

**SYMPOSIUM
ON
TRAFFIC CONGESTION IN DUBLIN: POLICY OPTIONS**

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Abstract: This paper presents background information on traffic and the transportation needs of Dublin, reviews the positive developments in transportation policy in Dublin in recent years, and offers reflections on the Platform for Change transportation strategy and the policy options most appropriate for Dublin, in particular; completing infrastructure projects currently under construction, developing the bus system and suburban rail/DART system, and exploiting demand management measures including pricing.

Keywords: Transportation policy, congestion, commuter journey times, traffic management.
JEL Classifications: I31, N74, R41.

1. INTRODUCTION

I would like to avail of the opportunity I have tonight to do the following:

- present some background information on traffic/transport trends in Dublin
- comment on the extent and nature of the city's traffic problems and congestion levels
- review the positive developments in transportation policy in Dublin in recent years and
- in the light of the above, present some personal thoughts on the Pfc (Platform for Change) transportation strategy and on the policy options that should be pursued in Dublin.

2. REVIEW OF DATA

Over the past decade the Greater Dublin Area has experienced unprecedented growth in travel demand, due primarily to sustained high economic growth rates and associated growth in population, households and employment. Data on actual and projected morning peak hour trips over the period 1991 to 2016 is presented in Table 1. The projections are taken from the DTI Final Report (May 1994) and from the 'Platform for Change' strategy document (November 2001).

Table 1: Actual and Projected Morning Peak Hour Trips (000s) in Greater Dublin Area 1991 to 2016

	1991	1997	2001	2011	2016
Actual	172	250	428 ^y		
Projected				263*	488 ⁺

Sources: ^y preliminary estimate prepared by DTO (January 2003)

*DTI (May 1994)

⁺PfC (November 2001)

Peak hour trips are estimated to have increased by almost 150% in the period elapsing from 1991 to 2001 - an average annual increase of 9.5%. If the latest DTO data is to be believed, between 1997 and 2001, the estimated annual average increase was a staggering 14%.

The corresponding data, showing trends in modal share over the period 1991 to 2001 is presented in Table 2 together with the estimated modal share for 2016 assuming full implementation of the PfC strategy measures. While the number of trips during the morning peak hour by all modes increased over the period the most interesting development in recent years has been the reversal in the historic trend of an increase in the car share of trips and the dramatic increase in the bus share.

Table 2: Breakdown of Morning Peak Hour Trips by Mode 1991 to 2016

	1991		1997		2001 ^y		2016 PfC ⁺	
	000s	%	000s	%	000s	%	000s	%
Private Car	110	64	181	72	302	70	180	37
Bus	44	25	47	19	98	23	69	14
Rail	18	11	22	9	28	7	239	49
Total	172	100	250	100	428	100	488	100

Sources: ^y preliminary estimate prepared by DTO (January 2003)

⁺PfC (November 2001)

There are a number of conclusions that can be drawn from this data :

- the traffic problems we are experiencing in Dublin are, in my opinion, as much a product of the success of Dublin's economy as any failure in transportation policy or in the delivery of such policy. Dublin's performance, until very recently, in terms of high economic and employment growth has been truly exceptional. It was always inevitable that economic growth on the scale we have experienced would exacerbate transportation problems in the region in much the same manner as it resulted in severe pressure in the housing market.

- in 1994 the DTI forecast that there would be 263,000 peak hour trips in 2011. This level of trips was exceeded by 1998. In 2001 the PFC forecast that there would be 488,000 trips in 2016. The latest data suggests that the number of trips had reached 88% of this forecast by 2001. On this basis, the forecast of 488,000 trips was probably exceeded in 2003. The evidence suggests that when considering policy options, it would be unwise to place undue credence in travel demand forecasts.
- in 1997, shortly after I was appointed Director of Traffic I described private car commuting in Dublin as a ‘sunset’ industry—I am sure you will agree with me it has been an absolutely gloriously sunset.
- the bus share of morning peak hour trips is estimated to have increased from 19% to 23% between 1997 and 2001. Over the same period the private car share declined from 72% to 70%. The data suggest that the rail share also declined over this period from 9% to 7%. (I understand that Iarnrod Eireann disputes this data). Based on recent experience it seems clear that investment in the bus services offers by far the best option in terms of achieving desired modal change.

3. TRAFFIC CONGESTION RECONSIDERED

It is generally accepted that Dublin’s transport infrastructure has been inadequate for many decades. Certainly, there were problems in the early 1990s before the recent boom commenced. Subsequent growth in travel demand has clearly not been matched by improvements to that infrastructure. Apart from the impact of ever-increasing traffic volumes on a generally static road network, the City Council and other local authorities have been pursuing a policy of redistributing priority on the road network to favour buses, cyclists and pedestrians at the expense of general traffic flow. Construction on major transport infrastructure projects (e.g. Luas and the Dublin Port Tunnel) that are currently underway is also contributing to increased congestion. Finally, a major programme of traffic calming has been implemented.

The consequence of these trends is that traffic congestion has increased and this in turn, has resulted in reduced average speeds, increased variability in journey times and a spread in both morning and evening peak period times. An indication of the scale of the increase in congestion on the city’s road network and the associated deterioration in service levels enjoyed by peak period time car commuters can be appreciated by observing car journey times.

Dublin City Council has been monitoring inbound commuter car journey times during the morning peak period since 1994. The routes generally run from the city boundary to the city centre covering 118kms in total. Data on journey times and

average speeds are summarised in Table 3 below:

**Table 3: Private Car Commuter Journey Times/Speeds 1994, 1998 & 2002
(Average for 20 Routes)**

	1994	1998	2002	% Change 94 to 02
Inbound (Morning Peak)				
Avg. Journey Time (mins.)	21.24	26.19	30.65	+44%
Avg. Speed (km/hr)	16.71	13.55	11.58	-31%

Source: Dublin City Council.

Between 1994 and 2002 average inbound journey times during the morning peak period on the 20 routes monitored increased by 44% while average speeds declined by 31%. The data showed very significant variation across the 20 routes surveyed.

However, this data may overstate the deterioration in car commuting journey times given many motorists have responded to increased congestion by altering their departure times etc. At the same time it is possible that across the region as a whole the deterioration in journey times has been worse than the data, which is confined to the city area, suggests.

While I do not wish to deny the scale of the congestion problem that exists or to suggest that private car commuters have not suffered a significant reduction in the level of service they enjoy, I believe that there has been a tendency to overestimate the extent of congestion and the costs it imposes on the city.

Estimates of the costs of congestion based on the delays experienced by vehicle users compared with free flow traffic conditions are frequently cited in the media and by organisations that should know better. These estimates have little or no economic validity. They assume that, in an ideal world, roads should always be uncongested and traffic should flow freely. This of course would be economically wasteful because, if these conditions were achieved, roads would be seriously under-utilised for most of the day and night. It is also true that estimates of congestion costs generally make no allowance for the not altogether insignificant social benefits of facilitating journeys at peak times.

We should not lose sight of the fact that for most peak period car commuters the benefits they derive commuting journeys must outweigh the costs they incur otherwise they would not undertake their journey by car. Perhaps congestion should be viewed simply as the price motorists pay for choices they have made in terms of where they live and work, where they shop, what schools their children attend and how they and their children choose to travel. Is it unreasonable to suggest that if the price of congestion were too high the individuals concerned would make different

lifestyle or travel mode choices?

There are a number of conclusions that can be drawn from this data:

- notwithstanding increased congestion the road network has proved remarkably resilient in the face of very significant and unanticipated increase in traffic volumes,
- while the network already caters for the 488,000 peak hour trips previously forecast for 2016 without the major expansion in public transport infrastructure recommended by the PFC, the ‘appalling vista’ envisaged by the ‘PFC’ has not come to pass.

Focusing exclusively on the negative impacts of congestion and the need to reduce it may be misguided endeavour for a number of reasons. Given the dramatic increase in traffic volumes some increase in congestion was always inevitable. Some of the policy measures currently being implemented contribute directly to increased congestion. Finally, in the absence of road pricing, congestion has provided a powerful incentive for motorists to alter their travel behaviour (e.g. by changing mode or time of travel).

4. POSITIVE DEVELOPMENTS IN TRANSPORTATION POLICY

Clearly there have been positive developments that have enabled the city to cope with such an extraordinary growth in trip demand whilst keeping the reduction in service levels enjoyed by peak period car commuters to reasonable levels. This has been achieved while maintaining the retail heart of the city in the face of strong competition from ‘out of town’ centres.

It is worth considering the factors behind this success:

1. Development of Quality Bus Corridors

To date 10 QBCs have been completed which give a high level of on-street priority to buses. Buses have also benefited from traffic management changes implemented over the past two years in the city centre. Analysis of QBCs indicates that they are delivering significant improvements in terms of consistently lower journey times. Passengers have responded to the improved service. Peak period bus passenger numbers are up almost 40% on average on the 10 completed QBCs.

A Quality Bus Network Project Office has been established under Dublin City Council to oversee the implementation of the next tranche of QBCs across the Greater Dublin Area and also to seek out improvements in the existing QBCs. While the outlook for buses has never been better it is disappointing to note that service

enhancements such as integrated ticketing and the rollout of real time passenger information for bus passengers promised in the original DTI Strategy in 1994, have not yet been delivered and are still some years off.

2. Cycle and Pedestrian Priority Measures

Significant progress has been made in providing improved facilities for cyclists and pedestrians across the region.

3. Liberalisation of Taxi Market

The taxi market is a critical and long neglected component of Dublin's public transport system. In 1995 there were 1,975 licensed taxis and service levels were generally acknowledged to be very poor. As a consequence of market entry liberalisation, due at least in part to the benign intervention of the Courts, just over 9,200 taxi licences have been issued as of today. In addition there are approximately 300 licences on offer to applicants. Independent market research commissioned by Dublin City Council suggests confirms that there has been a dramatic improvement in the taxi service in Dublin from a customers' perspective.

4. Parking Policy/Enforcement

Parking policy measures have made a significant contribution to overall transportation policy over the past few years. Almost all 'free' on-street parking in areas of the city where there was evidence of 'all day' commuter parking has been replaced by paid parking. In addition, a rigorous parking enforcement regime has been introduced. The net effect of the parking policy measures has been as follows:

- greatly improved compliance with traffic/parking restrictions which in turn has contributed to improved traffic flow,
- increased turnover in on-street parking spaces, which has resulted in increased availability of on-street parking. This has benefited short stay users including those visiting the city for shopping, leisure and business purposes,
- a significant increase in the City Council's income from parking, which has been applied to fund a variety of traffic management measures.

Table 4: Parking Enforcement Activity and On-Street Parking Revenue Dublin City Council 1998 to 2002

Year	1997	1998	1999	2000	2001	2002
Removals	0	867	7,246	4,711	6,475	4,772
Clamps/Relocations	0	6,833	25,033	27,234	36,954	46,409
Revenue	€3.8M	€6.2M	€11.5M	€13.1M	€18.3M	€19.7M

Source: Dublin City Council.

Developments in parking policy are interesting because they provide a good indication of the responsiveness of motorists to pricing measures.

5. Traffic Management

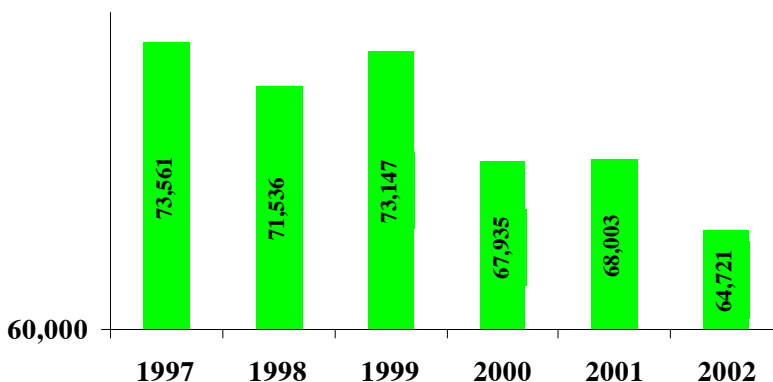
There has been major investment in ITS—intelligent transport systems—by Dublin City Council over recent years. This covers the roll out of SCATS— the City Council’s computer controlled adaptive traffic signal control system—over 450 junctions, the installation of over 80 traffic CCTV cameras, investment in motorway management systems, motorists information systems, the operation of a 24 hour Traffic Control Centre. This investment together with a considerable tightening up of controls on roadworks, the placement of skips on public roads, the control of hoardings, road closures, etc., has contributed to a significant improvement in the performance of the road network notwithstanding the sharp increase in trip volumes.

6. Major Expansion in Suburban Rail/Dart Capacity

There has also been a major expansion in the capacity of the suburban rail/Dart system.

Since Dublin City Council has been especially progressive in implementing parking/traffic management measures it is worth looking at some specific data for the city area. The data from the annual Canal Cordon traffic count is especially interesting. Over the period 1997 to 2002 there was an overall decline of 11% in the volume of traffic (in pcus) crossing the Cordon inbound during the morning peak period. Overall the number of cars declined by 8,840 or 12%. It is worth noting that the decline in the number of cars crossing the Cordon on QBC routes between 1997 and 2002 was 19.5% compared with a decline of only 6.2% on non-QBC routes.

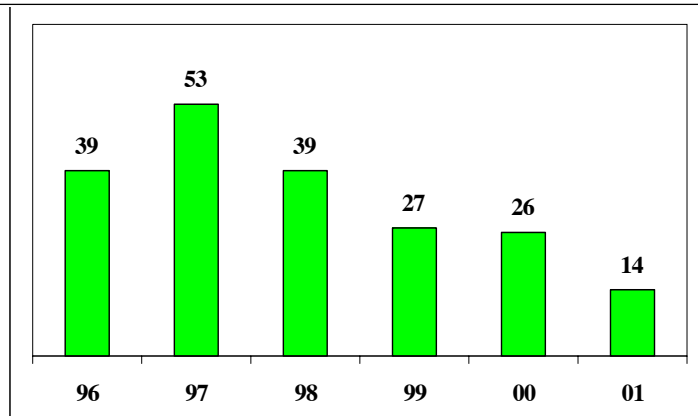
**Figure 1: Canal Cordon Count 1997 to 2002
Number of Private Cars Inbound 0700 to 1000 hrs**



Source: Author’s calculations.

Finally, it is worth mentioning that between 1997 and 2001 the number of road accident fatalities on the city's streets declined by almost 74% from 53 to 14. The decline over the same period in the State was just 13%.

Figure 2: Number of Road Accident Fatalities in Dublin City Council Area 1996 to 2001



Source: Author's calculations.

Analysis of the time of day when fatal and serious injury accident occurred in the city over the period 1997 to 2001 does not support the suggestion that the dramatic improvement in road safety can be attributed to increased congestion.

Over the next two years a number of major transportation projects, which are currently under construction, are set for completion. These include the two Luas lines, the Dublin Port Tunnel and the South Eastern Motorway. In addition there will be further increases to capacity on existing suburban rail/DART lines and improvements in the bus service.

5. POLICY IMPLICATIONS

In light of the above what can be said of transportation policy options for Dublin? The traditional outcome of transportation planning exercises in Dublin has been a set of ambitious and expensive plans to expand capacity. 'A Platform for Change' the transportation strategy for the 2001 to 2016 is no different in this regard although it is both particularly ambitious and costly. While there is much to commend in the PfC strategy I have a number of problems with the general approach:

Trip Demand Forecasts

It seems clear that the trip demand forecasts have been overtaken by events.

Temporal Mismatch Between the Need for Additional Public Transport Capacity and Likely Supply Given the Emphasis on Major Capital Projects

The experience to date is that significant delays are the norm in the delivery of major transportation projects. In the main, this reflects both the degree of local opposition that is associated with these projects and their political sensitivity given that they invariably pass through marginal constituencies. Almost every transport infrastructure proposal creates a distinct set of potential winners and losers. The losers are much smaller in number but are usually concentrated geographically. Unfortunately, the focussed opposition of the potential losers can be expected to outweigh the enthusiasm of the potential winners. This is likely to be the case with the capital projects in PfC.

The latest forecasts show that there is an urgent need for additional public transport capacity in the short term. Major capital projects, such as the proposed metro system, can only deliver this capacity in the long term hence the mismatch.

Doubts Concerning the Likely Availability of Public Funds

Even assuming that the cost estimates in PfC are realistic and all the experience suggests that the cost of transport infrastructure projects are generally underestimated by a significant margin there is a more serious problem with PfC. Sufficient account was not taken of the fact that transport has to compete with other sectors for scarce public funds and Dublin has to compete with other regions. PfC was finalised in 2001 when the country was in a euphoric mood and there was boundless optimism about the future economic prospects of the Irish economy and the availability of public funding.

The Problem of 'Latent Demand' for Peak Period Travel

PfC ignores the problem caused by 'latent demand'. Where road and rail networks are congested, expanding capacity may not reduce peak congestion as more commuters will be induced to travel during the 'peak' period. This investment will generate benefits in that more commuters will be able to exercise their preference for peak period travel but it is unlikely to reduce congestion.

The Role of the Bus Service

While PfC rightly emphasises the role of the bus in the short to medium-term, it envisages that in the longer term as rail based elements of the strategy are put into place the role of the bus will change from a primary public transport mode in its own right to feeder service for rail/metro systems. It is by no means evident that passengers enjoying a good level of service on the bus will want to change to rail based systems. Assuming progress with regard to the deregulation of the suburban

bus service, it is most unlikely that private operators will readily surrender passengers to a competing carrier. Furthermore, it is hard to justify significant public expenditure merely to achieve a switch between different modes public transport.

In the past departure from reality into fantasy in transportation planning manifested itself in the form of road reservations that, thankfully were never built but that nevertheless blighted whole areas of the city for years. In this more politically sensitised era there is a danger that the road reservations of previous eras will be replaced by the indicative metro lines.

In conclusion, I believe we should put the grand strategy on hold, complete the transport infrastructure projects that are currently under construction, concentrate on developing the full potential of bus system and the suburban rail/Dart system in the short to medium-term and exploit the pricing potential offered by ITS and demand management measures.

DISCUSSION

Mr. Bernard Feeney, Managing Director, Goodbody Economic Consultants presented a paper on the potential for road pricing in Dublin. This study was commissioned by the Department of Environment and Local Government and completed in 1999.

Based on a survey of road pricing initiatives worldwide, the study analysed a number of different schemes for road pricing in Dublin. These included daily charges for motorists entering the city centre or crossing the M50.

Charges of approximately €4.50 and €6 were considered. The study found that charging €6 for access to the city in the morning peak would reduce congestion by approximately 13 per cent. The charges would also raise significant revenues of up to €5m per annum. The study suggested that this revenue be earmarked for transport improvements in the city.

It was concluded that road pricing had the potential to reduce congestion significantly, improve the economics of bus operation, and raise considerable revenues for transport investment.

It was recommended that a full feasibility study of road pricing be undertaken.

Dr. Roy Johnston: If traffic is to be reduced by congestion charges it will be necessary that the public transport system be in a position to support the demand, and to be user-friendly to novice clients. The existing bus service could not be so described. It is necessary to have a total reconstruction of the route system, taking

advantage of the existing Dart, and projected Luas, in such a way as to enable a user to get easily between random points in the city area, with at most one easily negotiated change between cross-city routes, organised in an easily-understood mappable mesh. The London Underground map, or the Paris Metro map, support user requirements admirably. It should be possible to construct an integrated map including bus routes, Luas and Dart, totally interconnected in a mesh, in such a way as to give a comparable service. Such a service of course would not work if the bus schedules were corrupted by congestion, but if bus services were frequent and reliable, one could keep appointments with such a system, and vehicles in the city would be largely unnecessary for total mobility.