

Does the Rubber meet the Road? Investigating the Alternatives to Congestion Pricing

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About the Author

Since 1992, Michael Replogle has been Transportation Director for Environmental Defense, a 500,000 member non-profit organization that links law, science, and economics. He has been a key player in U.S. transportation law and policy, regional transportation planning, travel modeling, and advancing market incentives. Mr. Replogle is also President of the Institute for Transportation and Development Policy, a New York-based non-profit group he founded in 1985. Mr. Replogle has worked for or consulted to the World Bank, Federal Highway Administration, and many governments, and holds honors degrees in Civil and Urban Engineering and Sociology from the University of Pennsylvania.

A frequent witness to the Congress, state legislatures, and the courts, he is an expert on transportation finance, public-private partnerships, and road pricing strategies to enhance transportation system and environmental performance. He has been involved in metropolitan transportation policy and planning for over 30 years in venues including Washington, DC, New York, California, Texas, Oregon, Mexico City, and Jakarta. He is a member of US federal advisory committee on Intelligent Transportation Systems and the US federal advisory committee on the EPA MOVES emissions model. He is a member of the TRB Committee on Road Pricing and was recently elected as an emeritus member of the Transportation Research Board Committee on Transportation in Developing Countries.

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Executive Summary

This report compares a proposed congestion pricing system for New York City with several alternative proposals. It compares the proposals against three key criteria:

1) Timeliness. Can the plan work within this decade? Will it meet the timeliness considerations set forth in New York state law and in available federal grants?

2) Ability to Cut Traffic. Will it reduce actual traffic levels, both inside the central business district and along major approaches to it? Will it do more than just temporarily improve traffic flow, thereby attracting more drivers?

3) Ability to Fund Transit. Our region already faces a \$30 billion shortfall in transit investment needs. Will the proposal raise new revenue for transit investment or will it require finding and spending even more capital funds? If it does raise revenue, is it a targeted and realistic way to do so for this specific purpose?

The report also touches on related questions of fairness, especially with respect to the potential for proposed solutions to impact the economy, to deliver benefits both inside and outside the central business district, and to help the diverse sectors of the region's economy grow.

This report concludes that many of the proposals advanced by opponents of congestion pricing fail to meet the criteria above for these key reasons:

- **Requires Massive Spending for Long-Term Capital Projects.** Alternatives call for massive new capital spending on large public works projects, like tunnels, that could take decades to build and that currently lack any realistic prospect to be financed. These may or may not be good ideas for the region, but the political debate over whether and how to pay for them will likely stretch on for a long time, absent new funding mechanisms.
- **Increases Traffic in the Long Run.** The alternatives are targeted at creating more road space, thereby making driving easier and attracting more traffic over time. They may reduce congestion briefly by opening up road space, but without an added incentive – like congestion pricing – the newly-created road space will soon fill with new drivers. They'll end up clogging the streets with more vehicles, including on major feeder routes like the Gowanus and Long Island Expressways and other roads leading through outer borough communities.
- **Provides Insignificant or Unproven Revenue Potential.** Many alternative proposals simply require spending money, not raising it. Some

call for raising taxes on New Yorkers across the region, for example through higher income or payroll taxes. Higher income or payroll taxes support the state's general fund and, unlike tolls, are not dedicated to transportation investment.

Over \$354 million in U.S. Department of Transportation funding for transit and congestion relief initiatives has been offered to New York City if the New York State Legislature adopts an effective congestion pricing implementation plan meeting specific performance objectives.

Based on our comparison of the competing plans for traffic congestion relief, some form of congestion pricing for the central business district is the only solution that meets the criteria set forth in the federal grant and the state law – and that meets the key criteria of effectiveness, timeliness and revenue potential. There is no doubt that, looking forward, the region will have to consider bold new investments like a rail-freight tunnel and continue a broad political conversation about additional revenue streams. But to reduce traffic now, to invest in transit now, congestion pricing is the right solution. Every other proposal now being considered falls short in delivering practical, timely, affordable traffic relief.

Introduction

On April 22, 2007, Mayor Bloomberg unveiled his long-term sustainability plan for New York City, PlaNYC 2030. As one of 127 initiatives, **PlaNYC proposed a congestion pricing system** to help reduce traffic, improve air quality, and provide revenue for mass transit. Specifically, the mayor's congestion pricing plan projected 24-hour traffic reductions in the charging zone of 6.3% (as measured in vehicle miles traveled or VMT) and \$400 million in annual revenue for mass transit improvements. During peak times, VMT can likely be expected to decline even more, as demonstrated in other cities with successful congestion pricing programs.

In August 2007, the U.S. Department of Transportation (**USDOT**) **awarded \$354.5 million to New York City¹ to implement a congestion pricing program** for a minimum of 18 months that accomplishes the same traffic reductions set out in PlaNYC. The conditional grant includes \$10 million for congestion pricing technology, \$214 million for new bus facilities, bus lanes, park-n-ride, pedestrian improvements at stations, and upgraded traffic control systems for 223 intersections. It also includes \$113 million for Bus Rapid Transit (BRT) in all five boroughs along major transit corridors which lack subway service, plus \$16 million for regional ferry service connecting developing neighborhoods in Brooklyn and Queens with Midtown and Lower Manhattan. In other words, the federal grant in effect guarantees that new transit investment can move forward even before congestion pricing is implemented.

The funding is conditioned on actions by the New York State Legislature and is subject to the approval by USDOT. **The City will lose the funds unless the state legislature submits a plan that is:**

- 1) **Timely**, with authorization not later than 90 days after the opening of the next session of the New York State Legislature for implementation not later than March 31, 2009;
- 2) **Cuts traffic**, reducing vehicle miles traveled in the congested zone by at least 6.3% over a 24-hour period, using pricing as the principal mechanism to achieve this reduction;
- 3) **Raises funds for transit**, spending as much on pricing implementation technology as is provided by USDOT for bus rapid transit implementation, and providing enough bus service as called for by USDOT to meet the mobility needs of New York City.

¹ Awarding funds conditionally to the New York City Department of Transportation, the New York Metropolitan Transportation Authority, and the New York State Department of Transportation.

In response to the congestion problem and the available USDOT grant, the state legislature passed a bill on July 26, 2007 that:

- Authorized the Mayor to present a congestion pricing plan to address traffic congestion within a zone of severe traffic congestion in Manhattan.
- Establishes a Traffic Mitigation Commission that is required to conduct hearings, take testimony, review information regarding the Mayor's congestion pricing plan, and issue recommendations regarding the implementation of the Mayor's plan and any other plans submitted to it by January 31, 2008.
- Mandates that the commission submit an implementation plan that provides the same level of traffic mitigation (6.3% VMT reduction) as the plan submitted for the Urban Partnership Agreement (the Mayor's plan).
- Requires first the city council and then the legislature to consider the implementation plan by March 31, 2008.

In the months following the adoption of that legislation, the Commission has held public hearings in all five boroughs plus Long Island and Westchester. Here, public officials and citizens put forward recommendations for modifying the Mayor's original proposal, suggestions for supplements to that proposal and alternative traffic reduction ideas. This report analyzes some of the most prominent alternative proposals advanced by public officials at those hearings and compares them to congestion pricing under the criteria set forth in the federal partnership agreement and the state law.

Proposed Alternatives to Congestion Pricing

Several alternatives to the proposed congestion pricing scheme have been advanced in recent months. Advocates for these alternatives have argued that their proposals would achieve the PlaNYC objectives of improving traffic and air quality while boosting transit funding.

- **Congressman Anthony Weiner's Plan: "Reducing Traffic and Improving Our Environment: An Alternative to the Car Tax"**

Many aspects of this proposal are similar to the PlaNYC's original congestion pricing scheme. Improving transit first, distributing traffic better throughout the day via increased tolling, apportioning benefits in all boroughs, and targeting trucks are all in line with what the mayor proposed. However Congressman Weiner would limit congestion pricing to trucks only and would take a series of steps to open up more existing road space for faster-moving traffic, such as reducing alternate side street parking, and increasing traffic law enforcement. He also suggests large-scale, long-term capital investments such as building a Cross-Harbor Freight Tunnel, that while essential for long-term regional planning, cannot address traffic with the immediacy and revenue-generating capacity of congestion pricing.

- **Councilman Lew Fidler’s Plan: “The 9 Carat Stone Plan”**

This plan essentially levies a regional payroll tax to fund long term transportation projects including three major tunnels requiring massive capital investment. Similar to President Bush, he proposes hydrogen powered cars, which automakers and scientists agree are many years away from practical commercial viability. Councilman Fidler supplements these ideas with short term measures such as increased truck loading zones and enforcement of traffic laws that, while perhaps good to speed traffic flow and ensure better safety, are not likely to achieve significant reductions in traffic volumes. Other elements of Fidler’s plan, like moving government offices from Manhattan to the other boroughs, would simply displace current traffic to new locations; to the extent that those locations are less centrally-located in the transit system, there would likely be a net *increase* in traffic overall.

- **The Keep NYC Congestion Tax Free Plan: “Alternative Approaches to Traffic Congestion Mitigation in the Manhattan Central Business District”**

This plan, supported primarily by AAA, the Metropolitan Parking Association, and Queens Civic Congress, among others, combines several separate measures that when added are claimed to meet and exceed the 6.3% VMT reduction of the mayor’s plan. However, an evaluation by the Regional Planning Association² has concluded that the effectiveness of each measure appears highly conjectural and overstated. Most also fail to meet the goal of long-term effectiveness in reducing traffic. In fact, many will simply make driving easier in the Central Business District, thus probably attracting more drivers over time. Furthermore, the report’s additive approach for totaling VMT reduction overstates the results dramatically, double-counting many traffic reduction strategies. For example, many of the cars making up the 0.6-0.9 percent VMT reduction posited for increased fines and enforcement are likely to be taxis. However fewer taxis also account for the VMT reductions for restructuring taxi fares and reduced taxi cruising – in effect double counting the VMT reductions available from each measure.

Discussion of Limitations in Alternative Plans for Meeting Key Criteria

In evaluating these proposals, several recurring categories of alternative traffic solutions emerged. Here we explain the problems inherent in these categories according to the relevant criteria as defined in the Introduction.

1) Timeliness

² **Comments by Jeffrey M. Zupan, Senior Fellow for Transportation on “Alternative Approaches to Traffic Congestion Mitigation in the Manhattan Central Business District (October 2007)” by Keep New York Congestion Tax Free, October 15, 2007. Last accessed on 16 November 2007:**
http://www.campaignfornewyork.org/features/ZupanComments_AlternativeApproaches.html

- Long Term Transportation Projects May Be Good Ideas, But Won't Cut Traffic Now

It is vital for New York to invest in **long term initiatives** that will expand travel choices, cut congestion, improve mobility, and deploy emerging clean technology to cut pollution. Several such initiatives, like the Second Avenue Subway and East Side Access Project, are part of PlaNYC's vision for the City, with partial funding for these projects intended to come from the proposed congestion pricing initiative. In general, while these long-term initiatives will take a decade or more to be fully realized, are costly, and are not self-financing, they are likely to make good sense in the long-run. But they are not a substitute for congestion pricing. These projects will facilitate further access, development, and mobility in the region's congested core, but not manage congestion delays for the long-run in the way that cordon charging could do.

Opponents of congestion pricing have suggested an additional list of long-term, costly projects to deal with congestion and pollution from traffic in lieu of congestion pricing. Some examples include building a Cross-Harbor Freight Tunnel, a Trans-Narrows Rail Tunnel, or putting the Gowanus Expressway into a tunnel. Some of these long-term projects merit serious consideration, **but not as alternatives to congestion pricing**. They each have completion dates far in the future, require large capital investment, and do not raise funds for transit.

- Hydrogen cars won't affect congestion and are still far from full-scale implementation

Replacing a significant share of New York's motor vehicles with **hydrogen fuel-cell vehicles** is another long-term initiative that may someday have merit, but this is not ready for action, due to the low likelihood of cost-effective commercialization of these technologies for decades to come. Best estimates from the auto industry predict fuel-cell vehicles in mainstream production at least 10-20 years from now.³ Even if hydrogen cars were available now, the infrastructure is not in place for hydrogen generation plants, distribution networks, and fueling stations that could cost billions of dollars. Waiting for "supercar" technology is not a practical answer for New York now.

- Long-term projects provide no dedicated revenue stream

The MTA has already identified a \$30 billion shortfall and simply recommending more projects to fund is not a useful idea at a time of economic uncertainty. Congestion pricing, on the other hand, creates a dedicated revenue source to help fund these transit projects. Only once congestion pricing is in place should the political conversation consider which long-term transit projects to fund.

³ Environmental Defense. "Are Hydrogen Cars the Answer?" August 14, 2007. http://environmentaldefenseblogs.org/climate411/2007/08/14/hydrogen_cars/

Long Term Project Alternatives:

					Estimated Cost (\$ millions)	Estimated Completion Date (Only if funds were available)
	PlaNYC	Fidler	Weiner	Keep NYC Congestion Tax Free		
East Side Access	■			■	6,400 ⁴	2013 ⁴
2nd Avenue Subway (Phase 1)	■			■	3,800 ⁴	2013 ⁴ (Phase 1 funding under way)
Cross-Harbor Rail Freight Tunnel		■	■	■	2,300 ⁵	2015/2016 ⁵ Capital funds not available
Trans-Narrows Rail Tunnel		■			Unknown	Date and funds unknown
Expand water freight				■	Unknown	Date and funds unknown
Commuter bus facility in lower Manhattan				■	Unknown	Date and funds unknown
Move City agencies out of the CBD		■			Unknown	Date and funds unknown
Gowanus Expressway Tunnel		■			6,000-9,000	Date and funds unknown
Hydrogen Fuel-Cell Vehicles		■			Billions	10-20 years at best ⁶
Congestion Pricing	●				\$224 implementation, Plus permanent transit improvements estimated at about \$339 ⁷	2009

2) Cutting Traffic

⁴ PlaNYC 2030

⁵ Cross Harbor Freight Movement Major Investment Study

⁶ Steve Ellis, Manager of Fuel Cell Vehicles, Honda,
http://environmentaldefenseblogs.org/climate411/2007/08/14/hydrogen_cars/

⁷ Represents \$224 million estimated implementation cost (PlaNYC) plus \$339 million estimated one time capital and operating expenses needed for transit *prior* to congestion pricing (MTA, "Comments on NYC Traffic Congestion Mitigation Plan", October 2007).

- Clearing up road space only provides temporary congestion relief

PlaNYC and competing alternatives advanced by opponents of congestion pricing all seek to improve traffic operations and management through means including signal timing, enforcement of traffic laws, better taxi and truck management, and traffic information systems. Building on many years of efforts New York City has already made, these measures share in common an interest in boosting the efficient use of road space. While these measures are important for easing traffic congestion, they can be expected to only produce short-term congestion relief on their own. In the absence of cordon congestion pricing, improving traffic flow in Manhattan will lead to a well documented phenomenon known as induced traffic demand: additional road space and increased vehicle speeds will attract more drivers, ultimately worsening rather than improving traffic conditions over time.

Numerous studies have verified this concept, showing that new road capacity is filled quickly.⁸ To highlight one of many examples, a California study of urban roads showed that 60-90% added road capacity was filled with new traffic in 5 years.⁹ Another case showed that half of the increased traffic on new roadways resulted directly from added capacity.¹⁰ Evidence also indicates that the potential for induced demand is greatest in urban areas where road space is especially scarce.¹¹

- Pricing is necessary for permanent traffic reduction

Many proposed traffic operations and management strategies are fine ideas worth pursuing, but in order to be effective in the long-term they must be coupled with congestion pricing. Pricing road space provides a mechanism to prevent new road space from being filled too quickly. Otherwise these solutions may clear up road space only temporarily, and won't reduce VMT in the long run as necessitated by the state legislation.

- Alternative strategies may increase traffic in outer boroughs

Without congestion pricing, VMT is expected to grow by 25.4% from 2007 to 2030 in each of New York City's five boroughs and even more in the

⁸ Litman, Todd. "Generated Traffic and Induced Travel." *Victoria Transportation Policy Institute*. September 2007. <http://www.vtpi.org/gentraf.pdf>

⁹ Mark Hansen and Yuanlin Huang (1997), "Road Supply and Traffic in California Urban Areas," *Transportation Research A*, Vol. 31, No. 3, pp. 205-218.

¹⁰ Robert Cervero (2003b), "Road Expansion, Urban Growth, and Induced Travel: A Path Analysis," *Journal of the American Planning Association*, Vol. 69, No. 2 (www.planning.org), Spring 2003, pp. 145-163.

¹¹ Robert Noland (2001), "Relationships Between Highway Capacity and Induced Vehicle Travel," *Transportation Research A*, Vol. 35, No. 1, January 2001, pp. 47-72; available at www.epa.gov/otaq/transp/hwycap.pdf

surrounding suburbs.¹² As the city continues to wrestle with this rampant growth in traffic, measures that provide comprehensive VMT reduction across the city are critical to help manage traffic and related pollution. Modeling by the State Department of Transportation has shown that congestion pricing will lead to an immediate **decrease in VMT** ranging from 0.35 to 4.27 percent for major New York City corridors in each of the five boroughs.¹³ Experience worldwide shows that congestion pricing's traffic and pollution reduction benefits can readily be sustained over the long-haul. Opposing strategies that have the effect of expanding road space without managing induced traffic will result in more long-term motor vehicle use both inside and outside of the congestion zone, leaving communities citywide exposed to higher levels of congestion and pollution.

Traffic management and operations alternatives:

	PlaNYC	Fidler	Weiner	Keep NYC Congestion Tax Free	Likely to Induce Traffic Without Congestion Pricing
Increase Enforcement	■	■	■	■	√
Construction project regulations				■	√
Off-peak delivery incentives			■	■	√
Truck Loading Zones		■			√
Traffic signal upgrades	■			■	√
Expand Lower Manhattan traffic management				■	√
Traffic info technologies				■	√
Eliminate one way truck tolls		■		■	√
Reform placard abuse				■	√
Taxi Stands/Management		■		■	√
Reduce Alternate Side Parking			■		√
Higher taxi fares				■	√
511 travel info system				■	√

¹² USEPA, . Retrieved from: <http://www.epa.gov/ttn/naaqs/ozone/areas/vmt/vmtnygf.htm>

¹³ Includes the following corridors: East Side, West Side Access, I-278, Queens East-West, Bronx E-W, Bronx N-S, Brooklyn/Queens N-S. NYSDOT, "Report to the New York City Traffic Congestion Mitigation Commission." October 1, 2007.

3) Raising Funds for Transit:

- Increased taxes for transit are regressive and economically uncertain.

Like taking a sledgehammer to a nail, broad income and payroll tax increases are a rough tool that can have unintended consequences on businesses, employment and family income. These measures may place special burdens on low and middle income residents. In contrast, a congestion pricing plan benefits lower-income residents most and burdens them least since the vast majority of them rely on public transportation, and do not drive into Manhattan's zone. In fact, congestion pricing would provide a new revenue stream to help pay for the transit improvements that the city's low and middle income workers desperately need.

Relying on general revenue such as the payroll tax also puts transportation investments in direct competition with other funding priorities such as schools, and health care, during what is likely to be a tight-budget future. At a time of increasing economic uncertainty, with a Governor who has pledged not to raise taxes¹⁴, proposing broad tax increases is unlikely to succeed and likely to fail on broader policy and equity grounds.

- Broad based tax initiatives are politically uncertain and should be considered separately from road pricing

Broad-based taxes to raise transit revenue might deserve consideration by the state legislature at some point, but such schemes are currently beyond the scope of the congestion mitigation commission's mandate to achieve VMT reductions now. It is difficult to imagine passing a broad tax increase into law before the federal money is forfeited and the traffic problem significantly worsens. Furthermore, dedicating tolls to transit improvements is a more achievable near-term goal than taxes. Congestion pricing toll revenue is intended to go directly to agencies dedicated to transportation, while tax revenue must first be allocated from Albany's general fund. Additionally, there is potential to borrow against congestion pricing's future revenue in the bond market to pay for initial transit investments required upfront.

- Funds from alternative traffic management and enforcement are modest, conjectural, or over-estimated

The Keep NYC Congestion Tax Free Coalition report estimates revenue potential from their proposed traffic management and enforcement strategies. The amount of revenue predicted in this report has been criticized¹⁵ for being

¹⁴ "Spitzer Pledges Not to Raise Taxes." *The Business Review*. 20 September 2007. Retrieved from: <http://www.bizjournals.com/albany/stories/2007/09/17/daily36.html?surround=lfm>

¹⁵ Comments by Jeffrey M. Zupan, Senior Fellow for Transportation on "Alternative Approaches to Traffic Congestion Mitigation in the Manhattan Central Business District (October 2007)" by Keep New York

highly conjectural and in some cases double-counted. Here we investigate the revenue stream estimated in that report and summarize major problems concerning their viability:

Increase metered parking (\$80-100M): Extrapolates one midtown study for all of Manhattan. Revenue is overstated – at the proposed level all spaces must be occupied for a full 13 hrs every weekday. Additionally, meter charges normally enter the city’s general fund and must somehow be allocated towards transit revenue.

Placard reform (\$50-60M): The report claims that \$33M could be obtained by freeing up a hypothetical 14,000 metered parking spaces occupied by government workers using placards. However no evidence exists that placard reforms would be this effective at increasing the number of free parking spaces. Additionally, the revenue posited here double counts the parking revenue mentioned above.

Increased and variable prices on tolled crossings (\$195M): Introducing variable pricing on existing crossings may well help cut peak demand at those crossings, but without broader congestion pricing it is likely to lead to more diversion of traffic to neighborhoods near free crossings, especially on major approaches in Brooklyn and Queens. The extent of diversion must be taken into account in revenue estimates also.

Increased Parking Fines (\$75-150M): Highly conjectural, as it requires 6,000 additional parking summonses daily – a 26% increase¹⁶ – and provides no evidence that this is even a realistic goal or that the administrative costs make it worthwhile.

Other measures: Measures such as two-way truck tolls (\$10M), block-the-box enforcement (\$15-25M), or construction project regulation (\$3-5M) have minimal potential for raising revenue and are too modest to provide any meaningful funding for transit. They may well be worthy goals to pursue for quality of life and to make traffic flow more easily.

Conclusion

In a comparison of the competing plans for traffic congestion relief, congestion pricing is the only one put forward to date that meets all the criteria – timeliness, effectiveness in reducing traffic, potential to finance improved transit, and affordability. Every other proposal falls short in delivering practical, timely,

Congestion Tax Free, October 15, 2007. Last accessed on 16 November 2007:
http://www.campaignfornewyork.org/features/ZupanComments_AlternativeApproaches.html

¹⁶ Based on 8.4 million parking summonses issued in 2005, (statistics retrieved from:
http://www.villagevoice.com/blogs/runninscared/archives/2006/03/more_cops_more.php)

affordable congestion relief. Many of the ideas put forward, like better traffic enforcement, construction management, and “don’t block the box,” work by making driving more attractive. They may be worth doing for quality of life and to ease the driving experience, but they won’t yield permanent reductions in VMT. Large capital projects, like new tunnels, may be worthy investments, but they will take decades and billions of dollars in new funds to build – and they may end up competing with funds for other capital priorities like subway expansion.

Congestion pricing works because it opens the door to many other solutions. It makes buses run more smoothly. It cuts traffic inside the charging zone and on major approaches to it. It raises revenue in the near term to invest in transit now. Alternatives may be useful supplements to the plan but are by no means replacements. Regardless of whether many of these other proposals move ahead, congestion pricing is a necessity.