Congestion Pricing – London to DC

Executive Summary

Urban centers in the US are facing increased congestion and pollution as car ownership rates outpace road expansion capacity. One cost-effective solution for mitigating this problem and compelling car-owners to be accountable for the driving-related externalities of traffic and pollution is congestion pricing. Congestion pricing (also called value pricing) works by shifting rush hour travel to other modes of transportation or to off-peak periods by placing fees for driving in more congested areas. The city of London has witnessed substantial success with a congestion pricing scheme implemented in 2003 – pollution and congestion have fallen, public transportation use has increased, and the city has a new revenue stream to reinvest in sustainable transportation options. Washington DC is considering a similar scheme and has several factors, including amenable public opinion and strong electronic toll-collection infrastructure, in favor of congestion pricing; however, it faces different challenges than London with regard to its public transportation alternatives.

The Policy in London

In February 2003, the city of London implemented a congestion pricing scheme in order to reduce traffic congestion and raise revenues to fund transport improvements. The scheme required that cars and trucks pay a charge of £5 to enter an eight-square-mile area of Central London between the hours of 7:00 am and 6:30 pm, Monday through Friday. The zone is London's commercial and financial hub and is analogous to Manhattan's 8.5-square mile Central Business District. Taxis are exempt, as are qualifying low-emission vehicles. Cars registered to zone residents, who account for 2 percent of Greater London's 7 million people, pay one-tenth the standard charge (Komanoff).

The system is largely automated. 1,360 closed-circuit cameras at 348 sites within the charging zone and on its boundaries record the license plates of vehicles entering and moving within the zone, using Automatic Number Plate Recognition (ANPR) computer software. The plates are continuously matched against a database of monthly accounts and of daily payment details. Drivers can either make payments before or on the day of their journey via internet, text, or kiosk; if they fail to pay by the end of the day of their journey, they are charged an £80 penalty. ("How the congestion charge works") The system was cumbersome for users, as they had to manually input their payments; when the scheme was launched, the UK lacked electronic toll collection systems such as E-ZPass (Komanoff). Recently, an Auto Pay option has been put in place, which records the number of charging days a vehicle travels within the charging zone each month and bills users' debit/credit cards each month ("Paying the Congestion Charge").

At the time of implementation, only a few other cities in the world (in Norway and Singapore) had adopted similar schemes. The conventional policies for charging for road use involves fuel

taxes and facility tolls (on bridges, expressways, etc). Congestion charges, in contrast, vary with the level of congestion, and thus depend on time of day and location. Because of this variability and given the complexity of cities, especially large ones like London, people tend to be wary of the feasibility of a congestion pricing scheme.

Policy Administration

The policy functions at the local level. Mayor Ken Livingstone introduced the congestion pricing scheme and worked closely with Transport for London (TfL) to develop and implement it. Transport for London is the local government body responsible for most aspects of the transport system in Greater London in England. The original iterations of the policy extended as far back as 1997, when the Review of Charging Options for London (ROCOL) Working Group was commissioned by the central government.

As the problem the policy was targeting – congestion within London – was a highly local problem, having the local government design and administer the policy worked well. TfL was aware of the nuances of London's transportation system, and was able to design the policy to suit local context. For example, the city had considered implementing a workplace parking fee as an alternative to reducing congestion, and found it to be much more unpopular than a congestion pricing scheme ("Congestion Charging in London").

Policy Assessment – Successes and Shortcomings

The launch of the policy oversaw "immediate and substantial" reduction in congestion. After the first year of charging, cars entering Central London during charging hours had declined by 33 percent and trucks/delivery vans by 11 percent. Exempt vehicles (taxis, buses, motorcycles, and low emission cars) had increased by 11-23 percent. Congestion delays decreased by 30 percent within Central London. Taxi travel costs decline by 20-40 percent due to reduced delays (Litman). The TfL estimated that 50-60 percent of motorists had been diverted to public transportation, especially to buses. Bike trips increased 79 percent from 2001 to 2011, after having stagnated between 1993 and 2001 (Komanoff).

Although there had been concern that congestion might increase on other roads due to diverted traffic, no significant changes in in travel time occurred on peripheral roads (Litman). For example, on the Inner Ring Road surrounding Central London, traffic increased by 4 percent from 2003-2004 but congestion decreased 11-21 percent, a change attributed to improvements to these roads and traffic flows the mayor had commissioned in anticipation of the congestion scheme ("Congestion Charging in London").

The reduction in traffic delays has not lasted, however. TfL found that policies that had been co-implemented with the congestion pricing scheme, in particular traffic calming policies, had reduced the effective capacity of the road network for general traffic. These traffic calming policies had their own benefits, such as increased use of public transportation and bikes and

the lowest numbers of traffic fatalities and injuries in decades, and overall contributed to the TfL's goal of sustainable transportation (Komanoff).

One of the major impetuses behind the policy was reducing environmental and health consequences of high-density traffic in London. Over 4,000 people die prematurely every year because of the air quality in London (Litman). As these health issues tend to be long-term, researchers have not gathered substantial evidence on reductions in air-quality-related illness and death due to the congestion pricing scheme.

The London scheme has been criticized for promoting inequity – motorists already pay registration and fuel taxes, and so lower-income motorists are double-charged by the congestion scheme. Furthermore, the system uses a flat fee that does not reflect the type of vehicle or how many miles are driven within the priced area, and thus does not directly internalize the negative externalities of pollution and congestion. Furthermore, the fee is not time nor location variable. It would be more efficient to have higher rates on more congested roads and more congested times. There is also the issue of cost efficiency. The initial set-up cost of the program was £100 million higher than expected, and about half of revenues are spent on overhead costs (Litman).

There were both economic costs and benefits to the scheme. Some local businesses saw a decrease in customers due to less people driving in, while others saw increases due to increased access via public transportation. Another concern was the loss of parking revenue in areas in or close to the charging zones.

Extending the Policy to Washington DC

In Virginia, the average commute time to work is 26.5 minutes, the seventh highest time in the nation. Washington's suburbs have the second longest average commuting time in the nation (Fisher). This figure can be attributed to the rate of car ownership outpacing the rate of road-building ("About Congestion Pricing"). VDOT estimates that traffic congestion causes approximately 38 annual hours of delay for the average urban motorist in Virginia. Clearly, congestion in the DC metropolitan area is a serious problem.

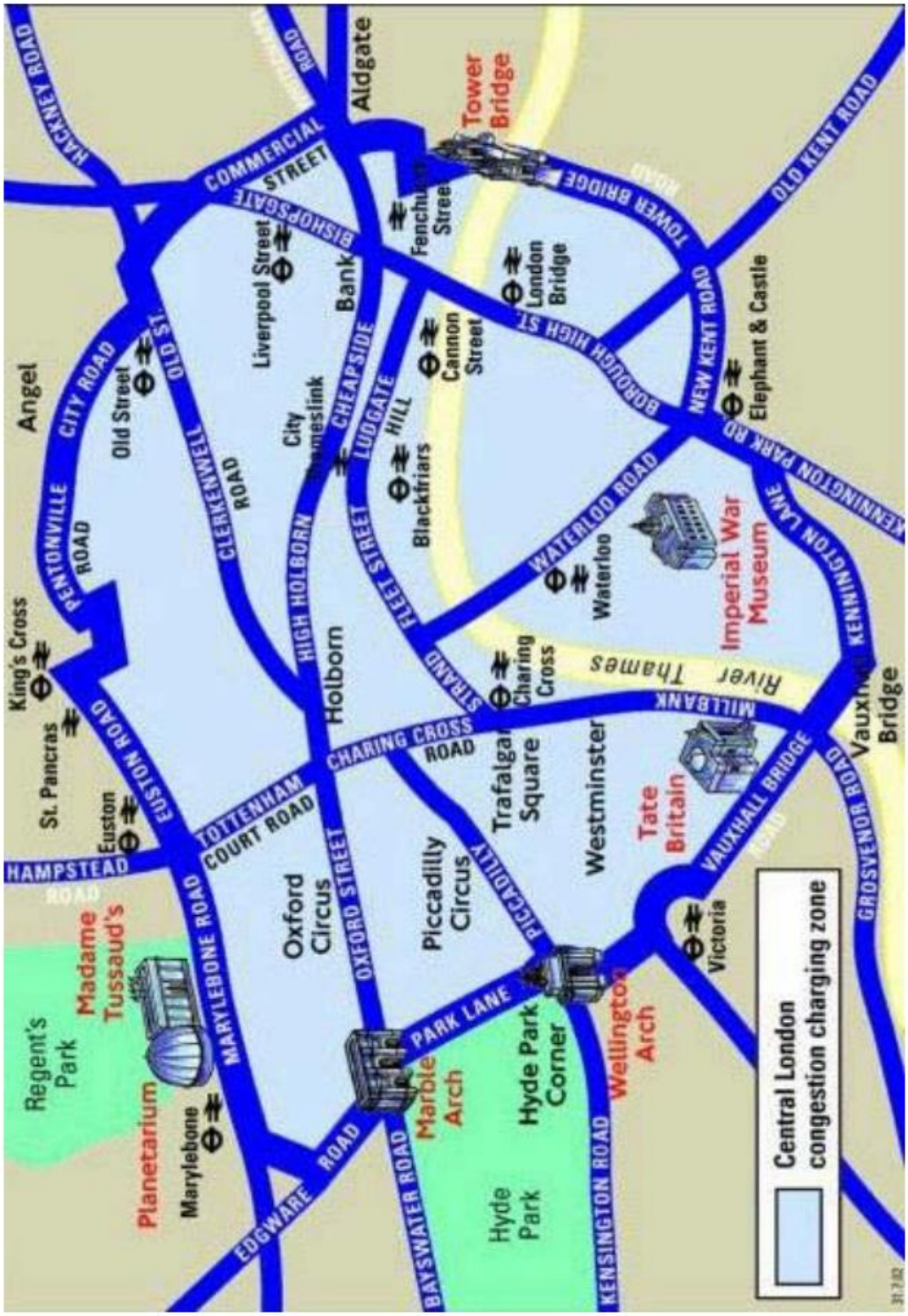
The Washington Metropolitan Area Transportation Authority (WMATA) and the Metropolitan Council of Governments' Transportation Planning Board are considering congestion pricing as a solution to this issue. Not only would such a scheme reduce traffic congestion and air pollution, it would also be an additional revenue source for the District. DC Mayor Adrian Fenty said "You have a lot of commuters who use our [DC's] infrastructure and don't pay any taxes" (Fisher). A congestion tax would help fund DC's spending on facility maintenance and infrastructure. A study by the Federal Highway Authority on the technical feasibility of such a scheme found that congestion pricing had the potential to reduce traffic and pollution, and that the US federal highway system was well positioned in terms of infrastructure and technology (eg/ electronic toll-collection technology) to implement such a system (Snyder).

A moveDC report by the DC Department of Transportation gave a brief overview of the mechanics of such a program: “A cordon area in the District could be implemented for weekday trips into the Central Employment Area at a rate approximately equivalent to a round-trip peak period Metrorail fare. Revenues from the zone should be dedicated to operations and maintenance of the managed facility (or area) and toward projects that expand the person-moving capacity of the transportation system, including those providing greater access to the priced areas or corridors” (Austermuhle).

Even before the policy had proved successful in reducing congestion in London, 39 percent of Londoners were in favor of the policy and 18 percent were neutral or unsure (HKS). In regard to public opinion, the DC plan is in a good position – a poll on a daily congestion charge plan for DC had 50 percent of respondents approving and 34 percent rejecting (Freed). At the same time, people viewed improvements in transportation choices and public infrastructure as a prerequisite to any pricing scheme (Snyder).

In London, the congestion pricing policy was rolled out in conjunction with several other changes, such as the expansion of the public bus infrastructure and improvement of peripheral road systems. While DC has the third-highest usage of public transit of all US cities, its public transportation system is already facing capacity constraints (Fisher). It will be difficult and inefficient to impose a congestion pricing scheme in isolation.

Central London Charging Area



Changes in Traffic Entering Central London, Typical Weekday 7:00 a.m. to 6:30 p.m.

	Before charging (Spring 2002)	After charging (Spring 2003)	Change	
Cars	194,000	133,000	-33%	
Delivery vans	54,000	49,000	-11%	
Trucks	15,000	13,000	-11%	
Subtotal chargeable	263,000	195,000		-26%
Taxis	56,000	67,000	+17%	
Buses	13,000	16,000	+23%	
Motorcycle	46,000	53,000	+15%	
Subtotal exempt	125,000	140,000		
All vehicles	378,000	324,000		-14%
Subtotal four or more wheels	332,000	278,000		-18%

Sources: Transport for London, *Congestion Charging Central London: Impacts Monitoring Second Annual Report*, April 2004, p. 27; and Transport for London, *Transport Strategy Revision: Central London Congestion Charging, Supplementary Information*, January 2004, p.13.

Video Camera Signs

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