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# CONGESTION PRICING AND THE OPPORTUNITY TO CONFRONT NEW YORK CITY'S AIR QUALITY EMERGENCY

CHAD HUGHES\*

## ABSTRACT

Poor air quality in New York City is a public health emergency that disproportionately harms the city's most vulnerable populations. Recent studies have found that exposure to particulate matter pollution previously thought "safe" causes significant damage to perhaps every organ of the human body. While New York City has reduced particulate matter exposure over the last decade, progress has stalled. In fact, climate change, the shift in the automobile market from sedans to SUVs and "light" trucks, and the federal pullback of environmental enforcement under Trump suggest that air pollution in New York City is likely to worsen.

While the City has little control over global climate change, the federal government, or the automobile market, it has sweeping powers over its streets. Furthermore, New York City is set to become the first American city with a congestion tolling system. The pending implementation of congestion pricing offers policymakers the opportunity to rethink the access of private automobiles to New York's core.

This Article argues that the Metropolitan Transportation Administration should implement a variable congestion toll that is based, in part, on measures of local air quality. Furthermore, the City should act unilaterally to reduce automobile access to the core when local air quality reaches particularly dangerous levels. The Introduction presents these recommendations and evaluates the stalled progress on air quality in New

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York City. Part I reviews the alarming literature on the public health impact of air pollution with a particular focus on PM2.5. Part II provides a discussion of the legal authority and potential legal roadblocks for New York State to implement a variable congestion toll tied to air quality, and for the City to unilaterally ban certain private automobiles from the central business district during air quality emergencies.

#### INTRODUCTION: AN UNFORTUNATE REVERSAL

Approximately 2,500 New Yorkers die prematurely every year as a result of air pollution, while millions more suffer through prolonged exposure to dangerously poor air quality.<sup>1</sup> While our understanding of the full scope and severity of the public health impacts of poor air quality continues to evolve, the results from studies over the last twenty years are alarming.<sup>2</sup> Scientists now believe that exposure to particulate matter that is less than 2.5 micrometers in diameter (PM2.5) damages “every organ of the human body,” and causes significant reductions in cognitive capacity.<sup>3</sup> Worse yet, air pollution disproportionately harms the poor, the elderly, the ill, the pregnant, children, and minority communities.<sup>4</sup>

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<sup>1</sup> See Jeremy Hinsdale, *By the Numbers: Air Quality and Pollution in New York City*, COLUM. UNIV. EARTH INST. (June 6, 2016), <https://blogs.ei.columbia.edu/2016/06/06/air-quality-pollution-new-york-city/> [<https://perma.cc/2PHN-WYC7>].

<sup>2</sup> See AIR POLLUTION AND THE HEALTH OF NEW YORKERS: THE IMPACT OF FINE PARTICLES AND OZONE, N.Y.C. DEP'T HEALTH & MENTAL HYGIENE (2010) [hereinafter AIR POLLUTION AND THE HEALTH OF NEW YORKERS], <https://www1.nyc.gov/assets/doh/downloads/pdf/eode/eode-air-quality-impact.pdf> [<https://perma.cc/37LB-W9RM>].

<sup>3</sup> See, e.g., Xin Zhang et al., *The Impact of Exposure to Air Pollution on Cognitive Performance*, 115 PROC. NAT'L ACAD. SCI. U.S. 9193 (2018); *The New York City Community Air Survey: Neighborhood Air Quality (2008–2017)*, N.Y.C. HEALTH DEP'T (2017) [hereinafter *Community Air Survey*], <https://nyc-ehs.net/besp-report/web/nyccas> [<https://perma.cc/Y92F-3YAF>]; Damian Carrington, *Revealed: Air Pollution May Be Damaging Every Organ in the Body*, GUARDIAN (May 17, 2019), <https://www.theguardian.com/environment/ng-in-teractive/2019/may/17/air-pollution-may-be-damaging-every-organ-and-cell-in-the-body-finds-global-review> [<https://perma.cc/WTH6-K3XF>] (on the alarming findings that air pollution causes extensive damage to the human body); Damian Carrington & Lily Kuo, *Air Pollution Causes 'Huge' Reduction in Intelligence, Study Reveals*, GUARDIAN (Aug. 27, 2018), <https://www.theguardian.com/environment/2018/aug/27/air-pollution-causes-huge-reduction-in-intelligence-study-reveals> [<https://perma.cc/Y8PP-AR8M>] (on studies that show exposure to air pollution significantly reduces cognitive capabilities, particularly among the elderly).

<sup>4</sup> See, e.g., Kevin Loria, *Is Summer Air Pollution Making You Sick?*, CONSUMER REPS. (July 23, 2019), <https://www.consumerreports.org/pollution/is-summer-air-pollution-making-you-sick/> [<https://perma.cc/VR4N-4WP6>]. See also Hinsdale, *supra* note 1; *Community Air Survey*, *supra* note 3.

While air quality has improved both nationally and in New York City over the last four decades,<sup>5</sup> hundreds of thousands—perhaps millions—of New Yorkers continue daily to be exposed to levels of pollution deemed unsafe by the EPA and the World Health Organization (“WHO”).<sup>6</sup> Furthermore, a number of trends, including the federal pull-back on environmental enforcement under the Trump administration,<sup>7</sup> global climate change,<sup>8</sup> and the accelerating market shift from sedans to SUVs and “light” trucks<sup>9</sup> may reverse some of the progress that has been made. While New York has little control over the federal government, the global climate crisis, or the automobile market, the City has sweeping powers over its streets.<sup>10</sup> Additionally, in 2019 New York State passed a

<sup>5</sup> For national data, see Nadja Popovich, *America’s Air Quality Worsens, Ending Years of Gains, Study Says*, N.Y. TIMES (Oct. 24, 2019), <https://www.nytimes.com/interactive/2019/10/24/climate/air-pollution-increase.html> [<https://perma.cc/HUP7-3GNV>]. For NYC data, see *Community Air Survey*, *supra* note 3.

<sup>6</sup> EPA sets the “safe” PM2.5 pollution threshold at annual average level of 12 micrograms per cubic meter. See Lisa Friedman, *E.P.A. Plans to Get Thousands of Pollution Deaths Off the Books by Changing Its Math*, N.Y. TIMES (May 20, 2019), <https://www.nytimes.com/2019/05/20/climate/epa-air-pollution-deaths.html> [<https://perma.cc/LT8C-88NS>]. WHO sets the threshold at 10 micrograms per cubic meter. See Hinsdale, *supra* note 1. Much of Manhattan, the South Bronx, and areas of the City adjacent to highways have a daily PM2.5 average above this 10–12 microgram threshold. See *Community Air Survey*, *supra* note 3.

<sup>7</sup> See, e.g., Ruthie Lazenby & Sarah DeSouza, *Opinion: After Feds’ Failure, NYS Must Crack Down on Pollution*, CITY LIMITS (Aug. 28, 2020), <https://citylimits.org/2020/08/28/opinion-after-feds-failure-nys-must-crack-down-on-air-pollution/> [<https://perma.cc/X92E-W3TA>]; Eric Roston, *U.S. Air Quality Was Improving. Now It’s Getting Worse*, BLOOMBERG (Oct. 22, 2019), <https://www.bloomberg.com/news/articles/2019-10-22/u-s-air-quality-was-improving-now-it-s-getting-worse?fbclid=IwAR2PJboquGU5Ro7iea1qnySpfzAUH3JVDyBodZxn--uY78kdlEcDH0kEgYA> [<https://perma.cc/LQG5-99HD>]; Jordan Davidson, *U.S. Air Quality Is Headed the Wrong Way*, ECOWATCH (June 20, 2019), <https://www.ecowatch.com/air-quality-united-states-low-2638932526.html> [<https://perma.cc/B785-VQRT>]. See generally Karen Clay & Nicholas Z. Muller, *Recent Increases in Air Pollution: Evidence and Implications for Mortality* (Nat’l Bureau of Econ. Rsch., Working Paper No. 2638, 2019), <https://www.nber.org/papers/w2638> [<https://perma.cc/R4FV-BYYY>].

<sup>8</sup> See, e.g., U.S. DEP’T HEALTH & HUMAN SERVS., CLIMATE CHANGE DECREASES THE QUALITY OF THE AIR WE BREATHE, [https://www.cdc.gov/climateandhealth/pubs/AIR-QUALITY-Final\\_508.pdf](https://www.cdc.gov/climateandhealth/pubs/AIR-QUALITY-Final_508.pdf) [<https://perma.cc/K5J8-P6P9>] (last visited Mar. 26, 2021); *Climate Change Is Making Ground-Level Ozone Pollution Worse*, YALE CTR. FOR ENV’T COMMC’N (2019), <https://www.yaleclimateconnections.org/2019/04/climate-change-makes-air-pollution-worse/> [<https://perma.cc/SMT8-UT3T>].

<sup>9</sup> See Niko Kommenda, *SUVs Second Biggest Cause of Emissions Rise, Figures Reveal*, GUARDIAN (Oct. 25, 2019), <https://www.theguardian.com/environment/ng-interactive/2019/oct/25/suvs-second-biggest-cause-of-emissions-rise-figures-reveal> [<https://perma.cc/8FGQ-2CZP>]; Adele Peters, *Should We Outlaw SUVs?*, FAST CO. (Oct. 23, 2019), <https://www.fastcompany.com/90420280/should-we-ban-suvs> [<https://perma.cc/R2BH-BZTS>].

<sup>10</sup> See Anne Barnard, *Demise of Gasoline Cars? What We Know about N.Y.’s Ambitious*

law to implement a congestion tolling program in New York City, the first of its kind in America.<sup>11</sup> While the implementation of congestion pricing was delayed by the Trump administration,<sup>12</sup> its eventual implementation under the Biden administration offers New York a unique opportunity to reconsider how it manages the access of private automobiles to its core when pollution levels are dangerously high.

City and state policymakers should take a two-pronged approach to reduce the severity and duration of air quality emergencies.<sup>13</sup> First, the Metropolitan Transportation Authority (“MTA”), which has been tasked with implementing congestion pricing in New York City,<sup>14</sup> should embrace a variable pricing model that is dependent in part on local pollution levels. The legislation that enabled congestion pricing mandates that the pricing model be designed by a six-member board and ultimately approved by the MTA’s Triborough Bridge and Tunnel Authority (“TBTA”).<sup>15</sup> One member of this board is to be nominated by the mayor, while the other five are to be nominated by the TBTA,<sup>16</sup> which is effectively controlled by the governor.<sup>17</sup> The mayor should nominate an individual who supports

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*Climate Goals*, N.Y. TIMES (June 20, 2019), <https://www.nytimes.com/2019/06/20/nyregion/greenhouse-gases-ny.html> [<https://perma.cc/3J2Z-5B7J>].

<sup>11</sup> N.Y. VEH. & TR. LAW § 1704-a (Consol. 2019); see also Azi Paybarah, *Congestion Pricing: Who Pays and Who Doesn't*, N.Y. TIMES (Apr. 18, 2019), <https://www.nytimes.com/2019/04/18/nyregion/newyorktoday/nyc-news-congestion-pricing.html> [<https://perma.cc/7BV9-NW36>] (reporting on New York being set to be the first American city to embrace congestion pricing).

<sup>12</sup> See Dana Rubinstein, *Why Congestion Pricing Might be Delayed*, POLITICO (Feb. 18, 2020), <https://www.politico.com/states/new-york/city-hall/story/2020/02/14/why-congestion-pricing-might-be-delayed-1261628> [<https://perma.cc/9AA4-UZMT>].

<sup>13</sup> This is an imprecise, subjective term. One can make an argument that the City is experiencing an air quality emergency when the local PM<sub>2.5</sub> air quality index (“AQI”) is above 50 (which corresponds to a 24-hour average level of PM<sub>2.5</sub> at 12 micrograms per cubic meter) and/or the local PM<sub>10</sub>, ozone, sulfur dioxide, or carbon monoxide AQIs are above 100. Exposure to such levels of PM<sub>2.5</sub>/ozone pollution are deemed “unsafe” by the EPA because of long-term results from such exposure and can lead to acute health events (trips to the ER and even death). See EPA, NATIONAL AMBIENT AIR QUALITY STANDARDS FOR PARTICLE POLLUTION (2012); EPA, AIR QUALITY INDEX (2018). As I will discuss throughout this Article, however, it is not clear at what AQI levels the city should impose a surcharge or implement a partial ban of automobiles. While it might make sense to implement a surcharge at the EPA threshold, implementing the ban at the threshold would perhaps be politically untenable and may conflict with the MTA’s ability to collect the statutory minimum in tolling revenue.

<sup>14</sup> N.Y. VEH. & TR. LAW § 1704(1) (Consol. 2019).

<sup>15</sup> *Id.* § 1704-A(1).

<sup>16</sup> *Id.*

<sup>17</sup> See N.Y. PUB. AUTH. LAW § 1263 (Consol. 2020) (MTA Board members are nominated by the Governor). See also Emma G. Fitzsimmons, *Who Really Runs New York City’s Subway?*,

a pollution-dependent variable pricing model, while the governor and mayor should together lobby the TBTA to nominate individuals who support such a model and to ultimately implement such a model. Second, the City should unilaterally create a program that bans most private passenger automobiles from the central business district (“CBD”) on days in which local air quality conditions are especially dangerous. The City already has sweeping power over its streets and would need no further legislative or administrative approval from state or federal actors to implement such temporary bans.<sup>18</sup>

#### I. NEW YORK’S AIR QUALITY IS A PUBLIC HEALTH EMERGENCY

According to the European Heart Journal, an estimated 8.8 million people died early deaths worldwide because of air pollution in 2018.<sup>19</sup> This amounts to approximately 15 percent of all deaths,<sup>20</sup> making air pollution the leading environmental cause of early death.<sup>21</sup> While it has long been understood that air pollution can be deadly and lead to chronic heart and lung conditions, scientists have only recently begun to understand the full extent of the damage that results from ongoing exposure to even low-to-moderate levels of air pollution.<sup>22</sup>

Research on the impact of fine particulate matter is especially alarming. PM2.5 particles are so small that, when inhaled, they travel through the olfactory bulb and into the brain, causing inflammation.<sup>23</sup>

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N.Y. TIMES (July 25, 2017), <https://www.nytimes.com/2017/07/25/nyregion/who-runs-new-yorks-subway.html> [<https://perma.cc/954M-KCTJ>].

<sup>18</sup> See *infra* Part I.

<sup>19</sup> See Carrington, *supra* note 3.

<sup>20</sup> This is an estimation based on 2020 death-per-minute rate (which shared the same estimate as 2018) multiplied by the number of minutes in a year. For 2020 death rate, see The World Factbook, *Field Listing: Death Rate*, CIA, <https://www.cia.gov/the-world-factbook/countries/world/#people-and-society> [<https://perma.cc/7KG8-NDAU>]. For number of minutes in a year and alternative potential measures of a year in a life, see JONATHAN LARSON, RENT act 2, sc. 1 (1996) (script on file with author).

<sup>21</sup> See Damian Carrington, *Why Is Air Pollution a Fast-Growing Concern?*, GUARDIAN (Nov. 5, 2018), <https://www.theguardian.com/environment/2018/nov/05/air-pollution-every-thing-you-should-know-about-a-public-health-emergency> [<https://perma.cc/W6EE-8TYV>].

<sup>22</sup> See Jonathan Mingle, *Our Lethal Air*, N.Y. REV. OF BOOKS (Sept. 26, 2019), <https://www.nybooks.com/articles/2019/09/26/our-lethal-air-pollution/> [<https://perma.cc/RT45-PYPG>] (data showing that air pollution is still killing people even in US cities that met federal air quality standards). See also Loria, *supra* note 4.

<sup>23</sup> See generally Sam Brockmeyer, *How Air Pollution Alters Brain Development: The Role of Neuroinflammation*, 7 TRANSLATIONAL NEUROSCIENCE 24 (2016). See also Mingle, *supra* note 22.

PM2.5 particles also travel deep into the lungs where they cross into the bloodstream and wreak havoc throughout the body.<sup>24</sup> Studies have linked PM2.5 exposure to higher rates of asthma, emphysema, lung cancer, heart attacks, narrow and clogged arteries, laryngitis, strokes, dementia, brain degeneration, Alzheimer's disease, depression, diabetes, gut cancer, kidney damage and cancer, pancreatic damage and cancer, bladder cancer, miscarriage, low birthweights, muscle weakening, reduced bone density, reduced intelligence, increased psychological distress, poor sleep, stunted lung development in children, stunted brain development in children, childhood obesity, leukemia, and even increased violent crime.<sup>25</sup>

These harmful effects are found not just in the world's most polluted cities, but in American cities with levels of air pollution that were previously considered safe.<sup>26</sup> While the EPA has determined that PM2.5 concentrations below 12 micrograms per cubic meter are "safe,"<sup>27</sup> and the WHO has set the threshold at 10 micrograms per cubic meter,<sup>28</sup> recent studies have shown significant negative health effects well below this threshold level.<sup>29</sup> Some scientists believe that no level of exposure to PM2.5

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<sup>24</sup> See Mingle, *supra* note 22.

<sup>25</sup> See, e.g., Carrington, *supra* note 3 (providing a general overview of body of research about head-to-toe impact of air pollution on human body). See also Amedeo D'Angiulli, *Air Pollution in Global Megacities Linked to Children's Cognitive Decline, Alzheimer's and Death*, CONVERSATION (Sept. 25, 2019), <https://theconversation.com/air-pollution-in-global-mega-cities-linked-to-childrens-cognitive-decline-alzheimers-and-death-105722> [<https://perma.cc/JU3E-TR6V>] (on the impact of brain development and cognitive performance in children); Brockmeyer, *supra* note 23 (on impact of brain development and cognitive decline); *Exposure to Air Pollution Is Linked to an Increase in Violent Crime*, ECONOMIST (Oct. 9, 2019), <https://www.economist.com/graphic-detail/2019/10/09/exposure-to-air-pollution-is-linked-to-an-increase-in-violent-crime> [<https://perma.cc/48DQ-RJKF>] (on the link between air quality and violent crime); Craig Hansen et al., *The Effect of Ambient Air Pollution on Sperm Quality*, 118 ENV'T HEALTH PERSP. 203 (2010) (on the link between air pollution and reduced quality of sperm); Didier Prada et al., *Association of Air Particulate Pollution with Bone Loss Over Time and Bone Fracture Risk*, 8 LANCET PLANET HEALTH 337 (2017) (on air pollution and bone health); Victoria Sass, *The Effects of Air Pollution on Individual Psychological Distress*, 48 HEALTH PLACE 72 (2017) (on the link to psychological distress); Ananya Roy, *Are Your Workers Making Mistakes? Could Be Air Pollution Messing With Their Brains*, ENV'T DEF. FUND (June 25, 2019), <https://www.edf.org/blog/2019/06/25/are-your-workers-making-mistakes-could-be-air-pollution-messing-their-brains> [<https://perma.cc/GG5K-ZNZH>] (on productivity, depression, dementia in adults and lower cognitive performance for children); Carrington, *supra* note 3 (on impact of air pollution and cognitive performance and degeneration in both adults and children).

<sup>26</sup> Carrington, *supra* note 3.

<sup>27</sup> See Friedman, *supra* note 6.

<sup>28</sup> See Hinsdale, *supra* note 1.

<sup>29</sup> See Friedman, *supra* note 6.

is safe.<sup>30</sup> In 2014, the average daily concentration of PM2.5 in central Manhattan between 23rd and 59th Street was above 14 micrograms per cubic meter, and all areas of Manhattan averaged PM2.5 levels above the WHO threshold.<sup>31</sup> Overall, significant areas of Manhattan, the Bronx, Brooklyn, and Queens—collectively home to millions of people—have average daily PM2.5 levels above the WHO threshold.<sup>32</sup>

There is also growing evidence that poor air quality has exacerbated the coronavirus crisis.<sup>33</sup> Multiple studies have linked poor air quality, particularly elevated PM2.5 concentrations, with increases in COVID-19 infections, increased severity of COVID-19 symptoms, and elevated COVID-19 death rates.<sup>34</sup> One study estimates that an increase in the concentration of PM2.5 by 1 microgram per cubic meter is associated with an eight percent increase in the local COVID-19 death rate.<sup>35</sup>

Worse yet, air pollution disproportionately harms the most vulnerable. In America, low-income and minority communities are more likely to be exposed to higher levels of PM2.5.<sup>36</sup> In New York City, traffic-related PM2.5 levels are 50 percent greater in high-poverty neighborhoods than in low-poverty neighborhoods.<sup>37</sup> Children in the low-income South Bronx suffer from the highest rates of childhood asthma in the United States.<sup>38</sup> Furthermore, air pollution is most damaging and dangerous to the ill,

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<sup>30</sup> See Mingle, *supra* note 22.

<sup>31</sup> See Hinsdale, *supra* note 1.

<sup>32</sup> See *id.* See also *Community Air Survey*, *supra* note 3.

<sup>33</sup> See Damian Carrington, 'Compelling' Evidence Air Pollution Worsens Coronavirus—Study, *GUARDIAN* (July 13, 2020), <https://www.theguardian.com/world/2020/jul/13/compelling-evidence-air-pollution-worsens-coronavirus-study> [<https://perma.cc/GG9D-Y6BA>].

<sup>34</sup> See Edoardo Conticini et al., *Can Atmospheric Pollution be Considered a Co-factor in Extremely High Level of SARS-CoV-2 Lethality in Northern Italy?*, 261 *ENV'T POLLUTION* 114465 (2020); Xiao Wu et al., *Exposure to Air Pollution and COVID-19 Mortality in the United States: A Nationwide Cross-Sectional Study* (2020) (unpublished manuscript), [https://projects.iq.harvard.edu/files/covid-pm/files/pm\\_and\\_covid\\_mortality\\_med.pdf](https://projects.iq.harvard.edu/files/covid-pm/files/pm_and_covid_mortality_med.pdf) [<https://perma.cc/NW3Z-NDGX>]; Matthew A. Cole et al., Discussion Paper No. 13367, *Air Pollution Exposure and COVID-19*, IZA INST. LABOR ECON. (2020), <http://ftp.iza.org/dp13367.pdf> [<https://perma.cc/GL97-4NVG>].

<sup>35</sup> See Wu et al., *supra* note 34, at 2.

<sup>36</sup> Cheryl Katz, *People in Poor Neighborhoods Breathe More Hazardous Particles*, *SCI. AM.* (Nov. 1, 2012), <https://www.scientificamerican.com/article/people-poor-neighborhoods-breathe-more-hazardous-particles/> [<https://perma.cc/2QRN-6VSF>].

<sup>37</sup> Iyad Kheirbek et al., *The Contribution of Motor Vehicle Emissions to Ambient Fine Particulate Matter Public Health Impacts in New York City: A Health Burden Assessment*, 15 *ENV'T HEALTH* 89, 98 (2016).

<sup>38</sup> Hazar Kilani, 'Asthma Alley': Why Minorities Bear Burden of Pollution Inequity Caused by White People, *GUARDIAN* (Apr. 4, 2019), <https://www.theguardian.com/us-news/2019/apr/04/new-york-south-bronx-minorities-pollution-inequity> [<https://perma.cc/2NSX-CN2C>].

the pregnant, the elderly, and to children.<sup>39</sup> Experts have recently described the impact of PM2.5 exposure on pregnant women and young children as “something approaching a public health catastrophe.”<sup>40</sup>

The good news is that air quality has improved significantly over the past forty years, both nationally and in New York City.<sup>41</sup> The Bloomberg and de Blasio administrations have done impressive work to reduce PM2.5 levels in New York City by regulating heating oil and requiring industrial boilers to convert to cleaner fuels.<sup>42</sup> Fine particulate matter pollution has decreased by approximately 30% on average across the city since 2009.<sup>43</sup> Particulate matter levels, however, remain dangerously high throughout much of the city in areas near heavily trafficked roads and highways.<sup>44</sup> Much of the Manhattan core, for example, has daily average PM2.5 concentrations at or above the EPA safety threshold.<sup>45</sup>

Furthermore, there are a number of unfortunate trends that suggest that both national and local air pollution is worsening. For the first time in decades, U.S. air quality deteriorated each year between 2016 and 2018, including an increase in national PM2.5 concentrations.<sup>46</sup> This increase is in part the result of the Trump administration and Republican efforts to “dismantle” Clean Air Act protections.<sup>47</sup> New York City’s greenhouse gas emissions also increased between 2017 and 2019 after years of decreases.<sup>48</sup>

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<sup>39</sup> *Health Impacts of Air Pollution*, ENV'T DEF. FUND, <https://www.edf.org/health/health-impacts-air-pollution> [<https://perma.cc/GY8V-M5ND>] (last visited Mar. 26, 2021).

<sup>40</sup> See Damian Carrington, *Air Pollution: Everything You Should Know About a Public Health Emergency*, GUARDIAN (Nov. 5, 2018), <https://www.theguardian.com/environment/2018/nov/05/air-pollution-everything-you-should-know-about-a-public-health-emergency> [<https://perma.cc/6CNW-S7SM>].

<sup>41</sup> See *Air Quality—National Summary*, EPA, <https://www.epa.gov/air-trends/air-quality-national-summary> [<https://perma.cc/5A8B-QXFS>] (last visited Mar. 26, 2021) (on federal progress); *Community Air Survey*, *supra* note 3 (on local progress).

<sup>42</sup> See *New York City Air Quality Programs Reduce Harmful Air Pollutants*, OFF. DISEASE PREV. & HEALTH PROMOTION, DEP'T HEALTH & HUM. SERV. (Nov. 17, 2016), <https://www.healthypeople.gov/2020/healthy-people-in-action/story/new-york-city-air-quality-programs-reduce-harmful-air-pollutants> [<https://perma.cc/6SS2-RBXR>].

<sup>43</sup> See *Community Air Survey*, *supra* note 3.

<sup>44</sup> See *id.*

<sup>45</sup> *Id.*

<sup>46</sup> See Roston, *supra* note 7.

<sup>47</sup> See Loria, *supra* note 4; Mingle, *supra* note 22; Nina Lakhani, *US Among Top 10 Countries for Pollution-Related Deaths, New Study Shows*, GUARDIAN (Dec. 18, 2019), <https://www.theguardian.com/environment/2019/dec/18/us-top-10-countries-pollution-related-deaths-study> [<https://perma.cc/AXT6-S87R>]; Friedman, *supra* note 6.

<sup>48</sup> See Yoav Gonen, *NYC Climate Progress on Ambitious Emissions Goals Backslides As*

Climate change is also likely to make matters worse. Higher temperatures will lead to higher levels of ground-level ozone pollution.<sup>49</sup> While particulate matter pollution will not necessarily increase as a result of global warming, persistently hot weather causes conditions in which air becomes stagnant and pollution sits in place near its source for longer periods of time.<sup>50</sup> In fact, because of warming temperatures, cities are experiencing *more* unhealthy air quality days, even as their average local emissions decrease.<sup>51</sup>

Finally, automobile emissions continue to increase in and around New York City. Regionally, carbon dioxide emissions from automobiles have increased 30% over the last thirty years, and 9% on a per-capita basis.<sup>52</sup> While the rise of rideshare and Amazon deliveries have contributed to this increase,<sup>53</sup> most of this growth is likely related to the shift from sedans to SUVs and “light” trucks.<sup>54</sup> Bigger, heavier vehicles generate greater CO<sub>2</sub>, ozone, and particulate pollution than lighter vehicles.<sup>55</sup>

While New York City cannot undo the damage caused by the Trump Administration and cannot unilaterally counteract climate change,

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*Strategic Plan Sprawls*, THE CITY (Dec. 1, 2020), <https://www.thecity.nyc/environment/2020/12/1/21920796/nyc-climate-progress-backslides> [<https://perma.cc/KYD7-WAQL>].

<sup>49</sup> See ELIZABETH MARTIN PERERA & TODD SANFORD, UNION CONCERNED SCIENTISTS, CLIMATE CHANGE AND YOUR HEALTH: RISING TEMPERATURES, WORSENING OZONE POLLUTION 2 (2011).

<sup>50</sup> See Thomas C. Peterson et al., *Changes in Weather and Climate Extremes: State of Knowledge Relevant to Air and Water Quality in United States*, 64 J. AIR & WASTE MGMT. ASS'N 184 (2014).

<sup>51</sup> See *Nationwide Trends in Air Stagnation Since 1973*, CLIMATE CENTRAL (July 24, 2019), <https://www.climatecentral.org/gallery/maps/nationwide-trends-in-air-stagnation-since-1973> [<https://perma.cc/B7SL-2ZMD>].

<sup>52</sup> Nadja Popovich & Denise Lu, *The Most Detailed Map of Auto Emissions in America*, N.Y. TIMES (Oct. 10, 2019), <https://www.nytimes.com/interactive/2019/10/10/climate/driving-emissions-map.html> [<https://perma.cc/S6G5-HNCK>] (select “New York metro area” in drop-down menu in second paragraph).

<sup>53</sup> See Terry Nguyen, *Amazon’s 1-day Shipping Is Convenient—and Terrible for the Environment*, VOX (Oct. 16, 2019), <https://www.vox.com/the-goods/2019/10/16/20917467/amazon-one-day-shipping-bad-for-environment> [<https://perma.cc/5542-MVJW>] (on Amazon impact); Erhardt et al., *Do Transportation Network Companies Decrease or Increase Congestion?*, 5 SCI. ADVANCES (2019) (finding that rideshare companies contribute to increased congestion and emissions).

<sup>54</sup> See Dawn Stover, *SUVs Are Worse for the Climate Than You Ever Imagined*, WIRED (Nov. 29, 2019), <https://www.wired.com/story/suvs-are-worse-for-the-climate-than-you-ever-imagined/> [<https://perma.cc/5JDC-H3S5>].

<sup>55</sup> See Josh Loeb, *Particle Pollution from Electric Cars Could Be Worse Than From Diesel Ones*, ENG’G & TECH. (Mar. 10, 2017), <https://eandt.theiet.org/content/articles/2017/03/particle-pollution-from-electric-cars-could-be-worse-than-from-diesel-ones/> [<https://perma.cc/3LA3-73ZN>].

it has sweeping powers over its streets.<sup>56</sup> Traffic and road dust (not including construction dust) account for approximately 25% of PM2.5 emissions and approximately 40% of ozone pollution in New York City.<sup>57</sup> Traffic density is also a key predictor of both PM2.5 and ozone concentrations.<sup>58</sup> Indeed, Columbia University researchers found that pollution levels in Harlem dropped significantly as a result of reduced automobile traffic during the COVID-19 shutdown.<sup>59</sup> Specifically, in March 2020, carbon dioxide and methane levels in Harlem dropped by 10%, carbon monoxide levels dropped by 50%, and PM2.5 levels declined by 20%.<sup>60</sup> Clearly, the reduction of automobile traffic is a key lever for the City to reduce exposure to dangerous pollutants. Furthermore, the City would likely save hundreds of lives a year if it were able to sustain such a decrease in PM2.5 levels.<sup>61</sup> The City should therefore act to reduce private automobile use on an ongoing basis.

## II. LIMITING AUTOMOBILE ACCESS TO THE CORE

### A. *Variable Congestion Pricing*

In 2019, New York state lawmakers passed the Traffic Mobility Act (“TMA”), which legalized congestion tolling for drivers entering Manhattan south of 60th Street.<sup>62</sup> The TMA authorized the establishment of a six-member Traffic Mobility Review Board (“TMRB”) that is responsible for recommending tolling levels and possible exemptions.<sup>63</sup> The MTA’s TBTA

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<sup>56</sup> See N.Y. COMP. CODES R. & REGS. tit. 34 § 2 (2017).

<sup>57</sup> See Kheirbek et al., *supra* note 37, at 93. See also N.Y.C. DEPT OF HEALTH & MENTAL HYGIENE, THE NEW YORK CITY COMMUNITY AIR SURVEY (2015).

<sup>58</sup> See Kheirbek et al., *supra* note 37. See also *Living Near Highways and Air Pollution*, AM. LUNG ASS’N, <https://www.lung.org/our-initiatives/healthy-air/outdoor/air-pollution/highways.html> [<https://perma.cc/G3XN-FEEF>] (last visited Mar. 26, 2021).

<sup>59</sup> See Larry McShane, *Scientists Detect Cleaner Air in NYC But Doubt it Will Outlast Coronavirus Shutdown*, N.Y. DAILY NEWS (Apr. 6, 2020), <https://www.nydailynews.com/coronavirus/ny-coronavirus-environmental-benefit-unlikely-to-last-20200406-vx5v3dn6evhbhdjdmarcyihleu-story.html> [<https://perma.cc/5CQ8-YUCK>].

<sup>60</sup> *Id.*

<sup>61</sup> For estimates of how many lives would be saved through modest reductions in ozone and PM2.5 pollution, see AIR POLLUTION AND THE HEALTH OF NEW YORKERS, *supra* note 2, at 3.

<sup>62</sup> N.Y. VEH. & TRAF. LAW § 1704-a (Consol. 2019). Drivers who travel only along the FDR or West Side Highway without entering local streets will not be charged. See Winnie Hu, *Confused About Congestion Pricing? Here’s What We Know*, N.Y. TIMES (Apr. 24, 2019), <https://www.nytimes.com/2019/04/24/nyregion/what-is-congestion-pricing.html> [<https://perma.cc/J3SW-8B9U>].

<sup>63</sup> Glenn Every, *Congestion Pricing Board Must Be Bus Friendly*, GOTHAM GAZETTE (Sept. 6,

will have final say over the tolling scheme and will work with the New York City Department of Transportation (“NYC DOT”) to implement the program.<sup>64</sup> Five members of the commission will be chosen by the TBTA, while one will be nominated by Mayor de Blasio.<sup>65</sup> Conveniently, the TMRB was barred by law from announcing its recommended fees until after the 2020 elections.<sup>66</sup>

Originally, congestion pricing was slated to be implemented by January 2021.<sup>67</sup> Because some of the roads in the congestion tolling zone receive federal funding, however, the MTA needs to complete some kind of environmental review with the Federal Highway Authority (“FHWA”).<sup>68</sup> The program was indefinitely placed on hold because the MTA was awaiting guidance from the Trump administration on whether congestion tolling requires an extensive environmental impact statement or a more limited environmental assessment.<sup>69</sup> If the federal government requires a full environmental impact statement, then congestion tolling is likely to be delayed by at least two years.<sup>70</sup> According to Columbia Law’s Michael Gerrard, projects take an average of 2,691 days to complete the environmental impact statement process with the FHWA.<sup>71</sup> The shortest time an agency has ever completed an environmental impact statement was 637 days.<sup>72</sup>

It is unclear if the Trump administration delayed the project out of incompetence or as an act of political retribution.<sup>73</sup> The MTA now

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2019), <https://www.gothamgazette.com/opinion/8775-congestion-pricing-board-must-be-bus-friendly> [<https://perma.cc/W3JK-32WS>].

<sup>64</sup> N.Y. VEH. & TRAF. LAW §§ 1704–05 (Consol. 2019).

<sup>65</sup> N.Y. PUB. AUTH. LAW § 553-K (Consol. 2019).

<sup>66</sup> Nolan Hicks & Carl Campanile, *Politicians Put Off Setting Congestion Pricing Fee Until After 2020 Election*, N.Y. POST (Apr. 2, 2019), <https://nypost.com/2019/04/02/politicians-put-off-setting-congestion-pricing-fee-until-after-2020-election/> [<https://perma.cc/4CPU-5W9U>].

<sup>67</sup> Caroline Spivack, *Congestion Pricing Delayed as New Car Owners Threaten to Slow New York to a Crawl*, CURBED N.Y. (July 15, 2020), <https://ny.curbed.com/2020/7/15/21324020/congestion-pricing-delayed-mta-cars-slow-new-york-city> [<https://perma.cc/UAC7-VPSM>].

<sup>68</sup> Mark McNulty et al., *Congestion Pricing Another Victim of Trump’s Vindictive Stance on Infrastructure*, REG’L PLAN. ASS’N (Sept. 29, 2020), <https://rpa.org/latest/lab/congestion-pricing-federal-government-delay> [<https://perma.cc/2MLY-5H2L>].

<sup>69</sup> See Annie McDonough, *Are Feds Holding Congestion Pricing Hostage?*, CITY & STATE N.Y. (Feb. 21, 2020), <https://www.cityandstateny.com/articles/policy/policy/are-feds-holding-congestion-pricing-hostage.html> [<https://perma.cc/E282-GJ97>].

<sup>70</sup> See Dana Rubinstein, *Why Congestion Pricing Might Be Delayed*, POLITICO (Feb. 18, 2020), <https://www.politico.com/states/new-york/city-hall/story/2020/02/14/why-congestion-pricing-might-be-delayed-1261628> [<https://perma.cc/5YH4-8WJE>].

<sup>71</sup> *Id.*

<sup>72</sup> *Id.*

<sup>73</sup> See Annie McDonough, *Will Trump Let Congestion Pricing Happen?*, CITY & STATE

anticipates that congestion pricing could be delayed until 2023.<sup>74</sup> This delay is particularly unfortunate given the “dire” COVID-19 induced public transit budget crisis.<sup>75</sup> Even with the recent \$6 billion cash infusion from the American Rescue Plan, the MTA continues to face significant long-term budget shortfalls.<sup>76</sup> Unfortunately, both Governor Cuomo (through the TBTA) and Mayor de Blasio have also failed to act in a timely manner to ensure that congestion pricing will be implemented as soon as possible.<sup>77</sup> Specifically, no members of the TMRB have been nominated to begin their work of designing the tolling scheme.<sup>78</sup> As such, while the Biden administration promises to “fast track” the environmental review of congestion tolling,<sup>79</sup> the program’s implementation is likely to continue to be delayed unnecessarily by inaction at the city and state level.

The governor and mayor should act immediately to get the TMRB in place to ensure that the MTA is ready to implement congestion pricing as soon as possible. The mayor should nominate an individual who supports the use of a variable pricing model in which the congestion fee varies both by time (peak and off-peak hours) and by measures of local

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N.Y. (Aug. 13, 2020), <https://www.cityandstateny.com/articles/policy/transportation/will-trump-let-congestion-pricing-happen.html> [<https://perma.cc/W4BS-749Y>].

<sup>74</sup> METRO. TRANSP. AUTH., MTA ANNUAL DISCLOSURE STATEMENT UPDATE 18 (2020), <https://new.mta.info/document/24571> [<https://perma.cc/3TRW-Y9JA>].

<sup>75</sup> See *id.* at 10.

<sup>76</sup> See Marybeth Luczak, *Senate Passes American Rescue Plan, Including \$US 30.5bn in Transit Relief*, INT’L RY. J. (Mar. 9, 2021), <https://www.railjournal.com/financial/senate-passes-american-rescue-plan-including-us-30-5bn-in-transit-relief/> [<https://perma.cc/882G-LCWX>].

<sup>77</sup> See Christopher Robbins, *The MTA’s \$15 Billion Question: With Trump Almost Gone, When Will Congestion Pricing Begin?*, GOTHAMIST (Dec. 1, 2020), <https://gothamist.com/news/mtas-15-billion-question-trump-almost-gone-when-will-congestion-pricing-begin> [<https://perma.cc/GA8V-AGL5>].

<sup>78</sup> See, e.g., *id.*; Clayton Guse, *NYC’s Congestion Pricing Program May be Delayed by Two Years, MTA Says*, DAILY NEWS (Nov. 29, 2020), <https://www.nydailynews.com/new-york/ny-congestion-pricing-delays-mta-funding-20201129-rg6yjp5jurc7ljaoxrqdcnufum-story.html> [<https://perma.cc/TKX5-83RK>]; Larry Penner, *The Federal Transit Man: Where is the New York MTA Traffic Mobility Review Board?*, RY. AGE (Aug. 3, 2020), <https://web.archive.org/web/20200919130231/https://www.railwayage.com/passenger/the-federal-transit-man-where-is-the-new-york-mta-traffic-mobility-review-board/> [<https://perma.cc/9VP7-4YG2>]; Larry Penner, *Opinions & Observations: Cuomo and de Blasio are MIA Concerning Congestion Pricing*, BROOKLYN DAILY EAGLE (Mar. 3, 2021), <https://brooklyneagle.com/articles/2021/03/03/cuomo-de-blasio-are-mia-concerning-congestion-pricing/> [<https://perma.cc/XBM3-FU7R>].

<sup>79</sup> See Alissa Walker, *Congestion Pricing Is Happening Thanks to Secretary Pete*, CURBED (Feb. 23, 2021), <https://www.curbed.com/2021/02/congestion-pricing-nyc-approval-pete-buttigieg.html> [<https://perma.cc/358X-RJ2T>].

air quality conditions. The governor, or his successor, should similarly use their influence to ensure that the TBTA nominees support such a pricing model and that the TBTA ultimately implements such a model. A variable pricing model would provide the region with a powerful tool to prevent and mitigate highly dangerous air quality conditions. Specifically, on days in which air quality is forecasted to reach unhealthy levels, the congestion fee should increase to dissuade individuals from driving into the CBD.

The TMA itself allows for a variable pricing model.<sup>80</sup> While the legislature likely had in mind peak and off-peak hours when it gave the TBTA the power to charge “variable tolls and fees” for vehicles entering the CBD,<sup>81</sup> there is nothing in the legislation that would preclude a variable model tied to air quality.<sup>82</sup> Indeed, while the only requirement for the tolling scheme is that it raise at least \$15 billion a year, the TMRB must consider the impact of its tolling approach on air quality and emissions levels.<sup>83</sup>

This pollution surcharge could vary based on the local Air Quality Index (“AQI”), a scale from 0 to 500 that is used to communicate levels of ozone, particulate matter, sulfur dioxide, and carbon monoxide pollution in a simplified manner.<sup>84</sup> The AQIs for each of these pollutants have six distinct levels—good, moderate, unhealthy for sensitive groups, unhealthy, very unhealthy, and hazardous.<sup>85</sup> A “moderate” PM2.5 AQI represents PM2.5 concentrations above levels that both EPA and WHO consider to be unhealthy.<sup>86</sup> A pollution surcharge should therefore be applied whenever the AQI for any of these pollutants reaches the “moderate” threshold. The surcharge should then progressively increase at each subsequent AQI level.

A variable pricing scheme based in part on AQIs raises a number of tricky practical questions that would need to be worked out through an

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<sup>80</sup> N.Y. VEH. & TRAF. LAW § 1704-a (Consol. 2019).

<sup>81</sup> See generally REG’L PLAN. ASS’N, CONGESTION PRICING IN NYC: GETTING IT RIGHT 11–13 (Sept. 2019).

<sup>82</sup> N.Y. VEH. & TRAF. LAW § 1704-a (Consol. 2019).

<sup>83</sup> N.Y. PUB. AUTH. LAW § 553-K(3) (Consol. 2019).

<sup>84</sup> See *Air Quality Index (AQI) Basics*, EPA, <https://airnow.gov/aqi/aqi-basics/> [<https://perma.cc/QFA9-5HV2>] (last visited Mar. 26, 2021).

<sup>85</sup> *Id.*

<sup>86</sup> EPA sets the “safe” PM2.5 pollution threshold at annual average level of 12 micrograms per cubic meter. Friedman, *supra* note 6. WHO sets the threshold at 10 micrograms per cubic meter. See Hinsdale, *supra* note 1. Much of Manhattan, the South Bronx, and areas of the City adjacent to highways have a daily PM2.5 average above this 10–12 microgram threshold. See *Community Air Survey*, *supra* note 3.

environmental study by NYC DOT and/or MTA engineers. One challenge is that a variable pricing model based on factors other than set time windows would introduce a degree of uncertainty into daily commutes. This provides a strong argument against a continuous model in which prices rise and fall automatically based on live data from sensors. Drivers deserve some degree of certainty when making a decision as to whether they are going to enter the congestion zone. As such, the MTA should rely on air quality forecasts and announce any surcharge with twelve hours of advanced notice.<sup>87</sup>

The MTA would also have to decide how and where to measure air quality. A surcharge based on regional AQIs is likely to provide too little protection to New Yorkers. Air quality varies significantly across small distances.<sup>88</sup> Areas within 500 feet of major roads typically have far worse air quality than the rest of the region.<sup>89</sup> Furthermore, the MTA would have to decide whether to incorporate air quality data from vulnerable areas outside of the congestion zone in its chosen AQI measures. Because much of the automobile traffic passing through the Bronx, Queens, and Brooklyn is destined for the CBD, there may be a strong argument to increase the pollution surcharge on days in which the South Bronx, for example, suffers from an “unhealthy” AQI while the Manhattan core is experiencing “good” conditions.

One potential way around these complications is to abandon the variable approach and to simply set a higher charge for the vehicles that are the heaviest polluters regardless of any AQI measures or forecasts. SUVs and light trucks, for example, would pay more to enter the CBD than sedans. This is the approach that London takes, registering vehicles by different classes and charging the most heavily polluting classes higher rates—as much as the equivalent of \$31—to enter the congestion zone.<sup>90</sup> Since London’s pollution surcharges were implemented in 2017, ozone levels have decreased by 36%, while the average number of the

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<sup>87</sup> Such forecasts are already made daily. See *New York, NY, AIRNOW*, <https://www.airnow.gov/?city=New%20York&state=NY&country=USA> [https://perma.cc/H928-VZZ7] (last visited Mar. 26, 2021).

<sup>88</sup> Nellie Bowles, *Do You Know What You’re Breathing?*, N.Y. TIMES (Nov. 30, 2018), <https://www.nytimes.com/2018/11/30/style/air-quality-pollution-monitors.html> [https://perma.cc/J7JD-2ATB].

<sup>89</sup> *Community Air Survey*, *supra* note 3.

<sup>90</sup> Somini Sengupta & Nadja Popovich, *Cities Worldwide Are Reimagining Their Relationship with Cars*, N.Y. TIMES (Nov. 14, 2019), <https://www.nytimes.com/interactive/2019/11/14/climate/car-ban-air-pollution.html?action=click&module=Editors%20Picks&pgtype=Homepage> [https://perma.cc/6FR3-SK6L].

heaviest-polluting vehicles entering the congestion zone each day has decreased by 13,500.<sup>91</sup>

While the London approach is simple and effective, it would be vulnerable to legal challenge if implemented in New York. Specifically, the London registration scheme would violate the Clean Air Act, which prohibits states from requiring “certification, inspection, or any other approval relating to the control of emissions” as condition precedent for the registration of motor vehicles.<sup>92</sup> To get around this restriction, the MTA could simply reframe the scheme as a bonus to more efficient vehicles. Vehicles would be charged as SUVs or light trucks unless they qualified and registered for an efficient vehicle bonus that would lower their toll. Courts have upheld such incentive schemes as valid under the Clean Air Act, noting that Congress explicitly distinguished between state and local measures that govern the *use* of automobiles (permitted) and measures that govern the *manufacture* of automobiles (not permitted).<sup>93</sup>

This bonus approach, however, would potentially violate the federal Energy Policy and Conservation Act (“EPCA”), which prohibits states from adopting or enforcing laws or regulations “related to fuel economy standards.”<sup>94</sup> The Second Circuit has previously held that a city program to provide financial incentives to encourage taxi fleet operators to use vehicles that are more fuel efficient was “related to fuel economy standards”, and therefore preempted by the EPCA.<sup>95</sup> The MTA, however, could reasonably argue that the congestion surcharge, while applying to less efficient vehicles, is a regulation of *weight* rather than fuel efficiency.<sup>96</sup> Indeed, greater than 85% of PM2.5 pollution from automobiles comes not from tailpipe emissions, but from the wear of brakes and tires.<sup>97</sup> The heavier the vehicle, the more particulate pollution from these sources.<sup>98</sup>

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<sup>91</sup> *Id.*

<sup>92</sup> 42 U.S.C. § 7543(a) (2018).

<sup>93</sup> See *Ass’n of Taxicab Operators v. City of Dallas*, 760 F. Supp. 2d 693, 698 (2010) (upholding Dallas’ authority to prioritize vehicles that run on natural gas over gasoline vehicles at the Dallas Airport taxi stand). See also 42 U.S.C.S. § 7543(d) (2018).

<sup>94</sup> See 49 U.S.C. § 32919(a) (2018).

<sup>95</sup> See generally *Metro. Taxicab Bd. of Trade v. City of New York*, 615 F.3d 152 (2d Cir. 2010).

<sup>96</sup> Gary Fuller, *The Polluting Effect of Wear and Tear in Brakes and Tyres*, *GUARDIAN* (Sept. 11, 2016), <https://www.theguardian.com/environment/2016/sep/11/polluting-effect-wear-brakes-tyres-pollutionwatch> [<https://perma.cc/5XZZ-ANRA>].

<sup>97</sup> Greg Shill, *Should Law Subsidize Driving?*, 95 N.Y.U. L. REV. 498, 560 (2020).

<sup>98</sup> See Loeb, *supra* note 55.

Regardless of the approach taken, any scheme that adds costs to drivers entering the CBD is likely to be politically unpopular.<sup>99</sup> The implementation of congestion pricing, however, represents a rare and valuable opportunity to rethink the costs and benefits of private automobiles accessing the regional core. A major political fight over whether to charge drivers to enter the core has already been fought and congestion pricing has already been approved by New York State.<sup>100</sup> The TMRB, furthermore, appears to have been designed precisely to shield political actors from accountability.<sup>101</sup> The City should take advantage of this opportunity to lobby for a policy that could improve long-term health outcomes, save hundreds of lives annually, and keep thousands of New Yorkers out of the ER each year.<sup>102</sup>

### B. *Air Quality Action Program*

Even if the TMRB and the MTA follow the above recommendations, it is possible that the prices set will not dissuade enough drivers to prevent or alleviate prolonged periods of dangerous air quality. The City should therefore implement an Air Quality Action Program (“AQAP”) that prevents private passenger automobiles from entering or operating within Manhattan below 60th Street when the average AQI of carefully chosen sensors is forecasted to reach some threshold level. Commercial vehicles, buses, taxis, rideshare vehicles, and private automobiles with handicap placards would be exempt and therefore allowed to enter and operate within the CBD when the AQAP is in effect. Ideally, the City would also follow the lead of Paris<sup>103</sup> and work with the MTA to eliminate transit fares when the AQAP is in effect.<sup>104</sup>

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<sup>99</sup> See Shant Shahrigian, *Lawmakers Call for Exceptions from NYC’s Controversial Congestion Pricing Plan*, N.Y. POST (July 6, 2019), <https://nypost.com/2019/07/06/lawmakers-call-for-exemptions-from-nycs-controversial-congestion-pricing-plan/> [<https://perma.cc/CZN2-RSP6>].

<sup>100</sup> Erin Durkin & Lauren Aratani, *New York Becomes First City in US to Approve Congestion Pricing*, GUARDIAN (Apr. 1, 2019), <https://www.theguardian.com/us-news/2019/apr/01/new-york-congestion-pricing-manhattan> [<https://perma.cc/Y3EE-T33X>].

<sup>101</sup> See Hicks & Campanile, *supra* note 66.

<sup>102</sup> For estimates of how many lives would be saved through modest reductions in ozone and PM2.5 pollution, see AIR POLLUTION AND THE HEALTH OF NEW YORKERS, *supra* note 2, at 3–4.

<sup>103</sup> Scott Sayare, *Fighting Pollution, Paris Imposes Partial Driving Ban*, N.Y. TIMES (Mar. 17, 2014), <https://www.nytimes.com/2014/03/18/world/europe/fighting-pollution-paris-imposes-partial-driving-ban.html> [<https://perma.cc/RXU2-2UDZ>].

<sup>104</sup> Even if the MTA does not participate, the City is likely to see increased bus ridership

Because of the severe nature of a temporary ban of private automobiles, the AQI levels that would trigger the AQAP would have to be higher than the pollution surcharge. A “moderate” PM2.5 AQI level is unfortunately far too common to be a politically viable threshold for the AQAP.<sup>105</sup> Instead, the AQAP should be reserved for situations in which the AQI meets or exceeds the “unhealthy for sensitive groups” level for any one of the relevant pollutants.<sup>106</sup> At such a level, AQAP bans would have been put in place on approximately eleven days in 2018.<sup>107</sup>

The AQAP, while aggressive, would not be out of step with international norms. Cities around the world have prohibited certain vehicles from operating within their cores during air quality emergencies.<sup>108</sup> When air quality is particularly poor, for example, Paris effectively bans 60% of automobiles from operating both inside the core of the city and on ring roads that are traditionally heavily polluted.<sup>109</sup>

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on days that private automobiles are prohibited from entering the CBD. The experience of the 14th Street Busway shows that reducing the presence of private automobiles significantly increases bus reliability and speeds and in so doing provides significant encouragement for individuals to take the bus. See Sydney Pereira, *Analysis Shows 14th Street Busway Has Slashed Commute Times On Notoriously Congested Route*, GOTHAMIST (Dec. 19, 2019), <https://gothamist.com/news/analysis-shows-14th-street-busway-has-slashed-commute-times-notoriously-congested-route> [<https://perma.cc/QZP5-XZY9>].

<sup>105</sup> See *Community Air Survey*, *supra* note 3.

<sup>106</sup> *Patient Exposure and the Air Quality Index*, EPA, <https://www.epa.gov/pmcourse/patient-exposure-and-air-quality-index> [<https://perma.cc/4RAA-JV99>].

<sup>107</sup> Data pulled from *Interactive Map of Air Quality*, EPA AIRNOW ARCHIVES, available at <https://gispub.epa.gov/airnow/index.html?tab=3> [<https://perma.cc/VN4V-8HHC>].

<sup>108</sup> See Sayare, *supra* note 103; Anthony Harrup, *Mexico City Takes Emergency Anti-Pollution Measures*, WALL ST. J. (May 15, 2019), <https://www.wsj.com/articles/mexico-city-takes-emergency-pollution-measures-11557947408> [<https://perma.cc/R29D-MBTG>]; *Beijing Bans Highly Polluting Cars During Smog Alerts*, GUARDIAN (Nov. 21, 2016), <https://www.theguardian.com/environment/2016/nov/21/beijing-bans-highly-polluting-cars-during-smog-alerts> [<https://perma.cc/8BZX-B7QE>]; Thom Dunn, *Beijing Banned Cars for Two Weeks and the Sky Turned Perfectly Blue. Guess What Happened the Next Day?*, UPWORTHY (Sept. 14, 2015), <https://www.upworthy.com/beijing-banned-cars-for-2-weeks-and-the-sky-turned-perfectly-blue-guess-what-happened-the-next-day> [<https://perma.cc/2SSQ-FXL8>]; Aria Bendix, *15 Major Cities Around the World That Are Starting to Ban Cars*, BUS. INSIDER (Jan. 12, 2019), <https://www.businessinsider.com/cities-going-car-free-ban-2018-12> [<https://perma.cc/PG54-PFNG>]; Adele Peters, *These 8 Cities Are Taking Bold Steps to Get Rid of Cars*, FAST CO. (Mar. 21, 2019), <https://www.fastcompany.com/90321627/these-8-cities-are-taking-bold-steps-to-get-rid-of-cars> [<https://perma.cc/C5W4-D5NR>].

<sup>109</sup> Feargus O’Sullivan, *The Cars That Ate Paris*, CITY LAB (Mar. 29, 2017), <https://www.citylab.com/transportation/2017/03/the-cars-that-ate-paris/520710/> [<https://perma.cc/Q8K4-C7CU>].

Currently, when the regional AQI reaches dangerous levels in New York, the City and State simply ask drivers to change their behaviors and warn vulnerable individuals to stay indoors and to avoid strenuous activities.<sup>110</sup> Such warnings are ineffective in preventing pollution-related deaths.<sup>111</sup> By banning private passenger vehicle traffic during air quality emergencies, the City can cut off a key source of air pollution to help ensure that any air quality emergencies are both shorter and less severe than they otherwise would be.<sup>112</sup> Of course, local air quality is not merely a function of local air pollution.<sup>113</sup> Both local weather and regional pollution, for example, shape local air quality conditions.<sup>114</sup> That said, efforts to ban vehicles from specific streets in Paris and London have reduced pollution at the street level by between 45 and 60% relative to when automobiles were present.<sup>115</sup>

### C. *Legal Authority for AQAP and Potential Legal Challenges*

Both state law and the New York City Charter grant NYC DOT significant authority over New York City streets. The State Vehicle and Transportation Law delegates to New York City the power to “prohibit[] or regulat[e]” the use of local roads “by particular vehicle or classes or types thereof or devices moved by human power.”<sup>116</sup> The law also grants the City Council the ability to delegate this authority to agencies.<sup>117</sup> The

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<sup>110</sup> See, e.g., *Ozone Health Advisory Issued for Long Island and New York City Metro Regions*, NBC N.Y. (July 9, 2019), <https://www.nbcnewyork.com/news/local/ozone-health-advisory-issued-for-long-island-and-new-york-city-metro-regions/1630293/> [<https://perma.cc/KKZ7-3UWF>].

<sup>111</sup> See Renee Cho, *What You Should Know About Air Quality Alerts*, EARTH INST. (June 26, 2018), <https://blogs.ei.columbia.edu/2018/06/26/air-quality-alerts-pollution/> [<https://perma.cc/E9N6-2Q5V>].

<sup>112</sup> See Sayare, *supra* note 103.

<sup>113</sup> Wildfires on the West Coast, for example, negatively impact air quality in New York. See, e.g., Luke Money, *Smoke from California Wildfires Reaches the East Coast and Europe*, L.A. TIMES (Sept. 15, 2020), <https://www.latimes.com/california/story/2020-09-15/smoke-california-wildfires-reaches-east-coast-europe> [<https://perma.cc/NU8A-4U49>].

<sup>114</sup> See *Climate and Health Assessment: Air Quality Impacts*, U.S. GLOB. CHANGE RSCH. PROGRAM (2016), <https://health2016.globalchange.gov/air-quality-impacts> [<https://perma.cc/8BXF-84WR>].

<sup>115</sup> Gary Fuller, *Pollutionwatch: How Does World Car-free Day Affect Emissions?*, GUARDIAN (Sept. 26, 2019), <https://www.theguardian.com/environment/2019/sep/26/pollutionwatch-how-does-world-car-free-day-affect-emissions> [<https://perma.cc/UGW6-QY4W>].

<sup>116</sup> N.Y. VEH. & TRAF. LAW § 1642(a)(3) (Consol. 2019).

<sup>117</sup> *Id.* § 1603(b).

New York City Charter does exactly that, delegating such power to the Commissioner of the Department of Transportation.<sup>118</sup>

In 1987, the NYC DOT Commissioner relied on the above Vehicle and Traffic Law language to ban bicycles from much of Midtown Manhattan from 10:00 AM to 4:00 PM on weekdays.<sup>119</sup> While the New York State court mandated that the Commissioner must go through the proper rulemaking processes to issue such a regulation, it held that the DOT Commissioner does, in fact, have the authority to unilaterally ban certain vehicles from the Manhattan core.<sup>120</sup>

Furthermore, the AQAP would likely survive various possible challenges under federal and state law. Commercial vehicles would be excluded from the AQAP ban because federal trucking law almost certainly would preempt the City's ability to fully ban trucks from the regional core.<sup>121</sup> Specifically, the Federal Aviation Authorization Administration Act preempts states from enacting or enforcing laws or regulations "related to a price, route, or service of any motor carrier . . . with respect to the transportation of property."<sup>122</sup> The Surface Transportation Act also prohibits states from "denying a commercial motor vehicle . . . reasonable access" between federal highways and "terminals, facilities for food, fuel, repairs, and rest, and points of loading and unloading for household goods carriers."<sup>123</sup>

The APAQ would also be vulnerable to claims that it is preempted by New York State law. Specifically, there is a risk that the program would be found to impermissibly displace the congestion tolling plan of the TMA.<sup>124</sup> While improving air quality is a key consideration of the TMA, the tolling scheme is *required* to raise at least \$1 billion per year.<sup>125</sup> Because the AQAP would block many tens of thousands of vehicles from

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<sup>118</sup> N.Y.C. CHARTER § 2903.

<sup>119</sup> See Hana R. Alberts, *It's Been a Bumpy 200-Year Ride for NYC's Historically Hated Bikes*, N.Y. POST (Mar. 20, 2019), <https://nypost.com/2019/03/20/its-been-a-bumpy-200-year-ride-for-nycs-historically-hated-bikes/> [<https://perma.cc/RNN6-MYR2>].

<sup>120</sup> Ass'n of Messenger Services, Inc. v. New York, 136 Misc. 2d 869 (N.Y. Sup. Ct. 1987).

<sup>121</sup> See *Rowe v. N.H. Motor Transp. Ass'n*, 552 U.S. 364, 375–576 (2008) (holding that any state regulations that would significantly impact trucking is preempted by 49 U.S.C. §§ 14501(c)(1) and 41713(b)(4)(A)); see also *Am. Trucking Ass'ns v. City of Los Angeles*, 569 U.S. 641 (holding that the Port of Los Angeles' efforts to regulate truck maintenance and impose placard and off-street parking restrictions were preempted by 49 U.S.C. § 14501(c)(1)).

<sup>122</sup> 49 U.S.C. § 14501(c)(1) (2018).

<sup>123</sup> 49 U.S.C.S. § 31114 (2018).

<sup>124</sup> N.Y. PUB. AUTH. LAW § 553-K(3) (Consol. 2019).

<sup>125</sup> *Id.*

entering the tolling zone on certain days, it would of course interfere with the MTA's ability to raise revenue through the tolling program.<sup>126</sup>

Nothing in the TMA, however, suggests that the MTA has been granted *exclusive* authority to impose restrictions and conditions on vehicles entering the CBD.<sup>127</sup> While the AQAP would have to be designed such that it does not prevent the MTA from raising \$1 billion per year through congestion tolling, it is unlikely that the program would be struck down for conflict preemption merely because it impacts the MTA's ability to raise tolling revenue.<sup>128</sup> Such a holding would suggest that any effort to remove on-street parking, to raise prices for public parking, to enforce new traffic regulations, to provide incentives for companies to locate in the outer boroughs, or to build new transit connections into the CBD could be preempted by the TMA. All of these actions would surely impact the number of cars entering Manhattan each day and therefore the MTA's ability to raise tolling revenue. The City's decision to temporarily prohibit private cars when air quality is dangerously poor should be seen as a background factor that the MTA must consider when designing or updating its tolling scheme. The City's actions under AQAP would not prevent the MTA from raising tolls to make up for any revenue shortfalls caused by the City's temporary restrictions.

## CONCLUSION

While much progress has been made over the years, New York's air quality remains a public health emergency.<sup>129</sup> Unfortunately, even before the COVID-19 crisis inspired a loss of confidence in public transportation,<sup>130</sup> there was reason to believe that air quality in New York was

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<sup>126</sup> *Id.*

<sup>127</sup> *Cf.* *Garcia v. N.Y.C. Dep't Health & Mental Hygiene*, 31 N.Y.3d 601, 619 (2018) (finding that a State law that does not establish "exclusive authority" do not automatically displace any local law on the same subject).

<sup>128</sup> *Id.* at 617–18 ("[R]eading conflict preemption principles too broadly risks rendering the power of local governments illusory. Thus, the 'fact that both the state and local laws seek to regulate the same subject matter does not in and of itself give rise to an express conflict', and conflict preemption is generally found only 'when the State specifically permits the conduct permitted at the local level' or there is some other indication that deviation from state law is prohibited.").

<sup>129</sup> See AIR POLLUTION AND THE HEALTH OF NEW YORKERS, *supra* note 2.

<sup>130</sup> See, e.g., Winnie Hu & Christina Goldbaum, *'The Worst-Case Scenario': New York's Subway Faces Its Biggest Crisis*, N.Y. TIMES (July 21, 2020), <https://www.nytimes.com/2020/04/20/nyregion/nyc-mta-subway-coronavirus.html> [<https://perma.cc/JH7B-PVBA>].

getting worse rather than better.<sup>131</sup> The good news is that the City has extensive powers to take bold, unilateral action.<sup>132</sup> The City does not need to wait for Washington or Albany to reduce the severity and duration of its residents' exposure to poor air quality.

Furthermore, the pending implementation of congestion pricing represents a valuable opportunity for the City to rethink the access it provides to heavily polluting vehicles to its core. The City and State just won a bruising political battle for congestion pricing and designed the implementation scheme to shield politicians from accountability for inevitably unpopular decisions to make drivers internalize more of the steep costs that they impose on society.<sup>133</sup> Policymakers should take advantage of the opportunity afforded by this victory to improve public health. The MTA should adopt a variable tolling scheme that is pegged to a measure of local air quality and the City should unilaterally implement a program that would temporarily ban most private automobiles from the CBD when air quality reaches some threshold "emergency" level.

While the proposed surcharge and AQAP would save hundreds of lives and could keep thousands of New Yorkers out of the ER each year,<sup>134</sup> they are modest steps and fundamentally reactive in nature. To make sustainable improvements to daily air quality, the City must aggressively reallocate street space from automobiles to pedestrian, bicycle, and transit usage. Research increasingly suggests that even air quality that is currently considered "good" is highly damaging to New Yorkers' long-term health.<sup>135</sup> The City should incorporate this alarming research on the health impacts of exposure to air pollution into its efforts to redesign its streets for the twenty-first century. Currently, these programs are primarily focused on limiting traffic violations and combating climate change.<sup>136</sup> While both of these goals are vitally important, a stronger consideration of the health costs of pollution would likely inspire more aggressive action to move away from automobile-centric usages of city streets.

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<sup>131</sup> *Air Quality in New York City*, IQAIR (Feb. 3, 2021), <https://www.iqair.com/us/usa/new-york/new-york-city> [<https://perma.cc/Y94W-H8XS>].

<sup>132</sup> See N.Y. VEH. & TRAF. LAW § 1642(a)(3) (Consol. 2019).

<sup>133</sup> See Emma G. Fitzsimmons & Winnie Hu, *Congestion Pricing Is Coming. Now Everyone Wants a Break*, N.Y. TIMES (Apr. 4, 2019), <https://www.nytimes.com/2019/04/04/nyregion/congestion-pricing-trucks-new-jersey.html> [<https://perma.cc/G2U3-VDHF>].

<sup>134</sup> See Sayare, *supra* note 103.

<sup>135</sup> See IQAIR, *supra* note 131.

<sup>136</sup> See Renee Cho, *How New York City is Preparing for Climate Change*, EARTH INST. (Apr. 26, 2019), <https://blogs.ei.columbia.edu/2019/04/26/new-york-city-preparing-climate-change/> [<https://perma.cc/7Y3F-G4UE>].

This urgency may be a silver lining in the terrible news about air pollution. While the costs of global warming are diffuse and long-term, pollution is exacting a remarkable toll on New Yorkers every single day.<sup>137</sup> While the City should not be alarmist, it must do more to raise the alarm. The implementation of a pollution surcharge and the AQAP would allow the city not just the opportunity to mitigate the effects of air quality emergencies, but also to better communicate to New Yorkers that they are in fact often experiencing an emergency when they step out their doors. Once roused, New Yorkers will hopefully demand further action.

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<sup>137</sup> See IQAIR, *supra* note 131.