Exploring Alternatives to Police-Based Traffic Enforcement and Overcoming their Potential Barriers to Implementation

Abstract

Traffic collisions are a serious threat on United States roadways, causing the death of over 35,000 Americans each year. Although there is a clear consensus that this public health crisis must be made a top priority throughout all levels of government, current traffic enforcement methods are not directly tied to increased traffic safety. Instead, traffic stops are often initiated by racial bias and devolve into the site of escalation, criminalization, and violence. The use of police to initiate traffic stops fails on two fronts - the lack of a positive effect on safety as compared to alternative means of traffic enforcement, and the explicit and implicit racism that results in severe, harmful outcomes for Black people. Poor, Black communities disproportionately carry the burden of traffic-related injuries and fatalities due to being neglected in terms of transportation design and enforcement techniques that would lead to safer transportation networks and greater health outcomes. In addition to facing unsafe conditions across all modes, Black drivers are stopped much more frequently than white drivers. Thus, alternatives to police-based traffic enforcement could potentially serve to distribute traffic enforcement more fairly, while at the same time encouraging safer driving behavior and avoiding possible escalation and subsequent violence. Although alternatives to police-based traffic enforcement may serve to significantly reduce opportunities for racial bias in enforcement, the correct methods for implementation of these alternatives are heavily debated. The following paper demonstrates the pressing need for alternatives and explores potential barriers they may face, along with possible solutions.

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Introduction

Of the many notable events that have come to characterize the year 2020, the massive civil unrest brought forth by the unjust murder of Black people at the hands of United States law enforcement has likely been the one that has exposed the crack's in our nation's foundation most markedly. Throughout the past year, advocates for racial justice have been working tirelessly to ensure that the barriers built by long-standing systemic racism be torn down and replaced with more just and equitable solutions which seek to eliminate inequitable outcomes based on race. Protests were sparked by the murder of George Floyd at the hands of the Minneapolis Police Department yet evolved to confront all aspects of racial bias in American institutions. Although Floyd's murder did not take place in an automobile, countless other fatal police interactions with Black drivers unfortunately did. In 2015, roadside interaction was one of the most common precursors to fatal police shooting of a Black person.[1] In the same year, 11% of all fatal shootings occurred during a routine traffic stop.[1] In 2020, Black people were 28% of those killed by police in 2020, despite only accounting for 13% of the U.S. population.[2] In addition, police groups have long reported that traffic stops are among the deadliest interactions for police officers as well, which may cause officers to be on higher alert, and more likely to use deadly force. While police officer training may also come into play, numerous studies have demonstrated persistent racial bias in traffic

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[1] Wesley Lowery, "A Disproportionate Number of Black Victims in Fatal Traffic Stops," December 24, 2015, https://www.washingtonpost.com/national/a-disproportionate-number-of-Black-victims-in-fatal-traffic-stops/2015/12/24/c29717e2-a344-11e5-9c4e-be37f66848bb_story.html.

[2] "Mapping Police Violence," Mapping Police Violence (This Is The Movement, 2020), https://mappingpoliceviolence.org/.

stops within every region of the country, leading to a disproportionate criminalization of Black drivers and a higher likelihood of encounters which turn fatal.

While there are various systemic factors that significantly impact the demographics of local police forces, as well as a self-selection bias in who chooses to enter law enforcement, racial bias is extremely pervasive in all aspects of American society. To rid the country, which was built upon the backs of subjugated peoples, of all racial bias is a gargantuan task. Regardless, there are impactful steps that can be taken to improve the outcomes of Black people, particularly when it comes to racially biased traffic enforcement and violent police encounters. The fact of the matter is that many of these encounters are unnecessary and the same level of traffic safety, if not an improved level, can be achieved using alternate modes of traffic enforcement. The purpose of this paper is threefold. First, I describe two persistent shortcomings of traditional police-based traffic enforcement – the first begin the fact that it fails to significantly improve traffic safety, and the second being that it disproportionately harms Black people due to discriminatory policing. I explore two alternatives to police-based traffic enforcement, both of which are currently in place, although in varying extents. Finally, I explore expected barriers to implementation and outline a role for advocates and transportation professionals (planners, policymakers, engineers, etc.) to play.

A Demonstrated Need for Alternatives

Traffic Enforcement is Racially Biased and Unsafe

Racial bias is an extremely insidious phenomenon at play in all elements of modern life, including traffic stops. Not only is it a real and present issue in traffic stops, but it results in increased stops, arrests, and fatal encounters between racial minorities and police.[1] The largest ever study of racial profiling during traffic stops was completed by researchers at Stanford University and analyzed 95 million traffic stop records from 21 state patrol agencies and 35 municipal police forces from 2011 to 2018.[3] There are a number of important findings from this work. Black Americans are pulled over 40% more often than white drivers but are much less likely to be stopped after sunset, when "a veil of darkness" masks their race.[3] This suggests that Black drivers do not violate traffic laws more often than their white counterparts, but rather are guilty of only one thing - driving while Black. It also demonstrates that the standards for pulling over white drivers are higher than for Black drivers, as there is no data showing that Black drivers who are stopped and searched lead to more arrests than white drivers. Also possible is that police ignore many violations of traffic law, but selectively choose to stop Black drivers more frequently for these kinds of infractions. In any case, police have been shown to consistently target Black drivers when making stops.

Once a traffic stop had been made and the officer had seen the face of the driver closely, Blacks and Latinos were significantly more likely to have their cars searched

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[3] Emma Pierson et al., "A Large-Scale Analysis of Racial Disparities in Police Stops across the United States," *Nature Human Behaviour* 4, no. 7 (April 2020): pp. 736-745, https://doi.org/10.1038/s41562-020-0858-1.

than whites.[3] Finally, the legalization of recreational marijuana reduced the number of

searches of white, Black, and Hispanic drivers-but the bar for searching Black and

Hispanic drivers was still lower than that for white drivers' post-legalization. These last

examples demonstrate the subversive nature of traffic stops. The stated goal of traffic

stops is traffic safety but stops are mostly used as a pretext for these kinds of searches.

In this case, police are not making roads safer, but are targeting Black and Latino

drivers in an attempt to find contraband, something that has less to do with traffic safety

or preventing collisions. These patterns are too conclusive to be considered

coincidence, and the nature of driver searches have too many discrepancies to discuss

them separately from race. Racial bias appears wherever police are involved with

ticketing and citations, as is the case with jaywalking tickets in New York City. In the first

quarter of 2020, 78 of the 79 jaywalking tickets were issued to Black and Latino

residents.[4] With this bias identified and its toll properly evaluated, police traffic

enforcement can more rightly be challenged and updated on the basis of unequal

application of traffic laws.

Traffic Enforcement's Primary Concern is Not Safety

Speeding places a significant toll on our transportation networks and is ultimately

an avoidable behavior and one that can be addressed and minimized through the

thoughtful design of our roadway infrastructure, as well as the efficient and equitable

enforcement of our traffic laws. In addition to speeding, red light running is a significant

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[4] Gersh Kuntzman, "NYPD's Racial Bias in 'Jaywalking' Tickets Continues into 2020," Streetsblog New York City, May 7, 2020, https://nyc.streetsblog.org/2020/05/07/nypds-racial-bias-in-jaywalking-tickets-continues-into-2020.

risk that leads to over 700 fatalities a year, which represents over 25% of annual

fatalities at signalized intersections.[5] These safety concerns are particularly important

when it comes to pedestrians and cyclists, as the chances of fatality and severe injury

are significantly higher than that of drivers due to their exposed nature. Addressing

these concerns is the often-cited goal of traffic stops, but police presence has not been

shown to successfully discourage the kind of driving behavior that results in collisions.

The City of Nashville makes for a useful case study in this regard. The city has

historically had more traffic stops per capita than the national average, and their data

showed that Black drivers were pulled over 44% more frequently than white drivers.[6]

The primary purpose of these racially biased traffic stops was to find contraband, yet

researchers found that only 1.6% of all traffic stops resulted in an arrest.[6] This is

coupled by the fact that in 2019, Nashville's vehicle crashes were ten times the rate

which was expected based on historical trends. In this case, police traffic enforcement

failed in two regards. First, it was not able to effectively reduce traffic crashes and

secondly, it was not able catch suspects who presented a serious threat to public

safety. Police cannot and should not be tasked with the difficult job of traffic

enforcement because of the biases that permeate their decision making as well as the

demonstrated lack of concrete results on safety.

The over-policing of Black communities is a well-documented phenomenon, and

thus, it could reasonably be assumed that a greater police presence would lead to

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[5] Highway Loss Data Institute, "Red Light Running," Insurance Institute for Highway Safety (Insurance Institute for Highway Safety, 2019), https://www.iihs.org/topics/red-light-running

[6] "Stop-And-Frisk Data," New York Civil Liberties Union (New York Civil Liberties Union, December 10, 2018), //www.nyclu.org/en/stop-and-frisk-data

greater traffic enforcement, and thus better traffic safety outcomes for people who live in neighborhoods where police seem to be ever-present. This is very much the opposite of the truth, as demonstrated by the fact that Black pedestrians and cyclists are killed at a much higher rate than their white counterparts. In an attempt to fight the ever-lasting war on crime, their true primary goal as opposed to ensuring traffic safety, police fraudulently rely on motor vehicle law and subjugate those who they view as fitting a demographic they associate with crime. To rectify these shortcomings, communities must be deliberate about how they build out alternatives.

Alternatives to Police-Based Traffic Enforcement

In line with recognizing the limitations of police traffic enforcement and a contemporary interest in racial justice, there are a number of alternatives being explored around the US that will be discussed here. While many have faced a lack of political will, funding and legal challenges from local courts, their merit must be considered as planners look for a way to address the serious threat posed by traffic violations while retaining human dignity and safety of targeted communities including Black Americans and Latinos. These alternatives are the most common projects undertaken across America and are often ones that have proven track records legitimizing their use and cost.

Automated Traffic Enforcement Overview

Automated Traffic Enforcement (ATE) most often takes one of two forms, red light cameras, and speed cameras. These cameras must be highly sensitive, able to detect and differentiate between multiple vehicles at the same time and be installed at optimal locations. Further, the presence of these cameras must be well publicized both by the city and on the roads and intersections where they are installed. Careful consideration of location and the citation and ticketing process must be implemented both in order to ease residents' process of paying their fine as well as to ensure that these tools are not disproportionately located in certain areas of the city. This would lead to fines disproportionately levied on particular neighborhoods, and easily become manipulated into further tools of inequality. Examples from cities such as Chicago,

Portland, Seattle, and New York City have demonstrated excellent results for these

programs.

Automated Traffic Enforcement Improves Safety

In 2020, the City of Chicago reviewed data from 2005 to 2018, collected from its red-light camera program. During that time, the city found that T-bone crashes, which often result in the most severe injuries, dropped 64%. T-bone crashes most often occur at intersections where one of the drivers fails to yield the right of way - a behavior that can be heavily discouraged with red light cameras. In the same time period, all crashes at camera-equipped intersections dropped 59%.[7] In 2011 Chicago also began red light community meetings to be held before cameras are installed, moved, or taken down in order to make community members feel like a part of the process. This addition directly ties into the equity focus that traffic safety programs need to address to remedy traffic enforcement issues instead of intensifying them. These kinds of public meetings also help dispel misunderstanding about the nature of ATE and the city's goals for the program.

The city of Seattle implemented a red-light camera project in 2006, with initial results reported in 2007. The city took on the task of surveying the community and found that 7 in 10 Seattle residents thought running red lights in Seattle was a problem, and 82% of those respondents were in favor of installing red light cameras at key intersections.[8] The program has since been expanded, with the result being that red light running at intersections with cameras is down 50%. In addition, while the city did

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[7] City of Chicago, "Red Light Camera Enforcement," www.chicago.gov (City of Chicago, 2021), https://www.chicago.gov/city/en/depts/cdot/supp_info/red-light_cameraenforcement.html
[8] City of Seattle, "City of Seattle Traffic Safety Camera Pilot Project Final Evaluation Report" (City of Seattle, December 2007), https://www.seattle.gov/Documents/Departments/Police/Publications/Red_Light_Study_07.pdf

not say that the cameras decreased traffic crashes, they did conclude that the cameras reduced the severity of crashes when they did occur.

New York City was the first US city to adopt a Vision Zero campaign, which included a series of red-light cameras. From 1997 to 2017, the city of New York measured the effectiveness of these lights. The city saw most significant decreases in traffic crashes in Brooklyn and Queens, the two boroughs that were outfitted with the most cameras.[9] The program is considered by the city to be immensely successful and has been extended seven times since its inception. By 2018, the city found that red light running decreased by over 75% at locations with a camera and that T-bone crashes, largely a result of running a red light, dropped 71%. Furthermore, there was no increase in rear end collisions, a concern that some critics suggested was more likely to occur when cameras were installed, due to abrupt stopping by drivers.

Automated Traffic Enforcement is Cost Effective

Many ATE programs pay for themselves throughout a fraction of their lifetime, and/or have low costs of installations at the onset. For example, in the case of New York City, the DOT reported that the program had more than paid for itself. The total cost of the program over this 23-year period was $245,860,261, while total revenue was $532,643,413 - almost double the cost.**Error! Bookmark not defined.** In the case of S eattle, the total cost of the program was $369,000, much less than the budgeted $460,000 the city had approved for it. Based off this and the revenue from tickets, according to the official report, the revenues of the program "substantially exceed" the

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[9] AAA, "New York City Red Light Camera Program," AAA Foundation for Traffic Safety (AAA, 2014), https://www.aaafoundation.org/sites/default/files/2014TSCIreport.pdf

costs.**Error! Bookmark not defined.** In addition to savings on operating costs, the m

onetary costs that crashes put on society are estimated to be $871 billion dollars per

year.[10] Shifting funding to ATE programs that can reduce this number is not only a

moral imperative, it's the logical choice. ATE also decreases the financial strain on

police departments, as these projects only require an initial cost to operate and minimal

cost to oversee. Seattle determined that instead of paying out over $60,000 in overtime

staffing for traffic enforcement officers, cameras helped reduce that to a nominal

number.[8] Another financial benefit is the fact that cameras operate 24/7, 365 days a

year - it is not reasonable or financially sustainable to expect the same of police officers.

While it varies across cities, costs of police misconduct settled in court or otherwise also

cost large cities tens of millions every year. Many of these lawsuits stem from traffic

violations that would not occur if ATE was in place.

These examples are used to highlight the ability of ATE in creating safer streets

in a way that is economically viable and, with careful consideration and action, sharply

reduces racial bias. Criticisms of ATE are often due to poor communication of program

goals, distrust in the technology, and a sense that these methods are simply revenue

generating tools for the city. The ability of ATE proponents to enact their programs will

be how they address these issues and provide counter points.

Automated Traffic Enforcement Can Act in Conjunction with Unarmed Traffic Enforcement Agents

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[10] Lawrence Blincoe et al., "The Economic and Societal Impact of Motor Vehicle Crashes, 2010 (Revised)," vol. 2277 (National Highway Traffic Safety Administration, May 2015), https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812013

A recent discussion among advocates for racial justice has been the replacement of armed traffic enforcement officers, whom have little oversight and far too much individual discretion, with unarmed municipal employees tasked only with conducting stops and issuing citations. This goes hand in hand with the creation of separated traffic agencies within municipalities, who would be in charge of reviewing red light and speeding cameras, as well as the enforcement of the motor vehicle code, both of which are generally handled by local police departments. Thus, local police could shift their focus on to more pressing crimes, reducing the opportunity for racially biased and violent encounters to take place and also improving the negative public perception of police. For most people, traffic stops are their only interaction with the police and often one that results in negative outcomes. Communities with a long-standing distrust of the police could also benefit, as community members may feel more encouraged to call police when actually necessary, rather than neglecting to do so due to fear.

The largest example of disarming and demilitarizing the police took place in Berkeley, California, where the city voted to pass a series of police reforms in 2020. These reforms include funneling mental health and emergency calls regarding homelessness away from the police force, a goal of cutting the police budget in half, and the use of a separate city department of unarmed officers to conduct parking and traffic law enforcement.[11] City councilors and residents cited the data about police traffic stops, racial bias, and the ineffectiveness of police methods on reducing dangerous driving. This idea has yet to be fully explored, as the city of Berkeley has many logistical

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[11] Levin Sam, "California City Moves to Replace Police with Unarmed Civilians for Traffic Stops," The Guardian (The Guardian, July 16, 2020), https://www.theguardian.com/us-news/2020/jul/15/berkeley-police-california-unarmed-civilians-traffic-stops.

challenges to solve before fully implementing this program, but the idea is gaining

momentum. A similar conversation is happening in the city of Cambridge,

Massachusetts, and is being met with similar obstacles and counter arguments.[12] As

this alternative to police traffic stops becomes debated across more cities, Berkeley will

serve as a case study to demonstrate the effectiveness of the program.

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[12] Adam Sennott, "Officials Revisit Idea of Unarmed Traffic Enforcers," Cambridge Chronicle (Wicked Local, September 17, 2020), https://www.wickedlocal.com/story/cambridge-chronicle-tab/2020/09/17/cambridge-officials-revisit-idea-of-unarmed-traffic-enforcers/11466005/.

Barriers to Implementation

The largest barrier facing alternatives to police traffic enforcement is a lack of political will and public understanding about how these alternatives would operate. Addressing these fears while educating and bringing residents into the decision-making process is important for the effectiveness of alternatives. Other barriers that will be addressed in this section include budgetary concerns, legal challenges from local and state bodies, and police objections to these alternatives as a means of better public safety. This section ties directly into the role of planners and advocates in that it is imperative to understand these criticisms of alternatives to police traffic enforcement and be able to build public trust and support for them, as well as address legitimate questions regarding logistical problems.

Concerns Around Traffic Safety

While many of the other concerns around ATE are rooted in politics and distrust of government, there are also critics whose disapproval is rooted in the more palatable concern of traffic safety. Transportation professionals have argued that intersections or corridors requiring ATE are simply poorly designed and should be replaced. Many transportation professionals who subscribe to the Complete Streets school of thought express concern that ATE is directing attention away from major street redesigns, which also serve to increase safety and equity, such as road diets. This is a valid concern, as our streets, particularly those serving poor and minority communities, are in major need to improvement and the site where massive inequalities take place. For example, people living in low-income areas are twice as likely to be killed while walking than

those in high income areas. Black children are twice as likely to be killed while walking than white children, and Latino children are 40% more likely. Even worse, only 50% of low-income communities have streets with proper sidewalks compared to 90% of high-income communities.[13] Thus, it is recommended that equity be at the forefront of ATE implementation and comprehensive geographic analysis be conducted in order to ensure that the communities that face the largest traffic crash burden are targeted for ATE implemented. Furthermore, it is integral that funds from ATE programs be directed towards funding large-scale redesigns of corridors and intersections with the most pressing needs. That being said, in an ideal Vision Zero world, our transportation networks would be designed to encourage self-enforcement and the need for any traffic enforcement would cease to exist. Unfortunately, our transportation networks are primarily auto-centric and before a major shift away from police traffic enforcement can come about, automated enforcement may serve as a valuable steppingstone until the infrastructure needed for self-enforcement is put in place.

Another concern lies in the fact that ATE systems often have a tolerance of 8-10 MPH before issuing a violation. Transportation professionals have expressed concern that drivers will become familiar, and drive just below the violation speed, which often times is higher than the average speed of vehicles on the road before ATE was put in place. This can be refuted by the fact that this is the tolerance which police generally use before pulling over drivers for speeding anyway. In addition, police do not cite every single speeding driver, while speeding cameras do. Drivers who may risk the off chance

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[13] Vision Zero Network, "Elevating Equity in Vision Zero Communications: A White Paper Framing the Challenges & Opportunities" (Vision Zero Network, September 2016), http://visionzeronetwork.org/wp-content/uploads/2017/01/VZ-Equity-White-Paper-FINAL.pdf.

that they get cited for speeding may feel less emboldened to do so if the citation was guaranteed through camera enforcement.

In the case of red-light cameras, transportation professionals have also argued that rear-end collisions may increase, due to vehicles abruptly stopping. These are drivers who would have otherwise taken the risk and continued through the yellow or red light in the absence of a red-light camera. While all crashes are inherently negative, the severity of rear-end crashes is generally far less than that of T-bone crashes, which would continue to occur without red-light cameras. Regardless, the New York example presented above has shown that these concerns are unfounded, and that red-light cameras did not lead to an increase in rear-end crashes.

Public Opinion and Overcoming Fears of Defunding the Police

While many residents recognize the racial bias is inherent in police traffic stops and safety, many are concerned with alternatives simply because it is a foreign concept. Providing examples of alternatives currently in place is key. Many cities have made successful forays into moving police out of various areas of public safety, thereby defunding them while consolidating their actual duties into a more manageable load. CAHOOTS (Crisis Assistance Helping Out On The Streets) is one such program. In Eugene, Oregon, this mental health task force uses trained members to handle mental health crisis, suicide prevention, substance abuse disorders, housing issues and homelessness, and transportation to mental and physical health resources.[14] This program has spread to other parts of the state and serves a vital role for intervention in

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[14] White Bird Clinic, "What Is CAHOOTS?," White Bird Clinic (White Bird Clinic, September 29, 2020), https://whitebirdclinic.org/what-is-cahoots/.

these kinds of issues, but also helps redefine the role of police in these communities. Eugene is not less safe because of this diversion of police funds, nor is the police department suffering with this additional help. Restructuring the narrative on the role of police in society can naturally extend to traffic enforcement as well.

Many residents, in addition to questions of safety, fear that alternatives to police traffic enforcement will still carry on the biases that plague police intervention today. These fears are well founded, and it is the responsibility of advocates to demonstrate how successful Vision Zero programs avoid these pitfalls and work to create the most equitable system of traffic enforcement possible. Fear from the public both contributes to and is fed by politicians, with the result being the stalling and elimination of alternatives to traffic enforcement from occurring in cities.

Political and Law Enforcement Obstacles

City councilors, while often the source of pushing for alternatives, often act as a barrier to these programs. Policing alternatives are almost uniformly criticized by police unions and fraternal organizations, and the allies against alternatives find themselves closely aligned. This opposition provides one of the largest barriers, as opponents can strike down legislation that crosses their desks while also fueling public fears about these alternatives. Police unions are a particularly difficult issue to confront, as they have long acted as an impenetrable "Boy's Club" in order to fight reform, and also have strong connections in local and state government. Both in the Berkeley and Cambridge examples of unarmed traffic enforcement officers, for example, both law enforcement and city council members have been the largest voices of dissent, and in Cambridge

they have successfully sowed public doubt and delayed the vote. It seems that these individuals must be won over to the side of alternative traffic enforcement strategies, or a popular movement must compel city residents to force them to act. Tools on how to do this will be presented in the next section.

Legal Challenges

Legal challenges stem from local ordinances all the way up to state supreme courts. The government has struck down police traffic enforcement alternatives in many areas of the country, and these barriers will have to be addressed in order to implement any successful long-term projects. As is the case in Cambridge, Massachusetts regarding unarmed traffic enforcement officers, the city council has stalled the vote due to a failure to communicate through the proper channels to determine if the ordinance would conflict with state law.[12]

ATE has suffered some of the most aggressive legal challenges when it comes to transportation policy. 24 states and Washington, DC legally allow speed or red-light cameras, but most states have caveats within this. Many communities outlaw ATE through local ordinances, and even in states where they are legal it is sometimes decided by county.[15] Others only allow ATE in select areas such as construction zones, school zones, and major parks. Further, in Missouri, their Highway and Transportation Commission pursued policies that highly regulated and limited the success of ATE

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[15] Governors Highway Safety Association, "Preparing for Automated Vehicles: Traffic Safety Issues for States" (Governors Highway Safety Association: Governors Highway Safety Association, 2018), https://www.ghsa.org/sites/default/files/2018-08/Final_AVs2018.pdf.

(Wright, 2015). The Missouri Supreme Court even struck down red light cameras in St. Louis in 2015.

These attacks on alternatives to police traffic enforcement have a mixed bag of success, but overall have significantly dragged down these efforts by delaying them or eliminating them entirely. These legal challenges will require tactful solutions and will involve reshaping the narrative and offering convincing arguments regarding safety, equity, and cost. This next section will build off of all the alternatives and their opposition to recommend a path forward for those directly and indirectly responsible for the future of city planning.

The Role of Planners and Advocates

Planners

     As professionals in the field, planners must continue to do on-the-ground work, as well as confront the technical and political challenges that have already arisen and are further expected to arise. It is recommended that planners put forth more academic research on alternatives to police-based traffic enforcement. While there is a recent surge in willingness to discuss the topic in the public sphere, there are still significant gaps in research. For example, there is little data, outside of a small number of case studies, which definitively prove that red-light cameras do not increase the incidence of rear-end crashes, or that speeding cameras do not induce higher average speeds. In order to put forth many of the policies and infrastructure improvements discussed above, more reliable, and conclusive data is needed. Further analysis in regard to equity could also serve to move forward some of these policies. For example, a recent trend in ATE is the implementation of bus-lane cameras, but there is little data demonstrating its effectiveness and its worthiness as compared to separated bus lanes, or entire street redesigns. There needs to be a further exploration of the costs and benefits associated with alternatives to police-based traffic enforcement.

     Although this may be perceived as an intermediate step, within the already intermediate step towards achieving widespread Complete Streets adoption and self-enforcement, planners must confront the issue of speed limits, along with the methods with which they are set. Studies on the likelihood of pedestrian death at various vehicle suggest that for each 10 MPH increase in vehicle speed, the chance of pedestrian

death increases dramatically, and the chances of death from colliding with a vehicle traveling over 58 MPH is 90%.[16] The city of Seattle took this information seriously and set out on a campaign with two components. They reduced speed limits to 25 MPH in areas all over the city and added more signage in areas where speed limit indicators were few and far between. Upon review, the city saw 22% reduction in all crashes and a drastic 54% reduction in speed of drivers going over 40 MPH.[17] Similar experiments have been conducted in cities such as Boston, where speeding amongst drivers in the highest percentile again dropped significantly due to the speed limit change. The relatively low barrier to entry for these programs makes them attractive, and directly address speeding in many neighborhoods, an issue that residents routinely raise to their local government. Regardless, the first step for planners in addressing the issue of speed limits is changing the 85th percentile rule, which simply raises the speed limit on roads. Instead, planners must identify speeding hotspots and iterate designs of the problem area, until reaching an 85th percentile speed that is safe and context sensitive.

It is also recommended that planners continue to put community engagement, in its various forms, at the forefront of transportation planning. In addition to traditional forms of community engagement encouraged, the use of participatory budgeting is recommended. It is a useful tool which allows for the allocation of discretionary public funds based on community planning and voting. Over 3,000 city and municipal governments use some form of participatory budgeting, including large US cities such

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[16] Brian Tefft, "Impact Speed and a Pedestrian's Risk of Severe Injury or Death," AAA Foundation for Traffic Safety (AAA, September 2011), https://aaafoundation.org/wp-content/uploads/2018/02/2011PedestrianRiskVsSpeedReport.pdf

[17] Seattle Department of Transportation, "Speed Limit Case Studies," Seattle Department of Transportation (City of Seattle, 2020), https://www.seattle.gov/transportation/projects-and-programs/safety-first/vision-zero/speedlimits.

as New York City and Chicago. New York City offers an interactive map, where residents can propose projects ranging from a traffic light at an unsafe intersection to sites for community centers and local clinics. Then, through a series of meetings, the New York City Council works with residents to vote on how to allocate $36 million of the city budget to these programs.[18] As citizens participate more in their own infrastructure, concerned residents will naturally bring up unsafe areas due to poor road infrastructure and signage that enable dangerous driving. By allowing city residents, both citizens and undocumented residents, to have a hand in shaping their communities, they will be able to identify areas that are unsafe and offer suggestions to address these issues without simply sending police to the scene. At the same time, because residents are directly responsible for these safety measures, there is less room for miscommunication between the city and residents about the nature of traffic safety programs and the worry that these programs do not reflect the wants or needs of the communities themselves. New York's model of participatory budgeting could help alleviate some of the issues of access, and the resulting lack of demographic representation, that comes with traditional town meeting models.

Advocates

Automated traffic enforcement has the potential to produce positive effects on racial disparities in traffic safety and enforcement. Given the data presented throughout, it is hoped that advocates could use this is a starting point on which to present a municipality-specific automated traffic enforcement initiative. While political will may be

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[18] New York City Council, "Participatory Budgeting," New York City Council (New York City Council, April 2019), https://council.nyc.gov/pb/,

low in some areas, the results cannot be invalidated and with enough community input, change is possible.

- Using the table and represented below, familiarize yourself with common arguments against ATE, such as the idea that cameras make mistakes or that ATE is a revenue generating tool and not related to safety.

- Research how residents feel about ATE where it already exists to inform community members and clear up misconceptions. Research community sentiments towards local law enforcement, as well as any public arrest data your municipality or state may have available. What does bias look like in your community? Which geographic areas are most targeted?

- Launch ad campaigns. These should be tailored to the community, with resources in various languages posted in gathering places such as local shops and parks. Hold community meetings where residents can share their concerns about road safety, infrastructure, and other elements of their physical neighborhood. Get employees of the city and public works present whenever possible.

- Working closely with neighborhood organizers, get community members to go door to door, having conversations with residents about how exploring alternatives to police-based traffic enforcement can have a significant impact effect on safety and reducing fatalities in the community.

- Ensure that any Vision Zero and ATE task forces that are created reserve a significant number of positions for community members and organizations.

Criticisms of Automated Traffic Enforcement	Responses to Criticism
Issues of equity in terms of the **geographic placement** *of cameras, and how fines are leveraged*	Steps are being taken by many cities to ensure that cameras **are placed equitably** throughout the city. In addition, Black, Latino, and other immigrant neighborhoods are much more likely to be the victims of severe injury or death from traffic crashes, **so cameras that both remove the presence of police and have a proven reduction on speeding will equitably benefit these communities.**
Concerns that fines place a disproportionate burden of traffic ticket costs on low-income communities	On the issue of equity, a **sliding scale for fines** could be implemented based on residents' ability to pay, as well as alternatives to fines for first time offenders.
Claims that these systems are **revenue generating tools** *for the city*	These Automated Traffic Enforcement projects do generate revenue for the city, but **the proven reduction in harm and injury crashes** have a monumental social benefit for the public health of cities, not to mention the **costs saved through reducing the damages from crashes** the city must pay.
Concern over the **potential growth of rear end collisions** *due to red light cameras*	While the research on rear end collisions is not unanimous, most **cities have not seen an increase in rear end crashes** since the implementation of red-light cameras. These crashes are also less common and less severe than crashes such as right-angle collisions.
Transportation planning policies and teams **not considering** *or reflecting the* **diversity of the communities** *that their policies will affect.*	The various examples of ongoing alternative programs presented have taken **community engagement** into account, both during the planning process and whenever revisions are made to existing programs. Thus, cities can ensure that residents are a part of

	these decisions and initiate them in the most equitable and effective manner.

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