Will Triple Gridlock Paralyze New York?

The Crisis in Our Transport Infrastructure and Governance

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[Slide deck available as pdf at http://www.komanoff.net/cars_II/]
What is Triple Gridlock?

1. **Street Gridlock**
   After nearly a decade of improved traffic flow, travel speeds are worsening within the Manhattan Central Business District (CBD).

2. **Subway Gridlock**
   Transit ridership has climbed to levels not seen for 60 years. But antiquated communications systems limit train throughput. “Trains are forced to wait in stations while crowds of passengers exit and enter the cars, causing delays that ricochet through the system.” (RPA)

3. **Political Gridlock**
   [TK]

This tweet, from an Oct. 2015 weekday, could have been written almost anytime in 2015.

Second Ave. Sagas @2AvSagasyes

6 trains are running with 8-minute headways at 8:15 am. Platforms are dangerously packed. This is system-wide.
In 2007, following 35 years documenting fossil-fuel pollution, deconstructing nuclear power cost escalation, and spearheading “livable streets” activism locally and nationally, I turned my attention to “traffic pricing,” particularly congestion pricing in New York City.

My touchstone was an epigram by the German scholar-activist Wolfgang Sachs, a student of the philosopher Ivan Illich. [See next slide.]
Sachs’ epigram suggested two avenues: *analytical* and *political*. I pursued both.
With funding from the Nurture Nature Foundation, I created a spreadsheet model that, inter alia, estimates the “social delay costs” from an “incremental” car trip into the Manhattan CBD.

The “Balanced Transportation Analyzer” (BTA 1.1):

- Treats transit, as well as motor vehicles.
- Has 67 tabs (worksheets), 500,000 (?) cells.
- Yet consumes only 5 MB.
- Runs new toll scenarios in seconds.
- Interactive: 000s of feedback loops.
- Outputs (time savings, environmental benefits, etc.) are expressed in both physical quantities & monetary equivalents.

Figures shown:
1. Are estimated aggregate time losses experienced by all other vehicles.
2. Include inbound leg only.
3. Include delays en route to CBD as well as within CBD.

Any driving trip into the CBD betw 2-8 p.m. slows all other vehicles by a total of ~3 hours.
Traffic Pricing Benefits and Costs

Why Traffic Pricing?
• Reduce Congestion
• Manage Traffic
• Generate Revenue

Why Congestion Pricing?
• Big traffic payoff from reducing hypercongestion
• Big revenue payoff since trips are high-value
• Society wins even if forecasts inexact
  • If too many trips disappear, traffic flow improves more
  • If too few trips disappear, revenue is greater

Congestion Pricing is *Binary*. Good or Bad?
• Good: Simple and inexpensive to administer
• Bad: Arbitrary quality of all or nothing
• Bad: Runs counter to digital/micro zeitgeist
In 2011, I joined forces with traffic engineer Sam Schwartz (Gridlock Sam), who was devising a toll-reform proposal built around two precepts:

1. Charge more where there’s more traffic and good transit.
2. Lower tolls everywhere else.

- Taxis + Ubers pay GPS-based surcharge instead of toll.
Here’s what we get when we run Sam’s tolls through my BTA model

Even with the rollback of tolls on the seven MTA bridges, and with \( \frac{1}{4} \) of net proceeds allocated to roads and bridges, there’s enough $$ to fill the gap in the 2015-2019 MTA capital plan – without more debt or new taxes.

And: CBD travel speeds are predicted to rise 15-20%.
Imagining a fully funded MTA capital plan

Case study: CBTC
[Communications-Based Train Control]

- **Max # trains/hour (per line)**
  - Today ("fixed-block wayside signals"): 20-25
  - With CBTC: 30

- Resulting increases in passenger capacity
  - $\Delta$ trains/hr (per line): + 7.5
  - $\Delta$ passenger cpcty/hr (per line): + 9,600 (7.5 x 1,275)
  - $\Delta$ passenger cpcty/hr (14 lines): + 144,000 (14 x 9,600)
  - $\Delta$ cpcty per 15 hrs: + 2,020,000 ( = $\Delta$ +36%)

CBTC, even more than new lines (or countdown clocks), is central to making subways reliable, sufficient and humane.
3. Political Gridlock

By statute, the public authority in charge of NYC’s transit system is controlled by the governor. Moreover, any new tolls require approval by the state legislature. Albany, then, rather than City Hall, is the gatekeeper for toll reform. Mutual antagonism between the mayor and the governor has turned the customary mixed rivalry between the two offices into a zero-sum game. A sense of shared interests that might enable the two executives to hammer out a generational overhaul of transportation tolling and finance is lacking. Their feud, not policy options, rivets the public. A political truce is hailed as the policy solution. The likely outcome: an underfunded capital plan (w/ fare hikes to amortize the debt) and no toll reform. Street gridlock and subway gridlock worsen.
$2.5 billion a year in net benefits. Spurned?

Traffic Pricing Benefits and Costs

Selected Scenario:
Move NY - Gridlock Sam Fair Plan (2015)

Net Benefit of Selected Scenario, $Millions/yr:
$2,470

Green area = direct CO2 reductions. The real climate benefit (not monetized here) comes from allowing NYC to prosper and grow.