

AUTOMATED STATEGRAFT: ELECTRONIC ENFORCEMENT TECHNOLOGY AND THE ECONOMIC PREDATION OF BLACK COMMUNITIES

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Automated traffic enforcement systems disproportionately impact Black communities in the United States. This Essay uncovers a troubling reality: while technologies such as speed cameras and red light cameras are often touted as tools for public safety by the National Highway Safety Transportation Administration, they disproportionately burden Black and Hispanic neighborhoods. The authors coin the term “automated stategraft” to describe this phenomenon—an insidious process that siphons financial resources from already vulnerable groups under the guise of law enforcement. In doing so, it exacerbates economic disparities and erodes trust in legal and governmental institutions.

This Essay delves into the biases inherent in these technologies, particularly in the future of automated traffic enforcement: facial recognition systems. These biases amplify racial and economic injustices, perpetuating inequities. To address this pressing issue, this Essay proposes more just traffic enforcement practices that prioritize community trust and avoid exacerbating racial disparities. It advocates for a critical reevaluation of existing practices, emphasizing equity, justice, and community well-being over financial gain or excessive surveillance. This call to action underscores the urgent need to safeguard public interests in an era marked by increasing

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surveillance, ensuring that technological advancements in law enforcement serve to protect—rather than oppress—marginalized communities.

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INTRODUCTION

In the landscape of post-pandemic economic recovery, U.S. cities have found a way to bridge budget deficits: automated traffic enforcement.¹ The implementation of speed cameras and advanced traffic enforcement technologies marks a significant shift in urban fiscal strategy. However, this solution is casting a shadow over Black communities, which increasingly feel the brunt of this enforcement.

In the heart of Chicago, young entrepreneur Rodney Perry unwittingly became a symbol of a contentious policy. While launching his new business, Perry experienced an unexpected twist: a barrage of traffic fines.² Within a year, Perry was saddled with eleven traffic tickets, a considerable number for marginally exceeding new, stricter speed limits.³ The financial fallout was severe: over \$700 in fines, a Denver boot immobilizing his vehicle, and the added burden of borrowing money to clear his dues.⁴

Perry's story is a microcosm of a larger, troubling pattern. Black communities—already navigating the complexities of post-pandemic recovery—find themselves disproportionately targeted by these predatory automated enforcement tactics.⁵ The use of technology, while ostensibly a neutral tool to generate revenue for cities, is inadvertently exacerbating existing inequalities.

This raises crucial questions about the equity of such policies, highlighting a scenario where measures intended to bolster city finances are placing an undue strain on communities that are the least equipped to bear it. This practice raises critical questions about the fairness and impact of such policies, especially in neighborhoods where every street corner seems to have a watchful camera. While aimed at enhancing road safety, these measures hint at a deeper narrative of disproportionate enforcement and the burden it places on the community's shoulders, challenging the balance between fiscal objectives and the goal of genuinely safer streets.

1. See Katie O'Brien, *Camera-Enforced Streets: Creating an Anti-Racist System of Traffic Enforcement*, 36 J. C.R. & ECON. DEV. 515, 536, 554 (2023) (showing that for-profit companies install and maintain traffic enforcement cameras, contracting with local governments).

2. Emily Hopkins & Melissa Sanchez, *Chicago's "Race-Neutral" Traffic Cameras Ticket Black and Latino Drivers the Most*, PROPUBLICA (Jan. 11, 2022, 5:00 AM), <https://www.propublica.org/article/chicagos-race-neutral-traffic-cameras-ticket-black-and-latino-drivers-the-most> [<https://perma.cc/U9Y4-B8FJ>].

3. *Id.*

4. *Id.*

5. See O'Brien, *supra* note 1, at 544.

Traffic enforcement cameras frequently ignite debates over fairness and equality. A central concern is their disproportionate impact on low-income and minority communities, particularly Black and Hispanic communities. The phenomenon of “driving while Black” highlights a troubling pattern: Black drivers are more likely to be stopped, ticketed, threatened, or harassed by police.⁶ The financial repercussions from traffic tickets disproportionately burden these drivers, often leading to debt and a higher likelihood of entanglement with the criminal legal system even after a routine traffic stop.⁷ Automated traffic enforcement expands the surveillance and punitive experience of driving while Black.

This context is vital when considering the future of automated traffic cameras and facial recognition technology. Contrary to the assumption that algorithms are impartial, these systems can perpetuate racial, gender, and other biases. The uneven distribution of cameras may result in biased enforcement, disproportionately targeting certain communities. Moreover, traffic camera fines pose an additional financial strain on those from lower socioeconomic backgrounds, exacerbating existing inequalities. This reality calls for a critical reassessment of the use and implications of automated enforcement systems to ensure they do not perpetuate bias.

This Essay explores how automated traffic enforcement is statecraft, when public officials illegally transfer property to public coffers, and in this case, using electronic means that accelerate the harm, creating

6. *Id.* at 518. Disparities like these are highlighted by how many times Sandra Bland and Philando Castile were pulled over by police over the years. For example, “[i]n his fourteen years of driving, police stopped Castile fifty-two times, resulting in eighty-six minor traffic offenses and \$6,588 in fines and fees.” *Id.* at 516–17. *See also* Kelsey Shoub, Leah Christiani, Frank R. Baumgartner, Derek A. Epp & Kevin Roach, *Fines, Fees, Forfeitures, and Disparities: A Link Between Municipal Reliance on Fines and Racial Disparities in Policing*, 49 POL’Y STUD. J. 835, 855 (2021) (finding that when police regularly rely on fines, “black drivers are searched at the same rate, but the rate for white drivers declines”); Kevin Roach, Frank R. Baumgartner, Leah Christiani, Derek A. Epp & Kelsey Shoub, *At the Intersection: Race, Gender, and Discretion in Police Traffic Stop Outcomes*, 7 J. RACE ETHNICITY & POL. 239, 256 (2022) (finding that Black male drivers are more likely to be searched and this disparity is exacerbated by investigatory stops); Frank R. Baumgartner, *NC Traffic Stops*, U.N.C. CHAPEL HILL, <https://fbaum.unc.edu/traffic.htm> [<https://perma.cc/BKC5-M9NM>] (highlighting traffic stop trends in North Carolina from 2002 to 2020).

7. *See generally* Shoub, Christiani, Baumgartner, Epp & Roach, *supra* note 6; FRANK R. BAUMGARTNER, DEREK A. EPP & KELSEY SHOUB, *SUSPECT CITIZENS: WHAT 20 MILLION TRAFFIC STOPS TELL US ABOUT POLICING AND RACE* (2018) (presenting a comprehensive review of traffic stops focused on distinctions in traffic stops between White, Black, and Hispanic/Latino populations).

atuomated stategraft.⁸ Part I describes automated traffic enforcement, its use, technological foundation, and concerns about the disparate impact of this technology. Part II outlines how automated enforcement generates profit and litigation. Part III presents concerns about disparate automated enforcement technologies and recommendations to address safety and equity. The Essay concludes with a call to continue to safeguard the American public from automated stategraft in an age of technology-enabled surveillance.

I. WHY TRAFFIC CAMERAS RAISE EQUITY CONCERNS

U.S. cities are increasingly turning to automated traffic enforcement, a system rife with concerns about fairness and equity. While proponents tout safety benefits, the real driver behind these programs is often the generation of substantial profits from fines. Speed cameras and red light cameras are disproportionately placed in Black neighborhoods, creating a system of predatory fines that traps low-income residents in debt. Red light cameras and speed cameras are examples of automated enforcement systems that remotely capture images of drivers who violate traffic laws. The systems then issue citations.⁹ To understand the enormity of the harm, it helps to start with a foundational understanding of the technology, bias, and the Black community. This Part discusses the implementation of traffic enforcement cameras, how the technology works, and how this automated enforcement disproportionately impacts predominately Black and Hispanic communities.

A. Overview and Implementation

1. HISTORICAL CONTEXT OF AUTOMATED TRAFFIC ENFORCEMENT

It is dangerous to walk in the United States.¹⁰ There is no single factor that explains why U.S. roads are more dangerous for pedestrians,

8. Bernadette Atuahene, *A Theory of Stategraft*, 98 N.Y.U. L. REV. 1, 3 (2023) (defining “stategraft” as “when state agents transfer property from persons to the state in violation of the state’s own laws or basic human rights”).

9. *Traffic Safety Review: State Speed and Red-Light Camera Laws and Programs*, NAT’L CONF. ST. LEGISLATURES, <https://www.ncsl.org/transportation/traffic-safety-review-state-speed-and-red-light-camera-laws-and-programs> [https://perma.cc/5DAD-5UL5] (Sept. 22, 2022). Automated enforcement measures can include red light cameras, speed cameras, work zone cameras, and school zone cameras. *Id.* (describing state legislative action on these types of cameras).

10. The Governors Highway Safety Association estimated that 7,508 pedestrians were killed in traffic crashes in 2022. GOVERNORS HIGHWAY SAFETY ASS’N,

but there are several contributing reasons, such as deadly road design, large SUVs and trucks, and pandemic-influenced driving styles.¹¹ It is also dangerous to drive in the United States. The AAA Foundation found that approximately 46% of people killed in red light–running crashes were passengers or people in other vehicles and more than 5% were pedestrians or cyclists.¹² Approximately 35% of those killed were the drivers who ran the red light.¹³ Speed-related crashes made up 29% of all crash fatalities in 2021.¹⁴ The National Highway Traffic Safety Administration estimates the economic cost of speed-related crashes was approximately \$46 billion in 2019.¹⁵

As bad as these conditions are, they are compounded when the pedestrian, driver, and/or traveler is Black.¹⁶ A study by the Boston University School of Public Health and the Harvard T.H. Chan School of Public Health found that traffic deaths disproportionately affect Black and Hispanic/Latino people with greater disparities than previously thought.¹⁷

PEDESTRIAN TRAFFIC FATALITIES BY STATE: 2022 PRELIMINARY DATA 3 (2023), <https://www.ghsa.org/sites/default/files/2023-06/GHSA%20-%20Pedestrian%20Traffic%20Fatalities%20by%20State%2C%202022%20Preliminary%20Data%20%28January-December%29.pdf> [https://perma.cc/GM3T-ETET]. In 2020, 15% of pedestrian and 26% of cyclist fatalities—and 41% of pedestrian and 55% of cyclist injuries—occurred at intersections. *We Need to Make Intersections Safer for Pedestrians and Cyclists*, INST. FOR TRANSP. & DEV. POL’Y (Aug. 17, 2022), <https://www.itdp.org/2022/08/17/intersections-safer-pedestrians-and-cyclists/> [https://perma.cc/AAT9-PA35].

11. Marin Cogan, *Why Pedestrian Deaths in the US Are a 40-Year High*, VOX (July 6, 2023, 6:00 AM), <https://www.vox.com/23784549/pedestrian-deaths-traffic-safety-fatalities-governors-association> [https://perma.cc/LPG5-79C3].

12. Andrew Gross, *Red Light Running Deaths Hit 10 Year High*, AAA NEWSROOM (Aug. 29, 2019), <https://newsroom.aaa.com/2019/08/red-light-running-deaths-hit-10-year-high/> [https://perma.cc/2ADC-SZ3L].

13. *Id.*

14. *Almost One-Third of Traffic Fatalities Are Speed-Related Crashes*, NHTSA (July 10, 2023), <https://www.nhtsa.gov/press-releases/speed-campaign-speeding-fatalities-14-year-high> [https://perma.cc/D75P-WNAR].

15. NAT’L HIGHWAY TRAFFIC SAFETY ADMIN., U.S. DEP’T OF TRANSP., *THE ECONOMIC AND SOCIETAL IMPACT OF MOTOR VEHICLE CRASHES, 2019 (REVISED)* 3 (2023), <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813403>.

16. For the history on how infrastructure expounded American inequality, see Johnny Miller, *Roads to Nowhere: How Infrastructure Built on American Inequality*, GUARDIAN (Feb. 21, 2018, 2:30 AM), <https://www.theguardian.com/cities/2018/feb/21/roads-nowhere-infrastructure-american-inequality> [https://perma.cc/5JA5-CUNS].

17. See Matthew A. Raifman & Ernani F. Choma, *Disparities in Activity and Traffic Fatalities by Race/Ethnicity*, 63 AM. J. PREVENTATIVE MED. 160 (2022). From 2005 to 2014, non-White people accounted for 46.1% of pedestrian deaths despite representing 34.9% of the national population. SMART GROWTH AM., *DANGEROUS BY DESIGN* 2016, at 16 (2017), <https://s3.amazonaws.com/cdn.smartgrowthamerica.org/dangerous-by-design-2016.pdf> [https://perma.cc/5MNQ-BZMB]. Respectively,

Inadequate investment in pedestrian infrastructure leads to higher fatalities in marginalized communities, and particularly in Black, lower-income, and tribal communities.¹⁸ In Houston, researchers found that Black neighborhoods had a thirty-five percent higher rate of pedestrian crashes than non-Black neighborhoods, primarily due to poorly designed infrastructure.¹⁹

Traffic stops are a common form of government-citizen interaction that raise complex law enforcement issues. These stops occur over 50,000 times every day in the U.S.²⁰ Notably, Black drivers face a higher risk; they are twenty percent more likely to be stopped by police than White drivers.²¹ Moreover, once stopped, Black drivers have a greater

Hispanics were 1.4 times and Native Americans were 4.5 times more at risk of being killed while walking than White non-Hispanic people. *Id.* at 17. Hispanics made up 16.9% of the population but accounted for 21.5% of pedestrian crash deaths. *Id.* at 16.

18. Stephanie Gidigbi Jenkins, *How Infrastructure Can Help Bridge the Racial Divide*, NAT. RES. DEF. COUNCIL (May 18, 2022), <https://www.nrdc.org/bio/stephanie-gidigbi-jenkins/how-infrastructure-can-help-bridge-racial-divide> [<https://perma.cc/6QJ5-6NHX>]. See also Christina M. Thornton, Terry L. Conway, Kelli L. Cain, Kavita A. Gavand, Brian E. Saelens et al., *Disparities in Pedestrian Streetscape Environments by Income and Race/Ethnicity*, SSM - POPULATION HEALTH, Apr. 19, 2016, at 206 (finding that disparities in pedestrian features exist between neighborhoods of differing socioeconomic and racial/ethnic composition). These issues are not restricted to people in inner cities. Researchers have found disparities in pedestrian infrastructure in a traditional Rust Belt city. Mozhgon Rajaei, Brenda Echeverri, Zachary Zuchowicz, Kristen Wiltfang & Jennifer F. Lucarelli, *Socioeconomic and Racial Disparities of Sidewalk Quality in a Traditional Rust Belt City*, SSM - POPULATION HEALTH, Nov. 19, 2021, at 1, 6–7.

19. Lucio Vasquez, *Poor Infrastructure in Houston's Black Neighborhoods Has Caused a Disproportionate Number of Pedestrian Crashes*, *New Study Says*, HOUSTON PUB. MEDIA (July 25, 2023, 1:28 PM), <https://www.houstonpublicmedia.org/articles/news/transportation/2023/07/25/457714/poor-infrastructure-in-houstons-black-neighborhoods-has-caused-a-disproportionate-number-of-pedestrian-crashes-new-study-says/> [<https://perma.cc/9WAS-CQX3>]. Fifty-four percent of pedestrian crashes were due to “infrastructural deficiencies.” *Id.*

20. *The Stanford Open Policing Project*, STAN. OPEN POLICING PROJECT, <https://openpolicing.stanford.edu/> [<https://perma.cc/BN9J-GETT>]. Baumgartner’s research emphasizes routine traffic stops are the most prevalent police tool used to increase revenue. See Shoub, Christiani, Baumgartner, Epp & Roach, *supra* note 6, at 836.

21. REGAN F. PATTERSON, CONG. BLACK CAUCUS FOUND., *NEW ROUTES TO EQUITY: THE FUTURE OF TRANSPORTATION IN THE BLACK COMMUNITY* 11 (2020), <https://www.cbfcinc.org/wp-content/uploads/2020/10/NewRoutesToEquity-Final5.pdf> [<https://perma.cc/6RMD-VKU9>]. See also SUSANNAH N. TAPP & ELIZABETH J. DAVIS, *CONTACTS BETWEEN POLICE AND THE PUBLIC*, 2020, at 11 tbl.8 (2022) (showing Black and Hispanic persons are more likely to experience the threat of force or nonfatal use of force by the police).

likelihood of arrest, charges, and incarceration.²² This disproportionate impact has led to increased support among Black communities for automated traffic enforcement.²³ A Rutgers study indicates that framing these systems within a racial justice context enhances their acceptance, reflecting a community's shift towards technology-based solutions to mitigate biases in traffic law enforcement.²⁴

2. REASONS FOR IMPLEMENTING TRAFFIC ENFORCEMENT CAMERAS

Responding to community demands, speed cameras now feature in pedestrian safety strategies across 196 U.S. cities, counties, and other communities, while 337 have implemented red light programs.²⁵ These systems offer many benefits: enhanced public safety, minimized interactions with law enforcement, and bolstered state and city profits.²⁶

22. Shoub, Christiani, Baumgartner, Epp & Roach, *supra* note 6, at 839. Race is often a mediating factor in police-citizen traffic stops. In general, Black drivers are more likely to experience a traffic stop than are White drivers. Further, “cities with larger Black populations tend to have higher rates of ticketing and revenue collection per capita than cities with smaller Black populations.” *Support for Traffic Cameras Increases if Used as a Tool to Limit Interactions with Police*, RUTGERS UNIV. (July 11, 2022), <https://www.rutgers.edu/news/support-traffic-cameras-increases-if-used-tool-limit-interactions-police> [https://perma.cc/DDD7-LAAP].

23. Julianne Cuba, *Support for Camera Enforcement Increases when Put in Racial Justice Context, Study Finds*, STREETS BLOG NYC (Apr. 25, 2022, 12:01 AM), <https://nyc.streetsblog.org/2022/04/25/support-for-camera-enforcement-increases-when-put-in-racial-justice-context-study-finds> [https://perma.cc/R9L2-BRT6].

24. Kelcie Ralph, Jesus M. Barajas, Angela Johnson-Rodriguez, Alexa Delbosc & Carlyn Muir, *Can a Racial Justice Frame Help Overcome Opposition to Automated Traffic Enforcement?*, TRANSP. RSCH. INTERDISC. PERSPS., Apr. 15, 2022, at 1, 7–8. See also Tennyson Donyéa, *Speed, Red-Light Cameras Could Reduce Racial Disparity in Police Stops, Study Says*, WHYY PBS (July 15, 2022), <https://whyy.org/articles/speed-red-light-cameras-racial-disparity-police-stops/> [https://perma.cc/LN9S-QK9L] (“Kelcie Ralph, a safety researcher whose work identifies traffic misconceptions and solutions to traffic safety issues . . . said the racial justice message ‘increased support for cameras, 71% versus 57%,’ and that some study participants had direct negative experiences with police in the past.”).

25. Carey L. Biron, *Poor, Minorities Hurt Most by US Expansion of Traffic Cameras*, REUTERS, <https://www.reuters.com/article/idUSL8N39P67M/> (Aug. 16, 2023, 4:02 AM). For an analysis of federal and state legal challenges to automated traffic enforcement systems, see generally Robin Miller, Annotation, *Automated Traffic Enforcement Systems*, 26 A.L.R.6th 179 (2007). For an updated list of legislation by jurisdiction, see *Speed and Red Light Cameras*, GOVERNORS HIGHWAY SAFETY ASS'N, <https://www.ghsa.org/state-laws/issues/speed%20and%20red%20light%20cameras> [https://perma.cc/9LJ2-3998].

26. See Biron, *supra* note 25. Albuquerque's mayor, Tim Keller, stated, “our goal here is behavior change. We're not going to gain any points or profit for this program for citing people.” D'Val Westphal, *Albuquerque Speed Enforcement Camera Citations Are on the Rise but the Money Isn't Adding up: Here's What We Know*, ALBUQUERQUE

However, the efficacy of traffic cameras in improving road safety remains contentious. Proponents highlight their role in enhancing overall safety. However, critics argue that they merely alter the nature of accidents. For example, the presence of these cameras can lead to behavioral adaptations by drivers, like abrupt braking to avoid fines. This may increase the risk of rear-end collisions at intersections with red light cameras.

Speed cameras, by recording license plates, enable municipalities to automatically issue violations for traffic law breaches. As of January 2024, twenty-five states and the District of Columbia permit red light cameras, and the same number allow speed cameras under state laws or city ordinances.²⁷ These laws typically set guidelines for camera usage, often in sensitive areas like school or work zones.²⁸ Conversely, nine states have banned speed cameras and eight prohibit red light cameras.²⁹

The impact on law enforcement is notable. For example, due to the influence of automated traffic enforcement on driver behavior, the San Francisco Police Department saw a dramatic decrease in speeding tickets issued, from 948 in September 2015 to just ninety-one in September

J., https://www.abqjournal.com/news/local/albuquerque-speed-enforcement-camera-citations-are-on-the-rise-but-the-money-isnt-adding-up/article_30d4e2eb-4980-515a-8b06-fb6aad5f75b4.html [<https://perma.cc/DF9U-KK2S>] (June 7, 2023).

27. *Safety Camera Laws*, INS. INST. FOR HIGHWAY SAFETY (Feb. 2024), <https://www.iihs.org/topics/red-light-running/safety-camera-laws> [<https://perma.cc/GS5G-28G4>] [hereinafter *Safety Camera Laws*]. The number of communities with speed safety cameras has increased in recent years (from 137 in 2018 to 211 in 2023), but the number of communities using red light safety cameras has dropped (from 403 in 2018 to 337 in 2023). *Trends in the Number of U.S. Communities with Speed Safety Cameras*, Line Graph in *Speed*, INS. INST. FOR HIGHWAY SAFETY, <https://www.iihs.org/topics/speed> [<https://perma.cc/8ECN-Q63B>] (Jan. 2024); *Trends in the Number of U.S. Communities with Red Light Safety Camera Programs*, Line Graph in *Red Light Running*, INS. INST. FOR HIGHWAY SAFETY, <https://www.iihs.org/topics/red-light-running> [<https://perma.cc/8BF5-T5W2>] (Jan. 2024).

28. *See Safety Camera Laws*, *supra* note 27.

29. GOVERNORS HIGHWAY SAFETY ASS'N, *supra* note 25. *See also* CHUCK DEWEESE, GOVERNORS HIGHWAY SAFETY ASS'N, *AUTOMATED ENFORCEMENT IN A NEW ERA* 8 (2023), <https://www.ghsa.org/sites/default/files/2023-12/Automated%20Enforcement%20in%20a%20New%20Era%2012-5-23.pdf> [<https://perma.cc/YT8G-8GZZ>] (“Some states do not have any laws addressing the use of [automated enforcement], thus deferring to municipalities.”). However, reducing contact between law enforcement and drivers can save time and resources. *See* Gregg Palermo, *Red Light Traffic Cameras Likely Coming Back to St. Louis*, SPECTRUM NEWS (Sept. 18, 2023, 3:03 PM), <https://spectrumlocalnews.com/mo/st-louis/news/2023/09/18/st--louis-red-light-cameras-> [<https://perma.cc/REJ6-EAS9>].

2023.³⁰ This shift reflects the growing reliance on automated enforcement and its significant role in capturing traffic violations.

3. THE RETURN OF AUTOMATED TRAFFIC ENFORCEMENT: WHY NOW?

Automated enforcement, unpopular in the U.S.,³¹ faces criticism for causing new kinds of accidents, lacking transparency, and being partly managed by private firms which share ticket profits.³² Public trust in automated enforcement further eroded after Redflex, a private firm involved in several jurisdictions—including Chicago—was embroiled in a bribery scandal that led to convictions.³³ Although Redflex settled a fraud lawsuit with Chicago for \$20 million, the company’s peak revenue was \$44 million in 2023.³⁴ Recently, factors like the COVID-19 pandemic and technological advancements have reignited discussions about this technology.

Driver Behavior after COVID-19. At the height of their use, red light cameras became widely unpopular in the 2010s, and many municipalities found themselves reversing course.³⁵ However, COVID-19 restarted efforts to increase automated traffic enforcement.³⁶ Driver

30. Heather Knight, *California Allows Cities To Catch Speeding Drivers with Automated Cameras*, N.Y. TIMES (Oct. 13, 2023), <https://www.nytimes.com/2023/10/13/us/california-speed-cameras.html>.

31. See Maya Fegan, *Speeding into the Future: The Pitfalls of Automated Traffic Enforcement*, BERKELEY J. CRIM. L.: BLOG (Apr. 15, 2021), <https://www.bjcl.org/blog/speeding-into-the-future-the-pitfalls-of-automated-traffic-enforcement> [<https://perma.cc/ABD5-WKEZ>] (“In recent years, there has been increasing backlash against ATE, primarily due to public perception of the fines as excessive and revenue-driven.”).

32. See *id.*

33. Press Release, U.S. Att’y’s Off., N. Dist. of Ill., Former Redflex CEO Sentenced to 30 Months for Corruption in the Awarding of Chicago’s Red-Light Camera Contracts (Nov. 10, 2016), <https://www.justice.gov/usao-ndil/pr/former-redflex-ceo-sentenced-30-months-corruption-awarding-chicago-s-red-light-camera> [<https://perma.cc/QK3J-TS62>].

34. Lonnie Burton, *Red-Light Camera Company to Pay \$20 Million Settlement to City of Chicago To Settle Fraud and Bribery Lawsuit*, PRISON LEGAL NEWS (Sept. 7, 2017), <https://www.prisonlegalnews.org/news/2017/sep/7/red-light-camera-company-pay-20-million-settlement-city-chicago-settle-fraud-and-bribery-lawsuit/> [<https://perma.cc/549R-RXB5>]; *Redflex Revenue*, ZIPPPIA, <https://www.zippia.com/redflex-traffic-systems-careers-751712/revenue/> [<https://perma.cc/B8LL-6952>].

35. Matthew S. Maisel, *Slave to the Traffic Light: A Road Map to Red Light Camera Legal Issues*, 10 RUTGERS J.L. & PUB. POL’Y 401, 426–29 (2013) (outlining the political fallout and budget deficiencies in Maryland, Washington, D.C., Virginia, New York, and New Jersey and, as of 2013, the municipalities where voters rejected automated traffic enforcement).

36. DEWEESE, *supra* note 29, at 4–5.

behavior changed.³⁷ Though fewer drivers were on the roads, drivers became less vigilant and common driving mistakes increased, such as speeding, distracted driving, mobile phone usage while driving, and inebriated driving.³⁸ The National Highway Traffic Safety Administration found a significant and ongoing rise in traffic-related deaths in the U.S., with 2020 seeing the highest number in over a decade, and this upward trend continuing into 2021.³⁹

Legal Challenges, Evolving Tech, and Federal Funds. The implementation of traffic cameras has faced legal hurdles, such as in St. Louis, Missouri. The city halted its use of traffic cameras in 2013 after facing legal challenges.⁴⁰ In 2015, the Missouri Supreme Court ruled against the use of these cameras.⁴¹ The court's decision highlighted a fundamental flaw in the system: it unjustly required drivers to prove they were not operating the vehicle at the time of the offense.⁴²

In response to these legal challenges, there is a movement towards integrating innovative technologies into traffic enforcement. Proposed systems include the use of facial recognition technology, coupled with cross-referencing data from various databases, to accurately identify drivers before issuing any citations or summonses.⁴³ This technological advancement aims to address the accuracy and fairness concerns previously raised by the Missouri Supreme Court.

37. Shahzeb Ansari, Haiping Du, Fazel Naghdy & Abdul Sattar, *Impact of Post-Covid-19 on Driver Behavior: A Perspective Towards Pandemic-Sustained Transportation*, J. TRANSP. & HEALTH, Jan. 3, 2023, at 1, 2; Erika Lopetrone & Francesco N. Biondi, *On the Effect of COVID-19 on Drivers' Behavior: A Survey Study*, TRANSP. RSCH. REC., Apr. 2023, at 742, 742 (“[R]espondents indicated they had witnessed more aggressive and distracting drivers on the road after March 2020 relative to the time before the pandemic.”); Amanda N. Stephens, Steven Trawley, Justin Ispanovic & Sophie Lowrie, *Self-Reported Changes in Aggressive Driving Within the Past Five Years, and During COVID-19*, PLOS ONE, Aug. 1, 2022, at 1, 3, 9.

38. Ansari, Du, Naghdy & Sattar, *supra* note 37, at 2; Xiaomeng Dong, Kun Xie & Hong Yang, *How Did COVID-19 Impact Driving Behaviors and Crash Severity? A Multigroup Structural Equation Modeling*, ACCIDENT ANALYSIS & PREVENTION, Apr. 27, 2022, at 1, 1–2.

39. Andrew Gross, *Solving a Puzzle: With Fewer Drivers on the Road During COVID, Why the Spike in Fatalities?*, AAA NEWSROOM (Feb. 28, 2022), <https://newsroom.aaa.com/2022/02/solving-a-puzzle-with-fewer-drivers-on-the-road-during-covid-why-the-spike-in-fatalities/> [<https://perma.cc/3HKE-BN68>]. In 2020, approximately 38,680 people died in vehicle crashes, a 7.2 percent increase compared to the reported 36,096 deaths in 2019. And there was a 12 percent increase from the first nine months of 2020 compared to the first nine months of 2021, with an estimated 31,720 deaths caused by crashes. *Id.*

40. Palermo, *supra* note 29.

41. *Id.*

42. *Id.*

43. *Id.*

Accompanying these technological updates, there is an anticipation of new legislation aimed at addressing civil liberty concerns related to surveillance and data collection.⁴⁴ The goal is to strike a balance between effective law enforcement and the protection of individual privacy rights.

The recent increase in federal funding through the Federal Infrastructure Investment and Jobs Act has opened doors for states to allocate these funds towards traffic cameras, specifically in work and school zones.⁴⁵ This development marks a significant shift in traffic enforcement strategy, backed by federal support.

Moreover, the revenue generated from traffic fines is proposed to be fully reinvested into sustaining and improving the traffic camera program, supporting driver education, and funding traffic infrastructure improvements.⁴⁶ This reinvestment strategy aims to create a comprehensive and self-sustaining traffic safety system, underpinned by new federal funding, legal compliance, and advanced technology.

4. TECHNICAL ASPECTS AND OPERATIONAL CONCERNS

Though the technology is relatively established, concerns continue to revolve around accuracy, privacy, and security. Speed enforcement uses radar and aerial speed enforcement along with automated enforcement, which can use radar or lidar detectors embedded in the roadway to gauge vehicle speed.⁴⁷ The camera captures the date, time, location, speed, and license plate of the vehicle.⁴⁸ In some jurisdictions, it will also capture a picture of the driver.⁴⁹ There are also efforts to design automated enforcement to scan for distracted driving and seatbelt enforcement.⁵⁰ These programs are already in use in the United Kingdom

44. *See id.*

45. *See generally* Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, 135 Stat. 429 (2021).

46. *Id.* § 11101–30.

47. *Traffic Safety Review: State Speed and Red-Light Camera Laws and Programs*, *supra* note 9.

48. *Id.*

49. Palermo, *supra* note 29.

50. DEWEESE, *supra* note 29, at 7.

As of November 2023, no state laws address the use of automated enforcement specifically to combat distracted driving. . . . [Automated enforcement] technology to prevent distracted driving has proven successful in Australia and is currently being tested in North Carolina with commercial motor vehicle operators only. The system uses both fixed and mobile cameras to capture driver footage, which is then reviewed by artificial intelligence to identify the operator and violation. . . . In addition to being used to enforce distracted driving laws, this technology can also be used to enforce seat belt laws and address traffic violations such as expired registrations. In 2019,

and there are tests underway in North Carolina.⁵¹ And the Los Angeles City Controller was quoted saying they had the technology to watch for other driving violations.⁵² This technology can monitor and assess a variety of factors.

Red-light safety cameras take photographs of vehicles entering signalized intersections after the light has turned red. The cameras are connected to the traffic signal and sensors that monitor traffic flow just before the crosswalk or stop line. The sensors provide additional violation data such as vehicle speed and how long the light was red before the vehicle entered the intersection. . . . Many red-light safety camera programs provide motorists with a grace period of up to half a second after the light turns red.⁵³

License Plate Readers. Speed cameras usually capture license plate images, but not images of driver or passenger faces.⁵⁴ However, California and some other states require a picture of the driver's face;

efforts were undertaken in Maryland to have a bill introduced to permit the use of this technology to reduce distracted driving violations; this effort failed.

Id. at 9.

51. *Id.*; *Suspected Seatbelt and Mobile Phone Offences Captured as Part of Week of Action*, HAMPSHIRE & ISLE OF WIGHT CONSTABULARY (July 25, 2023, 11:59 AM), <https://www.hampshire.police.uk/news/hampshire/news/news/2023/july/Suspected-seatbelt-and-mobile-phone-offences-captured-as-part-of-week-of-action/> (“The van is equipped with two cameras which capture suspected offences. One of them is set at a shallow angle to identify mobile phone use to the ear, and to see whether the seatbelt is going across the body or hanging down behind the driver. The second camera has a steep view, providing visibility of mobile phone use low down, to detect behaviour such as texting near the steering wheel or door. . . . This process ensures that only clear offences, which are reviewed by at least two humans, are considered for prosecution.”).

Baton Rouge, Louisiana, leadership remarked that the red light cameras could also help law enforcement with detecting criminal activity. Bess Casserleigh, *Metro Council Could Re-Evaluate City-Parish Red Light Camera Program*, WBRZ (Sept. 21, 2022, 6:00 PM), <https://www.wbrz.com/news/metro-council-could-re-evaluate-city-parish-red-light-camera-program/> [<https://perma.cc/V36P-3JZN>].

52. Laura Strachan, *Red Light Camera Tickets To Include Other Violations?*, FINDLAW, findlaw.com/legalblogs/law-and-life/red-light-camera-tickets-to-include-other-violations/ (Mar. 21, 2019).

53. DEWESE, *supra* note 29, at 10.

54. *Cf.* Lindsey Holden, *Divisions Grow Over Use of Facial Recognition in California*, GOV'T TECH. (Apr. 18, 2023), <https://www.govtech.com/policy/divisions-grow-over-use-of-facial-recognition-in-california> [<https://perma.cc/TUP9-TRMQ>].

some use facial recognition and some do not.⁵⁵ In general, an insurance company found a five percent error rate in speed and red light cameras for various reasons.⁵⁶ On October 13, 2023, California passed a bill which bans or restricts the use of facial recognition for police body cameras, traffic monitoring, and other uses.⁵⁷ However, cameras that capture facial images can save those images in databases,⁵⁸ which could be used for other law enforcement activities unless laws prevent this storage. The lack of clarity in whether facial images are collected or stored is itself a question of concern.

Facial Recognition and Traffic Enforcement Cameras. Jurisdictions are debating adding facial recognition to traffic enforcement cameras. It is important for the legal community to understand its implications on automated traffic enforcement. Facial recognition technology primarily utilizes convolutional neural networks (CNNs), a deep learning algorithm integral to many AI applications, including image analysis.⁵⁹ CNNs transform facial features, or pixel values, into numerical representations for comparison against a facial image database, excelling in pattern and feature recognition by mimicking the human visual cortex's layer-based

55. See *Red Light Camera Citation*, SUPERIOR CT. OF CAL.: CNTY. OF S.F., <https://sf.courts.ca.gov/divisions/traffic/red-light-camera-citation> [<https://perma.cc/C2QG-ADTL>]. While California will not use facial recognition, St. Louis, Missouri, will use facial recognition when reviewing automated traffic enforcement. CAL. VEH. CODE § 22425(l)(4) (West 2024); Palermo, *supra* note 29.

56. See Letter from Ryan Nicolas, Reg'l Manager, Md. Photo Enf't, Xerox, to Khalil Zaled, Dir., Dep't of Transp. (Dec. 11, 2012), <https://thenewspaper.com/rlc/docs/2012/md-xeroxerror.pdf> [<https://perma.cc/53PL-HDU9>].

57. A.B. 645, 2023–24 Leg., Reg. Sess. (Cal. 2023).

(4) Photographic evidence that is obtained from a speed safety system that does not result in the issuance of a notice of violation shall be destroyed within five business days after the photograph was first made. The use of facial recognition technology in conjunction with a speed safety system shall be prohibited.

Id. § 22425(l)(4). Since the language says images not resulting in a fine cannot be stored, there needs to be clarification on whether images resulting from a fine can be stored. A recent bill puts restrictions on facial recognition technology. See Press Release, Phil Ting, New Legislation by Assemblymember Ting Targets Law Enforcement Use of Facial Recognition Technology To Protect Californians (Jan. 11, 2024), <https://a19.asmdc.org/press-releases/20240111-new-legislation-assemblymember-ting-targets-law-enforcement-use-facial> [<https://perma.cc/6WPY-4HWR>].

58. Companies like Redflex have global databases, including images and drivers details from the United States and Australia. Sarah Marx Quintanar, *The Economics of Discrimination in the Court System: Police, Technology, and Their Interaction* 14, 17 (2011) (Ph.D. dissertation, Louisiana State University) (LSU Scholarly Repository).

59. Zhiming Xie, Junjie Li & Hui Shi, *A Face Recognition Method Based on CNN*, J. PHYSICS: CONF. SERIES, 2019, at 1, 1–2.

processing.⁶⁰ Despite their longstanding use in surveillance and access control, and increasing accuracy⁶¹ for some demographics, facial recognition algorithms are evolving, with technologies like GPT4 and Gemini potentially diverging from the CNN-based methods. This evolution underscores the dynamic nature of facial recognition, where varying technologies may exhibit distinct accuracy levels and distinct biases.

Concerns About Technology. The technology's reliability is compromised by factors such as poor lighting, incorrect poses, obstructions like hair, and crucially, the biases in training data. The latter issue, highlighted by AI researchers Joy Buolamwini and Timnit Gebru, significantly impacts darker-skinned individuals, with some systems historically failing on approximately twenty-two percent of such faces.⁶² In contrast, the error rate was less than one percent on light-skinned male faces, and most of the data that trained the model were collected from the White male tech workforce.⁶³ Although improvements have been made—reducing error rates in some systems to as low as 0.5 percent for specific tasks—racial and gender biases persist, necessitating independent bias audits for each application of facial recognition in traffic monitoring to ensure fairness and effectiveness.⁶⁴

Cybersecurity risks in connected technologies like traffic enforcement systems are often sidelined, but these vulnerabilities are a core concern. Such systems are prone to hacking, potentially leading to evidence tampering or generating false traffic violation reports.⁶⁵ There

60. See *id.* at 1–2. For clarity, the technology involves feature matching by pixel, where the algorithm identifies unique facial features by analyzing the pixels of an image. It compares these features against a database to find matches, making it a powerful tool for identity verification and other applications. See *id.*; Soad Almabdy & Lamiaa Elrefaei, *Deep Convolutional Neural Network-Based Approaches for Face Recognition*, APPLIED SCIS., Oct. 17, 2019, at 1, 2–3.

61. See Paramjit Kaur, Kewal Krishan, Suresh K. Sharma & Tanuj Kanchan, *Facial-Recognition Algorithms: A Literature Review*, 60 MED. SCI. & L. 131, 133 (2020).

62. Joy Buolamwini & Timnit Gebru, *Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification*, PROC. MACH. LEARNING RSCH., 2018, at 1, 10.

63. *Id.* at 6, 9.

64. Inioluwa Deborah Raji, Timnit Gebru, Margaret Mitchell, Joy Buolamwini, Joonseok Lee & Emily Denton, *Saving Face: Investigating the Ethical Concerns of Facial Recognition Auditing*, 2020 AEIS 145, 147.

65. See DENIS MAKRUSHIN & VLADIMIR DASHCHENKO, SECURING SMART CITIES, FOOLING THE 'SMART CITY' 18–19 (2016), <https://thenewspaper.com/rlc/docs/2016/kaspersky.pdf> [<https://perma.cc/QU9X-ZQW4>].

is also the risk of personal data exposure in the event of security breaches, emphasizing the need for robust security measures.⁶⁶

Scams mimicking government documents are widespread, affecting public trust. An instance in Bernalillo County, New Mexico, saw residents receive fraudulent letters from a “Tax Processing Unit,” falsely claiming unpaid taxes and threatening property seizure.⁶⁷ This undermines confidence in official notices, leading people to overlook genuine documents.

The reliability of traffic enforcement cameras is vital. False positives, where cameras incorrectly identify lawful vehicles as violators, and false negatives, where violations are missed, are common.⁶⁸ Factors like poor camera calibration, inadequate resolution, or environmental challenges like adverse weather and poor lighting can contribute to these inaccuracies.⁶⁹ In Texas, drivers have reported cameras capturing images of minor infractions, such as edging into a crossing or slightly crossing a line at a red light, raising fairness concerns.⁷⁰ For red light cameras, the timing mechanism’s precision is vital; slight timing errors can lead to unwarranted tickets, undermining the system’s fairness.⁷¹

Errors in vehicle identification, often due to misreading license plates or deliberate obfuscation, are also frequent.⁷² Each specific facial recognition software used in traffic monitoring must undergo independent bias audits to ensure accuracy and equity, as these audits are not universally applicable.⁷³ Issues related to facial recognition tied to vehicle

66. *See id.*

67. Isaac Cruz, *Scam Tax Letters Sent to Bernalillo County Residents*, KQRE NEWS, [krqe.com/news/new-mexico/scam-tax-letters-sent-to-bernalillo-county-residents/?ipid=promo-link-block1](https://www.krqe.com/news/new-mexico/scam-tax-letters-sent-to-bernalillo-county-residents/?ipid=promo-link-block1) [https://perma.cc/JJS9-3X5C] (Mar. 24, 2023, 1:37 PM).

68. *Cf., e.g.,* Scott Desind, *3 Flaws in Traffic Cameras You Should Be Aware of*, TRAFFIC TICKET ATT’YS, (Nov. 1, 2014), [thetrafficticketattorneys.com/blog/traffic-cameras-flaws/](https://www.thetrafficticketattorneys.com/blog/traffic-cameras-flaws/) [https://perma.cc/8YXH-4WC5].

69. *See generally* Chuanyun Fu & Hua Liu, *Investigating Influence Factors of Traffic Violations at Signalized Intersections Using Data Gathered from Traffic Enforcement Camera*, PLOS ONE, Mar. 4, 2020, at 1.

70. Christine Hauser, *Texas Is Latest State To Pump the Brakes on Red-Light Cameras*, N.Y. TIMES (June 8, 2019), <https://www.nytimes.com/2019/06/08/us/texas-cameras-red-lights.html>.

71. *See* Desind, *supra* note 68.

72. *See Automated License Plate Readers Widely Used, Subject to Abuse*, FORD SCH. PUB. POL’Y (Feb. 22, 2023), stpp.fordschool.umich.edu/news/2023/automated-license-plate-readers-widely-used-subject-abuse [https://perma.cc/B539-BNER].

73. *See* Alex Najibi, *Racial Discrimination in Face Recognition Technology*, SITN (Oct. 24, 2020), sitn.hms.harvard.edu/flash/2020/racial-discrimination-in-face-recognition-technology/ [https://perma.cc/43HU-L694].

ownership are the most pernicious for the Black community and others with darker complexions.⁷⁴

While traffic enforcement systems offer potential benefits for road safety and regulation, their effectiveness is significantly undermined by cybersecurity risks, potential for scams, and inherent biases in technology, particularly facial recognition. These challenges necessitate robust security measures, public awareness, and continuous auditing for biases.

B. Predatory Ticketing: How Traffic Cameras Exploit Communities of Color

1. UNFAIR BURDEN ON PREDOMINATELY BLACK AND HISPANIC NEIGHBORHOODS

Traffic enforcement cameras raise ethical, legal, and social concerns, reflecting apprehensions about their implementation and impact. These systems unfairly target residents with a barrage of financial penalties, creating a system of predatory ticketing that traps low-income residents in debt. Criticisms include their ineffectiveness and exacerbation of racial inequities.⁷⁵ In Chicago, proximity to expressways results in higher ticketing in Black neighborhoods.⁷⁶ A majority of the city's top ticketed intersections are in Black census tracts.⁷⁷

Nationally, organizations have highlighted the disproportionate surveillance of low-income, Black, and Hispanic communities.⁷⁸ In

74. See, e.g., Buolamwini & Gebru, *supra* note 62, at 3.

75. See, e.g., *Predominantly Black Neighborhoods in D.C. Bear the Brunt of Automated Traffic Enforcement*, FINES & FEES JUST. CTR. (June 28, 2018), [finesandfeesjusticecenter.org/articles/predominantly-black-neighborhoods-in-d-c-bear-the-brunt-of-automated-traffic-enforcement/](https://perma.cc/M67V-JM82) [https://perma.cc/M67V-JM82]; Hopkins & Sanchez, *supra* note 2.

76. Hopkins & Sanchez, *supra* note 2.

77. *Id.* (stating six of the ten locations that issued the most tickets are in majority Black census tracts). Meanwhile, only two of the ten intersections where red light cameras issued the fewest tickets are in majority Black tracts. *Id.*

78. See, e.g., Carmen Chau, *NAACP Oppose Red Light and Speeding Camera Legislation*, FOX61, <https://www.fox61.com/article/news/politics/naacp-oppose-red-light-speeding-camera-legislation/520-77e54ba2-c081-44c6-b352-b95a85c2fe8f> [https://perma.cc/SF5Y-B4PX] (May 25, 2023, 5:43 PM). The NAACP in Connecticut expressed concern about the placement of automated traffic enforcement in Black and Latino communities. *Id.* The Anti-Police Terror project noted that expanded video surveillance in Oakland would continue to be targeted against Black, low-income, and Hispanic populations. Marianne Favro, *Here's What To Know About Speeding Cameras Coming to the Bay Area*, NBC BAY AREA, <https://www.nbcbayarea.com/news/local/speeding-cameras-coming-to-bay-area/3343594/> [https://perma.cc/A97Q-UUJW] (Oct. 17, 2023, 12:21 AM).

Chicago, Black ZIP codes, representing twenty-seven percent of households, received thirty-eight percent of camera tickets from 2015 to 2019.⁷⁹ The COVID-19 pandemic intensified these disparities, with Black and Latino workers, who are less likely to have remote jobs, facing higher financial penalties.⁸⁰ ProPublica found that majority-Black ZIP codes had a ticketing rate three times higher than majority-White areas in 2020.⁸¹

Despite race-neutral intentions, ProPublica's analysis reveals Black and Latino drivers still face disproportionate ticketing in Chicago.⁸² While automated enforcement reduces police-community interactions, Priya Sarathy Jones of the Fines and Fees Justice Center cautions that it can create parallel financial burdens on marginalized groups.⁸³

But what happens when electronic surveillance is used against pedestrians in the name of pedestrian safety? It is already documented that Black pedestrians constitute a disproportionate number of individuals ticketed for pedestrian violations such as biking citations or jaywalking.⁸⁴

79. Hopkins & Sanchez, *supra* note 2. In majority-Hispanic ZIP codes, which make up nineteen percent of tickets and sixteen percent of households, the disparity was less severe. *Id.* Households in majority-Black ZIP codes received an average of four citations, more than twice as many as majority-White ZIP codes, which received less than two tickets. During the same period, households in majority-Hispanic ZIP codes received more than three citations per household. *Id.*

80. *Id.*

81. *Id.* While there was an increase, it was much smaller for households in majority-Hispanic ZIP codes. *Id.*

82. *Id.* Low-income residents incurred additional penalties. ProPublica's research into Chicago's ticket debts sending Black motorists into bankruptcy led to significant reform. See Melissa Sanchez & Sandhya Kambhampati, *How Chicago Ticket Debt Sends Black Motorists into Bankruptcy*, PROPUBLICA (Feb. 27, 2018), <https://features.propublica.org/driven-into-debt/chicago-ticket-debt-bankruptcy/> [<https://perma.cc/9KV3-JDSM>]; Melissa Sanchez & Elliott Ramos, *Chicago City Council Approves Ticket and Debt Collection Reforms to Help Low-Income and Minority Motorists*, PROPUBLICA (Sept. 18, 2019, 1:20 PM), <https://www.propublica.org/article/chicago-city-council-approves-ticket-and-debt-collection-reforms> [<https://perma.cc/WE9V-P56J>].

83. Priya Sarathy Jones, *Mayor Bowser Made a Wrong Turn on Traffic Safety. A Real Task Force Can Get DC Moving in the Right Direction.*, FINES & FEES JUST. CTR. (Apr. 11, 2023), <https://finesandfeesjusticecenter.org/2023/04/11/mayor-bowser-made-a-wrong-turn-on-traffic-safety-a-real-task-force-can-get-dc-moving-in-the-right-direction/> [<https://perma.cc/FN8M-QUFM>].

84. From 2012 to 2017, Black pedestrians in Jacksonville, Florida, made up fifty-five percent of all ticketed pedestrians though they represented only twenty-nine percent of the population. Topher Sanders, Kate Rabinowitz & Benjamin Conarck, *Walking While Black*, PROPUBLICA (Nov. 16, 2017), <https://features.propublica.org/walking-while-black/jacksonville-pedestrian-violations-racial-profiling/> [<https://perma.cc/FR2C-RSRA>]. See also *Analysis Finds Tickets Disproportionately Issued to Black Pedestrians*, EQUAL JUST. INITIATIVE (Nov. 30, 2017), <https://eji.org/news/analysis-finds-tickets-disproportionately-issued-to-black->

Disproportionate instances of “biking while Black” citations happened in New York City, Fort Lauderdale, Chicago, and Minneapolis.⁸⁵ In New York City, Black and Latino pedestrians received almost ninety percent of illegal walking citations in 2019.⁸⁶ In Sacramento, Black pedestrians were five times more likely than White pedestrians to receive a jaywalking citation.⁸⁷ These disparities in citations were especially prevalent during the COVID-19 pandemic,⁸⁸ and continue to make walking and cycling unsafe for people of color because of increased interactions with law enforcement.⁸⁹ If being a Black, Hispanic, or Native American pedestrian or cyclist is penalized, what will happen when surveillance is continually and incorrectly causing increased infractions against these populations?

2. EXAMPLES FROM SPECIFIC MUNICIPALITIES

Rochester, New York, and Miami discontinued their automated traffic enforcement programs in 2016 and 2017, respectively, due to

pedestrians/ [https://perma.cc/KW7S-FW8F] (“Even larger racial disparities exist in ticketing for violations of less-familiar statutes. For example, 78 percent of all tickets for ‘walking in the roadway where sidewalks are provided’ were issued to Black pedestrians, as were 68 percent of tickets for ‘failing to cross the road at a right angle or shortest route.’”).

85. Romic Aevaz, *Op-Ed: Transportation and the Police Part 2: The Enforcement Problem in Pedestrian and Bicycle Safety*, ENO CTR. FOR TRANSP. (June 19, 2020), <https://enotrans.org/article/transportation-and-the-police-part-2-the-enforcement-problem-in-pedestrian-and-bicycle-safety/> [https://perma.cc/G4W8-CDCV].

86. *Id.* See also Gersh Kuntzman, ‘Jaywalking While Black’: Final 2019 Numbers Show Race-Based NYPD Crackdown Continues, STREETS BLOG NYC (Jan. 27, 2020, 12:01 AM), <https://nyc.streetsblog.org/2020/01/27/jaywalking-while-black-final-2019-numbers-show-race-based-nypd-crackdown-continues> [https://perma.cc/4ZQX-NHJH].

87. Aevaz, *supra* note 85. See also Anita Chabria, Nashelly Chavez & Phillip Reese, ‘Racial Profiling’? Jaywalking Tickets Disproportionately Given to Black People in Sacramento, SACRAMENTO BEE, <https://www.sacbee.com/news/local/crime/article144743834.html> [https://perma.cc/J36Y-VA4L] (Apr. 16, 2017, 7:57 AM).

88. See Ashley Southall, *Scrutiny of Social-Distance Policing as 35 of 40 Arrested Are Black*, N.Y. TIMES, <https://www.nytimes.com/2020/05/07/nyregion/nypd-social-distancing-race-coronavirus.html> (Nov. 30, 2020).

89. See Aevaz, *supra* note 85; Stefani Cox & Charles Brown, *Silent Barriers to Bicycling, Part III: Racial Profiling of the Black and Latino Community*, BETTER BIKE SHARE P’SHIP (Mar. 13, 2017), <https://betterbikeshare.org/2017/03/03/silent-barriers-bicycling-part-iii-racial-profiling-black-latino-community/> [https://perma.cc/2HUA-4D9U]; Stefani Cox, *Could the Challenges of “Biking While Black” Be Compromising Bike Share Outreach Efforts?*, BETTER BIKE SHARE P’SHIP (Nov. 8, 2016), <https://betterbikeshare.org/2016/11/08/difficulties-biking-black-compromise-bike-share-outreach-efforts/> [https://perma.cc/S62V-KHR7].

concerns over their impact on low-income communities.⁹⁰ Meanwhile, in Chicago, Mayor Lori Lightfoot proposed a “smart streets pilot” project for automatic ticketing of parking or standing violations.⁹¹ Cameras mounted on poles and city or Chicago Transit Authority vehicles would automatically ticket drivers who are parked or standing illegally in crosswalks, bike lanes, bus lanes, bus stops, and no parking zones.⁹²

Albuquerque has a convoluted history with automated speed enforcement. Looking to address safety and equity, the city initially adopted the technology in 2005,⁹³ but faced a hiatus following a 2010 ban.⁹⁴ However, driven by traffic data and safety concerns, speed cameras were reintroduced in May 2022.⁹⁵ Despite challenges like incorrect enforcement⁹⁶ and vandalism,⁹⁷ Albuquerque’s approach evolved, especially with the Vision Zero Action Plan focusing on major

90. Will Cleveland, *Red Light Camera Program Turned off*, DEMOCRAT & CHRON., <https://www.democratandchronicle.com/story/news/2016/12/20/red-light-camera-program-turned-off/95679500/> (Dec. 21, 2016, 2:18 AM) (describing the change in Rochester, New York); David Smiley, *Miami Pulls the Plug on Its Red Light Camera Program*, MIA. HERALD, <https://www.miamiherald.com/news/local/community/miamidade/article189812879.html> [<https://perma.cc/PAF5-KGH3>] (Dec. 15, 2017, 2:12 PM).

91. Michael Brady, *Chicago May Test Parking Enforcement Tech To Cut Traffic Deaths*, SMARTCITIESDIVE (Jan. 20, 2023), <https://www.smartcitiesdive.com/news/chicago-smart-streets-parking-enforcement-tech-traffic-deaths/640793/> [<https://perma.cc/ZRY6-YZAN>].

92. *Id.*

93. *13 KRQE* (CBS television broadcast Nov. 30, 2007). In 2008, Las Cruces, New Mexico’s second largest city, also investigated the implementation of red light cameras. *See* Steve Ramirez, *Council Considers Red Light Cameras*, LAS CRUCES SUN-NEWS, Sept. 13, 2008.

94. *See* Rick Nathanson, *Albuquerque, N.M., Considers New Traffic Camera System*, GOV’T TECH. (June 16, 2021), <https://www.govtech.com/public-safety/albuquerque-n-m-considers-new-traffic-camera-system> [<https://perma.cc/VN2A-JLG5>]. Additionally, a state transportation department policy banned speed vans and red light cameras on state roads. *NM Commission Bans Red-Light Cameras on Some Roads*, KOAT, <https://www.koat.com/article/nm-commission-bans-red-light-cameras-on-some-roads/5032640> [<https://perma.cc/BX8W-7B47>] (Mar. 18, 2010, 4:50 AM).

95. Gabriel Chavez, *New Speed Camera Placed on Coors After City Previously Said ‘No’ to Cameras on State Roads*, KRQE, <https://www.krqe.com/news/albuquerque-metro/new-speed-camera-placed-on-coors-after-city-says-no-cameras-to-cameras-on-state-roads/> [<https://perma.cc/B8YT-WEZS>] (Oct. 17, 2022, 7:40 AM).

96. George Gonzales, *Albuquerque Speed Camera Shut Down for Incorrectly Citing Drivers*, KRQE, <https://www.krqe.com/traffic-roads/albuquerque-speed-camera-shut-down-for-incorrectly-citing-drivers/> [<https://perma.cc/47BX-DYKF>] (Nov. 8, 2022, 9:38 AM).

97. George Gonzales, *City of Albuquerque Removes Speed Camera After Thieves Strike*, KRQE, <https://www.krqe.com/news/crime/city-of-albuquerque-removes-speed-camera-after-thieves-strike/> [<https://perma.cc/94TX-TBEL>] (June 30, 2022, 10:13 AM).

speed violations.⁹⁸ The city's enforcement system offers citation appeals, mainly used in cases of vehicle sale or theft.⁹⁹ However, non-payment of fines remains an issue, leading to proposals for stricter measures to enhance compliance and pedestrian safety.¹⁰⁰ To tackle persistent non-payment, city leadership proposed an ordinance to treat unpaid fines as municipal parking offenses.¹⁰¹ This would enable parking enforcement to boot vehicles with three or more unpaid fines, thereby enhancing compliance and the overall effectiveness of the speed enforcement program in ensuring pedestrian safety.¹⁰² These systems create a cycle of debt and despair. Unpaid fines lead to further penalties, car booting, and even license suspension, making it even harder for people to get to work or afford basic necessities.

II. AUTOMATED STATEGRAFT THROUGH AUTOMATED TRAFFIC ENFORCEMENT

Legally, the use of camera footage as evidence in traffic violation cases has been challenged, questioning its admissibility and its reliability as evidence. This Part outlines relevant case law, pertinent legislation, and how automated traffic enforcement is *automated stategraft*.

A. Profitability of Automated Enforcement for Governments

Traffic enforcement cameras line government coffers through a system of automated stategraft. These systems exploit residents with a barrage of punitive charges, creating a financial burden that disproportionately impacts low-income communities. When their municipal coffers are low, local governments employ mechanisms including fines, fees, and forfeitures to fill them.¹⁰³ Financial incentives

98. Nathanson, *supra* note 94 (“The new approach to dealing with speeders came out of the Vision Zero Action Plan, a collaboration among city departments and agencies and community partners, which formed a task force to study the problem of speeding and make recommendations for creating safer streets.”).

99. Audrey Claire Davis, *City of Albuquerque Installs Last Planned Speed Camera*, KRQE, <https://www.krqe.com/traffic-roads/albuquerque-has-installed-its-final-planned-speed-camera/> [https://perma.cc/2T8V-FXJ7] (Dec. 13, 2023, 7:18 AM).

100. Chris McKee, *Hundreds of Albuquerque Drivers Are Ignoring Fines from City's Speed Cameras*, KRQE, <https://www.krqe.com/news/albuquerque-metro/hundreds-of-albuquerque-drivers-are-ignoring-fines-from-citys-speed-cameras/> [https://perma.cc/K2KU-H3ZV] (Mar. 27, 2023, 8:05 AM). By March 2023, Albuquerque had issued 44,000 speed camera tickets since the program's relaunch, with many fines overdue. *Id.*

101. *Id.*

102. *Id.*

103. Shoub, Christiani, Baumgartner, Epp & Roach, *supra* note 6, at 836–37.

make it so local elected officials and camera companies have an interest in using the system to help municipalities, even if doing so is not in the public's best interest.

1. PROFIT GENERATION THROUGH TRAFFIC CAMERAS

Juniper Research anticipates a significant increase in spending on automated traffic enforcement systems over the next five years.¹⁰⁴ It projects that expenditures on smart traffic management solutions will surge to \$18.6 billion by 2028, up seventy-five percent from \$10.6 billion in 2023.¹⁰⁵ This growth reflects a global trend towards smarter traffic solutions, with cities like Albuquerque making significant investments—\$400,000 in 2019 and \$1 million in 2021—in its automated enforcement systems.¹⁰⁶

Cities across the U.S. have seen substantial revenue from automated enforcement.¹⁰⁷ For instance, Suffolk County, New York, generated \$28.9 million in 2017, paying \$9 million to its vendor.¹⁰⁸ Yet, despite this revenue, rear-end crashes at red light camera intersections in the

104. Ryan Daws, *Smart Traffic Management Spending To Increase 75% by 2028*, IOTNEWS (Nov. 6, 2023), <https://www.iotechnews.com/news/2023/nov/06/smart-traffic-management-spending-increase-75-by-2028/> [<https://perma.cc/BX5L-JY3U>].

105. *Id.*

106. OFF. OF MGMT. & BUDGET, CITY OF ALBUQUERQUE, FISCAL YEAR 2022 APPROVED BUDGET 101 (2021), <https://www.cabq.gov/dfa/documents/fy22-approved-budget-numbered-w-hyperlinks-final.pdf> [<https://perma.cc/S28B-PEHX>].

107. *See* CTR. FOR JUST. & SAFETY FIN., CITY OF PROVIDENCE, DEPARTMENT OF PUBLIC SAFETY BUDGET ANALYSIS 17 (2021), <https://www.providenceri.gov/wp-content/uploads/2021/04/City-of-Providence-Dept-of-Public-Safety-Budget-Analysis-04.13.2021.pdf> [<https://perma.cc/4LU6-NB3Y>] (reporting traffic camera revenue in Providence, Rhode Island); POLICE TRAINING & STANDARDS COMM'N, MD. DEP'T OF PUB. SAFETY & CORR. SERVS., SPEED MONITORING SYSTEMS ANNUAL REPORT FY 2023 (2023) (reporting traffic camera revenue in Maryland); PHILA. PARKING AUTH., RED LIGHT PROGRAM ANNUAL REPORT 10 (2022), <https://philapark.org/wp-content/uploads/PPA-Red-Light-Camera-Report-2022-compressed.pdf> [<https://perma.cc/SD42-VBLQ>] (reporting traffic camera revenue in Philadelphia); PHILA. PARKING AUTH., ROOSEVELT BOULEVARD AUTOMATED SPEED CAMERA ANNUAL REPORT 8 (2022), <https://philapark.org/wp-content/uploads/Automated-Speed-Enforcement-Camera-Report-FY-2022.pdf> [<https://perma.cc/7CN6-LVAZ>] (reporting revenue from a single street in Philadelphia); PORTLAND BUREAU OF TRANSP., CITY OF PORTLAND, OUTCOME EVALUATION: FIXED PHOTO RADAR SYSTEM 25 (2021–22), https://www.oregonlegislature.gov/citizen_engagement/Reports/Portland%202021-22_Preliminary%20Legislative%20Report_Fixed%20Photo%20Radar%20System.pdf [<https://perma.cc/CJW2-FWVD>] (reporting traffic camera revenue in Portland, Oregon).

108. Hauser, *supra* note 70.

county increased by twenty-one percent from 2009 to 2016.¹⁰⁹ Similarly, Washington, D.C., amassed \$1 billion from traffic and parking tickets in three years, boasting the highest fine revenue per resident in the United States.¹¹⁰ Chicago's 2014 initiative to ticket drivers at yellow lights marginally shorter than the three-second city minimum brought in approximately \$8 million from an additional 77,000 tickets.¹¹¹ Albuquerque earned over \$1.9 million,¹¹² while Illinois collected more than \$1 billion from 2008 to 2018 through red light cameras.¹¹³ In 2021,

109. *Id.* See also Mike Frassinelli, *Accident Rate Rises at Intersections with Red-Light Cameras, N.J. Study Shows*, NJ.COM (Nov. 27, 2012, 1:25 PM), https://www.nj.com/news/2012/11/red-light_cameras_lead_to_more.html [https://perma.cc/XVR4-BBER] (discussing a similar trend in New Jersey).

110. Jones, *supra* note 83. See also Sophia Barnes, *DC Issued \$1 Billion in Parking, Traffic Tickets over 3 Years: AAA*, NBC4 WASH., <https://www.nbcwashington.com/news/local/dc-issued-1-billion-in-parking-traffic-tickets-over-3-years-aaa/2222964/> [https://perma.cc/5D5N-V46F] (Feb. 24, 2020, 9:39 AM); Dan Kopf & Justin Rohrlich, *No US City Fines People Like Washington Fines People*, QUARTZ (Jan. 29, 2020), <https://qz.com/1789851/no-us-city-fines-peoplelike-washingtondc> [https://perma.cc/UF49-B5TL].

111. Josh Sanburn, *Cities Have Found a New Way To Take Your Money*, TIME (Oct. 15, 2014, 1:42 PM), <https://time.com/3505994/red-light-camera-problems-tickets/>. In 2022, Colorado Springs residents argued that the city had reduced the yellow light time in intersections where red light cameras were installed. *News 5 Investigates: Shorter Yellow Lights Found at Some Red Light Camera Intersections*, KOAA, <https://www.koaa.com/news/news5-investigates/news-5-investigates-shorter-yellow-lights-found-at-some-red-light-camera-intersections> [https://perma.cc/HPF5-XQEM] (May 6, 2022, 6:12 AM).

112. T.J. Wilham, *Albuquerque Has Made More Than \$1.9 Million from Camera Citations*, KOAT, <https://www.koat.com/article/albuquerque-money-made-speed-camera-citations/46136066> [https://perma.cc/U5NQ-A6RM] (Dec. 21, 2023, 12:42 PM).

113. Austin Berg, *Illinois Red-Light Cameras Have Collected More than \$1B from Drivers Since 2008*, ILL. POL'Y, <https://www.illinoispolicy.org/reports/illinois-red-light-cameras-have-collected-more-than-1b-from-drivers-since-2008/> [https://perma.cc/HTA9-DJTP] (“The annual haul from red-light camera tickets statewide has more than doubled over the decade, with local governments collecting more than \$113.2 million in 2018 compared with \$53.5 million in 2008. Red light camera revenue outside Chicago city limits drove almost all of that increase, with \$56.6 million generated in 2018 compared with \$5.4 million in 2008.”). See also Patrick Andriesen, *The Policy Shop: Are Chicago's Speed Cams a Money-Making Scam?*, ILL. POL'Y (Mar. 22, 2023), <https://www.illinoispolicy.org/policy-shop/the-police-shop-are-chicagos-speed-cams-a-money-making-scam/> [https://perma.cc/7F2V-BR7R] (discussing the effects of speed cameras in recent years); STACEY SUTTON & NEBIYOU TILAHUN, UNIV. OF ILL. CHI., *RED-LIGHT AND SPEED CAMERAS: ANALYZING THE EQUITY AND EFFICACY OF CHICAGO'S AUTOMATED CAMERA ENFORCEMENT PROGRAM (2022)*, https://www.chicago.gov/content/dam/city/depts/cdot/Red%20Light%20Cameras/2022/Sutton+Tilahun_Chicago-Camera-Ticket_Exec%20Summary-Final-Jan10.pdf [https://perma.cc/R6CR-VJGT] (analyzing the social, economic, and safety impact of automated enforcement); Jason Knowles, Maggie Green & Ann Pistone, *Revenue from Chicago Speed Cameras More than Doubles After 6-10 mph Change: Data*, ABC 7 CHI.

New York City collected approximately \$30 million from red light violations,¹¹⁴ and in 2022, Tampa, Florida, received \$10 million.¹¹⁵

The Insurance Institute for Highway Safety encourages local governments to spend their automated traffic enforcement revenue on transportation safety programs.¹¹⁶ In New Mexico, half of the funds from automated speed enforcement go to the state, with the rest going to municipalities to cover program costs.¹¹⁷ California's pilot program in six counties mandates using revenue first for program costs, then for local traffic safety measures.¹¹⁸ Spokane Mayor Nadine Woodward proposed allocating traffic camera ticket funds for law enforcement in November 2023.¹¹⁹

However, controversies persist. Los Angeles's 2004 red light program faced criticism for prioritizing revenue over safety, leading to its termination by the city council in 2011.¹²⁰ One 2020 study found that

(July 6, 2023), <https://abc7chicago.com/chicago-speed-cameras-news-tickets-speeding-ticketillinois/13470264/> [<https://perma.cc/FBE6-THC5>] (discussing growth in ticket revenue after a change in enforcement policy).

114. N.Y.C. DEP'T OF TRANSP., *NEW YORK CITY RED LIGHT CAMERA PROGRAM REVIEW: 2022 REPORT 13* (2023), <https://www.nyc.gov/html/dot/downloads/pdf/nyc-red-light-camera-program.pdf> [<https://perma.cc/GA4Z-35S6>].

115. Olivia George, *One Year, 56 Red-Light Cameras, \$10 Million in Tickets*, TAMPA BAY TIMES, <https://www.tampabay.com/news/transportation/2023/02/20/red-light-camera-tampa-florida-revenue-road-safety/> (Feb. 21, 2023) (“Since red light cameras arrived in Tampa in 2011, the program has generated more than \$84.3 million from tickets through the end of 2022 — about a quarter of which went to Verra Mobility, according to public records. Last year, the city earned about \$3.1 million in profit from the cameras. Verra Mobility received \$1.8 million and the Florida Department of Revenue received \$5.4 million.”).

116. *Red Light Running*, *supra* note 27.

117. *Automated Speed Enforcement: Frequently Asked Questions*, CITY OF ALBUQUERQUE, <https://www.cabq.gov/automated-speed-enforcement/automated-speed-enforcement-frequently-asked-questions> [<https://perma.cc/4MWD-N3MX>] (“Any remaining funds will be used for Vision Zero traffic safety initiatives.”).

118. *Vehicles: Speed Safety System Pilot Program: Hearing on A.B. 645 Before the Assemb. Comm. on Transp.*, 2023 Leg. 8 (Cal. 2023) (statement of Laura Friedman, Chair).

119. Nate Sanford, *Spokane's Mayor Proposes Using Traffic Camera Ticket Funds To Pay for Police*, INLANDER (Nov. 9, 2023), <https://www.inlander.com/news/spokanes-mayorproposes-using-money-raised-by-traffic-camera-tickets-to-pay-for-police-but-citycouncil-members-say-shes-just-trying-to-sh-26938971> [<https://perma.cc/62PJ-NJKU>] (“In the early part of the decade, annual revenue from enforcement cameras was roughly \$1.5 million. But as the city added more cameras, revenue grew, and now camera revenue averages closer to \$5.5 million each year.”).

120. Jerry Garrett, *L.A. City Council Votes To Remove Red-Light Cameras*, N.Y. TIMES (July 28, 2011, 12:11 PM), <https://archive.nytimes.com/wheels.blogs.nytimes.com/2011/07/28/l-a-city-council-votes-to-remove-red-light-cameras/>.

Houston's cameras altered accident types but did not reduce them.¹²¹ In response to a nearly \$400 million profit decline, Washington, D.C., added numerous traffic cameras in its 2023 budget.¹²²

Legal Challenges and the Difficulty of Establishing Illegality. The red light camera programs have faced legal challenges alleging they violate constitutional rights and discriminate against motorists. Besides public outcry, there are state and federal government preemptions as well as state and federal constitutional interests. "The constitutional bars include interests in equal protection, non-excessive fines, and due process."¹²³

Federal courts have generally rejected claims that red light camera ordinances and statutes violate substantive due process,¹²⁴ procedural due process,¹²⁵ or the Fifth Amendment's Takings Clause.¹²⁶ Attempts to preempt local ordinances with state law have been unsuccessful in Iowa, New Mexico, and Ohio, but were successful in Minnesota, Colorado, and Louisiana.¹²⁷

121. Justin Gallagher & Paul J. Fisher, *Criminal Deterrence when There Are Offsetting Risks: Traffic Cameras, Vehicular Accidents, and Public Safety*, AM. ECON. J.: ECON. POL'Y, Aug. 2020, at 202, 224–26. Another study of Houston using data from 2006 to 2010 did not find that red light cameras reduced the total number of accidents. Justin Gallagher, *Cameras Can Catch Cars that Run Red Lights, but that Doesn't Make Streets Safer*, CONVERSATION (Aug. 15, 2018, 6:23 AM), <http://theconversation.com/cameras-can-catch-cars-that-run-red-lights-but-that-doesnt-make-streets-safer-100217> [<https://perma.cc/WH5G-88QE>]. However, in a study in Oxnard, California, right-angle collisions declined with the introduction of red light cameras. Richard A. Retting & Sergey Y. Kyrychenko, *Reductions in Injury Crashes Associated with Red Light Camera Enforcement in Oxnard, California*, 92 AM. J. PUB. HEALTH 1822, 1822 (2002).

122. Biron, *supra* note 25.

123. Jeffrey A. Parness, *Beyond Red Light Enforcement Against the Guilty but Innocent: Local Regulations of Secondary Culprits*, 47 WILLAMETTE L. REV. 259, 261 (2011).

124. *See, e.g., Shavitz v. City of High Point*, 270 F. Supp. 2d 702, 720 n.17 (M.D.N.C. 2003) (noting that the mere fact that an administrative or judicial body benefited financially from the fines or penalties it imposed was not generally a violation of due process, unless "the decisionmakers st[and] to gain substantial, personal pecuniary benefits from their adjudicative decisions" (quoting *Doolin Sec. Sav. Bank, F.S.B. v. Fed. Deposit Ins. Corp.*, 53 F.3d 1395, 1406 (4th Cir. 1995))). *See also Hughes v. City of Cedar Rapids*, 112 F. Supp. 3d 817, 840–41 (N.D. Iowa 2015) (holding a city was not required by federal due process to follow state procedure).

125. *See, e.g., Worthy v. City of Phenix City*, 930 F.3d 1206, 1221–24 (11th Cir. 2019); *Farrington v. City of Greenville*, 871 S.E.2d 366, 376–78 (N.C. Ct. App. 2022).

126. Maisel, *supra* note 35, at 421; *McCarthy v. City of Cleveland*, 626 F.3d 280, 283–85 (6th Cir. 2010) (holding that the images captured by automated enforcement cameras did not create a per se "taking" within the meaning of the Fifth Amendment).

127. Maisel, *supra* note 35, at 422–24.

Litigants have argued the programs lack due process, violate privacy, and unlawfully delegate police powers to private companies.¹²⁸ However, courts have generally upheld the constitutionality of red light cameras.¹²⁹ The lawsuits have not focused on problems with the technology itself, but rather the way the programs are implemented and enforced. The legal debate centers around whether cities have proper authority to use automated enforcement and whether the hearing process is fair.¹³⁰ While some lawsuits have succeeded in ending local programs, most challenges have been unsuccessful.¹³¹ Some individuals have attempted to focus on racial due process violations.¹³² The core technology behind red light cameras has generally withstood legal scrutiny.¹³³

But the legal system is starting to recognize instances of unlawful takings. In 2016, there was a \$3.5 million settlement for drivers in New Mexico against Redflex.¹³⁴ “The drivers claimed Redflex and the company’s collection agency, CreditWatch Services, hassled them non-stop after voters in the city canceled the program in 2011 and the cameras were removed.”¹³⁵ In 2021, drivers filed a class action in Stone Park, Illinois, asserting they were wrongly ticketed for stopping past the line while legally turning right on red.¹³⁶ In October 2023, Washington,

128. See, e.g., *Hughes*, 840 F.3d at 991, 997.

129. E.g., *Travelers Prop. Cas. Co. of Am. v. Nassau Cnty. Traffic & Parking Violations Agency*, 937 N.Y.S.2d 536, 540 (Sup. Ct. 2011); *Krieger v. City of Rochester*, 978 N.Y.S.2d 588, 593 (Sup. Ct. 2013).

130. See, e.g., *Watson v. City of Southlake*, 594 S.W.3d 506, 513 (Tex. Ct. App. 2019); *Hunt v. City of Diboll*, 574 S.W.3d 406, 430 (Tex. Ct. App. 2017).

131. See, e.g., *Krieger*, 978 N.Y.S.2d at 604–05; *Hunt*, 574 S.W.3d at 436.

132. See, e.g., *Mathis v. City of Lakeland*, No. 22-12426, 2023 WL 2568814, at *2 (11th Cir. Mar. 20, 2023). In *Mathis*, the plaintiff argued that the city conspired to violate his due process rights because he was Black. *Id.*

133. *But see People v. Rekte*, 181 Cal. Rptr. 3d 912, 916, 919 (Ct. App. 2015) (holding that the red light camera system did not withstand legal scrutiny after the motorist successfully presented expert testimony and evidence showing inaccuracies in its computer-generated data and the city could not produce independent evidence to show the system was reliable).

134. Gabrielle Burkhart, *Red Light Camera Company Settles Class Action Lawsuit in Albuquerque for \$3.5M*, KRQE, <https://www.krqe.com/news/red-light-camera-company-settles-class-action-lawsuit-in-albuquerque-for-3-5m> [https://perma.cc/ADN8-RT8S] (Mar. 18, 2016, 4:01 PM).

135. *Traffic Camera Firm Settles Albuquerque Lawsuit for \$3.5M*, AM. BANKER (Mar. 21, 2016, 9:15 AM), <https://www.americanbanker.com/news/traffic-camera-firm-settles-albuquerque-lawsuit-for-35m>.

136. Jonathan Bilyk, *Stone Park Red Light Cameras Wrongly Ticketing Drivers Who Stop past Line Turning Right on Red, Class Action Says*, COOK CNTY. REC. (Nov. 18, 2021), <https://cookcountyrecord.com/stories/612746238-stone-park-red-light-cameras-wrongly-ticketing-drivers-who-stop-past-line-turning-right-on-red-class-action-says> [https://perma.cc/77JL-UD44].

D.C., stopped denying residents the ability to renew their driver's license if they have outstanding debt to the city, including unpaid parking or traffic fines and fees.¹³⁷ The court found that D.C. violated the plaintiffs' procedural due process by denying them a hearing before taking away their property interest in renewing their license.¹³⁸ The court rejected the city's arguments that it did not take away property rights by refusing renewals, rather than revoking existing licenses, as these rights had already expired.¹³⁹ The court found that licensees may have a legitimate claim to renew a driver's license, making renewal a property interest.¹⁴⁰

Some class action lawsuits have been successful in addressing automated traffic enforcement. In 2012, nearly half a million people who received red light camera tickets in New Jersey filed a successful Section 1983 claim against townships with cameras operated by the vendor American Traffic Solutions.¹⁴¹ In one class action complaint, the plaintiffs stated the defendants violated the Fourteenth Amendment's Due Process Clause and the New Jersey Civil Rights Act and were unjustly enriched.¹⁴² The defendants denied all wrongdoing and liability, but settled with the plaintiffs, where each received a partial refund of approximately \$6 on their \$85 to \$140 tickets.¹⁴³

In a New York class action suit, *Halberstam v. City of New York*,¹⁴⁴ plaintiffs alleged violations of the Fifth and Fourteenth Amendments, fraud, and unjust enrichment, claiming that the city implemented the red light camera program so that the yellow traffic signal durations were less than the three seconds standard set by federal direction.¹⁴⁵ The city moved to dismiss, and the court found that the plaintiffs failed to state a proper claim under New York Civil Rights Law Section 11 because the plaintiffs' complaint did not argue that the \$50 fine was disproportionate to the offense of passing through a red light.¹⁴⁶ Additionally, the second and third causes of action related to substantive due process were also

137. See *Parham v. District of Columbia*, 648 F. Supp. 3d 99, 113 (D.D.C. 2022).

138. *Id.* at 106–07.

139. *Id.* at 107–08.

140. *Id.* at 108, 111.

141. Mike Frassinelli, *Settlement Reached in Red-Light Camera Class Action Suit*, NJ.COM (Dec. 28, 2012, 8:56 PM), https://www.nj.com/news/2012/12/settlement_reached_in_red-light.html [<https://perma.cc/2MYT-2MXY>].

142. Class Action Complaint at 1, *Telliho v. E. Windsor Twp. & Am. Traffic Sols.*, No. 12-cv-04800 (D.N.J. filed Aug. 1, 2012).

143. Class Action Settlement Agreement at 10–24, *Telliho*, No. 12-cv-04800; Frassinelli, *supra* note 141.

144. No. 654239/2012 (N.Y. Sup. Ct. Dec. 9, 2014).

145. *Id.* at 2–3.

146. *Id.* at 6.

found to be without merit as the city only had to meet a lower level of due process protections.¹⁴⁷

In a Chicago class action, *Willis v. City of Chicago*,¹⁴⁸ the city settled for \$38.75 million with the claimants in response to a lawsuit that alleged Chicago did not give motorists adequate notice to red light camera and speed camera violations.¹⁴⁹ The lawsuit alleged that the city broke its own regulations by not issuing a second notice of violation before determining guilt and by increasing the fine for late payment of tickets earlier than permitted.¹⁵⁰ The city later attempted to pass an ordinance to remove the requirement for a second notice.¹⁵¹

But the case that caught national attention was the 2015 Missouri Supreme Court decision that deemed St. Louis's ordinance governing red light cameras unconstitutional because it created a rebuttable presumption that shifted "the burden of persuasion onto the defendant to prove that the defendant was not operating the motor vehicle at the time of the violation."¹⁵² The Missouri Supreme Court took issue with two aspects of how the speed cameras were operating. First, "points" were not charged to the driver's record for this violation, which all moving violations must do under state law.¹⁵³ Second, the system created a "guilty until proven innocent" dynamic that the court deemed unconstitutional.¹⁵⁴ In 2023, the City of St. Louis was prepared to re-implement the cameras even after the Missouri Supreme Court "determined it was unconstitutional to ticket car owners without being able to prove they were the ones who committed the violations."¹⁵⁵ Though the focus is on civil penalties instead of criminal, and the burden

147. *Id.* Plaintiffs also failed to sufficiently plead their fraud claim. *Id.* at 7–8.

148. Plaintiff's Motion for Preliminary Approval of Class Action Settlement, No. 16 CH 14304 (Ill. Cir. Ct. July 26, 2017).

149. *Id.* at 1. See also Paris Schutz, *City Settles Red Light Camera Lawsuit for \$38.75 Million*, WTTW NEWS (July 20, 2017, 6:00 PM), <https://news.wttw.com/2017/07/20/city-settles-red-light-camera-lawsuit-3875-million>; John Byrne, *City Reaches \$38.75 Million Settlement in Red Light Ticket Lawsuit*, CHI. TRIB., <https://www.chicagotribune.com/politics/ct-rahm-emanuel-red-light-tickets-lawsuit-settlement-met-20170720-story.html> [<https://perma.cc/QPP8-SVXM>] (May 15, 2019, 9:25 PM).

150. Schutz, *supra* note 149.

151. Byrne, *supra* note 149.

152. *Tupper v. City of St. Louis*, 468 S.W.3d 360, 365 (Mo. 2015).

153. See *id.* at 372.

154. See *id.* at 372–73.

155. Sam Clancy & Christine Byers, *St. Louis Mayor, Board of Aldermen President Announce New Plan for Red Light Cameras*, KSDK, <https://www.ksdk.com/article/news/local/st-louis-bill-red-light-cameras-2023/63-1ba8b134-1f14-4c1b-a6c5-a21f76122aa6> [<https://perma.cc/J2HU-4KVU>] (Sept. 18, 2023, 6:28 PM).

of proof is less onerous in civil cases, this shift still places an undue burden on the person charged.

2. THE DEBATE OVER REVENUE VERSUS SAFETY OBJECTIVES

Traffic cameras are just one example of a disturbing trend: automated systems that presume guilt and require residents to prove their innocence to avoid unfair confiscation of their money. The state benefits from no longer bearing the burden of proof. This shifts the burden of proof to the vehicle owner to not only prove it was not them driving the vehicle, but to identify who was behind the wheel. The New Mexico law in particular requires residents to swear out an affidavit identifying the driver to avoid the fine.¹⁵⁶ A similar dynamic played out with Michigan's unemployment system.¹⁵⁷ Determined to fill budget shortfalls, Michigan instituted an automated system to adjudicate the unemployment process.¹⁵⁸ The software, the Michigan Integrated Data Automated System (MiDAS), was designed to detect unemployment fraud and automatically charge people with fraud.¹⁵⁹ The technology devolved into an automated shakedown, wrongly accusing tens of thousands of residents of fraud because of a faulty algorithm.¹⁶⁰ "It would take years for the state to repay Michiganders, and repayment often followed disastrous fallouts due to years of individual attempts to clear records and reclaim money."¹⁶¹ The system ran from start to finish with virtually no human oversight and calls to the Michigan Unemployment Insurance

156. ALBUQUERQUE, N.M., CODE § 7-15-4(D) (2023).

157. See generally Sonia M. Gipson Rankin, *The Midas Touch: Atuahene's "Statecraft" and Unregulated Artificial Intelligence*, 98 N.Y.U. L. REV. ONLINE 225 (2023). This article discusses the "algorithm implemented in Michigan that falsely accused recipients of unemployment benefits of fraud and illegally garnished their paychecks and intercepted their IRS tax refunds." *Id.* at 226.

158. *Id.* at 228–29 (explaining that decreased state revenues from the Great Recession caused subsequent budget cuts and implementation of MiDAS).

159. *Id.* (explaining MiDAS was "was programmed to find inconsistencies in unemployment compensation records, automatically determine if a claimant committed fraud, and execute collection proceedings, which could include garnishing wages and intercepting tax refunds").

160. Stephanie Wykstra, *Government's Use of Algorithm Serves up False Fraud Charges*, UNDARK (June 1, 2020), <https://undark.org/2020/06/01/michigan-unemployment-fraud-algorithm/> [<https://perma.cc/LAY7-E6NC>] (reporting on Michigan's use of a flawed automated system that identified at least 40,000 workers as having committed fraud—but it had a ninety-three percent inaccuracy rate due to faulty algorithms).

161. Gipson Rankin, *supra* note 157, at 226.

Agency were largely unanswered or provided vague information.¹⁶² It would take over five years until Michigan offered full restitution for unlawfully taking from its constituents.¹⁶³

These examples highlight the dangers of relying on automated systems, especially when they lack accuracy and oversight. There is a danger in relying heavily on technology for critical decisions affecting individuals' lives and legal obligations. These examples underscore the need for checks and balances in automated systems, especially where legal or financial consequences are involved, to ensure fairness and accuracy and to prevent the undue burden on individuals to prove their innocence.

3. IMPACT ON PUBLIC PERCEPTION AND TRUST

Public trust and perception are significantly influenced by the transparency of these systems. Often, there is a lack of clarity about how the systems operate, how data is used, and how violations are processed. Moreover, there is ongoing debate about the effectiveness of traffic enforcement cameras in reducing violations and improving safety versus their use as a profit generating tool for municipalities. This debate plays a key role in shaping public opinion about the utility and fairness of these systems.

III. UNEQUAL JUSTICE: HOW TRAFFIC CAMERAS DISCRIMINATE AND EXPLOIT MARGINALIZED COMMUNITIES

These societal concerns highlight the complex interplay between technology, law, ethics, and social norms. They suggest the importance of careful consideration and balanced approaches in the implementation of traffic enforcement camera systems.

A. The Issue of Bias in Automated Systems

The potential for bias in the deployment and operation of these systems is a critical and ethical concern. There is a risk that the systems could be used to disproportionately target specific neighborhoods or

162. See Wykstra, *supra* note 160; Gipson Rankin, *supra* note 157, at 229 & n.20 (citing *Cahoo v. SAS Analytics Inc.*, 912 F.3d 887, 894 (6th Cir. 2019) (“[T]he Agency never answered over 90% of the calls to its ‘Help Line.’”)).

163. See Rose White, *Michigan To Start Paying out \$20M Unemployment Fraud Settlement in August*, MLIVE, <https://www.mlive.com/public-interest/2023/01/michigan-to-start-paying-out-20m-unemployment-fraud-settlement-in-august.html> [<https://perma.cc/86SM-YC2N>] (Mar. 6, 2023, 2:43 PM).

demographics. These systems are built on biased data sets, leading to predatory ticketing practices that disproportionately burden people of color.

1. IDENTIFYING AND MITIGATING BIAS IN AUTOMATED ENFORCEMENT

This Essay proposes a comprehensive framework for addressing biases in AI. Bias in AI should be detected in all of its manifestations by unpacking biases encoded in datasets, predictions, and social outcomes that may be unintended consequences of AI.¹⁶⁴ Harm should be mitigated by auditing for transparency, explainability, accuracy, and dependability in AI.¹⁶⁵ And remedies should be implemented at every stage in AI development: data collection, training, operation, application, and evaluation.¹⁶⁶

Municipalities have turned to automated systems with a hope of mitigating bias. It is often assumed that algorithms are neutral parties, and that there will be no racial, gender, or other discriminatory bias in automated systems. However, some tech scholars suggest that bias is pervasive in algorithms.¹⁶⁷ Because facial recognition algorithms are not

164. See Sonia M. Gipson Rankin, *Technological Tethereds: Potential Impact of Untrustworthy Artificial Intelligence in Criminal Justice Risk Assessment Instruments*, 78 WASH. & LEE L. REV. 647, 666–81 (2021).

165. For more on transparency and explainability, see generally Santa Fe Institute, *Cris Moore on Algorithmic Justice & the Physics of Inference*, YOUTUBE (Dec. 31, 2021), <https://www.youtube.com/watch?v=jnNSWJSYXR0> (discussing the importance of transparency in “the way we ask computers questions”) and Nagadivya Balasubramaniam, Marjo Kauppinen, Antti Rannisto, Kari Hiekkänen & Sari Kujala, *Transparency and Explainability of AI Systems: From Ethical Guidelines to Requirements*, INFO. & SOFTWARE TECH., Mar. 8, 2023, at 1 (discussing transparency and explainability “as important quality requirements of AI systems”). For more on accuracy, see Gipson Rankin, *supra* note 164, at 675–77 (discussing untrustworthy data). For more on reliability, see generally Gaudys L. Sanclemente, *Reliability: Understanding Cognitive Human Bias in Artificial Intelligence for National Security and Intelligence Analysis*, 35 SEC. J. 1328 (2022) (discussing impact of cognitive human bias in artificial intelligence for national security and intelligence analysis) and Benjamin D. Horne, Dorit Nevo, John O’Donovan, Jin-Hee Cho & Sibel Adali, *Rating Reliability and Bias in News Articles: Does AI Assistance Help Everyone?*, 13 PROC. INT’L AAAI CONF. ON WEB & SOC. MEDIA 247 (2019) (studying if the accuracy of reliability impacted bias perceptions).

166. See generally Steven D. Pearson, Carmi Z. Margolis, Scott Davis, Lisa K. Schreier, H. Nancy Sokol & Lawrence K. Gottlieb, *Is Consensus Reproducible? A Study of an Algorithmic Guidelines Development Process*, 33 MED. CARE 643 (1995) (evaluating the effectiveness of a consensus method by applying multiple algorithmic guidelines to different groups of physicians).

167. See generally JOY BUOLAMWINI, *UNMASKING AI: MY MISSION TO PROTECT WHAT IS HUMAN IN A WORLD OF MACHINES* (2023); AYANNA HOWARD, *SEX, RACE, AND ROBOTS: HOW TO BE HUMAN IN THE AGE OF AI* (2020) (audiobook); Cade Metz, *Who Is*

yet widely deployed, there is a window of opportunity to proactively ban automated facial recognition in traffic cameras until and unless the specific software has been specifically audited to ensure both a general level of accuracy (*i.e.*, greater than ninety-eight percent as was required in a California bill¹⁶⁸) and a lack of racial and gender bias in the particular task it would be used for (*i.e.*, that errors in matching images to known faces is within one percent across racial and gender groups). It will be important that this is tested in the particular conditions in which the images are generated and compared. Images from speed cameras and red light cameras may be more blurry, poorly lit, ill-posed, or obscured than other images.¹⁶⁹ Additionally, the audit should consider the database that comparison photos are pulled from.¹⁷⁰ Though auditing for racial and gender biases can enhance accuracy for specific tasks and populations, it is not a panacea, as improvements are not universally transferable across different software or classification tasks.¹⁷¹

Databases from police records may introduce different biases than from driver's licenses databases because some racial and socioeconomic groups may be overrepresented in arrest records, for example.

Thus, while facial recognition algorithms are not currently widely used, many of the precursors to deployment of such systems are already in place, particularly in states like California that require a photo of the driver's face before issuing a traffic violation.¹⁷² Given the propensity of

Making Sure the A.I. Machines Aren't Racist?, N.Y. TIMES, <https://www.nytimes.com/2021/03/15/technology/artificial-intelligence-google-bias.html> (June 23, 2023).

168. A.B. 642, 2023–24 Gen. Assemb., Reg. Sess. (Cal. 2023).

169. Poor or inconsistent lighting can hinder the technology's ability to accurately detect facial features, which often disproportionately affects people with darker skin. Jake Laperruque, *Key Facts About Face Recognition for Policymaking*, PROJECT ON GOV'T OVERSIGHT (Aug. 24, 2021), <https://www.pogo.org/analysis/key-facts-about-face-recognition-for-policymaking> [https://perma.cc/B8FE-5ME4] (“According to a National Institute of Standards and Technology study, some systems are 100 times more likely to misidentify people of East Asian and African descent than white people.”).

170. If these databases contain a disproportionate number of images of people from certain racial or ethnic groups, it can lead to unequal performance and accuracy across different demographics. *Cf. id.* (“Face recognition mismatches can form the basis of individuals becoming investigative targets and a variety of disruptive and potentially traumatic police actions, such as being stopped, searched, regularly monitored, or detained and questioned. These harms will be disproportionately borne by people of color . . .”).

171. *See id.*

172. *Compare* CAL. VEH. CODE § 22425(l)(4) (“The use of facial recognition technology in conjunction with a speed safety program shall be prohibited.”), *with Red Light Camera Citation*, *supra* note 55 (“The citation will state when are where the

speed cameras to be used in statecraft, it is important to limit the known racial biases in facial recognition algorithms before such systems can contribute to financially harming people with darker complexions.

2. THE MISCONCEPTIONS OF FAIRNESS IN AUTOMATED ENFORCEMENT SYSTEMS

It is crucial to recognize that the primary goal of automated traffic enforcement is not fairness, but safety and addressing budgetary shortfalls. Who has the power, privilege, and position to define safety? This power typically lies with municipalities and corporations that deploy smart automated enforcement systems. These systems, focusing on speeding and red light enforcement, employ technology to monitor behavior and collect data, including facial and license plate recognition. For instance, the U.S. Department of Transportation and companies like Redflex cite high urban traffic as a safety concern.¹⁷³ Yet, this approach often leads to a disproportionate focus on areas in which there is often a higher concentration of racial minorities in which facial recognition software is either not designed or trained to “see” them or is biased against them.

The concept of fairness in this context is complex, as it involves balancing competing needs, rights, protections, benefits, and harms. There is no such thing as mathematical fairness.¹⁷⁴ Citizens and governments must choose what is more fair or less fair by making judgments about the relative importance of many competing factors (*e.g.*, safer streets in different neighborhoods, fines that differentially impact different populations, and preventing violent encounters with police during traffic stops that differentially impact different demographics).

violation occurred. It will include a photo of the vehicle in the intersection, a close-up of the driver, and the vehicle’s license plate.”).

173. See OFF. OF SAFETY, U.S. DEP’T OF TRANSP., FHWA-SA-21-070, *SPEED SAFETY CAMERAS* (2021), https://safety.fhwa.dot.gov/provencountermeasures/pdf/PSC_New_Speed%20Camera_508.pdf [<https://perma.cc/7XGZ-66TG>]; *500 Cities and Growing: A Closer Look at the Communities Leading the Traffic Safety Revolution in North America*, REDFLEX (July 27, 2017, 7:17 PM), <https://redflex.com/insight/500-cities-and-growing-a-closer-look-at-the-communities-leading-the-traffic-safety-revolution-in-north-america/> [<https://perma.cc/9EEV-XCRD>].

174. See Alexandra Chouldechova, *Fair Prediction with Disparate Impact: A Study of Bias in Recidivism Prediction Instruments 2* (Feb. 28, 2017) (unpublished manuscript) (on file with Cornell University), <https://arxiv.org/pdf/1703.00056.pdf> [<https://perma.cc/VDD7-HJW7>] (“It is important to bear in mind that fairness itself—along with the notion of disparate impact—is a social and ethical concept, not a statistical one. A risk prediction instrument that is fair with respect to particular fairness criteria may nevertheless result in disparate impact depending on how and where it is used.”).

The assessment of fairness should go beyond bias in facial recognition. Factors may include red light cameras on lights with shorter yellow light times, poor road conditions, or other inadequate safety features in poor and Black neighborhoods. Could requirements be put on red light and speed cameras that incentivize cities to provide equitable access to road safety features? Technology is not the only method that can improve traffic safety, but it can either address systemic inequities or it can exacerbate them. Surveillance technology that has the potential to dramatically increase government power over its citizens should be used with particular prudence.

3. ETHICAL CONSIDERATIONS: THE DANGERS OF PERFECT SURVEILLANCE

Even if government surveillance could perfectly identify only wrongdoers, excessive surveillance would still remain a concern. Excessive surveillance is an overreach of government and corporate power in our lives.

Perfect identification can avoid some problems while still creating others. For example, on one hand, perfect identification allows automated traffic enforcement to precisely identify repeat offenders who endanger public safety. On the other, it enables targeting individuals and groups of people in surveillance used for state repression and targeted violence from law enforcement. Discrimination and state sanctioned racial violence could be conducted with greater efficiency.

The extensive use of traffic cameras can lead to concerns about the emergence of a surveillance state, where the movements of citizens are constantly under watch. This situation might raise public fears about privacy. Additionally, there are serious concerns regarding data privacy, specifically how the data captured by these cameras is stored, utilized, and potentially disseminated to third parties.¹⁷⁵ Potential for misuse is

175. See generally Saheed Oladimeji & Sean Michael Kerner, *SolarWinds Hack Explained: Everything You Need To Know*, TECHTARGET (Nov. 3, 2023), <https://www.techtarget.com/whatis/feature/SolarWinds-hack-explained-Everything-you-need-to-know> [https://perma.cc/LNN9-SEMN] (discussing how hackers targeted SolarWinds by deploying malicious code into its monitoring and management software used by thousands of enterprises and government agencies worldwide—including the Departments of State, the Treasury, Homeland Security, and Commerce); Everton Bailey Jr., *Ransomware: Dallas Says Cyberattack Targeted More People than Previously Disclosed*, DALL. NEWS, <https://www.dallasnews.com/news/politics/2024/01/11/ransomware-dallas-says-cyberattack-targeted-more-people-than-previously-disclosed/> (Jan. 13, 2024, 8:25 PM) (noting that over 30,000 people in the Dallas area were affected by a cyberattack); Carlie Kollath Wells, *Millions of Louisiana Residents Targeted in Massive Cyberattack*, AXIOS (June 16, 2023), <https://www.axios.com/local/new-orleans/2023/06/16/louisiana-cyberattack-dmv-moveit> (mentioning that over 6 million

high. If this data were leaked, it would be easy to imagine the extortion value of a timestamped and geostamped picture of a driver or pedestrian, including an image of who that person might be with. The lack of clarity and control over this data heightens privacy fears.

Professor Randy Dryer's and Shane Stroud's 2015 scholarship outlines several legislative ideas to improve license plate reader systems, particularly in light of potential privacy violations from geolocation tracking.¹⁷⁶ The use of cameras in traffic enforcement raises significant privacy issues. The perception of these cameras as tools for surveillance and tracking is a major concern, particularly regarding the tracking of individuals without their consent. Concerns also extend to how the captured data (*e.g.*, images and videos) are stored and accessed, with fears about the potential misuse of this data for purposes beyond traffic enforcement.

The most important rights in the age of AI are the right to privacy for individuals and the right to transparency when AI is used in algorithms that make consequential decisions that impact lives and liberty. The United States government has not yet passed law regulating AI but—determined to balance innovation and regulation, safety, and liberty—has opened the conversation on the regulation of AI. Executive Order 14110 on “Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence” was released by the White House, which sets up a government-wide initiative to oversee responsible AI development and deployment across federal agencies.¹⁷⁷ Dr. Alondra Nelson, who

records were compromised in a cyberattack targeting a vendor for Louisiana's Office of Motor Vehicles); Noelle Crombie, *Massive Hack of Oregon DMV System Puts Estimated 3.5 Million Driver License and ID Card Info at Risk, Officials Say*, OREGONLIVE, <https://www.oregonlive.com/commuting/2023/06/massive-hack-of-oregon-dmv-system-puts-estimated-35-million-driver-license-and-id-card-info-at-risk-officials-say.html> [<https://perma.cc/6LT7-J54S>] (June 20, 2023, 10:46 AM) (noting over 3.5 million residents of Oregon were affected by hacking); Jonathan Greig, *West Virginia City Latest Municipality Hit with Cyberattack*, RECORD (Jan. 5, 2024), <https://therecord.media/west-virginia-city-hit-cyberattack> [<https://perma.cc/X6W4-W9J5>] (indicating Beckley, West Virginia, was targeted with a ransomware attack).

176. Randy L. Dryer & S. Shane Stroud, *Automatic License Plate Readers: An Effective Law Enforcement Tool or Big Brother's Latest Instrument of Mass Surveillance? Some Suggestions for Legislative Action*, 55 JURIMETRICS 225, 261–72 (2015).

177. Nicole Turner Lee & Jack Malamud, *How Congress Can Secure Biden's AI Legacy*, BROOKINGS (Jan. 25, 2024), <https://www.brookings.edu/articles/how-congress-can-secure-bidens-ai-legacy/> [<https://perma.cc/9MLT-6M7W>] (describing how the United States has not passed legislation regulating AI); Exec. Order No. 14110, 88 Fed. Reg. 75191 (Nov. 1, 2023) (describing the role federal agencies will contribute to AI development); Memorandum from Shalanda D. Young, Dir., Off. of Mgmt & Budget, to the Heads of Exec. Dep'ts & Agencies (Mar. 28, 2024), <https://www.whitehouse.gov/wp-content/uploads/2024/03/M-24-10-Advancing-Governance-Innovation-and-Risk-Management-for-Agency-Use-of-Artificial->

served as the principal deputy director for science and society of the White House Office of Science and Technology Policy, pointed out that the data that enables AI systems is a global economic and political force and it will require governments to properly regulate automated systems.¹⁷⁸ The Algorithmic Justice League advocates for equitable AI access and accountability for any harm, emphasizing transparency in AI decisionmaking inputs and roles, and stressing the importance of established appeal mechanisms when AI tools are used in decision-making processes.¹⁷⁹

B. Addressing Racial Disparities

1. TECHNOLOGY AND ITS ROLE IN EXACERBATING RACIAL INJUSTICE

As jurisdictions debate adding facial recognition technology to automated traffic enforcement, it will exacerbate harms against Black communities. Data bias, omissions, and limitations can also lead to discrimination based on race. Data bias can lead to the lack of inclusion or recognition of certain groups in the data. This problem is central with facial recognition software that does not recognize darker skin. The Algorithmic Justice League argues such technological discrimination can lead to not registering the presence of people with darker skin, such as self-driving cars that may hit someone they cannot see, or automated exam software may mark someone absent because it does not “see” that person.¹⁸⁰

A key problem with AI and other algorithms is that they reify biases from the past, encode them in technology that provides a false veneer of objectivity, and then project those biases into the future. This diminishes all of humanity’s ability to imagine a more equitable, bountiful, safe, and prosperous future, but it is particularly harmful to minority populations whose voices and perspectives are drowned out in the vast datasets that fuel AI.

This has to be answered in the context of facial recognition in the legal system. Traffic violations are the most common ways that people

Intelligence.pdf [https://perma.cc/FJ9P-CN7J] (outlining the steps federal agencies must take to meet the Executive Order 14110).

178. See Alondra Nelson, *The Right Way To Regulate AI*, FOREIGN AFFS. (Jan. 12, 2024), <https://www.foreignaffairs.com/united-states/right-way-regulate-artificial-intelligence-alondra-nelson>.

179. *About*, ALGORITHMIC JUST. LEAGUE, <https://www.ajl.org/about> [https://perma.cc/27QX-JJ6V].

180. *Overview*, ALGORITHMIC JUST. LEAGUE, <https://www.ajl.org/learn-more> [https://perma.cc/9WBN-SR6N].

encounter law enforcement, and these encounters are particularly deadly for Black people.¹⁸¹ The combination of biased facial recognition and a racist criminal legal system has already resulted in a unique and devastating form of harm to the Black community. Every reported false arrest based on misidentification from facial recognition software has been a false arrest of a Black person, almost all of them men.¹⁸²

Thus far, there are no clear legal cases documenting that facial recognition was used to issue traffic citations. However, the harm is not just in issuing citations; it is also in the state keeping a record of faces at all. This phenomenon is particularly evident in facial recognition software. But the biggest harm is not invisibility, it is how the power of the surveillance state, amplified by AI, impacts Black people's health, well-being, and safety. Is the capture of an image itself statecraft or statecraft?¹⁸³ The potential harm from that image being captured is different for historically marginalized populations.

Some have argued that automated methods will be less biased than police for identifying traffic violations. This may or may not be the case. It will depend on where cameras are placed and who decides where they are placed. The presumed reduction of police violence depends on what happens after automated systems record images and suspected violations. It could reduce police violence against Black motorists on the street and increase violent police arrests in people's homes, traumatizing whole families and neighborhoods. The false veneer of objectivity could shift the violence in a way that makes it harder to document and correct.

2. PROPOSALS FOR REFORM AND EQUITY IN TRAFFIC ENFORCEMENT

Addressing the challenges of automated traffic enforcement involves three key steps. First, it is crucial to verify that images captured by automated cameras are processed and used in a manner free from bias,

181. See ERIKA HARRELL & ELIZABETH DAVIS, BUREAU OF JUST. STAT., U.S. DEP'T OF JUST., NCJ 255730, CONTACTS BETWEEN POLICE AND THE PUBLIC, 2018 – STATISTICAL TABLES 1–7 (2020), <https://bjs.ojp.gov/content/pub/pdf/cbpp18st.pdf> [<https://perma.cc/A3ZR-F55U>].

182. Katie Hawkinson, *In Every Reported Case Where Police Mistakenly Arrested Someone Using Facial Recognition, that Person Has Been Black*, BUS. INSIDER (Aug. 6, 2023, 2:41 PM), <https://www.businessinsider.com/in-every-reported-false-arrests-based-on-facial-recognition-that-person-has-been-black-2023-8> [<https://perma.cc/8JY7-3VYX>]; Kashmir Hill, *Eight Months Pregnant and Arrested After False Facial Recognition Match*, N.Y. TIMES (Aug. 6, 2023), <https://www.nytimes.com/2023/08/06/business/facial-recognition-false-arrest.html>.

183. See Atuahene, *supra* note 8, at 7 (“While statecraft is the skillful management of states affairs, statecraft pinpoints instances when public officials augment state coffers by intentionally or unintentionally stealing from those under their authority.” (footnote omitted)).

prohibiting their use until this is established. Second, testing the fairness of these systems in their specific operational context is essential. Third, implementing stringent privacy safeguards ensures that cameras meant for public safety do not inadvertently contribute to invasive surveillance.

Reports by Streetsblog Chicago highlight initiatives like adjusting camera locations near freeways, scaling fines based on financial capability, and reevaluating ineffective camera sites.¹⁸⁴ Incorporating assessments of racial and economic impacts of camera enforcement into the review process can provide valuable insights.¹⁸⁵

In Oakland, the automated enforcement pilot centers on equity and privacy. This includes options for lenient fines or community service, and restricts photo enforcement to rear license plates, banning facial recognition.¹⁸⁶ The policy minimizes police-community interactions at traffic stops, potentially reducing conflict.¹⁸⁷ With substantial community input, the policy includes a “Use Policy & Equity Analysis” for strategic site selection.¹⁸⁸ Privacy is prioritized by limiting footage retention and restricting external access or use of the data, emphasizing a commitment to privacy and targeted enforcement.¹⁸⁹

IV. ALTERNATIVES TO INCREASED TECHNOLOGICAL SURVEILLANCE

Systemic racism comes in many shapes and policies, and one of them is urban design.¹⁹⁰ Pedestrians may blame speedy drivers and drivers may blame jaywalking pedestrians, but the real culprit is the lack of pedestrian infrastructure.¹⁹¹ If the problem is pedestrian safety, what

184. John Greenfield, *How Should We Respond to the UIC and ProPublica Reports on Chicago Traffic Cameras?*, STREETS BLOG CHI. (Jan. 14, 2022, 11:24 PM), <https://chi.streetsblog.org/2022/01/14/what-should-we-do-about-the-racial-disparities-in-chicagos-life-saving-traffic-camera-program> [https://perma.cc/C828-2YWL].

185. See *Predominantly Black Neighborhoods in D.C. Bear the Brunt of Automated Traffic Enforcement*, *supra* note 75.

186. *AB 645 (Friedman et al.): Speed Safety Systems Pilot Program*, CITY OF OAKLAND, <https://www.oaklandca.gov/projects/assembly-bill-645-friedman-speed-safety-systems-pilot-program> [https://perma.cc/K43W-DU5U].

187. *Id.*

188. *Id.*

189. *Id.* (providing that “[f]ootage may only be retained for 5 days if no violation is issued, 60 days if a violation is issued” and “[f]ootage must be collected by the Department of Transportation and may not be shared or used for any other purpose”).

190. See, e.g., Jenni Bergal, *Racial Justice, Pedestrian Safety Fuel Jaywalking Debate*, STATELINE (July 14, 2022, 12:00 AM), <https://stateline.org/2022/07/14/racial-justice-pedestrian-safety-fuel-jaywalking-debate/> [https://perma.cc/EJC8-4UYJ] (suggesting that inadequate urban walking infrastructure, such as a lack of safety features at street crossings, disproportionately affects low-income, Black neighborhoods).

191. See *id.*

is being done to improve lighting and road infrastructure in these high conflict spaces? Tech can serve as an excuse or band-aid that does not fix deep systemic problems.

A. Improving Traffic Enforcement without Escalating Surveillance

To effectively enhance road safety, a holistic approach is essential. This encompasses extending yellow and red light phases, which is proven to reduce accidents, and restricting vehicle access in congested areas to improve safety.¹⁹² Key pedestrian infrastructure improvements include raised crosswalks, synchronized signals, and strategically placed crosswalks.¹⁹³ Additionally, expanding public transportation, such as adding bus services and building light rail, is vital.¹⁹⁴

Urban design changes, such as dedicated bus and buffered bicycle lanes, along with narrowing roadways, make traffic environments safer and more efficient.¹⁹⁵ Reducing multi-lane intersections also lessens potential hazards.¹⁹⁶

To improve traffic enforcement while addressing concerns about increased surveillance, it is crucial to understand community opposition often arises from perceptions of automated systems as revenue-focused. The U.S. Department of Transportation's operational guidelines for speed cameras are pivotal in this context.¹⁹⁷ These guidelines clarify that

192. See generally Hugh McGee, Sr., Kevin Moriarty & Timothy J. Gates, *Guidelines for Timing Yellow and Red Intervals at Signalized Intersections*, TRANSP. RSCH. REC., Jan. 2012, at 1. One study found that lengthened yellow lights plus red light cameras further cut violations significantly. Richard A. Retting, Susan A. Ferguson & Charles M. Farmer, *Reducing Red Light Running Through Longer Yellow Signal Timing and Red Light Camera Enforcement: Results of a Field Investigation*, 40 ACCIDENT ANALYSIS & PREVENTION, no. 1, 2008, at 327, 332 (2008).

193. See EBONY VENSON, ABIGAIL GRIMMINGER & STEPHEN KENNY, SMART GROWTH AM., DANGEROUS BY DESIGN 2022, at 17–21 (2022), <https://smartgrowthamerica.org/wp-content/uploads/2022/07/Dangerous-By-Design-2022-v3.pdf> [<https://perma.cc/W5ZW-D5H6>] (providing ideas for infrastructure and city, county, state, and federal leadership); Vasquez, *supra* note 19 (noting that pedestrian safety could be increased with better lighting, more sidewalks, and limited multi-lane intersections).

194. See sources cited *supra* note 193.

195. See VENSON, GRIMMINGER & KENNY, *supra* note 193, at 20–21.

196. See *id.* at 30. See also Vasquez, *supra* note 19 (noting that multi-lane roadways increase danger for crossing pedestrians).

197. See generally NAT'L HIGHWAY TRAFFIC SAFETY ADMIN., U.S. DEP'T OF TRANSP., DOT HS 810 916, SPEED ENFORCEMENT CAMERA SYSTEMS OPERATIONAL GUIDELINES (2008), <https://rosap.ntl.bts.gov/view/dot/16481> [<https://perma.cc/D9JF-GHBN>].

speed cameras should supplement, not replace, traditional enforcement, thereby balancing technological enforcement with traditional methods.¹⁹⁸

Importantly, these guidelines also tackle constitutional challenges arising out of the Fifth and Fourteenth Amendments, such as due process and equal protection.¹⁹⁹ Addressing these legal aspects ensures that automated enforcement respects individual rights and adheres to legal standards, thus maintaining a balance between effective enforcement and safeguarding civil liberties.²⁰⁰ This approach necessitates legislative action for the implementation of certain camera systems²⁰¹ to further ensure that traffic enforcement technology is used responsibly and ethically.

B. Balancing Safety, Equity, and Privacy

In the realm of traffic enforcement, balancing safety, equity, and privacy necessitates a legal framework that minimizes statecraft while addressing systemic issues. This approach is exemplified by the Biden Administration and Congress, which built upon the Obama Administration's efforts to rectify past injustices in transportation investments. The Reconnecting Communities pilot, part of the Bipartisan Infrastructure Law, is a significant step in this direction, allocating up to \$1 billion through 2026 for communities affected by inequitable transportation policies.²⁰² Moreover, D.C.'s creation of the Automated Traffic Enforcement Task Force to review and propose improvements to its program, including aspects related to fines, late payment penalties, and moving violation laws, demonstrates a commitment to reevaluating enforcement strategies.²⁰³ Such initiatives are crucial to shift away from a model that potentially requires mass surveillance and instead towards a comprehensive speed management program that emphasizes equitable road safety.²⁰⁴ These initiatives do not require government mass

198. *Id.* at 1.

199. *Id.* at 5.

200. *See id.*

201. *See id.* at 5–6.

202. Jenkins, *supra* note 18. These funds will support planning, capital construction, and technical assistance to state and local governments to address past harms. *Id.*

203. *Mayor's Task Force on Automated Traffic Enforcement (ATE) Equity and Safety*, DC.GOV, <https://dmoi.dc.gov/atetaskforce> (last visited Mar. 1, 2024).

204. *See id.*

surveillance of the people.²⁰⁵ They should all be a component of a comprehensive speed management program.²⁰⁶

Stategraft through automated enforcement threatens to compromise democracy. It changes the relationship between the state and its citizenry.²⁰⁷ Through automated traffic enforcement, the state exploits and imposes mass surveillance on its citizens—particularly the most vulnerable—to increase its coffers. The primary goal of a democratic state is to protect itself, its territory, and its population, which is reflected in the trust placed in political institutions to keep us safe. Yet, automated enforcement is frequently seen as a tool for generating revenue rather than as means to enhance road safety. This perspective stems from a belief that these cameras primarily target “bad” drivers who run red lights, rather than contributing to the safety of all road users through improved infrastructure.²⁰⁸ This perception can undermine public trust in these systems. Moreover, a lack of transparency and effective communication regarding the use and objectives of traffic cameras contributes to public skepticism and mistrust.

CONCLUSION

Automated enforcement can become automated stategraft. While automated traffic enforcement has potential to increase safety, it also

205. These endeavors can be funded by changes to parking structure rather than reliance on motorist citations. See INST. FOR TRANSP. & DEV. POL’Y, ON-STREET PARKING PRICING: A GUIDE TO MANAGEMENT, ENFORCEMENT, AND EVALUATION 50–54 (2021), https://www.itdp.org/wp-content/uploads/2021/09/ITDP_On-Street-Parking-Guide_2021_single-2.pdf [<https://perma.cc/36NB-FXSL>].

206. See generally NAT’L HIGHWAY TRAFFIC SAFETY ADMIN., *supra* note 197 (suggesting guidelines on automated traffic enforcement systems).

207. See Atuahene, *supra* note 8, at 27.

208. This is what occurred when jurisdictions across the United States, wanting to deny Black Americans access to public pools, began to shut them down. See, e.g., Heather McGhee, *Public Pools Used To Be Everywhere in America. Then Racism Shut Them Down.*, MARKETPLACE (Feb. 15, 2021), <https://www.marketplace.org/2021/02/15/public-pools-used-to-be-everywhere-in-america-then-racism-shut-them-down/> [<https://perma.cc/LQD6-Z4W9>] (“[M]any cities closed their pools rather than commit to desegregation, and . . . this same political mindset shaped the policy making for decades to come.”); *Palmer v. Thompson*, 403 U.S. 217, 218–19 (1971) (discussing the constitutionality of city swimming pool closings after segregated pools were declared unconstitutional); *Unintentional Drowning: Fact Sheet*, CDC, <https://web.archive.org/web/20120523061036/http://www.cdc.gov/homeandrecreationalsafety/water-safety/waterinjuries-factsheet.html> (May 16, 2011) (“[A]ccess to swimming pools . . . may contribute to the racial differences in drowning rates.”); Finlo Rohrer, *Why Don’t Black Americans Swim?*, BBC (Sept. 3, 2010), <https://www.bbc.com/news/world-us-canada-11172054> [<https://perma.cc/8T26-T47L>] (“[A]ccording to the US Centers for Disease Control and Prevention, the fatal drowning rate of African-American children aged five-14 is three times that of white children.”).

raises profound ethical, legal, and social concerns. Far from being passive observers, automated systems impose disproportionate financial and psychological burdens on Black communities, undermining already low trust in law enforcement and exacerbating economic disparities. Increased surveillance coupled with facial recognition technology and other automated responses shifts the burden of proof to those accused of violating traffic laws, and bias in how such systems are trained and deployed will burden some populations more than others. Even when intended to improve safety, these technologies may not address the root causes of traffic safety issues unless they are deployed along with other safety enhancements, many of which cost money rather than increase revenue. Automated traffic enforcement mechanisms are seen as profit generators that worsen the burden on already socioeconomically challenged communities rather than increasing their safety. A critical reevaluation of automated traffic enforcement is essential to address systemic injustices and drive transformative change. Cities and municipalities have an opportunity to increase community trust by deploying effective traffic management that uses technology to effectively balance safety, fairness, and community welfare. To do so, they must prioritize equity, evaluate and mitigate bias, protect privacy, and involve local communities in decisionmaking.