POLICY MEMORANDUM

Traffic in New York City Contributes to the Climate Crisis, Negative Health Outcomes, and Pedestrian Death and Injury

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TO Governor Kathy Hochul, Mayor Eric Adams, and Speaker Adrienne Adams

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EXECUTIVE SUMMARY

New York City has many public transit options, from the subway to buses to ferries to bike lanes. However, New York City still has a "car culture"[1] with nearly 2.2 million vehicles registered in the City[2] and 4.4 million vehicles traveling through the City each day.[3] The emissions released by these vehicles contribute to inequitable negative health impacts that disproportionately harm low-income and minority neighborhoods, as well as contribute to the worsening climate crisis. Moreover, the more vehicles that drive on the streets, the higher the risk of pedestrian death or injury. Reducing the number of vehicles in New York City would improve health, climate, and safety.

This policy memorandum sets forth four of the myriad options that exist to reduce the number of vehicles driven through New York City every day. The four options are: 1) improving public transit; 2) expanding bike lane infrastructure; 3) regulating last mile delivery; and 4) implementing universal paid parking.

It is our recommendation that in the long-term all four policy options should be adopted and implemented. However, in light of the different timeline and budget constraints presented by each option, we recommend that the policy options be implemented in the following order and priority. In the short-term, New York City should first regulate last mile delivery and then

implement a universal paid parking system. In the longer-term, the City and the State should budget and plan for improvements to the public transit system and the expansion of bike lane infrastructure.

Taken together, these policy options will significantly reduce the number of vehicles on New York City's streets and highways, thereby producing positive outcomes for residents' health and safety, while also lessening the impact on the climate crisis.

THE PROBLEM: TOO MANY VEHICLES IN NEW YORK CITY

We are all too familiar with the gridlock and congestion that plague New York City's streets. The high level of vehicle traffic in New York City has various negative impacts, including contributing to the climate crisis, causing negative health outcomes, and decreased road safety.

The most harmful air pollutants in urban areas are fine, tiny airborne particles (PM2.5).[4] These particles are particularly harmful because they are small enough to enter the lungs and bloodstream.[5] Studies have shown that the transportation sector is a major contributor to the amount of PM2.5. In New York City, it is estimated that 17 percent of PM2.5 emissions come from vehicle traffic.[6]

Whereas air quality in New York City has been improving over the past few decades, it still remains a significant health concern.[7] According to a study conducted by researchers at Harvard University and the University of North Carolina, pollution caused by trucks, cars, and buses traveling in New York City led to 1,404 premature deaths in 2016, with 2,024 premature deaths statewide linked to traffic pollution.[8] Many diseases are connected to air pollution, including respiratory, circulatory, neurological, gastrointestinal, and urinary illnesses.[9]

However, these negative health impacts are not borne evenly by all New York City residents. Communities of color and low-income communities in the City have higher rates of asthma, respiratory disease, heart disease, and death.[10] For example, heart disease hospitalizations caused by outdoor air pollution are twice as high in low-income communities as they are in wealthier communities.[11] This is because air quality varies greatly among the various neighborhoods within New York City, with the City's poorer neighborhoods more likely to have poor air quality and high rates of disease, like asthma.[12] Neighborhoods near major roadways are exposed to higher levels of PM2.5 and have more adverse health effects.[13] For example, the low-income communities near the Cross Bronx Expressway have higher rates of respiratory hazard from pollution caused by vehicle traffic.[14] And, PM2.5 levels from traffic are approximately 50 percent higher in high-poverty neighborhoods than in low-poverty neighborhoods in New York City with increased related hospitalizations.[15] Children are especially vulnerable to the negative health effects of exposure to airborne pollutants because

they consume more air and water per unit of body size compared to adults, are more likely to be active outdoors during peak traffic hours, tend to play closer to the ground where particulate matter concentrations are highest, and because their epithelial barriers are not fully developed.[16]

In addition to the environmental and health problems caused by air pollutants from vehicles in New York City, the high level of vehicle usage in New York City has a negative impact on pedestrian safety. In New York State, approximately 300 pedestrians are killed and 15,000 are injured by vehicles every year.[17] Since 2014, New York City has implemented a program called Vision Zero which is premised on the principle that serious vehicle crashes are preventable and nobody should be killed or seriously injured on roads.[18] Vision Zero involves a combination of engineering, enforcement, and education strategies to get closer to the goal of zero deaths and serious injuries.[19] Nevertheless, between 2014 and 2023, there were 258 fatalities and 52,809 injuries by motor vehicles in the City.[20]

There are also financial costs associated with air pollution emitted by traffic with estimates of about $4 million for every ton of particulate matter emitted.[21]

Other cities around the world have recognized the value in policy changes to reduce the number of vehicles on the road. Notably, in Paris, Mayor Anne Hidalgo has made radical changes to the city's transportation landscape, including expanding protected bike lanes; piloting electric shuttles, taxi boats, and tram-buses; and redesigning intersections to favor pedestrians over cars.[22] These efforts have paid off and the proportion of journeys by car in Paris have decreased by 45 percent between 1990 and 2020.[23]

THE POLICY OPTIONS

The policy options to address the health and road safety issues posed by the quantity of vehicles in New York City are plentiful. Below is a description of several of them:

a. *Improvement of the Public Transportation System*

Traffic congestion in New York City is a persistent issue that adversely impacts citizen mobility, air quality, and economic productivity, thus affecting the overall sustainability of the transportation system.[24] An effective solution to address this challenge is the improvement of New York City's public transportation system, which is crucial for reducing traffic congestion and enhancing urban mobility through the strengthening and modernization of its corresponding infrastructure.

In New York City, 56% of the population uses the public transportation system, according to the US Census Bureau[25]. This mode of transportation not only facilitates citizens' mobility but also boosts the economy and employment. According to the American Public Transportation Association (APA)[26], every $1 billion invested in public transportation capital and operations creates and supports an average of 36,000 jobs. Additionally, every dollar invested in public transportation generates four dollars in economic returns. Notably, almost 60% of public transit users commute to and from work, highlighting its importance in daily life and the city's economy[27].

By diverting demand from private vehicles to public transportation, cities can significantly alleviate traffic congestion.[28] Hence, investing in enhancing public transit infrastructure emerges as a judicious and advantageous approach for confronting the issues posed by urban traffic congestion while concurrently improving the commuter experience.[29]

To address vehicular congestion and enhance urban mobility, several policy options have been proposed to bolster the public transportation system. First, expanding the metro network is deemed imperative. Investing in new lines and stations can extend coverage and transport capacity, providing citizens with more efficient travel choices. Additionally, improving bus service efficiency and frequency is essential.

Measures such as dedicated bus lanes and optimized routes can streamline operations and at the same time increase the frequency, rendering buses more attractive than private vehicles. This approach offers a low-cost solution with minimal impact on users during implementation.[30] Moreover, upgrading infrastructure, including stations and payment systems, enhances user experience and operational efficiency systemwide.[31] Finally, implementing affordable fares and discounts for vulnerable groups is crucial for ensuring financial accessibility to public transportation for all citizens, making it a more attractive and feasible option for daily commuting.[32] These combined measures can significantly enhance the quality and efficiency of the public transportation system, ultimately reducing vehicular congestion in urban areas.

b. *Enhancing Bike Lane Infrastructure*

Enhancing and expanding bike lanes and cycling networks present an opportunity to reduce reliance on motor vehicles, thereby decreasing air pollution; promoting public health, economic growth, and pedestrian safety; and improving urban mobility in a cost-effective and sustainable manner. According to a recent investigation analyzing travel patterns in seven European cities, individuals who substitute just one daily car trip with cycling can diminish their annual carbon footprint by approximately 0.5 metric tons. Consequently, if 10 percent of the population were to adopt this change in travel behavior, it could lead to a reduction in emissions equivalent to about four percent of the total life-cycle carbon dioxide emissions produced by all car travel.

Beyond addressing the health consequences of climate change through the reduction of greenhouse gas emissions, utilizing human-powered modes of transportation such as cycling offers direct health advantages. Engaging in daily physical activity enhances overall well-being, promotes sustained independence as individuals age, serves as a preventive measure against chronic illnesses like diabetes, coronary artery disease, and depression, and reduces the risk of mortality from all causes.

Additionally, studies suggest that protected bike lanes improve the economic vitality of nearby areas, significantly increasing cyclists and pedestrians safety. Well-designed pedestrian areas enhance the liveliness of neighborhoods and have been demonstrated to boost retail activity by attracting more foot traffic and increasing the number of retail customers. For instance, Salt Lake City converted nine blocks of parking into a protected bike lane in 2013, allowing businesses located along the protected lanes to see an 8.8 percent increase in sales, outperforming the 7.0 percent increase seen citywide. A study examining more than 100 miles of one-way street bike lanes in New York City found that the installation of protected bike lanes lowers the injury risk by 34 percent on the streets where they are implemented. On streets identified as having the highest chance for cyclist injuries, risk was reduced by 60 percent. These positive findings affirm that investing in bike lanes infrastructure is instrumental for achieving New York City's citywide Vision Zero initiative.

Although the New York City Department of Transportation (DOT) has made progress in improving the City's biking infrastructure, much remains to be done. The majority of these improvements have taken place in Manhattan, leaving behind underserved communities in the outer boroughs, where air pollution the highest, and access to safe and reliable modes of transportation is much needed.

c. *Regulating Last Mile Delivery*

Approximately 2.4 million packages[33] are delivered to New York City homes everyday and nearly 200 million tons of freight travel through the City every year.[34] Last mile delivery refers to the final stage of the delivery process when the parcel is moved from the distribution center to the customer's doorstep.[35] With almost 90 percent of the goods delivered in New York City transported on trucks,[36] delivery trucks are significant contributors to the health and road safety problems outlined above. Regulating last mile delivery to reduce reliance on delivery trucks, or at least to reduce the use of delivery trucks during the daytime when there are higher levels of vehicle congestion and numbers of pedestrians, will help address those issues.

Two ways to regulate last mile delivery to those ends include expanding off-hour deliveries and the use of sustainable modes of delivery for the last mile. According to an analysis conducted by DOT of four commercially dense areas in the City, more than 75 percent of all commercial vehicle activity occurs between 7:00 am and 7:00 pm.[37] DOT conducted a pilot program for 30

participants operating out of 400 business locations between 2007-2010 whereby participants agreed to shift deliveries to off-peak hours, defined as 7:00 pm and 6:00 am.[38] The pilot resulted in increased delivery speed and reduced average and median service times.[39] In 2019, DOT expanded the program with a goal of having 900 retail location participants by 2021.[40] DOT should continue to expand the program by adding more participants and further reducing daytime truck deliveries.

At the end of 2019, DOT launched the Commercial Cargo Bicycle Pilot Program with three participants and 100 cargo bikes and by January 2021 it included six participants and 350 bikes.[41] DOT found that each cargo bike in the pilot covered an average 20 service miles each day (and up to 60 miles each day), resulting in a per bike carbon dioxide savings of approximately seven tons per year, equivalent to over 100 planted trees or 15,436 passenger car miles traveled.[42] Moreover, DOT found that 80 percent of the cargo bike deliveries in the pilot were made to residential addresses, thereby obviating the need for trucks on those smaller streets which would have double parked or unloaded onto the sidewalk and creating congestion and pedestrian safety concerns.[43] While DOT stated in 2021 that it would explore making the pilot permanent, to date in 2024 it has not yet done so. DOT should take the necessary regulatory steps to make the pilot permanent.

d. *Implementing Universal Paid Parking*

This proven initiative proposes the implementation of a city-wide paid parking system to ensure all street parking spaces within the city are metered, aiming to make more efficient use of parking resources and discourage unnecessary vehicle use.

The policy would introduce paid parking across New York City and seek to incentivize reduced car ownership through various measures. These include offering tax credits for households without cars and subsidies for commuter-sharing programs, thus encouraging a shift towards more sustainable modes of transport. Like other cities, revenue generated from the paid parking system would be allocated to fund improvements in public transportation, cycling infrastructure, pedestrian zones, and green spaces.[44] Importantly, a portion of this revenue would support low-income residents who rely on private vehicles for essential travel, through subsidies or public transit vouchers, ensuring the policy's benefits are equitably distributed.[45]

A significant component of the universal paid parking policy involves enhancing public transportation to provide a viable alternative to private vehicle use. This would include investments in expanding service frequency, extending hours, and creating new routes to cover underserved areas, thus improving the accessibility and convenience of public transit. The policy also envisions the reimagining of public spaces. By reallocating space from former parking spots, the city can create pedestrian plazas, bike lanes, and other public amenities that beautify the urban landscape and promote healthier lifestyles among residents.[46]

To implement universal paid parking, the City can conduct a series of community engagement sessions to gather feedback, address concerns, and ensure the transition to paid parking is equitable and meets the needs of all New Yorkers. Starting in select neighborhoods, the City would gauge public response and adapt the policy as needed.[47] A public awareness campaign would highlight the benefits of this policy and the available transportation alternatives, ensuring widespread understanding and support.

Success would be measured by the reduction in vehicle congestion, increased usage of public transit, and improvements in air quality. The City would employ a variety of data collection methods, such as surveys, traffic counts, and air quality measurements to assess the policy's impact and make data-driven decisions for future adjustments.

COMPARATIVE ANALYSIS OF PROPOSED POLICY SOLUTIONS

Effectiveness and Feasibility

Improvement of Public Transportation System: This policy option targets the core issue of vehicular congestion by enhancing public transport. It is highly effective in reducing reliance on private vehicles, thus lowering emissions and improving air quality. There is significant public acceptance of public transit, and this policy also aligns well with global trends towards sustainable urban mobility.

Enhancing Bike Lane Infrastructure: This policy option increases the availability of bike lanes and contributes to reducing emissions but its effectiveness is limited to individuals within a feasible distance for cycling. There is significant public acceptance of bike safety infrastructure, and this policy also aligns well with global trends towards sustainable urban mobility.

Regulating Last Mile Delivery: This policy option optimizes delivery systems by shifting deliveries to off-peak hours and employing cargo bikes, thereby reducing congestion and minimizing pollution. While effective in specific zones, its overall impact on citywide car reduction may be moderate compared to improvements in public transportation. Regulation involves logistical challenges and heavily depends on private sector compliance, making it moderately feasible. This option holds a significant advantage as a pilot program demonstrated success, and there is already some infrastructure in place to facilitate implementation. Essentially, this will not require any time to launch and the necessary logistical infrastructure is partially established.

Universal Paid Parking: This policy could effectively reduce unnecessary vehicle use by making car usage less convenient and more expensive. However, its effectiveness might vary significantly across different neighborhoods depending on the availability of alternative

transportation options. Universal paid parking faces potential public resistance, especially in areas where public transport is less accessible. Its feasibility is contingent upon robust engagement and clear communication of the benefits.

Cost and Impact

Public transportation enhancements are the most costly due to the extensive infrastructure required, but these costs are often offset by long-term savings in healthcare, environmental, and economic productivity. Residents generally support improvements in public transit due to the potential reductions in travel time and environmental impact. Businesses benefit from the increased accessibility of work locations for employees, which can enhance employee satisfaction and productivity. Government agencies face the challenge of managing large-scale logistics and funding but can capitalize on long-term benefits for urban planning and sustainability.

Bike lane enhancements require small investment compared to public transport but offer high returns in terms of health benefits and reduced environmental impact. Cyclists and potential cyclists directly benefit from safer and more extensive bike paths, which encourage more people to consider cycling as a viable commute option. Local businesses might experience an increase in customer traffic due to more accessible routes, although they could face initial resistance due to the loss of some parking spaces. Environmental groups would strongly support this initiative due to its positive impact on reducing emissions.

Regulating last mile delivery is low-cost, focusing more on policy changes than physical infrastructure, though initial setup for systems like cargo bikes and off-hour delivery incentives may require some investment. Delivery companies may resist changes to last mile delivery regulations due to alterations required in their operations and potential increases in costs. Residents, especially in congested areas, would benefit from reduced daytime traffic congestion and lower pollution levels. The City is tasked with enforcing new regulations and might need to subsidize initial changes to help businesses adjust to new delivery schedules and methods.

Universal Paid Parking could create revenue generated through parking fees, although initial setup and enforcement infrastructure would require investment. Car owners are likely to oppose universal paid parking policies due to increased parking costs. Commuters who use public transit could benefit from less congested streets and improvements in public transportation services funded by parking revenues. Streets will transition to more people-centric rather than car-centric, which could significantly enhance the livability and appeal of congested environments.

RECOMMENDATION

We recommend implementing all four proposals to gradually reduce the number of vehicles in New York, considering their short and long-term viability and impact. Firstly, regulating last mile delivery should be prioritized to swiftly address congestion and emissions, given its relatively quick implementation and lower cost. Secondly, establishing a universal paid parking system will incentivize alternative transportation usage and generate revenue for further enhancements. In the medium term, expanding bike lane infrastructure is crucial to promoting sustainable and healthy transportation options. Finally, as a long-term goal, significant improvements to the public transit system should be planned and budgeted, providing a solid foundation for more efficient and equitable urban mobility. Sequentially implementing these measures will effectively and progressively address transit challenges, contributing to a healthier and safer city for all residents.

STATEMENT OF PUBLIC INTEREST

Finding sustainable, cost effective, and feasible ways to reduce vehicular traffic congestion in New York City will significantly improve public health, enhance road safety, address climate change, promote equity, and boost economic productivity. Reducing vehicular traffic and simultaneously developing a more robust and better interconnected public transportation system is without doubt in the public interest as it will have a direct impact in promoting access to jobs, reducing illnesses, preventing traffic-related deaths and injuries, particularly in children and for people living in low-income communities. The implementation of these measures will provide a more enjoyable and equity living environment for all city residents.

CONCLUSION

Despite New York City's extensive public transit system and alternative transportation options, the city struggles with a strong car culture. The four policy options proposed above: improving public transit, expanding bike lane infrastructure, regulating last-mile delivery, and implementing universal paid parking aim to effectively tackle the problem by reducing vehicle numbers, improving health, safety, and environmental outcomes.

The recommended approach prioritizes short-term regulation of last-mile delivery and universal paid parking, followed by long-term investments in public transit and bike lanes. This phased strategy will enable traffic and pollution reduction while the City prepares for major infrastructural changes to enhance sustainable urban mobility.

Collectively, these policies promise to transform the city's transportation landscape, improving air quality, reducing greenhouse gas emissions, enhancing public health and safety, and making life more enjoyable. A more pedestrian-friendly environment will boost the overall quality of urban life, making New York City more vibrant and accessible. Achieving this vision requires collaboration among city planners, policymakers, and the community.

Implementing these transportation policies aligns with global sustainability trends, benefiting the entire population and making New York City an even more desirable place to live. These measures will significantly enhance the quality of life, particularly for children and low-income residents, by reducing traffic-related fatalities and injuries.

We urge you to consider our proposal seriously. New Yorkers deserve a world-class transportation system that is safe, reliable, and well-connected. We trust in your judgment to prioritize this in your annual goals and look forward to seeing tangible improvements in traffic congestion and public transportation in the near future. Thank you for your attention to this matter.

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