether similar programs may be successful if applied at Metro.
Metro ridership data was also utilized to gain in insight into the extent in which the ridership has declined on various bus and rail lines. This quantitative ridership data was pulled directly from the Metro website under their Interactive Estimated Ridership Stats page. The Metro database has the most comprehensive ridership data for the agency. This source was used to download quantitative ridership data for Metro’s most popular bus and rail lines. This ridership data was analyzed by comparing ridership data from 2014-2019. Once the analysis of journal entries and articles were completed, the following recommendations were made for Metro:

1. Target single-occupancy commuters
2. Free transit for a day or week
3. Target the millennial generation with social media marketing
4. Work with Transportation Network Companies (TNC’s)
5. Provide incentives for riding public transit
6. Target low-income individuals

These recommendations were determined based on previous research and proven techniques. In addition, they were determined to be the most applicable to Metro. These recommendations have been tailor made for Metro and the Los Angeles County region. Los Angeles County is known for its diverse communities, economy and built environment. While macro trends such as increasing rates of car ownership, changes in demographics and the widespread availability of transportation network companies (TNCs), and all agencies in the County experiencing a ridership decline, isolated regional approaches can fall. This is because they are insufficiently reflective of the individual needs and wants of the residents of the communities that make up the rich fabric of the
County. This made using a variety of data sources crucial to gain a broad understanding of the factors affecting ridership.
CHAPTER 3: METRO RIDERSHIP DECLINE

In Los Angeles County, overall transit ridership is down about 19% since July of 2013, the year that ridership most recently peaked, the latest figures show (Metro). Metro estimates 32.3 million boarding's in July of 2017, which was down from 39.8 just four years prior. That is across the entire system of bus, subway, and light rail lines. Bus ridership alone is down by 20% in the same period. That is especially problematic, because buses carry more than twice as many passengers daily as Metro’s trains (Tinoco). When taking ridership numbers from 2009 through 2018, Metro’s bus ridership was down by over 25% as Figure 2 shows.

![L.A. Metro riders ditching the bus](image)

*Figure 2: L.A. Metro bus ridership between 2009-2018 (Nelson)*

Metro operates a total of 6 light rail lines along with 165 bus routes, which includes 2 fixed route bus lines within Los Angeles County. The Metro rail lines consists of the Blue, Red, Green, Gold, Purple and Expo Lines and the fixed route bus lines are the Orange and Silver Lines. Based on the data pulled directly from the Metro.net Interactive Estimated Ridership Stats section, Metro has been losing customers across its entire system since 2014, primarily due to an exodus of regular bus riders, who account
for most of their fare revenue. This decline has affected their entire system except for the Expo Line. Metro is not just losing bus riders. The number of passengers riding trains dipped in 2018 for the first time since 2015, the year before major extensions of the Expo and Gold lines opened, Metro data show. Metro spokesperson Dave Sotero stated in an interview with Curbed that issues affecting ridership in other urban areas have been strongly felt in Los Angeles, including the rise of ride-hailing services like Uber and Lyft (Chiland). Cheaper fuel prices and a strong economy may have also encouraged more regular riders to drive, rather than take public transportation.

It is not that the Expo and Gold Line extensions have failed. Though Gold Line ridership dropped slightly in 2018, the light rail route still carries 14% more riders on a typical weekday than it did in 2015, when the line ended in Pasadena rather than Azusa. The Expo Line, meanwhile, is quickly becoming one of Metro’s most ridden transit routes. Since its extension to Santa Monica was completed, ridership on the line has nearly doubled, and it now carries more than 60,000 daily passengers (Chiland). It was the only one of the agency’s train lines that did not lose riders in 2018.

While the Expo and Gold lines have added riders in recent years, Metro customers have abandoned the older Blue and Green lines at startling rates. On a typical weekday in 2018, the Green Line carried nearly 15,000 fewer riders than in 2012. Ridership on the Blue Line was most likely affected by the nine-week closure of five stations at the beginning of 2018, but 2017 ridership numbers were not much higher (Chiland).

The Blue Line, meanwhile, has lost more than 20,000 daily riders over the same period. In 2018, passengers took 9 million fewer trips on the line than they did in 2012—a drop of more than 30%.
Even the Red Line, which carries more people than any other transit route in Los Angeles, saw ridership decline by about 1.5 million trips in 2018, compared to 2017.

**Metro Bus Ridership**

About 75% of Metro’s ridership is on the bus. Overall transit ridership has been largely flat since Metro began building rail in the 1980s, despite three successful tax measures. The Bus Riders Union and others have shown that huge capital projects tend to divert Metro resources away from their core bus service (Linton). For the past 3 years, Metro’s bus ridership has not seen as sharp decline in ridership compared to rail. For the past 3 years (2017-2019) systemwide bus has seen a 3% decline. But from the period between 2014 and 2019, bus ridership declines by around 21%, which was worse than rail for the same period. Declines were seen across most of their bus routes.

![ALL BUS BOARDINGS](image)

*Figure 3: Metro bus ridership systemwide 2014-2019*

**Orange and Silver Lines**

Metro’s Orange Line runs from North Hollywood though the San Fernando Valley to Chatsworth. The Orange Line is a fixed route bus line which has a designated
bus lane along with a barrier separating its lane from the general traffic. For the past 3 years, the Orange Line has seen a 9% decline. But like the systemwide ridership trend, for the period between 2014 and 2019, its ridership has declined by about 23%.

The Silver Line runs from San Pedro though Downtown Los Angeles and east to El Monte Bus Station via the 110 and 10 freeways. The Silver Line is considered an Express Route which means that it makes fewer stops than a typical local route bus. This route typically serves employees who work in the Downtown Los Angeles area.

The Silver Line is one of the few Metro bus routes than saw an increase in ridership in the past few years. For the past 3 years (2017-2019), it had a 19% increase in ridership, and for the period between 2014 and 2019, it has experienced an increase of 25% in ridership. This uptick in ridership may have been caused by the refurbishment and closure of the Blue Line rail station closure in 2019. Both lines run parallel to each other and the Silver Line may have attracted some Blue Line riders during the construction period.

**Metro Rail Ridership**

Racially, demographically, and economically, the people riding transit in Los Angeles have markedly different characteristics depending on what form of transit they
use. Bus riders tend to have lower incomes and fewer transportation options. Train riders have higher incomes and are whiter (Berg). Metro currently has a total of 6 rail lines in operation. The rail lines consist of the Blue, Red, Green, Gold, Purple and Expo Lines. These fixed route rail lines serve a total of about 313,972,498 trips during the last 3 years (2017-2019). But the rail lines did experience a 17% ridership decline during the same period, which was also the same percentage between 2014 and 2019.

![Metro Rail System Boardings](image)

*Figure 5: Metro rail boarding's systemwide 2014-2019*

Out of the 6 rail lines that Metro operates, the Expo and Red/Purple Lines experienced the least ridership decline during the last 3 years, 4% and 7% respectively.
Red/Purple Lines

The Red/Purple Lines run together from Downtown LA west until the Wilshire/Vermont station where they split. The Red Line continues northwest to North Hollywood and the Purple Line continues west towards the West Side of Los Angeles. The Purple Line is currently being extended to Westwood. The extension is scheduled to be completed in 2023. Once opened, the extension will serve the Miracle Mile, Beverly Hills, and Westwood communities. According to Metro data, the Red/Purple Line experienced a 7% decline over the past 3 years (2017-2019). During the period between 2014 and 2019, it had a 14% decline.
Blue Line

Metro’s Blue Line runs from Downtown LA to Long Beach. It runs though South Los Angeles, Watts, Lynwood, and Compton. During the majority of 2019, portions of the Blue Line was closed to undergo a massive overhaul to improve all the stations and crossings. This was done in two phases; the southern and northern sections of the line were closed separately in to perform the work. This affected the lines ridership dramatically during 2019.

But even prior to the refurbishment being started, the Blue Line had been seeing a decline in ridership as well. During the prior 3-year period before the refurbishment (2016-2018), ridership on the line was down about 21%. From the period between 2014 and 2018, ridership was down 27%.
Expo Line

The Expo Line runs from Downtown Los Angeles to Santa Monica, serving the West LA, Culver City communities in between. Out of the 6 Metro rail lines, the Expo Line is the newest one which began service in 2012. During the period between 2017-2019, ridership on the Expo Line declined by only 4%. But for the period between 2014 and 2019 ballooned by 86% due to the expansion from Culver City to Santa Monica.

Green Line

The Metro Green Line runs from Norwalk to El Segundo. This line serves the communities of Paramount, Lynwood, Watts, and Hawthorne. This line has experienced an 8% ridership decline in the past 3 years (2017-2019) and a massive 30% decline from 2014-2019. This is the hardest hit rail line in the Metro system from 2014-2019.

Gold Line

The first phase of the Gold Line from Downtown LA to Pasadena opened in 2003. The Eastside extension of the line from Downtown LA to East Los Angeles opened in 2009. The third phase from Pasadena to Azusa opened in 2016. An extension from Azusa to Pomona is currently being constructed and is expected to be opened in 2026. The Gold Line has experienced a 9% decline in ridership in the past 3 years (2017-2019) but an increase from 2014-2019 due to the expansions.
Figure 8: Gold Line boarding's 2014-2019

In 2019, passengers took an average of 295,889 on Metro’s rail lines on a typical weekday. That was nearly 50,000 fewer rides per day than in 2018. Compared to one year ago, ridership is down on all train lines. Some lines are carrying fewer riders than they have in years, and for the past few months, the Gold Line has been emptier than it is been since it began traveling to Azusa (Chiland). One of Metro’s key goals for improving transportation throughout the Los Angeles region over the next decade is doubling the number of trips residents take in a way other than driving solo. Getting more people to ride transit will be a big part of meeting that threshold.
CHAPTER 4: POSSIBLE CAUSES OF RIDERSHIP DECLINE

Research has shown that there are many factors that affect transit ridership in a major metropolitan area. External forces certainly play a critical role, with deep recessions then rising incomes, increasing auto ownership, steep jumps in housing prices, and the advent of new mobility services potentially changing how and when people choose to ride. Factors also include several economic and social characteristics, such as urban geography, economic activity, and population demographics (Taylor).

Boarnet and Crane (2001) state that transit service, like other commodities, follows a demand theory of consumption. Individuals are faced with resource constraints and trade-offs among available travel alternatives: Personal car, transit, walking, bicycle, etc. The relative attractiveness of those alternatives to individuals depends on relative costs. If the utility of using transit is higher than the costs of driving, a traveler is likely to choose a transit option. If taking a bus or train to work instead of driving a personal car can save commuter money, and travel time, a transit agency is likely to gain anew rider (Armbruster). It is reasonable to assume that if car drivers had a better alternative, they might be willing to use it. In theory, that alternative is public transportation—buses, commuter trains, light rail, streetcars, and subway systems (Wallace). At its best, public transportation is as reliable as driving, more efficient, less stressful, and cheaper. Most American cities fall well short of that ideal. The following are causes of ridership decline. The research for this project found that an increase in car ownership, the introduction of Transportation Network Companies, the requirement of high job concentrations, changes in demographics, bikeshare, telecommuting and a strong economy may lead to a decrease in ridership.
Increase in Car Ownership

According to a 2018 report prepared for the Southern California Association Governments (SCAG) determined the increased car ownership can likely explain much of the transit ridership decline in Southern California (Manville). The report indicates that private vehicle access among those who have historically been transit dependent is one of the major factors affecting transit ridership in the Southern California region. The report goes on to say that a defining attribute of regular transit riders is their relative lack of private vehicle access (Manville). But between 2000 and 2015, households in the SCAG region, and especially lower-income households, dramatically increased their levels of vehicle ownership (Manville). Their research states that data show that from 1990 to 2000 the region added 1.8 million people but only 456,000 household vehicles (or 0.25 vehicles per new resident). From 2000 to 2015, the SCAG region added 2.3 million people and 2.1 million household vehicles (or 0.95 vehicles per new resident).

From 2000 to 2015, the proportion of immigrant households that owned zero vehicles dropped 42%, but among Mexican immigrant households, non-vehicle ownership dropped by 66%. A factor that is likely leading to higher car ownership rates by low-income residents is the migration of poor families to the suburbs where housing is cheaper, but transit service is spotty or nonexistent (Fehr and Peers). A greater share of households with a vehicle, all else being equal, is likely to lead to less demand for public transportation (Taylor). Making matters even more difficult for transit, about half the households with no cars also have no workers: only 4.3% of American workers live in households that have no cars. Moreover, more than 20% of workers in carless households nevertheless drive alone to work (probably in employer-supplied cars) while fewer than
42% take transit to work (O’Toole). This suggests that transit does not even work for most people with no cars.

**Introduction of Transportation Network Companies (TNC’s)**

Transportation Network Companies (TNC’s) companies such as Uber, Lyft and other ride-hailing providers have transformed the transportation marketplace in over six hundred cities around the world. While their entry into cities has been controversial, they have been credited with providing a reliable and affordable transportation option, serving neglected areas of cities, and providing meaningful employment. Against these benefits, they have been accused of being unsafe, creating congestion, destroying stable jobs, and flouting the law. Transit agencies in major metropolitan regions have struggled with these companies since they have been shown to decrease ridership. Some research suggests that for each year after 14 TNC’s enter a market, heavy rail ridership can be expected to decrease by 1.3% and bus ridership can be expected to decrease by 1.7% (Graehler). This TNC effect builds with each passing year and may be an important driver of recent ridership declines.

The TNC coefficients also vary by mode. The commuter rail coefficient is positive, suggesting complementarity, but insignificant. The heavy rail and bus coefficients are negative and significant. This suggests that TNC’s reduce transit ridership. The effect is greater for each year after TNC’s enter a market, with the coefficient interpreted as a growth rate. After TNC’s enter a market, heavy rail ridership decreases by 1.29% per year, and bus ridership decreases by 1.70% per year (Graehler). This is reasonable to expect as TNC use grows after entering a market. The 40 light rail coefficient is also negative but is insignificant.
Figure 12 illustrates the effect of TNC variables, relative to the effect of changes in vehicle revenue miles (VRM). The values show that the TNC effect is a 1.3% decrease in heavy rail ridership and a 1.7% decrease in bus ridership per year. In a market like San Francisco, where Uber started operations in 2010, the model implies that we would expect a 12.7% decrease in bus ridership, all else being equal. The estimated coefficient on VRM is 0.462, which means that a 1% increase in VRM corresponds to a 0.42% increase in VRM. This is specific to the mode, but the coefficient is not segmented by mode. Continuing with San Francisco as an example, this result suggests that SFMTA would need to increase bus service by slightly more than 25% to offset the loss of bus ridership to TNC’s.

These findings suggest that TNC’s reduce transit ridership, specifically on heavy rail and bus. Further, they show that the effect increases as TNC’s become more
established in a market. These findings support related research on the effect of TNC’s on transit ridership (Mucci), and contradicts the arguments made by some shared mobility advocates (Feigon 2018). It should be noted, however, that the estimated effect of TNCs on heavy rail is likely to be heavily influenced by New York subway ridership and may differ if the study were expanded to more cities.

But other research shows that Uber’s effect on transit is theoretically ambiguous: while Uber is an alternative mode of travel, it can also increase the reach and flexibility of transit’s fixed-route, fixed-schedule service (Hall). These findings suggest that Uber’s entry increases public transit use for the average transit agency and that the effect grows over time (Hall). There is disagreement over the effect of TNC’s on transit ridership. Some authors argue that TNC’s are likely to increase transit ridership by providing first and last-mile connectivity, providing service at locations and times (such as late at night) when there is less transit service provided, or by reducing car ownership (Feigon 2016; Feigon 2018), while other studies show that TNC users are likely to switch from transit, reducing ridership (Henao). Both may be true to varying degrees. A survey of TNC users in seven US cities finds that TNC’s are associated with a 6% decrease in bus trips, a 3% decrease in light rail trips, and a 3% increase in commuter rail trips (Clewlow).

TNC users were asked which transportation alternatives they would have used for the trips that they currently make using Uber and Lyft. Based on frequency of ride-hailing use weighted data, a majority (61%) of trips would have not been made at all, or by walking, biking, or transit. 39% of trips would have been made by car (drive alone, carpool, or taxi). Using data unweighted by frequency of ride-hailing use, 49% of ride-hailing trips were likely to have not been made at all, or by walking, biking, or transit.
Directionally, this new evidence of mode substitution suggests that ride-hailing is likely adding vehicle miles traveled to transportation systems in major cities. The 49% to 61% of ride-hailing trips that would have not been made at all, or by walking, biking, or transit, are adding vehicles to the road.

In addition, depending the volume of dead heading miles associated with ride-hailing trips (miles traveled without a passenger, which have previously estimated to be 20% to 50%), the VMT associated with a ride-hailing trip is potentially higher than a trip taken in a personal vehicle. While this data provides initial insights into the travel behavior changes associated with ride-hailing, it is still limited in that it does not provide a complete picture of individual travelers’ trip generating activities, the modes they used before ride-hailing services, and the potentially new patterns of behavior that have since emerged. Further research in this area is needed to help cities and transportation planners make critical policy decisions about how we allocate public space.

Figure 10: Changes in transit use, biking and walking after adoption of ride-hailing services (Clewlow)
Recent research of New York City data also finds that travel demand growth has shifted away from public transit services towards ride-hailing services (Schaller). While many suggest that ride-hailing can be complementary to public transit, current evidence suggests that ride-hailing is pulling more people away from public transit in cities rather than adding riders (Clewlow).

On a 2017 survey conducted of TNC users, most respondents indicated that there was no change in their transit use regardless of them using a TNC or public transit. However, based on the results of those who did change their behavior, they found that shared mobility likely attracts Americans in major cities away from bus services and light rail (6% and 3% net reduction in use, respectively), and may serve as a complementary mode for commuter rail (3% net increase in use) (Clewlow). Of the reasons why commuters would substitute TNC’s for public transit, the main reasons were service is too slow, there are not enough stations and travel time. The reasons that least affected their substitution were buses or trains are too crowded, safety concerns and transit vehicle cleanliness. Substitutions are being driven by internal factors within the transportation agencies. These factors are mainly part of the operations of each transit agency.
Many Employers Have Left Los Angeles County

A major reason for transit’s decline has been the dispersion of jobs from concentrated job centers to distribution across the urban landscape. Many of the large employers that were located within Los Angeles County have moved to surrounding counties or out of state. For example, Toyota which left Torrance moved its U.S. headquarters along with 3,000 jobs to Dallas in 2018 (Donlon). Also having left for Dallas is Jacobs Engineering Group, $6.3 billion firm formerly based in Pasadena. Nestle USA also moved its headquarters from Glendale, a suburb just miles from downtown Los Angeles, to Rosslyn, Va., near Washington, D.C., and took 1,200 California jobs with it (Donlon). A study estimates that 1,800 relocation or "disinvestment events" occurred in 2016, setting a record yearly high going back to 2008 (Hethcock). About 13,000 companies left the state during that nine-year period.

In addition, the passing of proposition 30 in 2012 triggered $6 billion in new annual taxes pushed even more companies to leave California for greater opportunities in Arizona and Nevada. Kubota Tractor Corp. and Kubota Credit Corp., the company’s
financing arm, also moved their headquarters from Torrance to Grapevine, Texas in 2017. Texas held the No. 1 rank for attracting California companies and was followed by Arizona, Tennessee, Colorado, and Nevada. At least 22 California counties suffered losses, with San Francisco losing the most followed by Los Angeles (Blankley).

Many people assume that transit ridership is heavily influenced by population density. But when comparing urban areas, residential densities have only a weak influence on per capita ridership or transit’s share of commuting. The Los Angeles urban area, for example, is more than twice as dense as the Seattle urban area, yet per capita transit ridership in Seattle is 30% greater than in Los Angeles (O’Toole).

**Changes in Demographics**

A 2017 study concluded that the aging Baby Boomer generation is reaching an age where they travel fewer times per day (Driscoll). The Millennial Generation is now the largest single age-based component of the U.S. population and will get proportionately larger. As of 2010, there were one million more Millennials than Baby Boomers; by 2030, it is forecast that there will be 22 million more Millennials than Baby Boomers. This pattern of demographic shift over time is important for transit policy makers for two reasons: 1. The Millennial cohort group is the largest and its dominance will increase over the next two decades, and; 2. This generation has current patterns of transit use that are quite positive.

Older people are traditionally a reliable pool of bus riders. But baby boomers aging into retirement now are the first generation to have spent their entire lives in a world dominated by cars. Unlike their parents, baby boomers were never transit riders. They do not remember riding the streetcar. They do not have muscle memory of what it
is like to take the bus. The few who did ride the bus to and from work will no longer be dependent on the transit system to get around.

**Bikeshare Programs**

Bikeshare programs has been shown to reduce the number of trips taken on public transit. A 2018 study concluded that the bikesharing systems in New York City do in fact cause a decrease in bus ridership (Campbell). Their results indicated that every thousand bikesharing docks along a bus route is associated with a 1.7% to 2.42% fall in daily unlinked bus trips on routes in Manhattan and Brooklyn. Although the magnitude of the reduction is a small proportion of total bus trips, these findings indicate that either a large proportion of overall bikeshare members are substituting bikesharing for bus trips or that bikesharing may have impacted the travel behavior of non-members, such as private bicyclists. Understanding how bikesharing and public transit systems are interrelated is vital for planning a mutually reinforcing sustainable transport network (Campbell).

**Telecommuting**

Some transit ridership losses could be the result of people working from home. One survey found that 37% of workers say they telecommuted in 2015, up from 32% in 2006 and 9% in 1995 (Jones). This affects all modes of transportation, not just public transportation, but the incentives for working from home may be greatest in major urban areas where transit mode commuting shares are the largest. According to Governing magazine, data from the Census Bureau's American Community Survey showed that in 2017 for the first time the number of people who regularly work from home (7.9 million) exceeded riders of public transit systems (7.6 million). This agrees with a separate Census report that showed the numbers of people who worked from home at least one
day a week rose 4.2 million between 1997 and 2010 (Berr). As telecommuting grows in popularity and fewer riders use public transportation networks, it is placing financial pressure on the taxpayer-funded systems that are struggling to attract riders around the country.

**Strong Economy**

Research has also shown that when the economy is doing well ridership tends to dip. The economy has been strong over the past few years, with employment growth outpacing income growth. Income growth could lead to increased car ownership and decreased transit ridership. APTA’s 2007 “A Profile of Public Transportation Passenger Demographics and Travel Characteristics Reported in On-Board Surveys” shows that persons from households earning under $50,000 (nearly the median household income in 2007) make up 65.7% of transit passengers in the U.S. (APTA, 2007). Additionally, persons from households earning under $25,000 make up 34.9% of transit riders but make up less than 13% of total population (APTA, 2007). Populations that are more affluent demand public transportation less since higher income allows for provision of private transportation.

A study conducted of the Dallas Area Rapid Transit (DART) showed a significant positive correlation between car trips, gas prices, and poverty with transit ridership (Daqrouq). Several variables had a significant negative correlation with transit ridership, including income, unemployment, and weather-related variables. Although, compared to Los Angeles, Dallas is a smaller metropolitan area, their residents commuting behavior can be compared due to their urban sprawl. The study also showed that poverty has a positive correlation with transit ridership meaning that as poverty increases, ridership
increases. This finding suggests that poor individuals are most likely to choose public transportation for access to employment and other household necessities in an urban setting such as the study area. This proves that as individual income increases, their demand for public transit tends to decrease. The Los Angeles County region has seen a healthy economy for the past few years which allows residents to find better employment opportunities, therefore being able to afford private transportation.

Research shows that the decrease in public transit ridership can be due to a combination of various factors. There is not a single cause to ridership declines in a metropolitan region since these areas are so dynamic. Its residents are always changing and economies fluctuating which in turn have positive and negative effects on transit ridership. Which is why is it imperative that transit agencies have a good understanding of the factors affecting their unique ridership patterns to help mitigate drops in ridership.

The possible causes of ridership declines discussed in this project are only a few of the factors that may be affecting Metro’s ridership. Due to time constraints, only a few possible causes were discussed. There is a wide range of factors that may be affecting Metro’s ridership. Other factors such as bus and train schedule reliability, safety, commute time and transfer issues may also be playing a part in reducing Metro’s ridership. A more robust study of these factors may be beneficial to Metro. Honing into the specific factors affecting Metro’s ridership will allow them to be proactive for future ridership fluctuations.
CHAPTER 5: RECOMMENDATIONS

At a time when competition from ride-hailing services, bikes and telecommuting, and personal vehicles is increasingly threatening public transportation ridership, it is imperative that Metro be willing to experiment with new ideas to try and increase their ridership. Metro needs to be innovative and have an out-of-the-box mentality when it comes to programs and marketing campaigns. Programs and marketing campaigns should be done with specific goals and target audiences in mind. The following recommendations are based off proven programs that have been implemented at other transit agencies and cities and may help Metro increase ridership.

Target single occupancy commuters

In a 2017 survey by staffing firm Robert Half, it was determined that the average Los Angeles driver spends 53.68 minutes commuting to and from their worksite each day which ranks 8th worst in the nation. In addition, the survey concluded that Los Angeles ranks 1st in the nation for the most stressful commute for professionals.

![Figure 12: Mean commute time (one way) for Los Angeles County (U.S. Census)](image-url)
These survey results indicate that while more residents are purchasing vehicles, driving to work is a daunting and stressful task. Metro should develop marketing campaigns targeted at county drivers. County drivers are experiencing a great deal of stress commuting to work, marketing campaigns should focus on the stress relieving benefits of commuting via public transit. Marketing campaigns should mention the health risks of continuous stress on the human body and the toll that it takes.

Campaigns targeting drivers should be shown along Los Angeles County freeway billboards. A 2017 study conducted by Nielsen showed that more than 60%, of more than 4,000 people surveyed, believe billboards are a good way to learn about new businesses, as wells as sales and events. The study also reported that a majority of those surveyed believe billboards stand out more than ads in newspapers, online or on the radio (Nielsen). Since most of the freeways are congested, drivers become a captive audience and the billboards are a great avenue to convey the message that riding public transit is beneficial to their health.

Gas station pump screens can also be another effective way to target drivers. Metro can produce a short 30 second video highlighting the benefits of riding public transit over driving which can be shown on the gas pump screens. Again, these drivers become a captive audience while they wait to fill their gas tanks, which creates an opportunity for Metro to convey a message. This message can focus on the cost reducing benefits of commuting to work via public transit as opposed to driving.

Radio advertisements can also be another effective way to target drivers. A 2015 study conducted by Edison Research concluded that 9 in 10 commuters listen to traditional AM/FM radio while in their car on the way to work. This creates an
opportunity for Metro to directly advertise to commuters who spend a great deal of time traveling to and from work each day. Radio commercials focusing on the benefits riding Metro as opposed to commuting alone can be the most effective.

In addition, the Los Angeles region consistently ranks among the top congested places in the country (Texas A&M). A marketing campaign villainizing the congestion can lead drivers to start taking the Metro system. Reminding drivers that are there are other options as opposed to driving to work can motivate them to start riding transit.

**Free transit for a day or week**

According to the U.S. Census Bureau, the average American spends 25.9 minutes a day traveling to work one way which adds up to just over four hours every week spent in transit for work (Hess). They are spending around 15.9% of their typical budgets on transportation costs, according to the Bureau of Labor Statistics, and married couples with children spend closer to 17.1% (Hess). For these reasons, many advocates are asking for free public transit. There are already many cities around the world who offer free public transit, with many of them in Europe. But there are a few U.S. cities who have rolled out fare-free programs and they are having positive results.

For example, the city of Olympia in Washington state launched a the “Zero-Fare Demonstration Project” which will last for the next five years, at which point the city will re-evaluate the project’s impact. The program offers free bus, which previously cost $1.25 for a typical adult ride and $3 for an express bus from Lakewod to Tacoma. After just one month of the program, Olympia saw a 20% increase in ridership compared to the previous year — an equivalent of over 60,000 more riders (Hess). Similarly, in December of 2019, Kansas City, Mo., became the first large U.S. city to implement a universal,
systemwide fare-free scheme after a unanimous City Council vote. The city relied on a combination of public and private funds to make their “Zero Fare Transit” program a reality. The bus system previously cost travelers $1.50 per ride or $50 for a monthly pass.

The city of Sacramento also created a fare-free program for youth/students in grades K-12 with the local transit agency, SacRT. The transit agency has seen student ridership double since the program started in October 2019, as well as a 106% increase from January 2019 student ridership. Small-scale student transit programs at UC Davis and Sacramento State have also proved to be successful with over a 70% increase in student transit ridership (Randolph).

The increase in ridership among younger age groups is especially important, as research shows that if they use quality public transit from a young age, they are more likely to become life-long transit users (Randolph). Free or reduced-fare transit passes have the potential to increase transit ridership, enhance the mobility of disadvantaged groups, make it easier for children to go to school and participate in after-school activities, and reduce the environmental footprint of transportation.

Free transit programs may be cost prohibited for Metro but based on the results that Olympia and Sacramento received in terms of the ridership increase, it should be considered, at least for a short period. A free transit pilot programs can have the potential to entice non-riders to try riding the Metro system for a day, which may lead them to continue to ride. Metro may launch a pilot program to test the reaction of current riders and to analyze whether it increases ridership and if leads to new riders. This type of pilot program can be implemented as a promotional “Free Transit Day” or week. This trial
period will allow Metro to analyze the ridership gains and determine whether this type
program can be feasible long-term.

**Target the millennial generation with social media marketing**

One major factor influencing a person’s travel behavior is age. People of different
ages have different life priorities, work different amounts, and have different means of
transportation. People’s stage of life such as youth, working age, or retirement is
correlated not only with how much they travel, but by what mode they travel. According
to the National Household Travel Survey (NHTS), people aged 35–54 take more trips
than other age groups, especially older cohorts, for example. Additionally, younger
people tend to use transit at a higher rate than their older counterparts.

The 2009 NHTS results also show that people between the ages of 15 and 24 have
the highest propensity toward transit use (Figure 13). This young age group takes an
average of 2.9% of all their trips using transit, and the next youngest group (25–34) takes
an average of 2.6%. This is contrasted with older age cohorts, whose transit trip share
ranges between 1.3% and 2.0%. It makes practical sense that teenagers, college students,
and young professionals are more likely to use transit than older individuals. Young
people may be less able to afford private transportation, and more able to move afoot – a
requirement for most transit use – than those who are older and more financially
established.
Metro can target high school and college aged riders to try to retain them. Metro’s Universal College Student Transit Pass (U-Pass) which provides college students fare discounts has proven to be successful can lead to life-long riders. Increasing ridership among younger age groups is especially important, as research shows that if they use quality public transit from a young age, they are more likely to become life-long transit users (Randolph). Free or reduced-fare transit passes have the potential to increase transit ridership, enhance the mobility of disadvantaged groups, make it easier for children to go to school and participate in after-school activities, and reduce the environmental footprint of transportation. By developing marketing campaigns aimed at the younger riders can prove to be a good return on investment.

In focus groups and surveys, many student respondents used transit during school but anticipated reducing their use of transit after graduation (Fehr and Peers). There are certainly more college students who could be using transit – work towards capturing these potential customers by making college pass programs easier to obtain and better understood as part of campus life. It is critical that Metro try to retain these customers through their life transition into the workforce by extending their college-eligible benefit.
for their first-year post-graduation and expand the network of employers participating in pass programs.

Universities and colleges in this subregion and neighboring areas, are a major market for transit – including the campus staff. Like engaging major employers, connect with these schools to gather information about where students and staff are coming from and times when service is most likely needed. Evaluate the pass benefits and value to maximize ridership over revenue, investing in the future of these potential customers to retain them long-term.

Keeping young riders on the system may prove to be more important than converting non-riders. Marketing to these young riders in theory should be simpler since they are a captive audience on the Metro system already. Developing marketing campaigns on the Metro system in terms of posters on buses and rail cars can have a big impact since Metro knows that they are on their buses at least two times per day. This group of riders can also be targeted by promoting programs to them in and around schools and universities should give us the most advertising views.

Metro may try to attract younger Millennial riders by using their social media outlets. Utilizing social media accounts such as Facebook, Twitter and Instagram can be a powerful tool for Metro since this age group tend to receive most of their information from these sources. This is what the American Public Transportation Association (APTA) concluded in its 2014 report, "Millennials & Mobility: Understanding the Millennial Mindset." The study examined what is driving the millennial generation’s transportation choices, what will drive those choices in the future, and the opportunities for the transit industry to capitalize on those choices (Sneider).
In addition, research has shown that Millennials’ daily lives are less car-centered than those of older generations. In October 2014, the U.S. Public Interest Research Group (U.S. PIRG) Education Fund concluded in its "Millennials in Motion" report that millennials’ shift away from driving cars over the past 10 years is likely to continue. Census data indicate that the share of 16- to 24-year-olds who drive to work declined by 1.5 percentage points between 2006 and 2013, while the percentage of young people getting to work by public transportation, foot or bicycle increased (Sneider).

The U.S. PIRG report also states that driver’s licensing among young people has continued to decline. The percentage of high school seniors with driver’s licenses declined from 85% to 73% between 1996 and 2010, according to the AAA Foundation for Highway Safety, with federal data suggesting that the decline has continued since 2010. This can serve as a great opportunity for Metro to entice these young people to start riding their system. This age group has the potential to be life-long riders if they try the Metro system for the first time and realize that they it is a great way to commute without the hassle of owning a car and having to drive to places.

**Work with TNC’s instead of competing with them**

Instead of competing with TNC’s for riders, Metro can develop programs that will incentivize commuters to use TNC’s for their first/last mile. Having Metro work in conjunction with TNC’s to come up with a partnership in which TNC’s will offer transit riders with first and last-mile services can be a great combination of services for commuters. Metro may offer discounts to commuters who use TNC’s to get to a Metro station that is within 1-3-mile radius of them. Researchers believe that younger commuters are also taking greater advantage of new alternatives to the bus, like Uber and
Lyft or bike-sharing (Badger). These discounts can be targeted at this younger commuter who will be more likely to use such subsidy.

There are already pilot programs in place which are testing the viability of such partnerships. For example, Metrolink riders traveling to Ontario International Airport (ONT) now have a new mobility option with sponsored Lyft rides from four Metrolink stations and Omnitrans transit centers thanks to a partnership with the San Bernardino County Transportation Authority (SBCTA).

The program covers up to $35 off each Lyft ride connecting ONT with one of the Metrolink stations at Montclair, Upland, Rancho Cucamonga, and Ontario-East. SBCTA is funding the $396,000 pilot program to increase public transportation ridership servicing ONT. Through this partnership, travelers and workers alike have a convenient, reliable transportation option to get to and from the airport without needing to own or rent a car or worry about parking.

In addition, the Des Moines Area Regional Transit Authority (DART) has developed Flex Connect which is a new on-demand service they are testing that connects riders in the Flex Connect zone to DART buses. With Flex Connect, riders in the zone can book an Uber, Yellow Cab Co. taxi or a DART accessible vehicle to take them to and from one of three transfer points. Flex Connect is free for the duration of the pilot program. Riders pay regular fare when they connect to a DART route.

**Work with employers to provide incentives for riding public transit**

A 2017 study looked at the extent to which transport benefits to employees – including public transport-related, private transport-related and benefits for walking and cycling – promote changes in commuters’ modal split. This showed that commuter
benefits play a significant role in explaining observed travel patterns (Bueno). Benefit programs that pay for auto expenses (e.g. toll payments, mileage reimbursement, free parking) are negatively correlated with transit, biking, and walking, while employer-funded benefit programs for transit passes and bike reimbursements increase their respective mode shares (Bueno). This result confirms that promoting these types of measures is an effective policy to encourage the use of public transport modes, thus increasing efficiency and sustainability in daily mobility patterns.

Metro can partner with employers around the county to help them set up commuter benefit, transit discounts or reward programs for employees who ride transit. This can be on the form of commuter benefits such as transit pass discounts or reward points that may be redeemed at local restaurants or shops. Commuter benefits are a simple way for both employers and employees to save money. They are put in place to encourage the use of public transportation; these programs allow for employers and employees to use pre-tax dollars to pay for a variety of commuting expenses. The IRS allows employers to exclude (from income tax withholding and FICA taxes) the value of transportation benefits provided to employees for qualified transportation costs. If these expenses qualify, they become pre-tax dollars to the employee (Murray). A combination of incentives and disincentives to get people onto public transit may be the best strategy. Employers can also offer gift cards or paid days off for employees who take public transit for a minimum number of workdays. These types of rewards may encourage non-transit users to start riding public transit.

A 2016 survey of 76 U.S. and Canadian employers conducted by Best Workplaces for Commuters, a public-private partnership that promotes transit benefits,
and the Association for Commuter Transportation found that: 69% of employers offering employee transit benefit programs reduced their need for parking spaces, 59% improved community relations and 53% reduced local traffic congestion. These types of incentive are a positive for both the employees and employers.

**Target low-income individuals**

According to Data USA, about 17% of L.A. County residents live below the poverty level. This translates into about 1.69 million residents who live within the county. These are all people who are having a hard time paying their bills and rents. These residents can benefit from riding public transit since it saves them money. Marketing can be targeted at these residents. Focused marketing in low-income areas can help increase ridership for these individuals.

Marketing should be focused around the money savings associated with riding public transit. Informing low-income residents about discounted programs that Metro offers will get them to take advantage the discounts available. These marketing efforts can be concentrated in and around job placement agencies and government assistance offices. Programs focusing on low-income individuals in the county may results in positive ridership results. Targeting low-income areas within the Los Angeles County may be the most effective way to increase ridership since these residents are the most likely to ride the system. Any transit programs developed by MCS should take the most vulnerable county residents into consideration.
CHAPTER 6: DISCUSSION

As discussed in this project, there are a variety of possible factors which may affect transit ridership. These possible causes range from commuter preferences to changes in demographics. Metro needs to realize that technology also has and will continue to play a major part in commuting behavior. Technology allows for employees and students be conduct their work and projects from anywhere and this is becoming more common in today’s world.

At the time of this project, the world and the country are going through an unprecedented time. Life for millions of employees has changed within a matter of months. The Coronavirus Disease 2019 (Covid-19) has forced many employers to allow their employees to telecommute from home. Due to this, transportation agency ridership is severely being impacted. Employees no longer need to commute to and from work. The commute for millions of Americans in nonexistent. This will undoubtedly have a long-lasting effect on the way that both employers and employees conduct their business. Employers will realize that they may not need such a big office space when they can have their employees work from home. They will save on lease and rent fees which will mean less overhead for business owners. Employees will realize that they can perform if not all, most of their job duties from home. They will no longer have to sit in traffic to get to and from work. The time savings of not having to commute will allow employees to spend more time with their family and have a better quality of life. This will have a permanent effect on Metro’s ridership.

Moving forward, Metro will need to come to the realization that their ridership may never be the same. Covid-19 has reset the way of life for every commuter. Currently,
students will not have to attend classes in person, many grade schools and universities are conducting their classes online. Students do not have to commute to school, which has dramatically impacted Metro’s ridership. This will be the way of life for commuters for the foreseeable future. Metro will need to adapt to this, or else it will have a difficult time trying to increase ridership. It will take a long time before they regain some of the riders that they have lost in the last couple of months and the possibility of them never riding Metro again also exist.

Covid-19 has also proven that commuting can be optional. It is reaffirming that advancements in technology has allowed many jobs to be performed remotely from anywhere in the world. This has changed the commute landscape for many employees in the past decade. Covid-19 has sped up the integration of telecommuting for many companies. Many companies who had been hesitant to allow their employees to work from home have been forced due to safety issues. To decrease the risk of the spread of Covid-19, employers have allowed their employees to telecommute, which will have an everlasting effect on their travel behaviors. It is difficult to predict the long-term outcome that Covid-19 will have on Metro’s ridership. But there are lessons to be learned during this trying time. Metro may need to familiarize itself to the ever-changing technological landscape that affects the way employees work today. As Covid-19 has proven, work can be done from home and will most like continue to be done that way in the future.
CHAPTER 7: CONCLUSION

As research has shown, not one cause alone has led to Metro’s ridership decline, it has been a combination of various factors. Therefore, there will not be a single solution which will remedy this issue. It will require a combination of various programs and marketing efforts on the part of Metro to help reverse this trend. The best way for Metro to increase ridership would be to use a combination of different techniques of promotions and incentives to get residents to ride their system.

Los Angeles County residents who rarely ride transit represent great untapped pool of potential riders. Car ownership is outside the control of transit agencies, and increased vehicle access for lower-income residents has positive economic and social benefits. Instead of trying to recapture lost regular riders, focusing on expanding the pool of “choice riders” could boost ridership significantly. If every fourth person in Southern California who rarely or never rides transit replaced one driving trip with one transit trip every two weeks, annual ridership would grow by 96 million. This would take creative and innovative programs to get these residents to start riding Metro.

Metro would benefit from further research of their specific ridership declines. A thorough analysis of Metro’s demographics, technologies affecting transit demands and current patrons would be beneficial to fully understand why their ridership has continued to decline. With a more robust and complete data set on why Metro’s riders are preferring transit alternatives, they will be better prepared to implement proper programs to mitigate future changes in ridership levels. While there were limitations to this report such as specific Metro rider commute preferences, with ample time and resources, they may further investigate that data. Future direction for such analysis should focus on the
region-specific commute trends and preferences. Metro offers a great service that not only benefits the city of Los Angeles but the entire region by reducing congestion and stress levels for commuters.

In addition, a thorough analysis of why Los Angeles County residents would much rather drive than take public transit would be beneficial to help Metro develop future programs that will target these potential riders. More research that will help Metro better understand county residents’ commuting behavior and preferences will allow them to determine the best course of action needed to get them to start riding their system. Such analysis would require a longer timeline that would allow for a broader data range to get a more complete data set to determine causes for this ridership decline.

This type of research would not only benefit Metro but all the other transit operators who serve the region. This type of research could be shared in assist the other operators develop proper programs to help them increase their respective ridership. With the proper pass programs and marketing campaigns Metro can increase their ridership.

But Metro is facing uphill battle. It not only has to compete with the car, it now has to battle the effects that technology is having on commuter behavior. Technology in not only affecting the way employees and students work and study but most importantly for Metro, the need for them to commute.
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Service Cuts or Emerging Modes?


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Texas A & M Transportation Institute, Urban Mobility Scorecard,


### Table 1: Metro Systemwide Ridership (Bus and Rail) Between 2014-2019 (Metro)

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<td>1,384,995</td>
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<td>Change Between 2014 and 2019</td>
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<td>-6%</td>
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### Table 2: Metro Bus Systemwide Ridership Between 2014-2019 (Metro)

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### Table 3: Orange Line (Bus) Ridership Between 2014-2019 (Metro)

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<td>12,698</td>
<td>13,768</td>
<td>14,539</td>
<td>15,813</td>
<td>16,723</td>
</tr>
<tr>
<td>Average Sunday and Holiday Boardings</td>
<td>10,212</td>
<td>10,551</td>
<td>11,136</td>
<td>12,029</td>
<td>12,731</td>
<td>13,209</td>
</tr>
<tr>
<td>Total Boardings</td>
<td>6,714,108</td>
<td>7,008,626</td>
<td>7,373,450</td>
<td>7,754,858</td>
<td>8,422,122</td>
<td>8,742,210</td>
</tr>
<tr>
<td>Change in Ridership</td>
<td>-4%</td>
<td>-5%</td>
<td>-5%</td>
<td>-8%</td>
<td>-4%</td>
<td>-4%</td>
</tr>
<tr>
<td>Change Between 2014 and 2019</td>
<td>-23%</td>
<td>-10%</td>
<td>-12%</td>
<td>-11%</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

### Table 4: Silver Line (Bus) Ridership Between 2014-2019 (Metro)

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>Average Weekday Boardings</td>
<td>17,558</td>
<td>15,059</td>
<td>14,905</td>
<td>15,478</td>
<td>14,743</td>
<td>14,173</td>
</tr>
<tr>
<td>Average Saturday Boardings</td>
<td>6,433</td>
<td>6,346</td>
<td>5,959</td>
<td>5,825</td>
<td>6,009</td>
<td>5,967</td>
</tr>
<tr>
<td>Average Sunday and Holiday Boardings</td>
<td>5,937</td>
<td>5,127</td>
<td>4,543</td>
<td>4,386</td>
<td>4,378</td>
<td>4,390</td>
</tr>
<tr>
<td>Total Boardings</td>
<td>5,209,169</td>
<td>4,467,409</td>
<td>4,363,651</td>
<td>4,509,983</td>
<td>4,334,742</td>
<td>4,178,964</td>
</tr>
<tr>
<td>Change in Ridership</td>
<td>17%</td>
<td>2%</td>
<td>-3%</td>
<td>4%</td>
<td>4%</td>
<td>-</td>
</tr>
<tr>
<td>Change Between 2014 and 2019</td>
<td>25%</td>
<td>-1%</td>
<td>1%</td>
<td>8%</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Table 5: Red/Purple Line Ridership (Metro)

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Average Weekday Boardings</td>
<td>133,413</td>
<td>137,142</td>
<td>142,074</td>
<td>143,422</td>
<td>143,891</td>
<td>152,331</td>
</tr>
<tr>
<td>Average Saturday Boardings</td>
<td>77,070</td>
<td>81,837</td>
<td>94,392</td>
<td>89,177</td>
<td>94,689</td>
<td>102,437</td>
</tr>
<tr>
<td>Average Sunday and Holiday Boardings</td>
<td>64,612</td>
<td>70,250</td>
<td>65,525</td>
<td>74,169</td>
<td>80,887</td>
<td>77,138</td>
</tr>
<tr>
<td>Total Boardings</td>
<td>41,775,490</td>
<td>43,301,200</td>
<td>44,861,106</td>
<td>45,629,352</td>
<td>46,356,726</td>
<td>48,645,206</td>
</tr>
<tr>
<td>Change in Ridership</td>
<td>-4%</td>
<td>-3%</td>
<td>-2%</td>
<td>-2%</td>
<td>-5%</td>
<td>-</td>
</tr>
<tr>
<td>Change in Previous 3 Years (2016-2019)</td>
<td>-7%</td>
<td>-5%</td>
<td>-3%</td>
<td>-6%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Change Between 2014 and 2019</td>
<td>-14%</td>
<td>-</td>
<td>-</td>
<td>-</td>
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</tr>
</tbody>
</table>

Table 6: Blue Line Ridership Between 2014-2019 (Metro)

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</tr>
</thead>
<tbody>
<tr>
<td>Average Weekday Boardings</td>
<td>27,531</td>
<td>64,648</td>
<td>72,139</td>
<td>78,754</td>
<td>76,868</td>
<td>85,030</td>
</tr>
<tr>
<td>Average Saturday Boardings</td>
<td>33,774</td>
<td>32,075</td>
<td>40,016</td>
<td>48,865</td>
<td>49,239</td>
<td>56,261</td>
</tr>
<tr>
<td>Average Sunday and Holiday Boardings</td>
<td>15,529</td>
<td>29,013</td>
<td>33,552</td>
<td>39,946</td>
<td>39,101</td>
<td>46,005</td>
</tr>
<tr>
<td>Total Boardings</td>
<td>8,905,140</td>
<td>19,836,016</td>
<td>22,383,828</td>
<td>24,988,825</td>
<td>24,457,253</td>
<td>27,276,468</td>
</tr>
<tr>
<td>Change in Ridership</td>
<td>-55%</td>
<td>-11%</td>
<td>-10%</td>
<td>2%</td>
<td>-10%</td>
<td>-</td>
</tr>
<tr>
<td>Change in Previous 3 Years (2016-2019)</td>
<td>-60%</td>
<td>-21%</td>
<td>-8%</td>
<td>-8%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Change Between 2014 and 2019</td>
<td>-67%</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>-</td>
</tr>
</tbody>
</table>

Table 7: Expo Line Ridership Between 2014-2019 (Metro)

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</tr>
</thead>
<tbody>
<tr>
<td>Average Weekday Boardings</td>
<td>58,002</td>
<td>61,024</td>
<td>59,659</td>
<td>39,793</td>
<td>30,264</td>
<td>30,192</td>
</tr>
<tr>
<td>Average Saturday Boardings</td>
<td>33,774</td>
<td>32,075</td>
<td>35,688</td>
<td>29,757</td>
<td>22,078</td>
<td>23,147</td>
</tr>
<tr>
<td>Average Sunday and Holiday Boardings</td>
<td>29,695</td>
<td>32,966</td>
<td>34,255</td>
<td>28,485</td>
<td>16,570</td>
<td>15,783</td>
</tr>
<tr>
<td>Total Boardings</td>
<td>18,269,068</td>
<td>19,413,884</td>
<td>19,030,229</td>
<td>13,376,428</td>
<td>9,834,541</td>
<td>9,818,027</td>
</tr>
<tr>
<td>Change in Ridership</td>
<td>-6%</td>
<td>2%</td>
<td>42%</td>
<td>36%</td>
<td>0%</td>
<td>-</td>
</tr>
<tr>
<td>Change in Previous 3 Years (2016-2019)</td>
<td>-4%</td>
<td>45%</td>
<td>94%</td>
<td>36%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Change Between 2014 and 2019</td>
<td>86%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 8: Green Line Ridership Between 2014-2019 (Metro)

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Average Weekday Boardings</td>
<td>29,287</td>
<td>30,839</td>
<td>32,563</td>
<td>35,950</td>
<td>39,177</td>
<td>41,481</td>
</tr>
<tr>
<td>Average Saturday Boardings</td>
<td>33,774</td>
<td>32,075</td>
<td>35,688</td>
<td>29,757</td>
<td>22,078</td>
<td>23,147</td>
</tr>
<tr>
<td>Average Sunday and Holiday Boardings</td>
<td>13,851</td>
<td>13,588</td>
<td>13,561</td>
<td>14,816</td>
<td>16,392</td>
<td>18,562</td>
</tr>
<tr>
<td>Total Boardings</td>
<td>9,131,806</td>
<td>9,510,211</td>
<td>9,961,716</td>
<td>10,980,323</td>
<td>12,058,903</td>
<td>12,967,235</td>
</tr>
<tr>
<td>Change in Ridership</td>
<td>-4%</td>
<td>-5%</td>
<td>-9%</td>
<td>-9%</td>
<td>-7%</td>
<td>-</td>
</tr>
<tr>
<td>Change in Previous 3 Years (2016-2019)</td>
<td>-8%</td>
<td>-13%</td>
<td>-17%</td>
<td>-15%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Change Between 2014 and 2019</td>
<td>-30%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 9: Gold Line Ridership Between 2014-2019 (Metro)

<table>
<thead>
<tr>
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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Average Weekday Boardings</td>
<td>47,656</td>
<td>50,523</td>
<td>52,581</td>
<td>50,587</td>
<td>50,587</td>
<td>44,232</td>
</tr>
</tbody>
</table>
| Average Saturday Boardings| 29,318 | 31,280 | 32,595  | 34,314 | 29,503 | 28,989 |}

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