MEMORANDUM

TO: Los Angeles County Metropolitan Transportation Authority (LA Metro) and Measure M Independent Taxpayer Oversight Committee (MMITOC)

FROM: Zachary Meagor

DATE: December 12, 2024

SUBJECT:

A recommendation that the MMITOC allocates $215 million a year of Measure M funding (one quarter of annual Measure M tax revenue) from 2026 to 2040 and LA Metro gathers $4 billion in state and federal grant funding between 2026 and 2040 to fund and construct 7 miles of track for a new heavy rail transit line in the Vermont Corridor by 2049, which will improve public transportation connectivity and reliability for low income residents in South Los Angeles.

PROBLEM:

Access to reliable, cheap transportation remains an issue for low-income individuals in South Los Angeles. While LA Metro, the county's transportation agency, operates the busiest bus system in the United States, many residents complain about its low frequencies, slow travel time, and crime (Wachtel). Traffic and Los Angeles's infamous car dependency cause most residents to rely on private transportation by automobile. Around 12% of households in Los Angeles do not own any vehicles, and these households are more likely to be low-income (Vanderbilt University).

Owning and maintaining a vehicle represents a large financial burden on low-income people in Los Angeles. According to SmartFinancial.com, the average Californian spends $12,182 each year to own and operate a private vehicle. This yields a cost of $1,015 per month on fuel, maintenance, insurance, depreciation, and other expenses (Marticio). In South Los Angeles, for example, the neighborhood Florence-Graham has a median income of $57,698 (laalmanac.com). Assuming this person pays the average yearly cost of $12,182, their cost of owning a vehicle takes over 20% of their annual income. For reference, personal finance experts recommend that yearly transportation costs stay at or lower than 10% of take-home pay. By contrast, taking public transportation for daily travel costs much less. The maximum someone pays to use LA Metro is $5 a day or $18 a

week, as the system no longer charges someone once they take $5 worth of rides in a day or $18 worth of rides in a week. Therefore, a daily commuter on LA Metro could be spending $72 a month or $864 a year on transportation. This yields $11,318 in savings when compared to owning a private vehicle.

Ridership in the LA Metro transportation system suffers due to various service quality issues. The Southern California Public Radio estimates that 80.6% of the buses serving 170 bus lines arrive on time (LAist). However, Metro defines “on time” as including a four minute and 59 second grace period after the scheduled time of arrival. Some lines are worse than others, with the 720 bus line running from Santa Monica to Commerce leaving late 30% of the time. Most Metro buses use car travel lanes and get stuck in traffic. However, the B subway line departs from stations on time with a success rate of 99.5% (LAist). This shows that rail lines are more effective at ensuring correct departure times. Transit lateness is an issue because low-income residents may arrive late to work or school, potentially hampering daily productivity.

In addition, while Metro has improved bus frequencies, many lines still suffer long wait times between buses. The fastest frequencies for bus lines are ten to fifteen minutes on especially busy lines. Some lines come as infrequently as every 30 minutes or every hour (Smith). The bus lines 754 and 204 which run through the Vermont Transit corridor have 30 minute frequencies in the evening (LA Metro). This contrasts with the light rail and subway lines, which arrive every eight to twelve minutes. An adequate transportation system allows residents to show up to their bus stop or transit station and not worry about when their ride is arriving. In busy transit corridors, residents should be able to get to their station and wait little time before a bus or train arrives. This allows more flexibility in the lives of low-income residents because they need not adjust their schedules to get to their transit stop at a specific time.

CONTEXT:

People need transportation to complete daily tasks, travel to work or school, visit friends and family, and do many other things. Transportation is so embedded in everyone's daily lives that people may forget about members of their community who do not have sufficient access. This issue is important because it affects economic mobility throughout the country's urban areas. The people most dependent on transportation are those who do not own private vehicles. Only 61% of households in the lowest quintile income level own a vehicle (Sen). This compares to 90% of households in the highest quintile income level owning a vehicle (Appendix A). When governments fund public transportation, they are granting transportation access to many low-income residents. If policymakers were to assume that every household owns a car, an exclusively automobile-centric transportation system would deny mobility for around 2 out of 5 people in the poorest fifth of households. In addition, for the poorest 10% of American households who own automobiles, the portion of after-tax income going to vehicle usage is 22.6% (Appendix B). This constitutes a far higher portion of their personal income than more affluent households.

When people have cheap, reliable transportation, they can more easily apply to jobs, access services, and travel to work or school. Scholars have proven links between access to reliable transportation and various indicators of economic mobility. Research shows a negative relationship between distance from transit and employment (Urban Institute). People are more likely to be unemployed in poorly served neighborhoods. In addition, a Harvard study found that children raised by workers with daily commutes shorter than 15 minutes earn higher incomes in adulthood (Chetty and Hendren). Therefore, improving transit access and service quality supports economic mobility for low-income youth. Lastly, operating and maintaining public transportation systems creates high-wage, blue-collar jobs. For example, subway operators make an average hourly wage of $33.38 in the US, which is 50% higher than the median wage for all jobs in the United States (Sen). Low-income workers benefit from stable, relatively high-paying job opportunities in government agencies.

In disenfranchised communities such as South Los Angeles, residents would greatly benefit from improved public transportation. People could avoid traffic congestion, thereby gaining more time to work, study, spend time with loved ones, or participate in leisure activities. In addition, the county's job centers would be easily connected to each other through improved transit routes. This could help residents travel to job centers previously accessible by automobile only. Residents could also travel further to job centers which are currently too distant to viably commute.

Another reason that improved transportation is important is that it is significantly cheaper than owning a private vehicle. People who currently bleed a large portion of their income toward their car, such as those in the poorest income decile, can switch to public transportation to reduce their gas and maintenance costs. Low-income teenagers, senior citizens, and the disabled who cannot or choose not to own a car will also be able to travel where they need to more easily.

Lastly, more efficient public transportation networks will improve social equity because all people, regardless of socioeconomic status, can use public transportation effectively. The stigma around “riding the bus” assumes that public transportation is only for people who do not have any other choice (Ecolane). Once all citizens recognize that public transportation systems such as LA Metro provide high-quality, affordable service, people of all backgrounds will begin to use public transportation. As more and more residents utilize public transportation, it will lose its stigma as a service for poor people and become a service useful for all. This would produce a virtuous cycle in which more people switch to public transportation for daily travel needs, reducing the chance that low-income citizens are shunned for relying on public transportation.

ALTERNATIVES:

Option 1 - Status Quo:

Right now, Metro operates 120 bus routes, four light rail lines, and 2 heavy rail (subway) lines (LA Metro). In the year 2023, weekday daily ridership was 882,435 and the total annual ridership was 288,088,023 (LA Metro). Around 70% of this ridership consists of bus trips, so buses remain the backbone of Los Angeles's transportation network (LA Metro). The Vermont Corridor in the city of Los Angeles is the second-busiest bus corridor in the system, with 45,000 daily boardings (LA Metro). The bus lines 204 and 754 run along Vermont Avenue from East Hollywood south to West Athens. This corridor is densely populated and surrounding neighborhoods are low-income, especially those south of the I-10 freeway.

Advantages

- *Ease of Operations*: LA Metro continues its normal, day-to-day operations of the 204 and 754 bus routes. There are few irregular challenges to the (relatively) smooth service that residents expect.
- *No Additional Costs*: No additional costs are incurred from attempting to upgrade the corridor in any way.

Disadvantages

- *Overcrowding and Traffic Congestion*: As an already dense corridor with room for even denser housing, Vermont Avenue could see housing construction in the near future. Neighborhood population growth could cause overcrowding in the buses. New residents may drive rather than take public transportation, further exacerbating traffic congestion in the area.
- *Inconsistent Service Quality*: As explained in the problem section, residents taking the bus suffer from potential delays, traffic congestion, and infrequent service, especially in the evening with 30 minute gaps between buses. This encourages low-income residents to switch to using a car if they can afford it.

Option 2 - Bus Rapid Transit

Bus rapid transit (BRT) is designed to have similar benefits as rail options at lower costs. BRT routes include dedicated bus-only lanes and prioritized traffic signaling so that buses do not have to maneuver through traffic to get between stops. They also have highly visible and more comfortable stations for passengers. Metro has completed a feasibility study for upgrading the Vermont corridor to bus rapid transit and plans to construct this new BRT route between Sunset Boulevard

and 120th street. The agency is hosting community input meetings in early December 2024 (LA Metro). This transformation is expected to finish between 2028 and 2030.

Advantages

- *Affordable Upgrade Option*: BRT does not require constructing a new right-of-way, instead utilizing the existing infrastructure by designating car-travel lanes as dedicated bus-only lanes. At the maximum estimated cost of $100 million a mile, BRT is still cheaper than both light and heavy rail (LA Metro).
- *Increased Ridership*: End-to-end dedicated bus lanes are estimated to increase daily ridership from 45,000 to between 63,850 and 74,380 (Wattenhofer). The higher quality service encourages people to ditch their cars for this easier form of transportation.

Disadvantages

- *Service Limitations*: Due to BRT not being fully grade-separated from car traffic, potential service issues such as traffic delays, accidents with cars, and road maintenance still occur.
- *Misallocation of Funds*: BRT is an impactful yet intermediary step between traditional bus routes and rail lines. Demand for high quality public transportation will only increase in the future. The opportunity cost of funding BRT rather than rail must be accounted for.

<u>Option 3 - Light Rail</u>

Light rail is partially grade separated rail rapid transit, which may run at street level, below street level, or elevated. Trains get signal priority when they run at the street level, but can still get stuck in traffic. In November 2016, Los Angeles voters passed Measure M to fund the implementation of BRT in the Vermont Transit Corridor. Measure M's expenditure plan will provide funds to convert the BRT service to light rail or heavy rail after 2067 (LA Metro). If ridership numbers on the BRT Vermont Corridor are lower than expected by 2067, then Measure M will fund the conversion to light rail.

Advantages

- *Service Quality*: Light rail, similar to heavy rail, has frequencies between 8 and 12 minutes. Trains are also more likely to be on time compared to buses.
- *Promotes Transit-Oriented Development*: High-density housing is urgently needed in Los Angeles to address the housing shortage. Dense housing

benefits rail rapid transit and vice versa. High population density around stations encourages ridership, and more people will benefit from the availability of the light rail.

- *Long Term Sustainability*: In densifying areas such as the Vermont Corridor, light rail has better potential for long term sustainability, although not to the extent as heavy rail. Light rail can operate at much greater capacities than BRT, allowing an increasing population to utilize the service.

Disadvantages

- *Variable Cost*: The price of light rail varies widely depending on how it is built in a certain segment (e.g. at street level/below/elevated). The cost per mile typically ranges between $100 million to $1 billion.
- *Similar Service Issues as BRT*: While light rail receives traffic signaling priority, it may get stuck in traffic during rush hour periods. Light rail also deals with the possibility of pedestrian injuries, car crashes, and road maintenance.

Option 4 - Heavy Rail (Subway)

Heavy Rail is fully grade separated and underground, running beneath streets and city infrastructure. Trains travel independently of traffic, allowing smooth and reliable transport between stations. If ridership numbers on the BRT Vermont Corridor continue growing by 2067, then Measure M will fund the conversion to heavy rail.

Advantages

- *Service Quality*: Heavy Rail operates uninterruptedly and at greater speeds than buses and light rail. Frequencies range between 8 and 12 minutes, which is faster than buses. Heavy Rail is also more likely to be on time, as the B Line running through Hollywood is 99.5% on time, for example.
- *Promotes Transit-Oriented Development*: Dense housing benefits rail rapid transit and vice versa. High population density around stations encourages ridership, and more people will benefit from the availability of the subway.
- *Long Term Sustainability*: In densifying areas such as the Vermont Corridor, heavy rail has better potential for long term sustainability. It can operate at much greater capacities than BRT, allowing an ever-increasing population to utilize the service.

Disadvantages

- *Highest Cost Option*: Heavy rail is the most expensive option to construct. Although Metro does not release average cost per mile numbers as they do for BRT, other subway expansion projects in Los Angeles have a cost of ~$1 billion per mile (Aragon).
- *Political Obstacles*: Measure M needs to be amended for Metro to expedite the funding of heavy rail before 2067. This is not possible until either MMITOC amends the expenditure plan for Measure M or Measure M is placed on the ballot for amendment in 2028.

RECOMMENDATION

Option 4 - Heavy Rail (Subway)

Based on the highest quality of service and long-term sustainability, heavy rail is the best public transportation upgrade for the Vermont Transit Corridor. Its advantages far outweigh the disadvantages, despite the high costs and political obstacles for approval.

The status quo is not acceptable because poor bus service quality harms economic opportunities for low income residents. The service is often late, has long frequencies, and suffers from traffic congestion. It is not a viable option that accounts for the population growth of the corridor and surrounding areas. Light rail is also a poor option because it is nearly as expensive as heavy rail while having significant drawbacks. It suffers from issues of traffic congestion, pedestrian injuries, car crashes, and road maintenance due to not being fully grade-separated. Heavy rail, on the other hand, runs completely independently of traffic, has the highest rate of arriving on schedule, and provides the shortest frequencies between arrivals. As a result, transit-oriented development is better suited around heavy rail transit stations.

It must be noted that Option 2 (BRT) is currently in the works. LA Metro has already scheduled community input meetings, and construction is expected to begin in 2025 or 2026. However, BRT represents a short term upgrade for the Vermont Transit corridor because Measure M will eventually fund either light or heavy rail in 2067. While BRT is a decent option with higher service quality than regular bus routes, its ridership limitations make it a poor choice for a densifying corridor in the long run.

In order to expedite the process of approving heavy rail for the Vermont Transit Corridor, Measure M's expenditure plan needs to be amended. MMITOC should amend the expenditure plan to allocate funds for heavy rail on an earlier timeline. Two of Measure M's goals are to "Expand the rail and rapid transit system; accelerate rail construction and build new rail lines" and "generate local economic benefits; increase personal quality time and overall quality of life." (LA Metro). These goals clearly align with the option of heavy rail since it offers the greatest local economic benefits. According to the Rebuild Socal Partnership, Measure M raises an annual revenue around $860 million. In addition, Measure M has strengthened Metro's service and project delivery, allowing the agency to access $3 billion in state and federal grants between 2018 and 2023 (LA Metro). This availability of funds suggests that Metro can afford to implement heavy rail in the

Vermont Transit Corridor. MMITOC should begin setting aside 25% of tax revenue from Measure M, or around $215 million a year, starting 2026 through 2040. The high costs of heavy rail requires funding from higher levels of government. Metro should aim to secure $3 billion from the aforementioned state and federal grants every five years from 2026 to 2040, with $1.33 billion allocated for the Vermont heavy rail project every five years. These funding mechanisms will raise $7.225 billion by 2040. Since heavy rail is estimated to cost around $1 billion per mile, LA Metro will have the funds to build about 7 miles of heavy rail. Construction begins several years after 2040, which chops off the expected upgrade to heavy rail by around 30 years from the expected start of construction in the 2070s.

In the meantime, BRT offers a decent upgrade for this high-ridership corridor. While funding is being raised and construction plans are being approved, residents will benefit from BRT for two decades before heavy rail gets built. In sum, heavy rail is the final upgrade which offers the best alternative to driving so that low-income residents can access efficient, reliable transportation to their destinations.

IMPLEMENTATION PLAN

December 2024: Metro hosts community input meetings regarding the conversion of local bus routes 204 and 754 to BRT.
January-December 2025: MMITOC amends Measure M's expenditure plan to fund the upgrade to heavy rail. From 2026 through 2040, $215 million (or one quarter) out of the $860 million annual tax revenue is set aside. By 2040, Metro possesses $3.225 billion in Measure M funding for heavy rail.
May-December 2025: Metro begins near-term improvements of the 204 and 754 bus routes. Construction of the BRT from Sunset Boulevard to 120th street begins.
August 2025: MMITOC reveals to the public the plan to amend Measure M's expenditure plan to fund the upgrade to heavy rail. Metro hosts a community input meeting to gauge citizens' interests and concerns regarding the upgrade. MMITOC implements reasonable recommendations from the public.
January 2026-December 2030: Metro applies for various state and federal grants to gather a total of $3 billion. Of this, $1.33 billion is set aside for the heavy rail project.
January-June 2028: The new Vermont Corridor BRT finishes construction. The first ridership studies are conducted one month after completion of the BRT.
January 2031-December 2035: Metro applies for various state and federal grants to gather a total of $3 billion. Of this, $1.33 billion is set aside for the heavy rail project.
June 2035: The second ridership studies are conducted for the Vermont Corridor BRT.
January 2036-December 2040: Metro applies for various state and federal grants to gather a total of $3 billion. Of this, $1.33 billion is set aside for the heavy rail project. After 15 years, Metro possesses a total of $4 billion in grant funding for the Vermont heavy rail upgrade.
June 2040: The last ridership studies are conducted for the Vermont Corridor BRT. Higher ridership than previous studies indicates that the implementation of heavy rail is viable.
December 2040: Metro hosts another community input meeting to remind citizens of the plan to construct heavy rail in the Vermont Corridor. Citizens share their interests, hopes, and concerns about the project.
January 2041-December 2043: Metro develops design and construction plans for heavy rail. Plans include station placement, alternative station placement, preliminary designs, and environmental review.
January-December 2044: Metro finalizes the final designs and station placements for the heavy rail. A final community input meeting allows citizens to express any additional comments before construction starts.
January 2045: Construction of 7 miles of track for the new heavy rail line begins.
January 2049: Construction of 7 miles of heavy rail completes. The Vermont Subway opens to the public.

February 2049: The first ridership study of the Vermont Subway is completed.
February 2050: The second ridership study of the Vermont Subway is completed. Greater ridership than the Vermont BRT and the first ridership study indicates the success of the heavy rail line.

ACTION BLOCK

____Accept- I will move towards implementing this recommendation.

____Revise this draft based on my notes and comments and return to me.

____Review it with the persons I have noted below and return the draft with revisions based on their comments.

____Please discuss with _____ regarding the recommendation and implementation plan to see if there are any changes worth considering.

____Reject- I appreciate your analysis but will move forward without further work on your part.

APPENDICES

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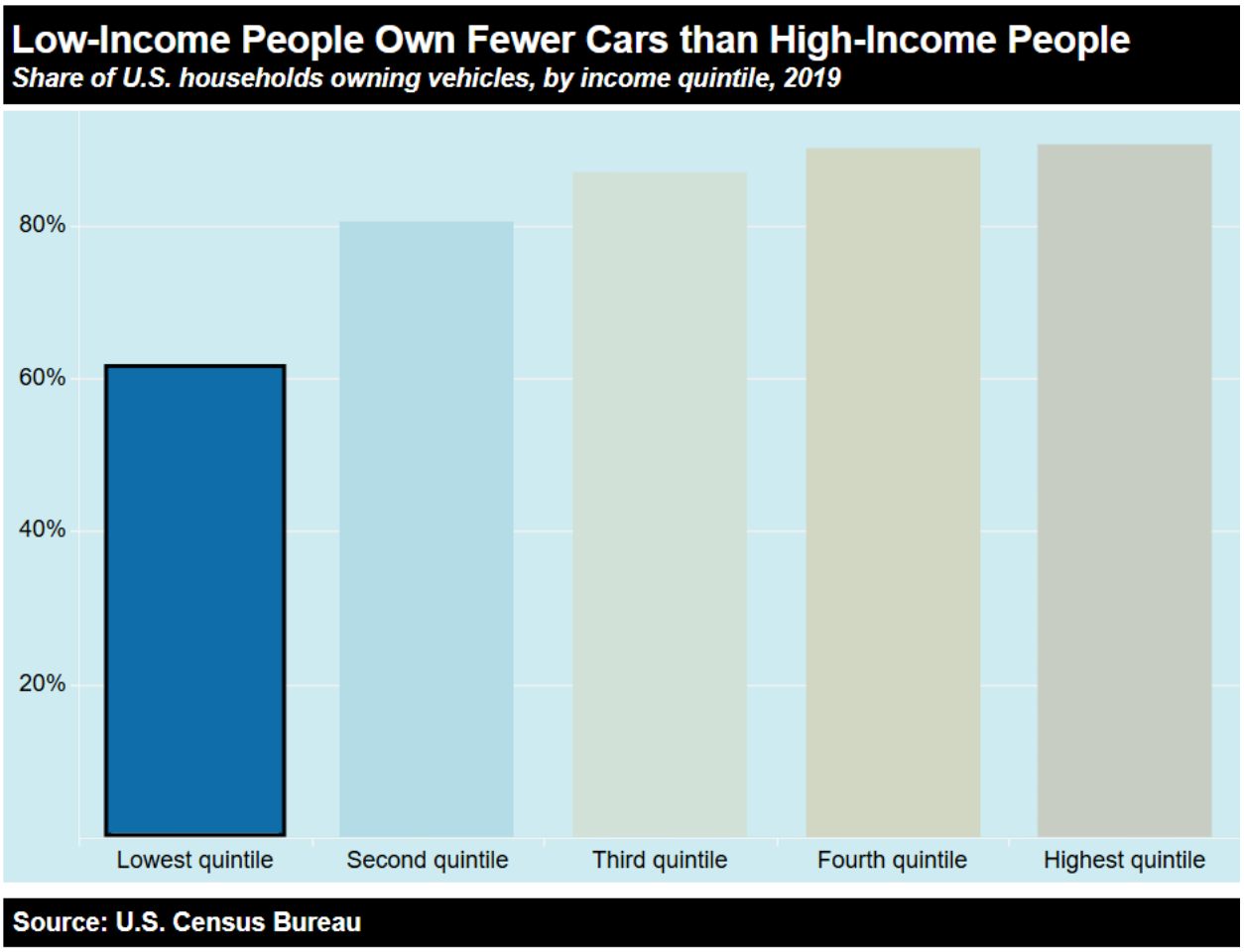
Appendix A

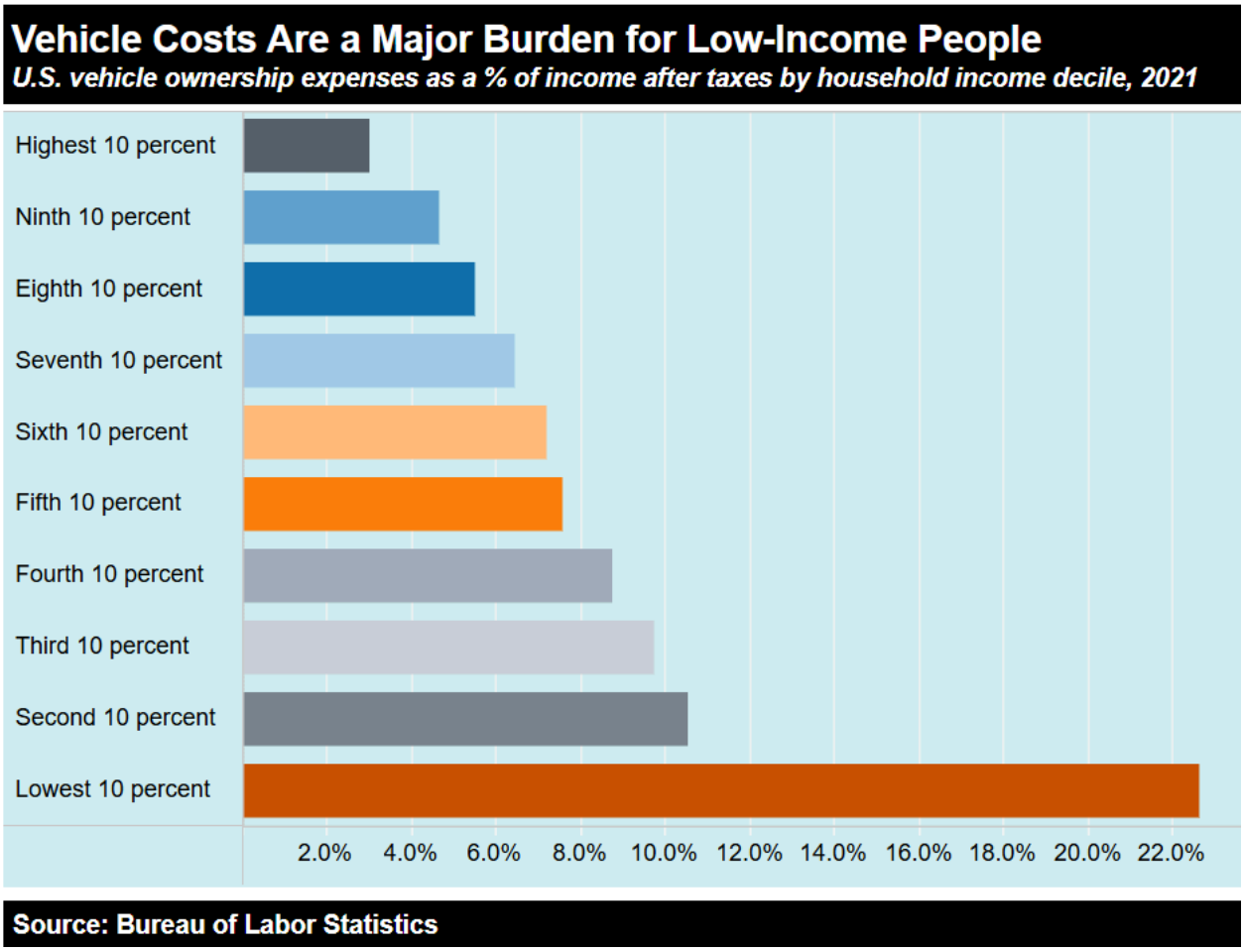
US Vehicle Ownership by Income Quintile, 2019



Appendix A shows that the lowest quintile income level has the lowest portion of vehicle ownership at 61%.

Appendix B

US Vehicle Ownership Expenses as a % of After-Tax Income by Income Decile, 2021



Appendix B shows that the poorest 10% of Americans spend ~23% of their after-tax income on expenses related to owning a vehicle. This percentage is far higher than all other income deciles.

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