

IVT - Seminar

“PARKING AS A TRAFFIC CONTROL MECHANISM – IDEAS AND CONSTRAINTS”

by Dr. Michael MacNicholas

Monday, April 20th, 2015, 14:45-16:30hr

HIL E6; ETH Hönggerberg, Zürich

Part of the Traffic Management and Control course

Abstract:

At first sight it might seem easy to use parking controls as a mechanism to limit traffic in central urban areas. But despite its attractions as a congestion reduction measure there are problems in its implementation. The lectures are designed to explore these practical difficulties, by a mixture of discussion that is supported by a certain amount of theory.

In the first place, one cannot ignore the complex political realities in the provision and use of parking facilities. All the parties involved in the process from customers, businesses and residents want different things. Free movement is sought by one section of the population, and sometimes the same people want to park on the street. Any policy that emerges from the conflicting objectives must as a result be compromised.

Parking control measures can influence only certain vehicular trips, and a parking policy is most effective if it is supported by a policy to divert certain trips away from the congested city core. The economic justification for congestion reduction through parking charges is also explained.

One of the key decisions in urban traffic management is striking a reasonable balance between the use of street space for movement, and for on-street parking. Small amounts of parking significantly reduce street capacity, particularly near junctions. The street network has to be divided up between links devoted primarily to movement and those reserved primarily for parking.

The lectures, and supporting appendices, then go on to look at the sort of models that could be used to illustrate what happens in a traffic/parking system. All of the material in the Appendices is not strictly required for the lectures, but they provide a background for a wider understanding of the subject. Since parking and traffic generation are inextricably linked, models are crucial to assess the impact of parking controls on the resulting traffic.

Starting with a very simple input/output model, some standard measures of parking usage are obtained. More sophisticated continuous and discrete versions are then proposed that allow for system simulation. Each version has its own strengths and weaknesses, which are discussed.

In addition any model must have the capability to incorporate the effects of time controls and pricing on parking usage. A simple method of allowing for these effects is proposed. In theory, one can achieve a lot of influence over traffic through the use of these measures in a parking policy.

However, the effectiveness of this influence depends largely on the legal, planning and administration system in the urban area. Rather than generalise on this issue the lectures look at the particular difficulties faced by Dublin in this regard. These difficulties can serve as a template for those in other cities.

Presenter's bio:

Dr MacNicholas has had a long involvement with the three parallel strands in parking provision and management. Firstly, as a consultant he has advised Planning Authorities on the location and quantum of parking to be provided. Secondly, he has also been involved in the financial analysis, design, development and management of parking provided by the private sector. Finally, as an academic he has had a long-term interest in the understanding and description of parking systems.

He is uniquely placed as a result to try to generate an interest in parking research at ETH, commensurate with its importance in transportation planning. The emphasis in the research ought to be a bridging of the gap between the applied and business aspects of parking, and the intellectually demanding task of modelling parking behaviour in response to supply, and time or price controls.

Dr MacNicholas is a graduate of University College, Dublin, University of Birmingham and University of Ulster. He has worked at different stages in the UK, USA and Ireland. He has had many years experience in the traffic engineering/transportation area, including important roles as Transport Consultant to the European Commission supported programme for the development of Ireland's transport system. He is currently engaged in producing a book on Parking System Analysis.

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No reservation is required.



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