



AIR QUALITY & CONGESTION PRICING

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CONGESTION PRICING 101

Definitions:

- **Cordon** - autos pay a charge to enter and/or circulate within a defined zone
 - Examples: London, Stockholm and Singapore (has not been implemented in the U.S.)
- **High Occupancy Toll Lanes (HOT Lanes) or Express Lanes** – High Occupancy Vehicle lanes that are converted into toll lanes with either free or discounted entry for carpools.
 - Example: Virginia I-95 HOT lanes

CONGESTION PRICING 101 - CONT.

Definitions:

- **Vehicle Miles Traveled (VMT) fee or Road User Charges (RUCs)** – the United States has a number of state pilot projects using this technology which tracks the number of miles a vehicle travels and charges a fee-per-mile. These system may eventually be able to introduce cordons, time of day pricing, and vehicle occupancy into their overall charging system.
 - Example: OReGO in Oregon
- **Transportation Network Companies (TNCs) fees** - Uber, Lyft, taxi companies can be charged a fee for general operation, pick-up/drop-off in a specific area ex. Airports or a cordon, and/or based on vehicle occupancy or ride type.
 - Example: NYC surcharge for for-hire vehicles in Manhattan south of 96th Street

INHERENT INEQUITIES IN TRANSPORTATION

Vulnerable communities have to:

- Pay more for transportation as a portion of their total income
- Travel farther to get to work and services
- Bear the brunt of poor air quality

**The current system reinforces the status quo.
Congestion pricing can address this inequality.**

CONGESTION PRICING, EQUITY & AIR QUALITY

Pricing should be designed to provide equitable impacts, including community health.

Design measures that improve air quality:

- Fees to reduce traffic emissions (impact depends on fleet fuel efficiency)
- Low emission zones
- Reinvestment requirements in low carbon alternatives
- Include equity impacts in planning, ex. King County, WA conducted zero emission feasibility study; analysis revealed where zero-emission bus routes would have the greatest positive impact on equity



Description:

- 13mi² cordon
- Automatic license plate recognition
- 2006 trial, 2007 adoption

Primary goals:

- Reduce congestion
- Improve air quality and public health
- Improve journey time reliability for car users

Air Quality Benefits 2005 - 2006:

- Carbon dioxide (CO₂) reduced by 14%
- Nitrogen oxide (NO_x) reduced by 7%
- Particulate matter reduced by 9%
- Outside of the cordon, greenhouse gases were reduced by roughly 2.5%
- 20-25 fewer premature deaths per year in Stockholm's inner city and a total of 25-30 fewer premature deaths annually in the Stockholm metropolitan area
- A few years after the tax was made permanent, child doctor visits for asthma had dropped to 10 per 10,000 children, a reduction of 47% from the baseline



Description:

- 8mi² cordon
- Automatic license plate recognition
- 2003 adoption

Primary goals:

- Reduce congestion
- Improve air quality and public health
- Improve journey time reliability for car users
- Create a long-term funding source for public transit improvements

Air Quality Benefits:

- 2002 – 2003 Carbon dioxide (CO₂) emissions declined by 16%; 2016 – 2017 reduced by 0.7%
- 2002 – 2003 Nitrogen oxide (NO_x) emissions declined by 13.5%; 2016 – 2017 reduced by 8%
- 2002 – 2003 Particulate matter (PM₁₀) declined by 15.5%; 2016 – 2017 unchanged but compliant with mandated limits by EU
- 2002 – 2003 Reduced risk of serious illnesses such as asthma, bronchitis, and heart attacks amounting to 1,888 extra years of life have been saved for the 8 million Londoners
- General downward trends for all pollutants since implementation



Description:

- Adjusts in real-time for congestion
- Overhead gantries communicate with units in each car, smart card also required
- 1998 launch, evolution of traditional cordon pricing launched in 1975

Primary Goals:

- Reduce congestion
- Improve journey time reliability for car users

Air Quality Benefits:

- Carbon Dioxide (CO₂) and other greenhouse gas emissions have been reduced by 10-15% within the inner city (2017 report)



OPPORTUNITIES IN THE U.S. - NYC

- Current: 2019 Manhattan for-hire vehicle fee
 - A fee is levied on every for-hire vehicle trip in Manhattan south of 96th Street
 - Fees are lower for shared rides
- Proposed: Cordon pricing - [Fix NYC](#)



OPPORTUNITIES IN THE U.S. — LOS ANGELES

- Congestion pricing study
 - 24 months to explore feasibility and equity implications
 - Sets stage for pilot program
 - TNC fees



OPPORTUNITIES IN THE U.S. - SEATTLE

- Proposed by mayor
- Seattle Department of Transportation feasibility study
- Road pricing will be paired with “transit and electrification in underserved communities.”

RESOURCES



Congestion pricing research resources.zip



QUESTIONS?

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