

# Sustainable Travel and Transport Action Plan Comhar Sustainable Development Council Response to Public Consultation

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# Executive Summary

## Foreword

Transport is one of the seven “key challenges” identified in the revised EU Sustainable Development Strategy published in June 2006. In Ireland, the transport sector has grown much faster than the economy as a whole and this growth has been accompanied by increasing problems like congestion, local air pollution, greenhouse gas emissions and the effects of urban sprawl. Comhar Sustainable Development Council (SDC) therefore welcomes the recently published public consultation document on the Sustainable Travel and Transport Action Plan (STTAP) by the Department of Transport. As Minister Dempsey stated in his launch of the public consultation, without policy intervention problems related to the transport sector will continue to grow. Transport policy offers the opportunity to address a range of societal problems in tandem through a more integrated policy approach. The realisation of a sustainable transport system could have a greatly beneficial impact on the economy through reduced pollution, reduced waste of time, and an increase in quality of life.

The STTAP could propose a positive definition of sustainable transport around a set of six goals based on environmental, social and economic constraints:

- i) Improved integration of transport with infrastructure, land use and demographic planning.
- ii) Reduced environmental emissions (CO<sub>2</sub>, NO<sub>x</sub>, VOCs, PM, noise)
- iii) Reduced transport congestion and accidents
- iv) Increased share of less harmful modes of transport
- v) Increased accessibility to transport
- vi) Support economic activities in the most efficient manner.

Sustainable transport should be the overall goal of the Department of Transport. It should not be a sub-sectoral objective to be considered on an equal basis along with other priorities, but rather inform all activities of the Department.

Our recommendations to the Minister for Transport on the STTAP are inspired by our philosophy that evidence to support policy proposals is important, that fairness – protecting the interests of the most vulnerable – should be at the heart of whatever is adopted, and that the views of interested parties should be taken seriously. To give a reality to this philosophy, we hosted a series of seminars during 2007 and early 2008 on themes related to sustainable travel and transport policy such as cycling, rural transport policy, transport demand management, and freight transport policy. Expert speakers from Ireland and abroad have given presentations with the latest information to audiences made up of people from a variety of backgrounds with a strong interest in the subject of sustainable transport. These presentations and ensuing discussions have helped inform the Comhar SDC’s recommendations to the Minister on the STTAP.

*Comhar SDC was established in 1999 as the forum for national consultation and dialogue on all issues relating to sustainable development. The Council has 25 members drawn from five pillars: the State sector, the economic sector, environmental NGOs, social/community NGOs, and the professional/academic sector. Comhar SDC is supported by a full-time executive and secretariat based at St. Andrew St, Dublin 2. More information is available at [www.comharsdc.ie](http://www.comharsdc.ie).*

## Summary Recommendations

The big problems with transport in Ireland are rising pollution – greenhouse gas and air pollutants – and rising congestion on roads that makes journey times ever longer, wastes time, generates stress, diminishes family and community life, fosters obesity, and adds to pollution and costs at many levels. The key to making transport in Ireland more sustainable is to provide direct incentives to both [private] motorists and truck drivers to reduce their use of fuel and associated carbon dioxide, smoke (particulates) and other pollutants, and their use of scarce road space at peak travel times, and to improve the availability of alternatives and make them more attractive. Where incentives take the form of increased taxes or levies, the revenues should in effect be given back to those who paid them to support investment and behaviour that encourages conservation of energy and road space, and that protects the most vulnerable<sup>1</sup>.

Transport impacts can be reduced with the good design of transport policies and in many cases will require political leadership and the ability to draw together many different areas of policy. The Department of Transport has a key role to play in implementing transport policy measures directly and indirectly by putting the institutional arrangements in place to lead collaboration with other departments and agencies on transport policy. A combination of a change in people's behaviour, technological solutions, and some government intervention in the form of planning and infrastructure provision is needed to achieve the above. Priorities for sustainable transport policy can be focused on the five I's:

- Incentives;
- Integration with planning;
- Infrastructure;
- Institutional arrangements;
- Information.

The first two of these – Incentives and Integration with planning – are key to sustainable transport yet not wholly within the remit of the Department of Transport. However, transport incentives and fiscal measures are urgently needed to deliver behavioural change and also to provide a source of revenue for investments in transport services and infrastructure currently lacking. Better institutional arrangements are needed to ensure that policies can be implemented effectively and at least cost, while information helps us measure our performance and informs us of the consequences of our actions.

The questions posed by the STTAP public consultation document are listed in Appendix I and answers are cross-referenced to the main text.

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1 See Comhar SDC recommendations to Budget 2008 on the carbon levy and revenue use. Available at [http://www.comharsdc.ie/\\_files/Exec%20Summary%20ComharRecs\\_budget08\\_FINAL.doc](http://www.comharsdc.ie/_files/Exec%20Summary%20ComharRecs_budget08_FINAL.doc).

## 1) Fiscal Measures and Incentives

Fiscal measures and good information promoting sustainable transport are crucial as the backbone to all other transport policy measures. If we price transport in a way that provides incentives to people to make sustainable choices and give them the information to realise this, then they will do so. In all cases good design of transport fiscal measures is needed to maximise behavioural change and minimise the impact on the economy and vulnerable members of society. Fiscal measures should be aligned with the near completion of investment projects in transport infrastructure such as Transport 21.

The chief recommendation is the implementation of a **national road pricing scheme**. A national scheme of road user charges can internalise all externalities associated with transport in a fair manner and has the advantage that congestion is addressed as well as environmental damage. Compared with the option to introduce congestion charges in major urban areas only, the full roll-out of a national road pricing scheme has a similar technological requirement and is the logical extension of such an instrument, with the advantage that all transport emissions are covered<sup>2</sup>.

Under such a scheme, all transport fixed charges such as vehicle taxes should be removed and converted to distance-based road charges which should vary according to vehicle emissions, geographical location, and time-of day. This will encourage consumers to purchase more fuel-efficient, clean vehicles and to drive less, and it will furthermore ensure that when they do take to the road, they can move smoothly, safely and efficiently. The design of the scheme should be made as simple as possible and stakeholder buy-in is crucial at the design stage of the scheme to reduce resistance to its implementation. In recent years the technology required to operate national road pricing has become more accessible and should be widely available within five years. The revenue collected through such a scheme should be sufficient to offset the revenue shortfall from vehicle taxes. It should be earmarked for transport infrastructure investment and to alleviate any distributional impacts thus making road pricing more acceptable to the public and providing a real choice of travel options.

The Netherlands has recently passed legislation approving the phased introduction of a national road pricing scheme with popular support. The Dutch experience in developing such a scheme shows the necessity for a lengthy preparatory period to study the most suitable scheme design, raise public awareness and obtain the stakeholder buy-in that is needed for legislative approval of a national road pricing scheme.

We need to begin similar preparatory work in Ireland as there will be significant lead-in time for the implementation of such a scheme. A feasibility study of a national road

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<sup>2</sup> Especially considering that rural travel accounts for 86 percent of vehicle-kilometres driven annually (McDonagh 2006).

pricing scheme should be commenced immediately to investigate the potential strengths and weaknesses of such a scheme as applied in Ireland. A full roll-out of this measure should be timed to begin with the near completion of the Transport 21 measures in 2013/2014; this will help ensure that alternative modes of transport are in place.

**1ES: Potential timeline for national transport fiscal measures**

2008	2009	2010	2011	2012	2013	2014	2015
	Fuel price escalator + CO <sub>2</sub> vehicle taxes						
	Carbon levy or cap-and-share						
	Preparation work on road user pricing	Scheme design and announcement		<b>National road user pricing</b>			

In the absence of a national road pricing scheme, several other fiscal measures should be considered such as a carbon levy, a cap-and-share scheme, fuel excise duty escalator and local fiscal charges such as congestion charging or intelligent parking pricing. More details of these are in the main document. 1ES summarises the potential timing of the introduction of transport fiscal measures.

## 2) Institutional Arrangements

Improving the sustainability of transport will require the cooperation of many government departments and agencies, economic sectors and individuals. The Department of Transport should lead in coordinating transport policy in Ireland. Institutional arrangements are needed that deliver policy on time and within budget.

- a) **Collaboration** of government departments, agencies, and local authorities is needed in land use, transport, pricing, environment, climate change policy – perhaps a national transport authority is needed?
- b) For major urban areas, **independent transport authorities** are needed with financial and human resources to provide creative urban transport strategies and the power to implement them.
- c) The **reform of the 1932 Road Transport Act** is urgently needed to address legal issues regarding the provision of new transport services. Creative ideas are needed to improve transport services in Ireland and the legislation should facilitate this.
- d) Agencies **should be mobilised** and integrated under the jurisdiction of the Department of Transport to provide information and develop and implement sustainable transport strategies.



### 3) Transport Infrastructure

Passenger and freight transport alternatives to road transport need to be provided in order to provide citizens with real choices when facing fiscal charges. Revenues from transport fiscal measures should be hypothecated to fund infrastructure and other measures promoting sustainable transport. This involves the provision of **transport infrastructure** and supports such as integrated ticketing, real-time information, logistical expertise, freight centres etc.

- a) **Multicriteria analysis** (MCA) should be used to prioritise infrastructure investment in a transparent manner. Priority should be given to investment in transport infrastructure that is environmentally effective, cost efficient and that takes long term demographics into account.
- b) In the Greater Dublin Area (GDA), **lower cost investment options** such as improved bus services and pedestrian and cycling facilities should be implemented ahead of higher cost alternatives.
- c) Increased modal share of **cycling and pedestrian** commuting will require significantly more investment and institutional support than is currently available. Investment is needed in much safer cycle infrastructure separated from traffic to reduce the perceived danger associated with cycling.
- d) **Bus and rail services** should provide services driven by demand and social policy. CIE should review timetabling and service provision to assess whether demand for services is met. There are cases where timetabling has not changed in twenty years and does not reflect new residential and commercial growth in some areas of the country. In areas where the demand is low in numbers but socially important, then services should be adjusted accordingly and may require subsidy if it is judged necessary.<sup>3</sup>
- e) **Prioritisation of walking, cycling and public transport, especially in city centres**, is needed to encourage non-car means of transport. For example, pedestrianisation of an area between St. Stephen's Green and O'Connell St in Dublin would be a significant first step to improving the quality of life in the city centre.
- f) It is necessary to make **public transport attractive**. Integrated ticketing has been discussed for the GDA since the mid 1980s; it should be implemented as soon as possible, i.e. immediately. Real-time information on bus routes would also improve the reliability and attractiveness of bus services.
- g) Review is needed of the amount and design of **motorways** planned. In particular, optimisation of the use of existing motorways should be prioritised over building new motorways.

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<sup>3</sup> There is more on this issue in the section on rural transport.

- h) Serious consideration must be given to improving the sustainability of Irish **freight transport**. A **national distribution centre** outside Dublin is required for freight transport to improve the logistics of small freight operators in particular and to enable the efficient use of existing infrastructure. Most freight transport in Ireland has its origin and destination within Ireland<sup>4</sup> and better coordination of freight transport services is needed.
- i) Give serious consideration to moving the location of:
  - Dublin **port** to a more accessible location, which will not require freight to be trucked round Dublin city centre on the M50. Operation of the container depots should be changed to facilitate night-time deliveries;
  - The **oil depot** and installing an oil pipeline from Dublin port to the north of Dublin.
- j) There are clear social benefits associated with **rail freight** in comparison with road freight. The development of rail freight in appropriate areas should be financially supported with public money (from transport fiscal measures) if the benefits outweigh the costs from a societal perspective. While it is expected that road will continue to be the dominant mode of freight transport, innovative solutions using existing infrastructure such as Luas lines at night for freight are possible options that should be given consideration to maximise the use of existing resources.
- k) An assessment of the potential of **plug-in electric vehicles** to reduce Irish transport greenhouse emissions and of the implications for related infrastructure should be carried out.
- l) **Biofuels** subsidies should be awarded based on the amount of CO<sub>2</sub> emissions reduced per litre of fuel rather than volume targets. Sustainability criteria should be adopted and used as a minimum standard for biofuels supplied to the market.

#### 4) Information

With infrastructure and fiscal measures designed to promote sustainable transport in place, **good information** is key to make people aware of the choices they face. The provision of good information can have a significant impact in reducing individual consumption and is a low cost policy measure.

Information on transport performance generally, and in regard to sustainability dimensions in particular, is widely dispersed between sources such as CSO, DTO and NCT, NRA, RPA, SEI, Road Safety Authority, CIE Group, and there are important gaps. The relevant information should be supplied on time, to the requisite quality. Without good information people may not know all the transport options available to them or understand fully the consequences of their actions. Our main recommendations on the provision of information are the following:

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4 CSO (2007) Road Freight Transport Survey 2006.

- a) **Ecodriving** training for private and commercial drivers should be obligatory at the time of first licensing.
- b) All firms with a large number of employees should be obliged to provide **workplace travel plans**. There should be a central service in each city providing support to firms and people not working for firms with a travel information centre.
- c) **Real-time information** should be rolled out for all modes of public transport.
- d) Consistent, simple **environmental labelling** should be provided on all new vehicles sold.
- e) **Transport data collection and modelling** are required to inform evidence-based policy-making in the transport sector. We recommend that a central facility for transport data and modelling be established.
- f) More **transport research** is needed. In particular work on estimating marginal abatement cost curves and elasticities for Ireland for the sector are needed urgently.

## 5) Integrated Land Use and Planning With Transport

- a) **Land use and planning** must be aligned with the **National Spatial Strategy** and be **integrated** into transport decision-making and vice-versa.
- b) Land use planning has a longer term impact on the sustainability of transport.
- c) Poor planning without heed to transport requirements has created much of the residential sprawl throughout Ireland and led to car dependency. More formal legislative requirements are needed to ensure good planning and transport integration.

## 6) Special Case: Rural Transport Policy

Rural transport has been neglected and many geographical areas have very little regular conventional transport services. This makes it difficult for rural dwellers to travel without using a car.

- a) Comhar SDC recommends that revenues from transport fiscal measures be used to:
  - Improve rural transport services for “conventional” trips, i.e. work or school-related transport,
  - Increase funding for the Rural Transport Programme to enable full geographical coverage of the scheme.
- b) Coordination of services in rural areas by different government and non-government agencies is needed so that mobility and accessibility objectives are aligned. For example, the closure of local services should be avoided to reduce the need for increased mobility to larger urban conurbations.
- c) A National rural transport policy strategy is needed to draw together existing schemes and transport services and provide a vision for an ambitious future for transport in rural areas.

# Introduction

A widely accepted view of sustainable development describes development that provides quality of life now and into the future. This generally relates to maintaining or improving the quality of human life into the future within the limits of the Earth's ecosystems and resource base (see e.g. Goodbody 2000). Any concept of sustainable transport must be grounded in the broader concept of sustainable development.

The Brundtland definition is used most often to describe sustainable development – development that “meets the needs of the present without compromising the ability of future generations to meet their own needs”. According to the 1997 Sustainable Development Strategy (Government of Ireland 1997, p. 101), sustainable transport in Ireland:

- helps to preserve the natural environment by minimising emissions of pollutants, reducing and managing transport waste and by careful land use planning to address the impact of transport infrastructure
- reduces environmental impacts and contributes to economic prosperity and development by maximising transport efficiency
- enhances social well-being by providing access and mobility to urban and rural populations and by reducing health risks and noise nuisance.<sup>5</sup>

In reality, however, the transport sector places particular stresses on the environment through greenhouse-gas emissions and other impacts. Furthermore, transport is considered important to economic growth and experience has shown that it is difficult to “decouple” from economic growth. Indeed, in Ireland the transport sector has grown at a higher rate than the economy as a whole, measured by such indicators as kilometres travelled per person annually and greenhouse-gas emissions from the transport sector. Transport in Ireland is currently on a path that is not sustainable; it does not meet all our current needs and in its current form will most certainly not meet the needs of future generations.

International organisations like the European Union and the Organisation for Economic Cooperation and Development (OECD) have devoted large resources to studying the transport sector and proposing ways to reconcile it with the ultimate objective of sustainable development. The OECD Environmentally Sustainable Transport (EST) project has proposed that:

*“an environmentally sustainable transport system is one where transportation does not endanger public health or ecosystems and meets needs for access consistent with (a) use of renewable resources below their rates of regeneration, and (b) use of non-renewable resources below the rates of development of renewable substitutes.” (Wierenkehr 2004, 14)*

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5 Government of Ireland (1997), Sustainable Development Strategy, p. 101

The OECD EST project identified six indicators to assess the wide impact of transport on health and the environment at local, regional, and global levels. These indicators concern land use, local noise and air quality, regional acidification and eutrophication, and tropospheric ozone and global climate change (Wiederkehr *et al.* 2004, 14). The indicators are carbon dioxide (CO<sub>2</sub>, the main greenhouse gas), nitrous oxides (NO<sub>x</sub>), volatile organic compounds (VOCs), particulate matter (PM), noise and land use. Data from the EPA and the Department of Transport illustrate that the transport sector in Ireland suffers from worsening trends in most of these areas.

Douthwaite *et al.*, in their briefing paper for the Comhar SDC 2006 annual conference, describe several constraints that threaten the Irish transport sector, especially: increasing dependence on oil, which exposes Ireland to potential energy price shocks or shortages due to supply constraints or political instability; increasing emissions of greenhouse gases (especially CO<sub>2</sub>) and local pollutants (NO<sub>x</sub>, SO<sub>2</sub>, PM); and the increasing costs of congestion (Douthwaite *et al.* 2006). A further external cost is the loss of “social capital” – “social networks and interactions that inspire trust and reciprocity among citizens” – which is degraded in a car-dependent society (Douthwaite *et al.* 2006, p. 28). Another important challenge in relation to transport is safety; the number of accidents caused by transport activities needs to be reduced.

There are therefore many indications that the Irish transport sector is not on a sustainable path. It is somewhat more difficult to generate a positive definition of a sustainable transport system, but the concept could bring together several general points.

A central theme of transport should be the concept of accessibility, or mobility. Transport should provide sufficient access to locations for persons and cargo, and the transport system should itself be accessible to persons and cargo (Himanen *et al.* 2006, p. 83). This social end must be balanced with other societal goals, however. Transport is a means to an end, and although mobility brings many benefits, there is evidence that too much mobility can bring environmental and social costs (Adams 1999, p. 95). The environmental costs – including pollution and habitat loss – are well known. Harder to quantify are the social costs, although they could be considerable. There are also internal trade-offs. Improving access by building more transport infrastructure can itself generate new demand for transport. Improve accessibility for motorists can worsen accessibility for non-motorists (e.g. motorways that encourage the development of out-of-town shopping centres).

Drawing from the constraints and possibilities identified in the above literature, the Sustainable Travel and Transport Action Plan (STTAP) could propose a positive definition of sustainable transport around a set of six goals based on environmental, social and economic constraints:

- i) Improved integration of transport with infrastructure, land use and demographic planning.
- ii) Reduced environmental emissions (CO<sub>2</sub>, NO<sub>x</sub>, VOCs, PM, noise)
- iii) Reduced transport congestion and accidents
- iv) Increased share of less harmful modes of transport
- v) Increased accessibility to transport
- vi) Support economic activities in the most efficient manner.

Sustainable transport should be the overall goal of the Department of Transport. It should not be a sub-sectoral objective to be considered on an equal basis along with other priorities, but rather inform all activities of the Department. In this regard, the STTAP should not use the term “sustainable transport” lightly. A transport policy that reduces the unsustainable impacts of the transport sector is not necessarily sustainable, if the negative trends are not reversed or are only mitigated somewhat. A STTAP that contains only incremental improvement on business-as-usual should not claim to be sustainable if the concept of sustainable development is to retain its usefulness. More positively, the STTAP should provide a compelling and enticing vision of how society could be improved through more economic opportunities, improved access, more efficient movement of goods and people and substantially less pollution and other harmful impacts.

# Main Policy Recommendations

The main external costs associated with transport are the emissions of air quality pollutants, greenhouse gas emissions, accidents, noise, and congestion. External costs or externalities arise when the activities of some people have an impact on others, which are not fully accounted, or compensated for, by the first group. Comparison of the relative importance of externalities in the transport literature shows that congestion and accidents have currently the highest external costs, while risk of climate change is relatively lower (Harrington 2008). Conventional emissions such as emissions of particulate matter (PM), nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), and hydrocarbons (HC) have already been significantly reduced through emissions standards and therefore in developed countries pose less of a threat per kilometre. Total emissions of NO<sub>x</sub> and PM have increased over the past decade and NO<sub>x</sub> emissions from transport now account for 50 percent of Irish NO<sub>x</sub> emissions.

CO<sub>2</sub> emissions from transport are growing, especially in Ireland. The Minister in his launch of the public consultation on Sustainable Travel and Transport stated that, even with the additional policy measures planned<sup>6</sup>, transport greenhouse gas emissions will rise to 15.26Mt per year by 2020, representing a 195 percent increase since 1990. While accidents and congestion affect us as individuals or as small groups, climate change has the potential to impact us on a national and global scale. It is therefore imperative that Ireland's greenhouse gas emissions from transport do not remain unchecked.

Several trends have been highlighted by the Minister which are influencing the transport impacts:

- “Unprecedented economic growth which saw Ireland's Gross Domestic Product (GDP) double;
- An increase in population of 17% from 3,630,000 to 4,240,000;
- An even more dramatic increase, of 40%, in the numbers at work (there are now 2,100,000 people in employment);
- A doubling of the volume of roll-on/roll-off port traffic from 6 million tonnes to 12 million tonnes;
- An increase of 115% in total road freight vehicle kilometres and 250% in total tonnes carried;
- An increase of 38% in the number of private cars per 1,000 adults from 382 to 528, which is still below the EU average of 558 for 20033;
- An increase of 72% in the total number of vehicles licensed from 1,338,616 in 1996 to 2,296,393 in 20064;

6 Including Transport 21 (0.51Mt CO<sub>2</sub>e), alignment of spatial planning and transport investment (0.083 Mt CO<sub>2</sub>e), 5.75% substitution of biofuels in transport fuels (0.5 Mt CO<sub>2</sub>e), and eco-driving (0.13Mt CO<sub>2</sub>e) from the Sustainable Travel and Transport Action Plan Public Consultation document pp. 57.

- An increase of 93% in Total Final Consumption (TFC) of energy from the transport sector from 2.7 megatonnes oil equivalent (MTOE) in 1996 to 5.4MTOE in 2006”

The ultimate goal is **to reduce the external costs of transport in Ireland**. Transport policy should meet the social and economic needs while stabilising and reversing the negative transport impacts currently seen in Ireland. This will necessitate decoupling the impacts of transport from economic growth and population size.

The STTAP should **set out policy goals and quantifiable indicator targets** with approximate timelines for their achievement. While the public consultation document sets out an appealing vision for sustainable travel and transport, more specific targets are required that are measurable in the future. Only then can we assess how much progress is being made.

There are several ways to reduce transport impacts on the environment that can be summarised as following:

- 1) Reduce the negative impacts produced per kilometre of travel;
- 2) Reduce the number of kilometres travelled per vehicle;
- 3) Reduce the number of vehicles travelling (either by reducing the demand for mobility and or increasing the share of other modes of transport);

Total transport impacts = (impacts per vehicle) x (km travelled per vehicle) x (no. of vehicles)

The first way is to make individual vehicles cleaner, safer, less fuel-consuming, and quieter. In the EU regulations have mainly been used to do this. For example, the pollutant emissions per vehicle have been reduced drastically since the mid nineties when emissions standards were first introduced for light duty passenger and commercial vehicles in the EU. Regulations have also been introduced to reduce the noise from vehicles and make them safer. Greenhouse gas emissions however remained unregulated because the auto industry argued successfully that this would have a negative impact on some manufacturers’ competitiveness over others. Instead a voluntary agreement was signed in 1999 between all manufacturers selling vehicles in Europe and the Commission where the manufacturers undertook to reduce CO<sub>2</sub> emissions from cars by 25% between 1995 and 2008.

The Commission has recently stated that *“The strategy has brought only limited progress towards achieving the target of 120g CO<sub>2</sub>/km by 2012”*. Therefore a new proposal has been put forward for EU legislation to reduce CO<sub>2</sub> emissions from new cars and vans, which would require average emissions from new cars sold in the EU-27 to reach the 120g CO<sub>2</sub>/km target by 2012. From this it is expected that in general the energy efficiency passenger cars sold in Ireland will continue to improve. However,



without good information and pricing incentives people may not be aware of the least environmentally-damaging vehicles on the market and choose vehicles with “negative” characteristics such as more weight, more engine power and size. Therefore while it appears that we can rely on regulations to reduce the CO<sub>2</sub> emissions per vehicle from the EU Commission, it is our national legislation that may determine which vehicles are actually driven on Irish roads.

Vehicle maintenance and repair play an important part in ensuring that the environmental performance of vehicles does not deteriorate over time. Actions such as regular oil changes, tyre air pressure maintenance and checking of the proper functioning of the OBD system can have a significant impact on maintaining fuel efficiency and reduced pollutant emissions.

Reducing the number of kilometres driven by individuals and commercial vehicles in many ways is more difficult than finding a technological solution to emissions reduction on a per vehicle basis; however it is the issue that we have most control over at national level. While European legislation can set the efficiency of the vehicles sold, Irish policy will determine how much people actually use their vehicles. Similarly freight transport and the modes used in Ireland are influenced greatly not only by the economy but also by national consumption patterns. Logistics and supply-chain management play a very important role in governing the number of vehicles on the roads. Both for passenger and freight transport, improving the CO<sub>2</sub> emissions intensity per vehicle by increasing the amount of goods and passengers transported in each vehicle will lead to reduced numbers of vehicles travelling and resulting emissions and congestion reductions.

Transport impacts can be reduced with the good design of transport policies and in many cases will require political leadership and the ability to draw together many different areas of policy. This is based on the assumption that transport’s economic and social benefits can increase without increasing its negative impacts. A combination of a change in people’s behaviour, technological solutions, and some government intervention in the form of planning and infrastructure provision is needed to achieve the above. For these reasons, Comhar SDC recommendations are centred on fiscal measures which are urgently needed to deliver behavioural change and also to provide a source of revenue for investments in transport services currently lacking. The structure of these recommendations is as follows: the first section describes proposed fiscal measures for transport, the second outlines some transport infrastructure recommendations; the third section is devoted to the importance of the provision of good information and finally a last section makes recommendations on rural transport policy. The questions posed by the STTAP public consultation document are listed in Appendix I and cross-references are given to the page(s) dealing with the issue where appropriate.

## Fiscal Instruments for Sustainable Transport

A basic principle underpinning all other policies is that economy-wide prices should reflect overarching sustainability goals. It is well-established that to reduce Irish transport impacts, there will need to be a radical change in people's behaviour. Consumers need guidance in the form of pricing to make the right decisions in their daily lives when purchasing goods and their transport choices. If, for example, the strategic target is to reduce the number of polluting vehicles in operation in Ireland then the vehicle tax system should reflect this (as discussed further in Comhar SDC submission to the vehicle tax consultations in 2007). Regulations can force manufacturers to produce efficient vehicles but if they are not priced in a way favourable to the models causing less harm to the environment then there may be no incentive for their purchase.

In an ideal world, the economics literature recommends that pollution charges be used to reduce pollution (Baumol and Oates 1988). In the case of transport this would mean charging the social marginal cost per kilometre travelled. While transport users already pay a combination of taxes and charges on transport, the EU research project TRENEN II has shown that in general in Europe the social marginal costs of a trip into a city by car are higher than the costs generally paid in fuel costs, parking charges, and congestion tolls. This shows that for many trips, drivers are not paying for the externalities they generate by driving. In the past the technology was not available to measure emissions in real time and to register vehicles usage and therefore it was impractical to levy a charge based on the direct impacts of transport per kilometre. As technology has improved however it has become a real possibility to do this and several countries are currently or are in the process of implementing a user charging scheme. The Netherlands has now passed legislation paving the way for the phased introduction of national road charges that will differ depending on the time of day, location, and type of vehicle driven.

The technology requirements and associated transaction and administrative costs can deter policymakers from implementation of road charges and generally necessitate a lead-in time for their implementation. A temporary solution may be sought in the form of a carbon levy or fuel taxes which, although not designed to address congestion, reduce the incentive to drive more miles. Carbon levies have the advantage over fuel taxes in promoting sustainable transport in that they target fuels with higher carbon content over alternative fuels and technologies.

Fiscal measures are often perceived as unpopular with the public. Vulnerable social groups, such as the poor or rural dwellers who would be hardest hit under many fiscal schemes are often cited as a reason for not implementing fiscal policy measures, even when they are recognised as efficient measures. For this reason it is very important that any proposed fiscal measure include a strategy to alleviate any hardship caused by the scheme but still not weakening the overall objective of incentivising environmentally benign transport. In fact fiscal measures are fundamentally necessary to raise revenue if increased investment in different transport modes is to be achieved. The hypothecation

of transport revenue and its use will be crucial in determining the public acceptability and ultimately the success of any such scheme. Separate sections below are dedicated to the revenue use for fiscal policy measures applied to transport and the question of transport policy measures applied in rural areas.

Fiscal measures and good information promoting sustainable transport are crucial as the backbone to all other transport policy measures. If we price transport in a way that provides incentives to people to make sustainable choices and give them the information to realise this, then they will do so. In all cases good design of transport fiscal measures is needed to maximise behavioural change and minimise the impact on the economy and vulnerable members of society. Fiscal measures should be aligned with the near completion of investment projects in transport infrastructure such as Transport 21. The rest of this section is dedicated to describing various fiscal policy measures designed to encourage and incentivise “good” transport behaviour.

## Road user charges

The chief recommendation is the implementation of a **national road pricing scheme**. A national scheme of road user charges can internalise all externalities associated with transport in a fair manner and has the advantage that congestion is addressed as well as environmental damage. Compared with the option to introduce congestion charges in major urban areas only, the full roll-out of a national road pricing scheme has a similar technological requirement and is the logical extension of such an instrument, with the advantage that all transport emissions are covered<sup>7</sup>.

Under such a scheme, all transport fixed charges such as vehicle taxes should be removed and converted to distance-based road charges which should vary according to vehicle emissions, geographical location, and time-of day. This will encourage consumers to purchase more fuel-efficient, clean vehicles and to drive less, and it will furthermore ensure that when they do take to the road, they can move smoothly, safely and efficiently. The design of the scheme should be made as simple as possible and stakeholder buy-in is crucial at the design stage of the scheme to reduce resistance to its implementation. In recent years the technology required to operate national road pricing has become more accessible and should be widely available within five years. The revenue collected through such a scheme should be sufficient to offset the revenue shortfall from vehicle taxes. It should be earmarked for transport infrastructure investment and to alleviate any distributional impacts thus making road pricing more acceptable to the public and providing a real choice of travel options.

The Netherlands has recently passed legislation approving the phased introduction of a national road pricing scheme with popular support. The Dutch experience in developing

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<sup>7</sup> Especially considering that rural travel accounts for 86 percent of vehicle-kilometres driven annually (McDonagh 2006).

such a scheme shows the necessity for a lengthy preparatory period to study the most suitable scheme design, raise public awareness and obtain the stakeholder buy-in that is needed for legislative approval of a national road pricing scheme. Box 1 provides a short description of the Dutch scheme.

We need to begin similar preparatory work in Ireland as there will be significant lead-in time for the implementation of such a scheme. A feasibility study of a national road pricing scheme should be commenced immediately to investigate the potential strengths and weaknesses of such a scheme as applied in Ireland. A full roll-out of this measure should be timed to begin with the near completion of the Transport 21 measures in 2013/2014; this will help ensure that alternative modes of transport are in place.

#### **BOX 1: The Dutch experience**

The Netherlands is planning to introduce national road pricing from 2012. This was already proposed and rejected in 2001 and some lessons have been learnt since then.

- Overall people are not willing to pay more taxes but they are willing to pay fair prices.
- Public and political acceptance is very important for the introduction of a national road pricing scheme. It is important to keep the design of the scheme simple.
- The scheme should start as soon as possible, even if only on a small scale as the problem is urgent.
- Politicians are needed with courage for the successful implementation of road pricing.

In order to get buy-in, extensive negotiations were held with stakeholders such as motorists associations, environmental groups, representatives of employers and employees, regional governments, etc. The recommendations made by the group were for a **km-price** that varies according to time, place and the effects on the environment (all roads, all motor vehicles). They also proposed that the current tax system (for purchase and ownership of a vehicle) be converted into the new system (use of the vehicle).

Various schemes were considered but the kilometre charge was selected, which requires all vehicles to have a GPS system installed. The objective is to reduce congestion and environmental damages. The expected charge will be €0.03-0.04 – 0.10/km depending on the type of vehicle, time of day, location. It will be revenue neutral compared to the current vehicle tax system. There will be phased implementation with the scheme operating on a small scale with volunteers and commercial users first. The Cabinet approved the scheme in December 2007 and it will start with freight transport in 2011. This will require intensive technical and policy-related cooperation with Belgium, France and Germany. Passenger cars will follow a year after the launch of freight transport. The complete system roll-out will be scheduled for 2016 and beyond. As part of the introduction of the price per kilometre, there will be extensive trials to test the technology and assess the behavioural and accessibility impacts, especially in the congested areas in the Northern wing of the Randstad (*Noordvleugel*).

A seminar on the subject of fiscal measures in transport policy was held by Comhar SDC with expert and stakeholder participation. A full report of the seminar presentations and discussion is given in the appendix but the main points arising from the discussion on road-user charges are summarised here as:

- The price elasticities of transport demand for Ireland have not been estimated and therefore it is difficult to estimate the impact of fiscal measures on transport;
- Competitiveness is very important; Dublin competes globally and so we do not want firms leaving the city.
- The announcement of a km-charge might reverse the land use trends and encourage people to live closer together.
- People will accept road pricing if they are given sufficient information and lead-in time to adjust their behaviour.
- The priorities for DTO policy for the GDA are to (i) reduce CO<sub>2</sub> and air pollutant emissions, (ii) reduce congestion, (iii) improve economic competitiveness.
- National per km charging was considered by DTO but not for at least 10 years.

#### Fiscal measures and Revenue use

- The question of revenue use is very important, as it should be used to take care of vulnerable groups.
- Without a regional tax system it is difficult to hypothecate revenues and return money locally.
- It is not the tax that will determine the impact on marginalised people but how the revenue is used.

#### Seminar Policy recommendations:

- National transport fiscal measures have a long lead-in time and other cheaper measures (“soft”) measures should be implemented in the interim.
- Easy policy measures would be to (i) make diesel vehicles more expensive to pay for their increased AQ emissions, (ii) implement a parking charge and give the revenue back to companies, (iii) encourage flexibility in work hours.
- Vehicle taxes must be removed and user charges implemented with credits for marginal groups.
- The visibility and transparency of any measure is very important to raise awareness and acceptability.

In the absence of a national road pricing scheme a **Carbon levy** or **Cap-and-share** scheme should be implemented on all transport emissions. A carbon levy targets transport greenhouse gas emissions, mainly CO<sub>2</sub> emissions, and has the added benefit

of providing an incentive to travel less (using fossil fuels) and therefore has an impact on congestion also. It should be levied in a very transparent manner so that consumers can see clearly at the point of fuel purchase how much of the price is due to the fuel carbon content. Two of the main issues determining the success or not of a carbon levy are the level at which the levy is set and the use to which the revenue collected from the carbon levy is put. The revenue should be hypothecated and be used to compensate vulnerable communities strongly affected by the levy, invest in additional carbon-saving activities in the transport sector, and/or to reduce labour taxes. The carbon levy measure could be transformed into road user charges at the point of implementation of that scheme. *Recommended implementation date: 2009*

A **Cap-and-share** scheme provides an alternative to a carbon levy; it can address all emissions not covered by the EU Emissions Trading Scheme (ETS)<sup>8</sup>. It sets a cap on carbon emissions from fuel suppliers and non-ETS industry, i.e. upstream, whose additional costs are passed through to consumers. The government or independent public agency issues permits to every citizen based on the total emissions cap set divided by the number of citizens/residents. These can then be sold by people to the fuel suppliers via an institution such as a bank or post office. People who emit under the average amount therefore will make a small profit, while those emitting more than the average pay the cost of doing so. The scheme acts similar to a carbon levy and therefore provides incentives to people to reduce their personal consumption of fossil fuels but is probably publicly more acceptable since the revenues are essentially distributed equally among the country's residents. The scheme involves all sectors not included in the ETS and therefore is especially relevant for passenger and freight transport since all fossil fuel suppliers would be required to buy emissions permits from individuals, who would in turn face pass-through costs in transport use.

Comhar SDC has commissioned a research project investigating cap-and-share as a mechanism to reduce greenhouse gas emissions from the transport and residential sectors. The terms of reference for the project are included in the Appendix. The first phase of the project examines cap-and-share qualitatively in the context of other personal trading schemes and policy measures to reduce greenhouse gas emissions and will be completed shortly<sup>9</sup>. The second phase involves modelling Irish greenhouse gas emissions under several scenarios including (i) business-as-usual, (ii) with cap-and-share policy, and (iii) carbon tax and fuel excise duty increase<sup>10</sup>. The results and recommendations arising from this project will be published in full in September 2008. *Recommended implementation date: 2009*

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8 This idea is originally from FEASTA and more information can be found on the website [www.capandshare.org](http://www.capandshare.org).

9 AEA Technology is the contractor for this phase and the interim report can be found on the Comhar SDC website at [www.comharsdc.ie](http://www.comharsdc.ie).

10 Cambridge Econometrics will carry out this part of the project.

If it is not possible to implement any of the above fiscal measures then a **fuel excise duty escalator** constitutes a further alternative. Fuel taxes are less effective than road charges or carbon levies at reducing greenhouse gas emissions from transport as they are not directly related to the vehicle emissions, nor do they change with time of day thus effectively cross-subsidising the cost of peak-hour traffic. The literature in this area shows that countries with low fuel taxes tend to have higher fuel consumption than countries with higher fuel taxes<sup>11</sup>. Good information and revenue hypothecation are needed to overcome the unpopularity of fuel taxes. This measure requires no institutional change and has the advantage of impacting the entire vehicle fleet on a per kilometre basis. *Recommended implementation date: immediately.*

If road charges are not implemented then all vehicle taxes should be based on the environmental performance of the vehicle – owners of vehicles emitting more should pay more. In Ireland there are currently taxes applied to vehicles at the time of purchase (registration taxes or VRT in Ireland) and as an annual “circulation” tax (motor taxes in Ireland). These are inefficient taxes that do not influence the amount or when vehicles are used<sup>12</sup>. However, if designed properly they can influence the type of vehicle purchased. The UK experience has shown that there needs to be significant differentiation between tax levels to encourage people to purchase the lower-emitting vehicle. The new Irish CO<sub>2</sub>-differentiated vehicle tax system should be monitored for its effectiveness and further tax incentives given to vehicles low in other pollutant emissions such as NO<sub>x</sub> and particulate matter. These charges could be transformed into road charges once such a scheme was implemented. *Possible implementation date: immediately.*

### Local fiscal measures

- a) Another fiscal measure that should be applied in the absence of road pricing is intelligent parking pricing. **Parking pricing** has been shown to be quite effective in deterring people from driving in urban settings; it has been stated that the largest contributing factor to drivers choosing to take the bus into the centre of a city is if parking were relatively unavailable or expensive<sup>13</sup>. The removal of on-street parking can be effective both as a deterrent to city-centre driving and also in creating further road space for other uses such as cycling. However, parking pricing does not affect “through traffic” and therefore can have only limited impact on congestion within urban areas.

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11 See Sterner (2007) for a comparison of EU and US fuel use.

12 In fact there is evidence that higher fixed charges such as vehicle taxes actually provide a motivation for vehicle owners to drive more than they would do otherwise.

13 UK Department of Transport (2002) “Attitudes to Local Bus Services” [online] <http://www.dft.gov.uk/pgr/statistics/datatablespublications/trsnstatsatt/earlierreports/attitudestolocalbusservices>

- b) **Congestion charging** should be implemented in cities with congestion such as Dublin in the absence of national road pricing. Revenue should be utilised for the provision of improved bus services and to compensate vulnerable groups. DTO modelling predicts that there would be a 25% drop in cars going through traffic cordons on the Dublin canals if there was a congestion charge.

Local fiscal measures should also be aligned with the completion of Transport 21 and other transport infrastructure investment. Figure 1 summarises the potential timing of the introduction of transport fiscal measures and Figure 2 illustrates a comparison of strengths and weaknesses of various measures to reduce CO<sub>2</sub> emissions.

**Figure 1: Potential timeline for national transport fiscal measures**

2008	2009	2010	2011	2012	2013	2014	2015
	Fuel price escalator + CO <sub>2</sub> vehicle taxes						
		Carbon levy or cap-and-share					
	Preparation work on road user pricing	Scheme design and announcement	<b>National road user pricing</b>				



SCHEME/ INSTRUMENT	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<b>Trading Schemes</b>	<ul style="list-style-type: none"> <li>■ <b>Guarantee emissions reduction level is met.</b></li> <li>■ Involve whole population encouraging behavioural change</li> </ul>	<ul style="list-style-type: none"> <li>■ Potential carbon leakage risk</li> <li>■ <b>Unknown transaction and set up costs</b></li> <li>■ Price stability dependent on appropriateness of cap</li> <li>■ Difficult to set the level of the cap</li> <li>■ Potential equity issues</li> <li>■ Design issues could create complexity</li> </ul>	<ul style="list-style-type: none"> <li>■ Create incentive for individuals to take other actions and participate more in other initiatives</li> <li>■ <b>Provide valuable experience and knowledge of tackling emissions from individuals</b></li> <li>■ Revenue raised from the tax can be used to further support environmental initiatives and investment</li> </ul>	<ul style="list-style-type: none"> <li>■ <b>Public acceptability of scheme as a new concept for individuals to be involved</b></li> <li>■ Public may have difficulty understanding the scheme</li> <li>■ Access, cost and availability barriers to behavioural change</li> </ul>
<b>Carbon Tax</b>	<ul style="list-style-type: none"> <li>■ Can lead to an economic efficient outcome reducing carbon emissions at lowest cost.</li> <li>■ <b>Can provide an incentive for innovation.</b></li> <li>■ <b>Low administration and transaction costs.</b></li> <li>■ Revenues can be recycled to offset the regressive nature</li> <li>■ A familiar instrument to public and government</li> </ul>	<ul style="list-style-type: none"> <li>■ Potential carbon leakage risk</li> <li>■ <b>Does not guarantee carbon reduction target will be met</b></li> <li>■ Difficult to set at the right level</li> <li>■ Can be regressive, having negative effects on vulnerable members in society</li> <li>■ <b>Public suspicion surrounding the actual use of revenues</b></li> </ul>		<ul style="list-style-type: none"> <li>■ Taxes are subject to political interference</li> <li>■ <b>Pressure from lobby groups.</b></li> <li>■ <b>Scepticism regarding the real intention behind carbon policies due to mistrust in the use of revenues</b></li> <li>■ The compensation provided through recycling the funds may not be transparent to the public</li> </ul>
<b>Increase in Fuel Excise Duty</b>	<ul style="list-style-type: none"> <li>■ <b>Moderate administration and transaction costs.</b></li> <li>■ Any revenue raised could be used for investment in public transport and low carbon technologies</li> </ul>	<ul style="list-style-type: none"> <li>■ <b>Does not guarantee carbon reduction target will be met</b></li> <li>■ Price elasticity in transport sector means duty would have to significantly increase to affect demand.</li> <li>■ Potentially regressive, impacting more on the consumption of the vulnerable.</li> </ul>	<ul style="list-style-type: none"> <li>■ Fuel duty already exists and the public are familiar with the concept</li> </ul>	<ul style="list-style-type: none"> <li>■ <b>Hugely unpopular with the road haulage lobby, and there could be public pressure to relax the increases in duty when they reach a level that start to impact on demand</b></li> </ul>

Figure 2: SWOT of Traded and non-traded approaches to reduce CO<sub>2</sub> emissions from Transport. Source: AEA Technology Interim Cap and Share report. Available at [www.comharsdc.ie](http://www.comharsdc.ie).

## Cross-cutting issues

**Distributional impacts** should be considered with any fiscal policy instrument and revenue should be used in an appropriate way to mitigate any undue hardship for vulnerable groups. This will be particularly relevant in rural Ireland where it may be difficult to implement public transport.

Rural areas should not be exempt from a national road pricing scheme or other fiscal measure designed to incentivise more environmentally-friendly travel. However, revenue collected from the scheme should be ring-fenced to improve alternative modes of transport and to provide compensation to those suffering undue hardship. A section dedicated to rural transport is found under Cross-cutting Issues.

### Revenue use

A national road pricing scheme with all roads included in the scheme would generate significant revenue. We estimate from 2005 NCT data that nearly 18 billion kilometres were driven in Ireland in 2005. If a charge were levied at the minimum rate proposed in the Dutch scheme then, based on that year, the income would amount to approximately €540 million. At the higher charge of €0.1 per kilometre, it can be estimated in Table 1 that approximately €1.8 billion would be collected through road charges from passenger cars alone.<sup>14</sup>

**Table 1: Estimate of revenue from road pricing**

ESTIMATES FROM NCT DATA	2005
Diesel veh-km	7,389,905,383
Petrol veh-km	10,608,063,835
Total veh-km	17,997,969,218
€ Revenue at 0.03 €/km	€539,939,076
€ Revenue at 0.1 €/km	€1,799,796,922

The decision on how to use this revenue will greatly determine the political and public acceptability of any transport pricing scheme. Any or at least a substantial share of the revenue generated through road pricing should be ring-fenced for the transport sector. With the significant revenue available, there is a great opportunity to

- alleviate mobility hardship due to the pricing scheme through a system of lump sum payments; and also
- further encourage sustainable transport by investing in infrastructure for alternative modes of transport.

<sup>14</sup> Incidentally the receipts for VRT and motor tax in 2005 amounted to nearly the same amount – €1.7 billion.

By comparison, €11 million is due to be spent in 2008 on the Rural Transport Programme, with a total allocation of €90 million over the period of the 2007-2013 NDP<sup>15</sup>. With additional resources the Rural Transport Programme could be implemented across all counties and its objectives modified to include services supporting regular commuters.

Successful implementation of national road pricing scheme without causing undue hardship to vulnerable groups will necessitate careful timing of the introduction of the scheme and a phase-in period with the establishment of wider public transport coverage, particularly in rural areas. As stated above, the price level should be low to begin with and slowly introduced first to geographic areas where conventional public transport services are available. This first stage revenue should be used to fund and launch new transport services in other areas so that eventually all areas will have sufficient transport alternatives that road pricing can be initiated on a national level. A recommended timeframe would be to begin implementation in 2010 and full roll-out in place by 2015.

## Institutional Arrangements

Improving the sustainability of transport will require the cooperation of many government departments and agencies, economic sectors and individuals. The Department of Transport should lead in coordinating transport policy in Ireland. Institutional arrangements are needed that deliver policy on time and within budget.

- a) **Collaboration** of government departments, agencies, and local authorities is needed in land use, transport, pricing, environment, climate change policy – perhaps a national transport authority is needed?
- b) For major urban areas, **independent transport authorities** are needed with financial and human resources to provide creative urban transport strategies and the power to implement them.
- c) The **reform of the 1932 Road Transport Act** is urgently needed to address legal issues regarding the provision of new transport services. Creative ideas are needed to improve transport services in Ireland and the legislation should facilitate this.
- d) Agencies **should be mobilised** and integrated under the jurisdiction of the Department of Transport to provide information (see above) and develop and implement sustainable transport strategies.

15 <http://www.ndp.ie/viewdoc.asp?Docid=2082&mn=newe&nID=&UserLang=EN&CatID=15&StartDate=1+January+2008>

## Transport Infrastructure

Passenger and freight transport alternatives to road transport need to be provided in order to provide citizens with real choices when facing fiscal charges. The fiscal measures should be hypothecated to fund infrastructure and other measures promoting sustainable transport. This involves the provision of **transport infrastructure** and supports such as integrated ticketing, real-time information, logistical expertise, freight centres etc.

**Multicriteria analysis** (MCA) should be used to prioritise infrastructure investment in a transparent manner. Priority should be given to investment in transport infrastructure that is environmentally effective, cost efficient and that takes long term demographics into account.

For urban areas, **independent transport authorities** are needed with financial and human resources to provide creative urban transport strategies and the power to implement them.

**Bus and rail services** should provide services driven by demand and social policy. CIE should review timetabling and service provision to assess whether demand for services is met. There are cases where timetabling has not changed in twenty years and does not reflect new residential and commercial growth in some areas of the country. In areas where the demand is low in numbers but socially important, then services should be adjusted accordingly and may require subsidy if it is judged necessary.<sup>16</sup> It is necessary to make **public transport** more **attractive**. Integrated ticketing has been discussed for the GDA since the mid 1980's; it should be implemented as soon as possible, i.e. immediately. Real-time information on bus routes would also improve the reliability and attractiveness of bus services.

The **reform of the 1932 Road Transport Act** is urgently needed to address the legal issues regarding the provision of new transport services. Creative ideas and solutions are needed to improve transport services in Ireland and legislation should facilitate this.

In the Greater Dublin Area (GDA), **lower cost investment options** such as improved bus services and pedestrian and cycling facilities should be implemented ahead of higher cost alternatives.

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<sup>16</sup> There is more on this issue in the section on rural transport.

## Alternative modes of transport to cars – bicycling<sup>17</sup>

**Bicycling and walking** have an important but under-appreciated role to play in sustainable transport policy. Despite the benefits of these modes, overall numbers of cyclists are declining in Ireland. There are a number of obstacles to cycling but perhaps the most important obstacle – the absence of cycling and walking from national transport policy – is being overcome with the welcome attention in the forthcoming STTAP of a new national policy on cycling and walking. The European experience described in Box 2 shows that it is possible to reverse declining numbers of pedestrians and cyclists. This section outlines some of the benefits of cycling and walking, the grounds to believe that there is a latent demand for cycling and walking, the obstacles that suppress this demand, and the steps that could be taken to remove these obstacles.

### Box 2: The European Experience with cycling

Examples from other European cities demonstrate that declining numbers of cyclists can be halted and even reversed. Copenhagen experienced a steady decline in numbers of cyclists from the 1950s until the 1970s, when the number of cyclists entering the inner city every morning dropped from 45,000 to about 5,000. From 1980, partly in response to public pressure, successive policy interventions have seen a rise in cycling to current levels of about 20,000. Overall, about one third of Copenhagen's commuters travel by bicycle, with a further one third travelling by public transport. Policy measures include a national cycling policy, the provision of high-quality infrastructure like cycle paths and bicycle-parking facilities, and traffic-management measures like the "green wave for cyclists", by which traffic lights are sequenced to accommodate an optimal average bicycle speed of 20 km/h. A political target adopted in spring 2007 foresees a rise in the modal share of cycling to 50 percent of all trips to work and education. This is a highly ambitious figure that will require not just infrastructure improvements but also punitive measures like introducing parking fees and road pricing. The Danish experience provided an enticing vision of how towns and cities can improve their environment and create beautiful, liveable spaces while escaping some of the problems of congestion and social exclusion; although no country's example can be transposed to another, there are generic lessons from such cities as Denmark that Ireland can apply in its own context. Other European countries have also reversed the decline: In Germany, modal share of bicycling for urban trips rose by half between 1972 and 1995, from 8 percent to 12 percent. In 1999 the bicycle's share of local trips was 30 percent in the Netherlands, 20 percent in Denmark, 12 percent in Germany, and 10 percent in Switzerland.<sup>18</sup>

17 We are grateful to Thomas Legge who contributed most of this section and was informed by a commissioned background paper by Colm Buchanan – "The Challenge of Developing and Implementing Cycling Policy in Ireland".

18 Colin Buchanan, "Cycling planning in Irish transport policy", June/November 2007

## Benefits of cycling and walking

There are many benefits to these modes of transport, including the reduced environmental impact (bicycles require no fossil fuels to run and bicycling and walking are almost noise-free), the health impact (bicycling and walking lead to increased fitness, reduced exposure to heart problems and reduced vulnerability to falls and other accidents, according to the Irish Heart Foundation), the economic impact (trips made by bicycle or on foot can displace car journeys and thereby relieve congestion, which has estimated costs every year of about 2 percent of Gross Domestic Production (according to the Organisation for Economic Cooperation and Development), and the social impact (interaction). Indirect benefits derive from the attractiveness of more “liveable” cities that accommodate cyclists and pedestrians rather than private cars.

## Latent demand for cycling and walking

Despite the potential of these modes, cycling and walking play only a small and declining role in the overall mix of transport options in Ireland. In 2002 only 3.8 percent of persons in Dublin travelling to work or school did so by bicycle, a decline of 17 percent since 1996. Outside Dublin the rates were still lower, and the rates of decline were higher (ranging from 27 percent in Galway to 57 percent in Limerick) (see Annex 1: Modal share in journeys to work, school and college, 1981-2002). Perhaps the most dramatic decline has been in the number of teenage girls cycling: in 2006 0.3 percent of girls between the age of 12 and 18 cycled to school. The number of trips made by bicycle in Ireland, at less than 2 percent of the total, is low compared to the best European examples, including 5 percent in Austria, 10 percent in Germany, 18 percent in Denmark and 27 percent in The Netherlands (see Annex 1). The Dublin Transportation Office based its 2001 policy on the assumption that the proportion of short trips (up to 6km) made by bicycle could be increased to 30% by 2016, with a particular emphasis on trips to places of education and commuting trips of up to 10km in length.

Research by the Institute for Transport Studies (University of Leeds) suggests a higher willingness to cycle than is currently evident. A model based on revealed preferences and stated preferences of individual commuters gathered from a range of sources estimated people’s willingness to cycle to work based on the provision of cycle facilities of different kinds and other factors and could therefore be used to estimate how changes in these factors would affect cycling to work for journeys of 12km or less. The work suggested that about 60 percent of people could not be persuaded to cycle under any circumstances. For the remainder of the population the provision of segregated off-road cycling facilities for half the journey would increase the modal share of cycling from 5.8 percent to 7 percent of all relevant journeys and making a daily payment of £2 would increase it to 10.9 percent. The greatest impact results from a package of different measures (17.8 percent), which implies that an integrated policy approach to cycling would be most effective.<sup>19</sup>

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19 Data presented by Matthew Page at Comhar SDC seminar, 21 June 2007

## Obstacles to cycling and walking

There are many barriers to the realisation of the potential contribution of cycling and walking to the Irish transport mix. The study by Galbraith and Keegan (2005) for Dublin City Council examined attitudes of cyclists and car commuters to cycling in Dublin. The car commuters surveyed gave the following reasons for not cycling to work: 24% “prefer to drive”, 21% found cycling “too dangerous because of traffic”, 16% “too far distance to travel” and 12% they “need ... (their)... car for work”. Anecdotal evidence suggests that some perceived barriers dissolve with experience. Bad weather is often cited as a reason not to cycle, even though weather conditions en route are usually favourable. In any case, the weather in Copenhagen – at least as bad as Dublin’s – does not stop most people commuting by bicycle. In Copenhagen 33 percent of non-cyclists cite bad weather as a reason not to cycle (in Dublin 19 percent of car commuters gave a similar answer in the 2005 survey<sup>20</sup>), although it rains on only 3.5 percent of all bicycle trips. Such negative perceptions are real barriers to increasing the modal share of cycling but they should be addressable through education and public-awareness campaigns.

Galbraith and Keegan (2005) also show the importance of cycling at a young age in determining whether people cycle to work later. The survey found that a significantly higher proportion of cyclists had previously cycled to either secondary school or college compared with car commuters. It also appears to have a knock-on effect in determining whether parents are willing to allow their children to school – 69% of cyclists said they would let their children cycle to school while only 43% of car commuters said they would. The Dublin study emphasises that “the importance of recruiting cyclists in the school-going age groups and the role of parents in influencing the cycling behaviour of their children cannot be over-emphasised”.

Other barriers are real and substantial. **Policy** on cycling, like other modes of transport, must be considered in an integrated way, but at present cycling policy in Ireland is formed by a patchwork of different approaches by different authorities and walking and cycling do not seem to have been fully considered as part of the transport policy mix in Ireland. Capital expenditure on cycling or pedestrian facilities is mainly done by local authorities and is negligible compared to other modes of transport.<sup>21</sup> The **institutional** barriers include the failure by various agencies to take cycling and walking into account. According to one local authority, the Railway Procurement Agency has been unwilling to provide bicycle facilities for cost reasons. Irish Rail was cited as an agency in particular need of persuasion on the merits of cycling; inadequate bicycle parking at railway stations and insufficient or non-existent space on trains for the carriage of bicycles are frustrating

20 Keegan, Owen & Julie Galbraith, “Attitudes of Cyclists and Car Commuters to Cycling in Dublin”, paper presented at Velocity conference, Dublin 2005

21 In the Greater Dublin Area almost €30m was spent between 1994 and 2005 on the provision of cycling facilities including the provision of 220km of cycle lanes. “Sustainable Transport Policies”, presentation by Dr Eimear Cotter, Integrated Transport Unit, Department of Transport, 2006

obstacles. The example of the RPA indicates that **financial** barriers also exist, despite record sums of money being made available for transport infrastructure. According to the Dublin Regional Authority, lack of funding was the main issue in the provision of the Sutton-to-Sandycove promenade (which would serve both pedestrians and cyclists, and would have a recreational as well as commuting purpose).<sup>22</sup> The lack of sufficient and appropriately trained **personnel** is a significant barrier to implementation at the local level, according to the BYPAD audit of bicycle policies.<sup>23</sup> Local authorities need to be able to hire and train key staff to oversee sustainable transport solutions in the same way that heritage officers were recently hired. Finally, concerns about **safety** deter many people from considering cycling. Evidence from several northern European countries indicates that accidents per capita involving cyclists decline as overall cycling numbers increase (the safety-in-numbers phenomenon) as cars become more used to cyclists and authorities design infrastructure prioritising cyclists' safety; the converse is that fewer cycling numbers makes cycling riskier, further deterring potential cyclists from choosing the mode.

## Recommendations

These recommendations are based on the hypotheses that there is a latent demand for cycling and walking as modes of transport, and that the decline in cycling and walking as modes of transport is not inevitable. The recommendations therefore suggest ways that national policy could be improved to facilitate a much greater role for cycling and walking in Irish transport. Although many of these recommendations focus on cycling, the interests of cyclists and pedestrians usually overlap so the recommendations for cycling, if implemented, will also benefit pedestrians.

### (i) Policy framework

The first essential step at the national level will be to establish a national policy on bicycling encompassing both recreation and utility bicycling. Cycling policy is a dynamic process and depends on many mutually supporting components. For example, the provision of bicycle-friendly infrastructure is important but it will not be sufficient on its own to realise the potential role of cycling. Experience from countries that have reversed negative cycling trends shows that countries with well developed, comprehensive cycling policies are more likely to increase their cycling numbers. These integrated policies typically feature the provision of separate cycling facilities along heavily travelled roads and at intersections; traffic calming of most residential neighbourhoods; extensive cycling rights of way complemented by ample bike parking; full integration of cycling with public transport; comprehensive traffic education and training of both cyclists and motorists; and a wide range of promotional events intended to generate enthusiasm and wide public support for cycling.<sup>24</sup>

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22 Comhar SDC seminar, 21 June 2007

23 Colin Buchanan, "Cycling planning in Irish transport policy", June/November 2007

24 Pucher and Buehler "Making Cycling Irresistible" *Transport Reviews*, Vol. 28, 2008



- *National policy*

At the national level transport policy must begin by acknowledging the many benefits of cycling and follow up with a national strategy. This should be coordinated by a single body but involving many others (e.g. transport, health, education) and provide for support for skilled personnel. There must be an alignment of the activities of other bodies (e.g. Irish Rail) with the needs of cyclists to ensure that obstacles, once identified, will be removed. Legislative changes will be necessary, particularly a reversal of the mandatory use of cycle paths. It may also be necessary to introduce legislative changes to place the burden of proof on motorists in the case of an accident between a car and a pedestrian or a cyclist.

- *Local policy*

At local-authority level a valuable approach is outlined in the BYPAD audit methodology, which has been developed as part of an EU-funded project and implemented in several Irish local authorities.<sup>25</sup> The BYPAD audit assesses the effectiveness of existing local authority cycling policies, identifies steps that can be taken and provides for a follow-up assessment of the effectiveness of new policies. The BYPAD audit in Ireland found that local authorities in Ireland take at most an “ad-hoc approach” to cycling policy development, which is characterised by low and irregular attention to the needs of cyclists, a lack of personnel working on cycling or trained to deal with the needs of cyclists, and informal structures causing outcomes to be dependent entirely on the individual commitment of staff members. Instead, local authorities need to move to either a “system-oriented approach”, characterised by long-term planning, the systematic taking into account of user needs, high quality data on which cycling policy is based, substantial budget allocations and formal partnerships between cycling officials and other partners (e.g. schools, employers). Even better would be the “integrated approach”, characterised by high quality measures based on agreed quality standards, an approach to planning that considers the whole urban/regional area as a network, systematic evaluation and monitoring of strategies, programmes and projects, the implementation of measures that safeguard the continuity of the cycling policy, and substantial and regular budgets.

Local authorities are more directly responsible for cycling policy as part of their work on traffic management and road works. Here, again, the problem seems to be one of lack of resources or attention to the potential role that cycling can play. The website of Dublin City Council provides guidance on “Getting around Dublin” by car, taxi, orbital routes, but not by bicycle.<sup>26</sup> The Council is exploring a scheme

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25 South County Dublin, Dublin City, Cork City and Waterford City. Colin Buchanan, “Cycling planning in Irish transport policy: paper for seminar informing preparation of Green Paper on sustainable transport”. Dublin: Comhar SDC, June/November 2007

26 [http://www.dublincity.ie/living\\_in\\_the\\_city/getting\\_around/](http://www.dublincity.ie/living_in_the_city/getting_around/)

to introduce for-hire bicycles at strategic points around the city along the lines of a similar scheme in Brussels, but this is a niche issue, even if it may help to promote occasional cycling in the city centre for short trips.<sup>27</sup>

## **(ii) Political leadership**

Underlying many of the obstacles is a lack of political commitment to cycling and walking. The reasons for this lack of political attention may relate to the fact that cycling is often seen as fringe, or even eccentric. Given that many obstacles exist to prevent cycling from becoming more mainstreamed, a strong political commitment will be necessary to ensure that measures identified are prioritised and implemented.

### ■ *Government as champion*

The importance for political will to effect change has been shown through the example of the plastic bag tax and the smoking ban in the workplace, showing how a clear and thought-through policy driven by strong political will can bring about a significant change in public attitudes and behaviour. Given the benefits to cycling and walking not just for those users but also for all other road users and members of society (e.g. through reduced congestion and pollution), there should be adequate incentive to implement even measures that might be unpopular in the short term. Indeed, the example of other European countries is that it is not enough to implement pro-bicycle policies but it is also essential to make car use less convenient. The Netherlands, Denmark, and Germany make driving expensive as well as inconvenient in central cities through a host of taxes and restrictions on car ownership, use, and parking, and strict land use policies foster compact, mixed-use developments that generate shorter and thus more bicycle-friendly trips.<sup>28</sup> The Government should designate one minister as its “champion” for cycling with the mandate to coordinate relevant activities across Government departments and from national to local level. For this role the minister should be assigned sufficient number of full-time dedicated personnel to implement activities at Government level.

### ■ *An ambitious target*

In 1996 the DTO proposed that 30% of all journeys to work and school that are less than 6km should be by bicycle. Although this target has not been met and is not likely to be met under current trends (e.g. with almost no teenage girls cycling to school), this does not mean that the target is not achievable or inappropriate. Strong political will including the willingness to curtail private car use as well as incentivise bicycle use, as has been done in other European countries, can lead to the realisation of even very ambitious targets. Moreover, the presence of a target itself forces discussion about the kinds of measures that could be taken. For this

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27 [www.dublincity.ie/Images/Appendices%201-5%20reduced\\_tcm35-48977.pdf](http://www.dublincity.ie/Images/Appendices%201-5%20reduced_tcm35-48977.pdf)

28 Pucher and Buehler “Making Cycling Irresistible” *Transport Reviews*, Vol. 28, 2008

reason, it will be essential to put in place ambitious targets for the penetration of cycling and walking as a share of all trips nationally and by sector. There should be a particular focus on primary, secondary and tertiary students as target groups, as an effective way of covering large sections of society at a stage when lasting habits can be formed. The target in Copenhagen for 50 percent of all urban trips by bicycle is far beyond what might be imagined feasible for Dublin, but it is considered possible by a city that shares many characteristics with Dublin. A realistic target for the medium term for Dublin would be the realisation of the latent demand suggested by evidence-based studies. The University of Leeds found that 17.8 percent of people would be willing to cycle to work under certain circumstances (see above), so the target should be set using the equivalent figure for Ireland – generated by empirical analysis of the situation here – as a minimum.

■ *The role of the public sector*

Public organisations should also play a more direct leadership role. At the moment many public organisations give out a rather mixed message, providing many civil servants with free car parking (the most egregious example of which is the paving over of the former lawns to the East and West of Leinster House). Many public buildings lack outdoor bicycle parking, secure indoor parking or shower and changing facilities). Public initiatives like the annual car-free day in September receive indifferent support from the very agencies that could be championing them. Although civil servants take their lead from the political process, there is much potential for the public sector to improve the environment through its own operations and the example it sets. Different agencies and government departments must link up the different components of the policy mix. At the local level, providing funding and training for personnel will be essential to improve the cycling and walking environment across the country.

**(iii) Infrastructure**

The infrastructure in Ireland is often not conducive to cycling or walking. Cycling-specific infrastructure such as cycle lanes is often inadequate, incomplete or sub-standard, as evidenced by cycle lanes that are poorly maintained or result in the loss of cyclists' right of way on a road. Many roads especially in urban areas are crowded and cyclists are forced into unhealthy competition for road space with motorists, who in turn share scarce road space with taxi drivers, delivery vans and waste trucks. Many centres of cities are heavily used by pedestrians despite the lack of areas closed to non-motorised traffic, but city-centre junctions seem to be designed to maximize traffic throughput rather than to encourage pedestrian use (for example, the pedestrian crossings at College Green in Dublin allow 9 seconds for pedestrians compared to 90 seconds for motorists). Low-density urban planning means that walking to school or work is impractical for many people. In rural areas roads are often too narrow or without footpaths, which means that there is higher risk of accidents and parents are reluctant to encourage their children to cycle or walk to schools even when they are close by.

■ *Bicycle-friendly infrastructure*

Often the policy debate focuses on the absence or quality of bicycling infrastructure, e.g. cycle paths, parking facilities. The problem should not be seen as one of providing or upgrading bicycle infrastructure, however, but rather of providing bicycle-friendly infrastructure. This is an important distinction, because as long as infrastructure like roads is constructed without taking into account the needs of all road users, including pedestrians and cyclists, these modes will be marginalized. An integrated approach is required and with good design these users' needs can be accommodated with little or no inconvenience to other users.

■ *Shared spaces*

A solution must lie in a more rational redistribution of road space among its users. Although motor traffic dominates Irish transport, it is often not the most efficient use of scarce road space, e.g. during periods of congestion. This principle, which is recognised by the limited pedestrianisation of certain Irish streets, should be extended to the further curtailment of private motor cars in urban areas, either by increased pedestrianisation or by increasing the breadth of road space to non-motorised transport modes. On-street car parking is often a wasteful use of scarce road space, and this space should often be given over instead to wider footpaths, cycle paths or bicycle parking spaces (10 bicycles can fit into one car-parking space). In addition, the space provided to cars can often be reduced without any reduction in traffic flow: in principle, the space for cars should be designed to the minimum size possible and the rest of the road given over to pedestrians and cyclists; at the moment it often seems that the opposite principle is taken, with a standard width of footpath and the rest of the road allotted by default to cars. Finally, sharing can also be temporal: giving over use of road space to certain modes at certain times can accommodate different modes in a more positive way. The pedestrianisation of Grafton Street except for the delivery period of 06.00-11.00 is a successful example of temporal sharing and this principle should be extended wherever possible, e.g. through the pedestrianisation of major thoroughfares like Dame Street in central Dublin on weekends. Pedestrianisation should not mean the exclusion of cyclists but rather the exclusion of motorised vehicles: Ireland should adopt the best practices of other European countries where cyclists are permitted into at least some pedestrian zones, with priority and right of way given to the pedestrian. Similarly all roads should have footpaths, which may be used by cyclists on dangerous roads, for example in rural areas. Information campaigns and signage can raise awareness of pedestrians' rights vis-à-vis cyclists.

■ *Greenways*

A more ambitious approach would be to curtail the amount of road space available to the private motor car throughout urban areas and the provision instead of high-quality dedicated routes that are for the exclusive use of non-motorised transport (and possibly also emergency vehicles, although this would have to be

strictly governed to avoid abuse). These “greenways” could have the potential to recruit large numbers of cyclists and pedestrians, especially neophyte cyclists who might otherwise be discouraged by the perceived risks of cycling. The Sutton-to-Sandycove greenway project will provide not just a recreational resource along its 22-km route but also a potential commuting route that is entirely safe to use because of the absence of motor vehicles. Those living within its catchment area, say 0.5 km, will be able to walk or cycle to the greenway and proceed along its route. This should provide an alternative that parents would be happy to see their school-going children use, for instance. If the Sutton-to-Sandycove greenway is successful, the greenway model should be extended to other parts of Dublin and eventually to all Irish cities and towns. Under this scenario, routes would be identified that thread through the whole city and the roads redesigned as necessary to provide an uninterrupted route of at least 3 metres width, segregated from motor traffic and providing a peaceful and beautiful route along major arteries.

Such an approach would necessarily involve reducing capacity for cars, but it is not clear that this would necessarily lead to increased congestion. Evidence from UCL shows that the phenomenon of “traffic evaporation” can occur when road space is curtailed.

#### ■ *Appraisals*

The appraisal of infrastructure should be broadened to take into account social costs and benefits, especially those relating to carbon emissions and health impacts. In this way, the apparent costs and benefits of including the needs of cyclists and pedestrians in infrastructure spending decisions would be taken into account. According to research by the Institute for Transport Studies at the University of Leeds,<sup>29</sup> such an approach to transport-infrastructure appraisals can lead to dramatically different outcomes than otherwise. Including impacts not traditionally featured in cost-benefit analyses like journey ambience (environmental quality and lack of danger from motorised traffic) and the benefits of physical activity for health can be very significant for cycling and walking schemes. Three UK case studies developed under this research revealed that cycling and walking schemes can have very high benefit-to-cost ratios:

## Recommendations on freight transport

Fuel consumption by road freight transport is estimated to have increased by 255 percent over the period 1990-2006, while GDP grew by 169%<sup>30</sup>. Over the same period rail freight has declined significantly. Freight transport has remained a somewhat neglected policy area and has become increasingly a major source of greenhouse gas

29 Matthew Page, Institute for Transport Studies, University of Leeds, Leeds, LS2 9JT, United Kingdom.

30 EPSSU SEI (2007) *Energy in Transport*, Energy Policy Statistical Support Unit, Sustainable Energy Ireland.

emissions in Ireland. While road transport will probably remain the dominant mode of transport for freight, a national freight transport policy could make a significant difference to the sustainability of the sector.

A **national distribution centre** outside Dublin is required for freight transport and should be initiated with public funds. One of the significant barriers to freight transport optimisation is the number of small operators in Ireland leading to inefficiencies in logistics. There is evidence of many cases of trucks driving empty because they have no return journey load. It is difficult to coordinate the deliveries of multiple operators without a central facility available to do so. Also economies of scale are necessary to justify more expensive transport infrastructure such as rail freight. Unfortunately this is a classic case of public good theory – although everyone would stand to gain from such a facility, there is no incentive for any one agent to organise it for everyone else. Government intervention in the form of human and financial resources is necessary to put a freight distribution centre in place and run it. The great advantage of such a facility would be that once a central distribution location were established, other transport infrastructure, such as rail freight, could be organised around it and small operators could collaborate to ensure optimisation of deliveries<sup>31</sup>.

Serious consideration should be given to moving the location of:

- Dublin **port** to a more accessible location, which will not require freight to be trucked round Dublin city centre on the M50;
- the **oil depot** and installing an oil pipeline from Dublin port to the north of Dublin.

The idea to relocate Dublin port has existed for many years, perhaps beginning with the ESBI study twenty years ago, which proposed that Dublin Port be relocated to a new port in north county Dublin<sup>32</sup>. The main reasons were that the site of Dublin port is constrained geographically by specially designated environmental areas which over more than half of the bay. Dublin Port is close to capacity and is situated in a central location, which could be used to provide badly needed residential housing close to the city centre. It is likely that extra capacity will be needed in the future<sup>33</sup>. The ESBI study at that time found that it was technically feasible to establish a single unified port capable of handling both present and future needs for both Ro-Ro and Lo-Lo Shipping, on the Central Irish Sea Corridor, at a suitable North County Dublin Location and that the capital costs of the proposed development would be £160 Million in 1989 values,

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31 A good description of the advantages and ideas from best practice for distribution centres (or Urban Consolidation Centres) is found in the "BESTUFS Good Practice Guide for Urban Freight Transport". Available at [www.bestufs.net](http://www.bestufs.net).

32 ESB (1990) *Port Infrastructure in Ireland: Requirements and Proposals*, ESB, June 1990

33 IBEC-CBI (2008) *Freight Transport Report for the Island of Ireland*, Report commissioned for Intertrade Ireland.

including road and rail access and all associated construction costs and servicing work<sup>34</sup>. This was not acted upon but more recently Dublin City Council (DCC) has published a study examining various options for Dublin Port in order to improve its economic potential and among other things improve the quality of life of Dublin city. The three main scenarios evaluated were:

- Do nothing – port stays at same site
- Partial relocation of port and development of lands
- Full relocation of Dublin port.

Their economic option appraisal identified complete relocation of the port as the best long-term strategy for Dublin. The main reasons were the additional capacity needed but not available in Dublin port to maximise future economic growth and the potential to redevelop lands for residential and mixed use at a city centre location would improve quality of life in Dublin. While the costs of relocation and redevelopment would be high in the short-term, it was estimated that they would be more than offset by the long-term gains. Dublin Port Company has strongly criticised the proposal and stated that the proposal is flawed since the proposed location of the new port – Bremore – is not included in any national or regional spatial strategy. They state that relocation of Dublin Port should not be even considered until a new port is fully operational in order to minimise the disturbance to cargo transport<sup>35</sup>.

One of the DCC partial relocation option proposes that the **oil depot** in Dublin port would be removed and an oil pipeline should be installed from Dublin port to the north of Dublin. This would facilitate the release of a significant area of land for other purposes, however it is estimated to be a costly option.

Comhar SDC recommends that the proposal to move Dublin Port out of the city be seriously considered, as while there appear to be certain barriers to the relocation there also are expected net gains in the long term which are aligned with a more ambitious longer-term vision for Dublin city. Examples of successful implementations of similar schemes are seen in the move of Helsinki Port to Vuosaari, and the redevelopment of the docklands in Hamburg and Bilbao<sup>36</sup>.

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34 Indymedia blog (2006) "The Dublin Port Debacle" [online]. Available at <http://www.indymedia.ie/article/74910>

35 Dublin Port Company (2007) "Response By Dublin Port Company To The Dublin City Council Dublin Bay Study", November 30 2007 [online]. Available at [http://www.dublinport.ie/fileadmin/user\\_upload/documents/DPC%20reply%20to%20DCC%20Study%2030%20November%202007.pdf](http://www.dublinport.ie/fileadmin/user_upload/documents/DPC%20reply%20to%20DCC%20Study%2030%20November%202007.pdf)

36 [http://www.newheartfordublin.ie/intl\\_examples.html](http://www.newheartfordublin.ie/intl_examples.html)

There are clear social benefits associated with **rail freight** in comparison with road freight. The development of rail freight in appropriate areas should be financially supported with public money (from transport fiscal measures) if the benefits outweigh the costs from a societal perspective. Innovative solutions using existing infrastructure such as Luas lines at night for freight are possible options that should be given consideration.

Overall, Comhar SDC recommends that significant policy and investment is needed to arrest the unsustainable development of freight transport in Ireland. A summary of the results of the freight transport seminar is provided in Box 3.

### **Box 3: Main Recommendations from Comhar SDC road freight transport seminar**

#### ***Design of roads:***

- The damage associated with HGVs is higher than for passenger cars and so their use on non-national roads should be restricted as is the case in many EU countries.
- A motorway strategy for Ireland is needed – motorway planning has been very piecemeal and now we have situations where motorways run alongside national roads.
- Bicycles and HGVs should not mix. Proper cycle lanes are needed to ensure that bicycles are separate to traffic. Bus lanes could be dedicated commercial traffic corridors in off-peak hours.
- The social cost of bigger (super-) trucks needs to be examined to test whether they are a good idea.

#### ***Reducing CO<sub>2</sub> emissions from freight transport:***

- Without an alternative to road freight there is little chance of achieving reductions in freight transport CO<sub>2</sub> emissions – rail freight needs to be developed. After construction goods, consumer goods are the biggest volumes of freight moved in Ireland. Because of the population densities and distributions in Ireland road freight distribution will remain the most practical method for many locations in Ireland. Almost all rail trips begin and end with a road trip.
- Improvements in efficiencies due to better supply chain management could contribute to carbon emission reduction rather than add to costs as is now the norm.
- We need to change consumption patterns, in particular to reduce packaging.
- There is little incentive for haulage operators to pay a higher price for more environmentally-friendly vehicles.
- A regulator needs to be appointed to catch the illegal operators. Enforcement of the present regulations is currently the main problem.



**Rail freight**

- Rail freight has not been successful partly because it is not harmonised across EU. Signalling and track gauges differ across countries and this makes it difficult to transport by rail across multiple countries.
- It could be possible to transport freight by rail on old passenger lines in goods vans. Irish Rail already does this to distribute car parts. Perhaps a freight carriage could be put on passenger trains.
- Turn times on passenger trains may not be suitable for freight transport. If this is so then the Luas lines should be considered, as they are not utilised at night. In Amsterdam urban passenger rail is used for freight also.
- There should be a rail head at Spencer Dock to facilitate rail transport freight.

**Suggestions for government intervention:**

- There are many small freight transport operators with little coordination so external leadership and funds are needed to establish a municipal freight distribution centre facilitating night deliveries.
- An independent/state container depot is required that can operate 24 hours a day; currently many of the operators have long leases in Dublin port and close at 17.30, which makes night deliveries very difficult.
- A subsidy could be given to night-time deliveries and retro-fitting low-noise technologies (as they do in Holland with the “PEAK” Project).
- Put in an oil pipeline from Dublin port to north of Dublin to replace the oil depot in Dublin port.
- Put in school bus services in urban areas.
- A north-south corridor is needed from Dublin airport to Sandyford, investigation is needed to assess whether the metro/Luas will be able to take freight.

**Other Infrastructure Issues**

It is necessary to make **public transport attractive**. Integrated ticketing has been discussed for the GDA since the mid 1980s; it should be implemented as soon as possible, i.e. immediately. Real-time information on bus routes would also improve the reliability and attractiveness of bus services.

Review is needed of the amount and design of **motorways** under construction or planned. In particular optimisation of the use of existing motorways should be prioritised over building new motorways.

An assessment should be carried out of the potential for **electric plug-in vehicles** to reduce Irish transport greenhouse gas emissions and the infrastructure required for greater take-up of this technology. There have been several recent studies showing that there may be great advantages associated with the wide use of electricity in transport,

particularly in passenger cars<sup>37</sup>. From a thermodynamical perspective, electric vehicles that run solely or partly on grid-connected electricity are more efficient and less greenhouse gas intensive than all alternatives, even in the current situation where most power is generated using fossil fuels. As more renewable fuels are used in electricity generation the comparative efficiency advantages of electric vehicles will continue to improve. RD&D into this and other advanced vehicle technology should be supported in Ireland.

### Recommendations on Biofuels

There are currently several funding mechanisms available in Ireland for biofuels production. The Mineral Oils Tax Relief (II) scheme was announced in Budget 2006 and there were over 100 applicants with 16 successful projects. At full capacity in 2008 the Department of Communication, Energy and Natural Resources expect that the scheme will result in 2% market penetration of biofuels in the transport fuel market, resulting in potential savings of over 1.2m tonnes of CO<sub>2</sub> emissions over the five years of the programme. In 2007 the Government announced the introduction of a biofuels obligation scheme in 2009 and we await details of this. Farmers are also incentivised by a new €6 million bioenergy scheme to top-up the EU energy crop premium. The Department of Agriculture and Food announced that farmers will receive an additional €80 per hectare on top of the existing €45 premium<sup>38</sup>. At EU level, the new climate change and energy policy package proposed by the EU Commission included a biofuels target for all Member States of 10% by 2020.

However there is growing evidence disputing the sustainability of biofuels on a number of levels and debating the wisdom on the whole of binding ourselves to biofuels as a way to reduce greenhouse gas emissions from transport. The main issues are whether biofuels really deliver significant CO<sub>2</sub> emissions savings from transport, at what cost, whether there is enough available land to produce the amount of energy crops needed to make a significant dent in fossil fuel substitution, whether biodiversity is put at risk as a result of intensive energy crop cultivation both in Europe and in the developing world, how governments should treat biofuels imports, and how biofuels production will compete with food crops for land resources? The subsidies needed to make biofuels competitive are high, and if less CO<sub>2</sub> emissions savings are achieved than expected, then the cost per tonne of CO<sub>2</sub> emissions actually abated will be very high (between €200-€1000 per tCO<sub>2</sub> abated<sup>39</sup>) even for the transport sector.

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37 See the following: Ryan, L. and H. Turton (2007) "Sustainable Automobile Transport", Edward Elgar Publishing, Cheltenham, UK; WWF International (2008) "Plugged In: The End of the Oil Age", Available at [http://assets.panda.org/downloads/plugged\\_in\\_full\\_report\\_\\_\\_final.pdf](http://assets.panda.org/downloads/plugged_in_full_report___final.pdf); and the soon to be released (27 May 2008) SEI report on the subject.

38 <http://www.dcmnr.gov.ie/Press+Releases/Dempsey+Announces+New+Biofuel+Obligation+to+Reduce+Harmful+CO2+Emissions.htm>

39 Lisa Ryan, Frank Convery, Susana Ferreira (2006) "Stimulating the use of biofuels in the European Union: Implications for climate change policy", Energy Policy 34, pp. 3184-3194.

The Department of Communications, Energy and Natural Resources estimate that to substitute 2% of transport fuels with biofuels would mean using 18% of the tilled land of Ireland for energy crops<sup>40</sup>. Therefore it is highly improbable that 10% substitution (the government's target for 2020) can be achieved with Irish feedstock and crops alone. If this is the case, it will be necessary to import biofuels from elsewhere.

These points raise some serious issues about subsidising large quantities of biofuels production. However, the signs are there that the next generation of biofuels, so-called "second generation biofuels", will be much more energy-efficient and cheap to produce than the current crop and so it may be that by investing now in costly first generation biofuels, we are investing in the future and paving the way for future technological solutions to the transport problem.

Clarity is needed about the objectives of government biofuels policy. Comhar SDC recommends that Irish biofuels targets be formulated to incentivise environmental performance. The European Parliament has recommended that the 10% biofuels substitution target be replaced with one that sets as its goal a 10% reduction of greenhouse gas emissions from transport through biofuels. Irish government policy should do likewise so that environmental performance is rewarded rather than an arbitrary volumetric quantity of biofuels with no idea of the actual impact on greenhouse gas emissions. Sustainability criteria should be adopted and used as a minimum standard for biofuels supplied to the market.

## Information

With infrastructure and fiscal measures designed to promote sustainable transport in place, **good information** is key to make people aware of the choices they face.

Consistent, simple **environmental labelling** should be provided on all new vehicles sold. Vehicle labelling at the point of sale is imperative so that consumers can make informed choices when purchasing vehicles. Under the European Directive on CO<sub>2</sub> labelling of passenger cars, dealers are required to put a label on all new vehicles for sale reporting the CO<sub>2</sub> emissions. Good information permits customers to take greenhouse gas emissions and fuel consumption into consideration in making purchase choices. Without knowledge of the CO<sub>2</sub> emissions characteristics of a vehicle, it is more difficult for purchasers to evaluate any fiscal incentives that may be available for low CO<sub>2</sub>-emitting vehicles, or to exercise their desire to purchase a less environmentally damaging vehicle. For this reason, it is important that complete and transparent information be provided on the features of vehicles during and before the purchase. CO<sub>2</sub> emissions and fuel consumption labelling enables purchasers to compare vehicles

40 <http://www.dcmnr.gov.ie/Press+Releases/Dempsey+Announces+New+Biofuel+Obligation+to+Reduce+Harmful+CO2+Emissions.htm>

on the basis of these characteristics. This tool complements other demand measures such as fiscal incentives. Labelling can also encourage vehicle manufacturers to improve the CO<sub>2</sub> performance or other characteristics of their vehicles (Menanteau 2003).

Worldwide, labelling has been used to rank domestic energy-using products such as refrigerators, washing machines, cookers, dishwashers and so on in terms of energy efficiency. There is a substantial literature on the influence of energy labelling on consumers' purchasing decisions, the conclusions from which may be relevant to CO<sub>2</sub> emissions and fuel economy labelling of passenger cars. For example in Japan, the New Energy and Industrial Technology Development Organization (NEDO) has created the 'CEV Eco Delivery Label,' which is to be attached to goods and packages that have been delivered using clean energy vehicles (CEV). The label is certified in each case by NEDO and the delivery companies can be required to report on how the labels are being used. The label can be put on goods delivered, for example, by shipping or delivery companies, which deliver to local government offices or companies using trucks fuelled by compressed natural gas (CNG). The Tokyo metropolitan government and six prefectures and cities, including Kyoto and Osaka prefectures and Kobe City, have requested that only 'green delivery'—using eco-friendly vehicles—be used for goods that they purchase. NEDO is hoping that the new label will raise citizen awareness about low-emission vehicles.

In Europe, the Parliament and Council initiated the second pillar of the European strategy to reduce greenhouse gas emissions from passenger cars, when it adopted the European Directive on labelling in 1999<sup>41</sup>. This Directive promulgates consumer information to be made available in the form of fuel economy and CO<sub>2</sub> emissions labels, guides and posters in car dealer showrooms from 18 January 2001. The amended Directive on labelling requires dealers to provide information on fuel economy and CO<sub>2</sub> emissions to consumers via television, radio, and the internet, as well as electronic storage devices such as videotapes, DVDs and CD-ROMs<sup>42</sup>.

Car dealers are required to ensure that a label on fuel economy and CO<sub>2</sub> emissions is attached on or displayed near each new passenger vehicle on sale. The car showroom should contain a poster listing and ranking all the vehicles sold at that outlet according to fuel consumption and CO<sub>2</sub> emissions. Additionally, a complete guide to the fuel consumption and CO<sub>2</sub> emissions from all passenger vehicles offered on sale in that Member State must be available in the form of a portable booklet free of charge to customers.

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41 Directive 1999/94/EC of the European Parliament and of the Council of 13 December 1999 relating to the availability of consumer information on fuel economy and CO<sub>2</sub> emissions in respect of the marketing of new passenger cars.

42 Commission Directive 2003/73/EC of 24 July 2003 amending Annex III to Directive 1999/94/EC of the European Parliament and of the Council.

The Commission has issued general guidelines on the design of the CO<sub>2</sub> labels, requiring the presentation of values of the fuel economy, CO<sub>2</sub> emissions and the model and fuel type of the passenger car. There is a growing literature on the subject of green- and eco-labelling that suggests that clearer “washing-machine” style labels are usually better understood by consumers than pure information-disclosure labels. ‘Experience has shown that the proportion of consumers who are willing and able to use technical information effectively is low’ (Banerjee and Solomon 2003). In addition, the European labelling directive requires that Member States produce a guide incorporating the values of all vehicle models’ fuel consumption. The guide provides an opportunity for customers to compare CO<sub>2</sub> emissions and fuel consumption of vehicles across all makes and size classes and theoretically encourages a shift to more fuel-efficient vehicles. In Ireland the Society of Irish Motor Industry has been given responsibility for the production of the guide and implementation of the labelling directive. While a 2008 listing of CO<sub>2</sub> emissions from vehicle models sold in Ireland is available on the internet, there is no government website such as that available in the UK or the United States to help consumers find the most efficient vehicle under various criteria.

It is difficult to estimate the effectiveness of fuel consumption labelling (Vine *et al.* 2001). The literature suggests that labelling is most effective when there is government involvement to win consumers’ confidence (Banerjee and Solomon 2003). Publicity is also important to gain consumer awareness and to impress upon manufacturers the significance of the programme. Good label clarity helps consumers make the right choices and incentives to do so, such as tax relief, are an added bonus.

EU Member States are required to report on the effectiveness of the labelling Directive following specific guidelines on the reporting format. The German automobile association ADAC collated the preliminary results (ADAC e.V. 2004), which include information on the status of implementation of the Directive in the Member States, any fiscal measures that affect car purchase decisions, as well as the effectiveness of the initiative, as judged by the individual Member States. In general, in most Member States it is the responsibility of the car manufacturers to supply the label and poster, whereas the guide tends to be produced by national Ministries or an independent authorized institution.

The results of surveys carried out on the effectiveness of the Directive show that the main factors influencing car purchase decisions in the EU are car reliability, safety, comfort, and cost/price ratio. The fuel economy is only relevant in so far as it affects the cost of running the vehicle. Many countries say that customer awareness of the label, poster and guide is low and that the foremost sources of information are dealerships, sales brochures, car magazines and recommendations by family and friends. Customers prefer a label which:

- Compares the fuel efficiency between different cars in the same market segment
- Rates the vehicle using a simple energy rating system (A to G, for example)

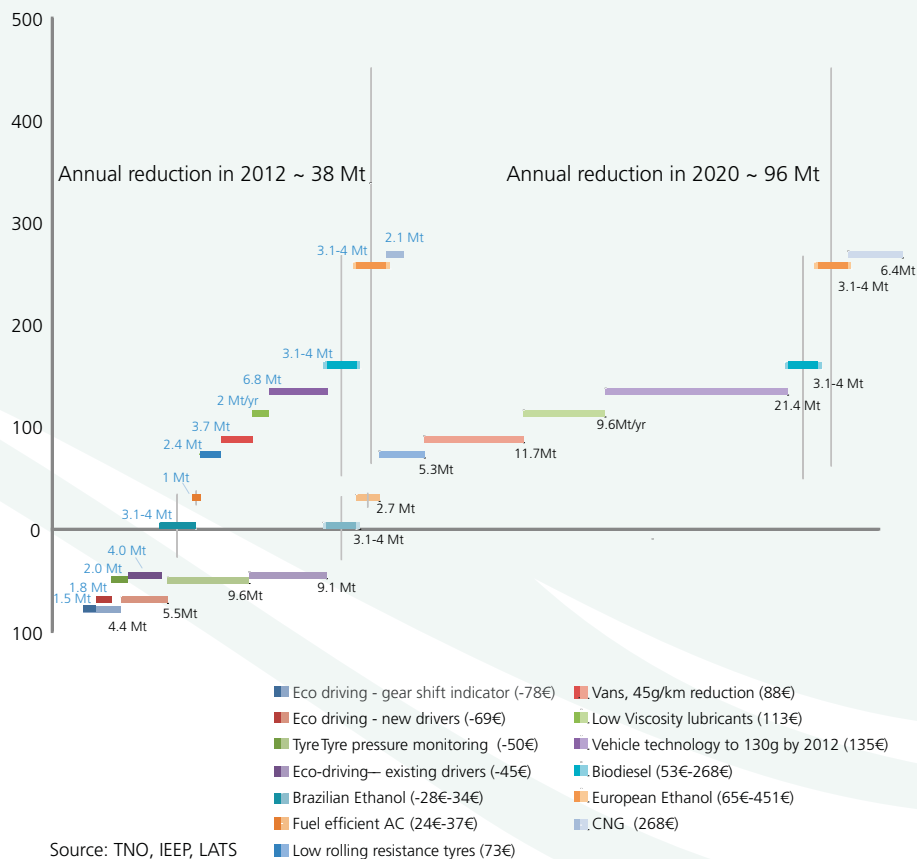
Member States made proposals to improve the effectiveness of the labelling Directive. The main proposals are the following:

- Consumers need to be made further aware of fuel economy, CO<sub>2</sub> emissions and the information tools available to them through this Directive.
- Dealers need to be informed about the requirements and rationale of the Directive's provisions. Often the poster is ineffective since its production and updating requires too much effort and is not in line with the dealers' ideas for their showroom.
- Harmonization of the content and design of information tools would simplify the issue for manufacturers and reduce costs since the labels could be attached at the vehicle production stage.
- Harmonization of an energy-rating system for all vehicle labels would make vehicle labels more transparent for consumers. This is also corroborated in a previous study (Boardman *et al.* 2000).
- Since cost is a high priority for consumers when purchasing a vehicle, the fuel consumption and CO<sub>2</sub> emissions should be converted to vehicle running costs on the label.

From these first reports on the effectiveness of the labelling Directive, it appears that in the EU most policymakers regard this instrument as underperforming and not achieving the reduction potential desired. It is difficult to judge the effectiveness of any instrument in isolation from the other factors that are in place concurrently. It seems imperative that the information on technological advancements in passenger cars reaches consumers. Comhar SDC recommends that responsibility for the production of clear labelling of vehicle CO<sub>2</sub> emissions be assumed by the Department of Environment and that there be a simple internet site given publicity during the Power of One campaign, which allows consumers to find the most efficient vehicle model suitable for their needs.

**Ecodriving** training for private and commercial drivers should be obligatory at the time of first licensing. Ecodriving is a low cost policy measure to reduce CO<sub>2</sub> emissions from transport. When marginal abatement cost (MAC) curves for the transport sector are compared in Figure 3, it can be seen that ecodriving initiatives can have negative costs to society, thus making it an attractive alternative in a sector with relatively high abatement costs compared with other sectors.

**Figure 3: Comparison of cost of passenger car CO<sub>2</sub> emissions mitigation measures (OECD 2007)**



Ecodriving is part of the Power of One campaign but it should not only be promoted but should also be integrated into driving license training and testing for both commercial and private drivers. More details are included in the report on the Comhar seminar on “Soft” transport policy measures in the Appendix.

All firms with a large number of employees should be obliged to provide **workplace travel** plans. Workplace travel plans work by focussing on the user at the centre of trip generation to induce travel behaviour change within the existing transport context. The objective is to maximise use of existing transport resources and reduce single occupancy car use. This is done by removing the existing barriers to using sustainable modes while adding barriers to car use. Workplace travel plans can be used to address multiple challenges facing businesses such as a scarcity of employee parking, a lack of accessibility due to congestion, lack of space forcing land acquisition, and a difficulty in encouraging employees to travel with other modes of transport than cars. There should be a central service in each city providing support to firms and people not working for big firms.

The UK, Austria, the Netherlands, Sweden, Switzerland, Germany and France are good examples of best practice in Europe in mobility management and policy. As a result of this work the following recommendations on soft measures are made to Government:

- 1) Introduce Commute Trip Reduction legislation. Extend existing requirement for travel plans beyond a development control requirement;
- 2) Make existing Employer Travel Pass Scheme mandatory in organisations with large numbers of employees and promote or make explicit the cost savings;
- 3) Extend Travel Pass Scheme to universities. Embed the cost into student enrolment fees;
- 4) Impose workplace car parking charges within canals. Make parking subject to benefit in kind;
- 5) Support niche markets for alternative travel services.

**Real-time information** should be rolled out for all modes of public transport in order to improve the attractiveness of public transport, in particular of buses.

**Data collection and modelling** is needed for transport. It is difficult to design policy without proper evidence-based analysis of our performance in transport service delivery and its sustainability. Data on freight transport and non-road modes is particularly weak and there is no modelling of transport and the impact of policies on the sector at a national level. There is some collection of transport by several agencies such as Sustainable Energy Ireland, DoEHLG, CSO, DoT and NRA, however Comhar SDC recommends that a centralised transport data centre be established to collect all transport data, which can be made available to researchers and policymakers working on transport issues. In affiliation or perhaps attached to the data centre Comhar SDC recommends (as have others before, see ICF-BOC 2006 report) that there should also be a transport modelling centre so that Irish transport scenarios can be modelled for the future. Without proper transport modelling it will be very difficult to design effective policies for sustainable transport in Ireland.



## Integrated Land Use and Planning

Poor planning without heed to transport requirements has created much of the residential sprawl throughout Ireland and led to car dependency. **Land use and planning** must be aligned with the **National Spatial Strategy** and **integrated** into transport decision-making and vice-versa. This may require reform of institutions related to transport so that land use and transport planners work together. More formal legislation may be needed to ensure that there is good planning and transport policy and infrastructure integration. Better planning could have a significant impact in reducing transport needs in the longer term. Box 4 provides some recommendations from Comhar SDC members on better planning practices.

### Box 4: Some examples of specific Comhar SDC suggestions for Planners

- Limit the development of shopping centres in locations where car is the only transport mode.
- Concentrate shopping in locations with high accessibility, i.e. near settlement business centres.
- Restrict the growth of satellite settlements to grow further.
- Ensure maximum within-settlement accessibility by non-motorised transport modes.
- Avoid planning residential areas around roads but rather build roads which require slow speeds [lots of humps, bends, never long vistas etc.
- Industry sites should not “stand alone” but rather be clumped together in eco-parks.
- Plan mixed-use multi node settlements.
- Demand a much greater amount of money from developers to pay for infrastructure such as schools, local shops, local sports facilities, parks etc. to reduce the need for journeys.
- Grow towns bigger so as to hit critical mass necessary for efficient public service provision.

Additional ambitious but realistic ideas are available at: [www.communities.gov.uk/publications/housing/ecotownsgreenerfuture](http://www.communities.gov.uk/publications/housing/ecotownsgreenerfuture)

## Rural Transport Policy

In Ireland, rural travel accounts for 86 percent of vehicle-kilometres driven annually (McDonagh 2006) and therefore comprises a very large share of passenger car CO<sub>2</sub> emissions. If Irish transport is to become more sustainable then it will be necessary to improve the sustainability of rural transport by reducing the amount of individual vehicle kilometres driven while improving mobility and accessibility to services.

However, the quandary of rural transport is this – there is a reason that so many kilometres are driven by car in rural Ireland and that is that there is often no alternative way to get around. How do we reduce emissions from rural transport without undue hardship to the people living there? The key is to implement a transport system that is sustainable in every sense – one which provides access to services and public transport to most areas, thereby reducing the need for car driving and improving the quality of life in rural communities.

The design of transport policy for rural areas presents several challenges. Settlement patterns in Ireland are different to those in the UK or on mainland Europe where rural communities tend to be centred on a village or croft. In Ireland there is generally a dispersed settlement pattern in rural areas, which makes it difficult to provide accessible services to the rural population. Car ownership is universally higher in rural areas (86.2 percent) than in urban areas (73.3 percent) of Ireland (CSO 2003). However for many people there is no accessibility to a vehicle leading to social exclusion. As stated by Gray *et al.* (2001):

*“Increasingly, accessibility is dependent on the mobility afforded by cars, with rural households becoming more reliant on their vehicles to access goods, services, recreation facilities, employment and further education.”*

Therefore if we are looking at reducing the number of kilometres driven in rural Ireland, policy measures must focus on improving both accessibility and mobility without the use of cars. However, at the outset it should be stated that rural communities are not homogenous and they vary substantially in terms of economic and social situations.

Of those currently driving, it is important to distinguish between the different reasons people use cars. People can be said to be *structurally dependent* when they have no alternative to the car to travel, i.e. there is no public transport serving their location or if there is it is too infrequent or inflexible for their needs. Other drivers are said to be *consciously dependent* on cars when they choose to drive over making use of available public transport systems for reasons of comfort, flexibility speed etc (McDonagh 2006). We do not know what the split of drivers in these two categories in Ireland is and so it is assumed that both must be addressed to reduce rural vehicle kilometres travelled.

For those geographical areas where there are few or no public transport alternatives to driving (i.e. where drivers are structurally dependent) then the focus must be to facilitate and support alternative modes of transport. There is evidence that there is significant deprivation in rural Ireland with two thirds of the economically poor living in rural Ireland and almost a quarter of farm families living with an income of below the minimum wage (McDonagh 2006). Gray *et al.* (2001) in their paper examining transport in rural Scotland find that “poor rural households often make considerable financial sacrifices to own and run vehicles, and that car ownership is higher among the rural poor than the urban poor”. By reducing the need for a car through alternative transport

modes, there is the benefit of not only making transport more sustainable in terms of the environment, but it also can relieve low income households of the necessity to own and operate a car.

The flip side of the coin to this is that any measures designed to make car travel more expensive or difficult must ensure that there is not unfair hardship on lower socioeconomic groups in all geographical areas. Any compensation however should not counteract the overall objective of the fiscal instrument, namely to reduce the incentives for unsustainable travel.

### **Comhar SDC recommendations on sustainable transport in rural areas**

Rural areas should not be exempt from a national road pricing scheme or other fiscal measure designed to incentivise more environmentally-friendly travel. However, revenue collected from the scheme should be ring-fenced to improve alternative modes of transport and to provide compensation to those suffering undue hardship.

The Rural Transport Programme currently provides funding for 34 community-based groups for local transport services. The main objective until now for the scheme was to provide transport services to socially-excluded groups rather than the provision of transport to those travelling on a regular, even daily basis to their place of work. Therefore the scope of the programme is limited and is not intended to compete with commercial services nor does it cover all geographical areas. Consultants Fitzpatrick and associates (2006) in their review of the scheme show that the scheme has been successful in providing flexible community-based transport services to the socially excluded in rural areas. They discuss three options for a future extension of the scheme and they recommend that in the short-term the scheme should be changed from a pilot programme to a permanent scheme with broader coverage of socially-excluded groups. This option would target services that specifically meet a more broad range of the needs of socially excluded groups, including older people, people on low incomes, people with mobility, sensory and cognitive impairments, or young people. In the longer-term however, they recommend that the target group coverage be extended to include all potential users of rural transport. Services would therefore not be targeted solely at the socially excluded, however defined, but could also provide services for work purposes, for example.

The Fitzpatrick report showed that full funding of a rural transport programme for all users in 2016 could achieve a market share of over 30% in rural areas (from the current 4%). However, they also state that such a scheme would require substantially increased funding, which could be earmarked from the revenue generated through road pricing or other fiscal measures promoting sustainable transport. If it were decided not to expand the RTP to include more “regular” services then another mechanism would be needed to plan and implement increased transport services for rural dwellers commuting to nearby centres or places of employment. Once regular transport services

are in place, mobility management measures such as mobility centres<sup>43</sup>, integrated ticketing, and individualised travel marketing can be implemented.

On the governance side, it is necessary that the main government departments and related agencies such as the Department of Community, Rural and Gaeltacht Affairs (DoCRGA), the Department of Transport, Póbal, and the Department of Environment, Heritage and Local Government work together to provide an overall strategy to find a solution to transport in rural areas. A national rural transport policy is necessary to provide strategic guidelines which incorporate the issues of integrated planning with transport to encourage clustering of settlements in a way that will facilitate transport services; local authority involvement in the RTP and local transport services; and the provision of infrastructure. However, while national policy should set overall guidelines and provide a funding structure, as mentioned above rural communities are not homogenous and so the design of local transport services will need to be determined at local level. This has been key to the success of the RTP in targeting individuals with unmet transport needs. The national coordinator should provide expertise to local groups setting up transport services.

It is important that any rural transport programme begin to coordinate with commercial transport operators such as Bus Éireann so that services can be scheduled in complement to rather than in competition with existing services. It is recommended that community groups organizing transport services align with existing development or other local organisations with established management and governance structures. Examples would include LEADER groups, Partnership companies, local authorities and new “unified structures” currently being developed under the cohesion process.

Improving mobility is often a key objective in rural transport policy, however accessibility to important services is just as important in the context of sustainable rural communities. If shops and services are located close by, then there is less necessity for transport services. In the absence of accessibility strategies, improved mobility may even have a detrimental effect on local communities, where people take public transport to the next urban conglomeration and reject the local shops available. 344 post offices have closed in Ireland over the past 7 years. Overall, nine counties have lost at least 30% of their contractor-operated offices since the beginning of 2002, the greatest declines being recorded in Leitrim, down 41%, and Cavan, Sligo and Westmeath, each down 40%.<sup>44</sup> The Interdepartmental Working Group established by the Minister for

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43 Mobility centres are facilities which provide information about existing public transport services and assist in determining a best possible transport option based on an individual's needs. “In small towns and villages there is a basic lack of acceptance for non-car transport options. The first priority when introducing mobility centres in rural areas would thus be to try to establish public transport as a genuine alternative to the car with potential users.” (Gronau and Kagermeier (2004).

44 Vincent de Paul (2008) “Vincent De Paul Says Post Office Closures Increase Dangers Of Isolation And Vulnerability”. <http://www.svp.ie/index.cfm/loc/4/articleId/AB214FE0-E446-25EB-10BA1C054641DDF1>

Public Enterprise to determine a basis for the sustainable operation of the Post Office network recommended that the structure of funding to post offices (particularly in rural areas) change from fixed retainer costs to variable cost<sup>45</sup>. They also recommended that

- “Departments and Agencies should develop a Government Services Outlet model in conjunction with local authorities for implementation on a phased basis nationwide over a two-year period.” Therefore in areas where a post office was closed down, there would be a Government Services outlet in place instead.
- Allowing any acceptable retailer, in future, to be a virtual post office could do more to provide good quality and accessible services in rural Ireland than maintaining the existing network of under-utilised offices.”
- Establish a universal banking service at post office points and obtain funding from the banking sector to do so.

These measures recognise the social value of having a local facility such as a post office nearby even if it is not commercially viable and they attempt to address the closure of post office by changing their funding structure. Gronau and Kagermeier (2004) discuss the experience with mobility management measures in Germany and find that when there is a high degree of population dispersion it is not practicable to put in place large centralised mobility centres and recommend that mini-mobility centres be integrated with other services across more communities. More, localised service centres providing perhaps more limited but broader services incorporating post offices, banking, mobility centres and shopping is preferable to local rural communities than larger centralised services with limited access. As listed in the previous section, alternative modes to motorised transport such as cycling and walking must also be facilitated by providing safe cycle paths, footpaths and lights. If people do not feel safe walking or cycling then they will continue to use their car, even for very short trips. Box 5 provides a summary of the recommendations arising from the Comhar SDC seminar on rural transport and social exclusion.

**Box 5: Recommendations of Comhar SDC seminar on rural transport and social exclusion – September 21 2008**

***Ineluctable trends, intractable problems?***

Rural Ireland’s transport challenges are the result of decades of development, personal preferences, policy decisions and policy and planning mistakes. Rural transport is forced to deal with the legacy of planning mistakes going back 20-30 years, as seen especially in urban-generated rural housing and urban sprawl that has spread cities’ commuter belts deep into the countryside. Perhaps the greatest legacy is the increasing car-dependency of much of Ireland, urban and rural. But addressing the externalities of the planning system will be necessary, even if difficult.

45 Report of the Inter-Departmental Post Office Working Group, 23 July 2001 <http://www.dcmnr.gov.ie/NR/rdonlyres/82E1B276-3711-4159-B8DA-FA90EA80F963/0/AnPostWorkingGroupReportfinal.pdf>

***Current policy initiatives are on the right track, but inadequate***

Current policy initiatives, although often positive, are inadequate to meet the challenges of rural transport. Transport 21 is increasingly acknowledged to be inadequate to bring about a sustainable transport system. Likewise, the Rural Transport Programme, which is based on the assumption that local communities do know best when it comes to their transport needs, is not sufficiently holistic because it is an almost entirely bottom-up approach, depending on the demands and initiatives of self-organising community groups. Such a demand-driven approach has many merits but it should be accompanied by a more integrated policy approach that involves excluded groups more systematically and operates across all relevant sectors, including all relevant government departments, local authorities and large employers such as universities.

***The importance of land-use planning***

Inadequate spatial planning in the past is at the heart of many of the problems of rural transport in Ireland, but there are opportunities to address this. Providing safe routes to schools will be essential to give parents the peace of mind to allow their children to walk or cycle to school, if they are not being bussed. It is difficult and expensive to retrofit good design principles – bicycle paths, schools, recreation areas – into existing developments, so developments should include these services as a matter of course.

***Obstacles***

Existing regulatory structures can impede the development of promising public-transport solutions. Under the 1932 Act that governs taxis in Ireland it is illegal for a taxi driver to collect several passengers along a single journey, even though such an approach might be more efficient than a dedicated public-transport service along the same route.

Equitable policy instruments are needed to encourage sustainable transport. There is a particular need to consider the impacts of transport pricing on rural areas. An equitable carbon tax would require that the tax's revenues are recycled to society by some means. This could include using the revenues to increase funding to rural public transport or measures to encourage more clustered spatial development. Another approach would be to compensate rural residents directly through a tax rebate or increased social-welfare payments. Ultimately, however, a carbon tax is intended to correct a market failure by causing fuel prices to reflect their external costs, so any compensatory mechanism should not act as a subsidy for dispersed rural housing.

***A national policy framework is required for rural transport***

The Sustainable Travel and Transport Action Plan provides an opportunity for innovative policy approaches and should lead to a national sustainable transport policy framework, which supports sustainable rural transport and communities.

A full report of this seminar is available in the Appendix.

In summary, Comhar SDC recommends the following initiatives:

- Devise a national rural transport action plan identifying lead department and agency with links to related departments;
- Acknowledge the need for substantial additional funds to implement a comprehensive rural transport service;
- Extend the scope and the funding of the RTP to include regular rural travel for work purposes by 2015;
- Identify potential groups to operate transport services across all counties;
- Target the optimisation of existing resources – for example, the availability of school buses for other uses during the day;
- Roll-out mobility management measures designed to fit specific community needs such as mobility centres providing information and advice (perhaps combined with other local services such as banking or post offices), integrated ticketing,
- Maintain local services in smaller communities, even if it means combining several services, such as post office, banking, shopping in a one-stop-shop facility;
- Encourage local businesses to provide transport services to the local area;
- Provide access to existing transport conventional services, i.e. put in low priced Park and Ride facilities at all bus and train stations;
- Link new local transport services (such as door-to-door call-on-demand transport) with mainstream transport nodes;
- Integrate transport considerations in the early stages of planning new residential and commercial buildings.

Finally, it should be noted that many of these recommendations require significantly higher funding than that currently available for the RTP. Without fiscal measures in place as part of transport policy, it is unlikely that there will be sufficient funding to cover new rural transport services. Therefore rural communities should view fiscal transport policies as an opportunity rather than a threat, as is often the case.

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# Appendix I

## Public Consultation Questions

We have attempted to answer the questions in each chapter by giving general comments and then referring, with the use of hyperlinks, to the text to answer specific questions. Overall it is not clear from the document which policy measures are planned with certainty and which are options just at the stage of consideration.

### From Chapter Three – Integrating Spatial Planning and Transport

#### Comments

The main strategies required to achieve better combination of transport and planning are mentioned but it is not clear how they can be achieved. For example, NSS is already meant to be aligned with NDP and Transport 21 but, as this document says, to date it hasn't worked. There needs to be an analysis of why this hasn't worked to date and what can be changed to address this. The document gives a general analysis of broad issues related to good land use and transport planning. However the specific issues to be addressed are not outlined.

**1)** What measures are required to better integrate land use and transport?

This is a very difficult question; there are many measures needed, for example better regulation, incentives to good practice and institutional capacity are all key issues.

**2)** How can the existing commuting patterns be tackled through spatial, regional and land use planning?

See the section on Rural transport policy in particular.

**3)** Does this issues document generally identify the key measures to be considered to better integrate spatial planning and transportation?

See comments above.

### From Chapter Four – Moving People

#### Comments

We agree with many of the points made in this chapter regarding the provision of transport infrastructure. However, unfortunately the information does not appear to be available regarding what the new infrastructure – Metro West, LUAS etc – will achieve in terms of taking people out of cars? Without these numbers it is difficult to judge whether they will be environmentally-effective or cost efficient.

The point made in relation to real-time information in Brussels is very well made and shows the value of information and certainty.

While €30m has been invested in cycling it clearly isn't enough since the strategy has failed. Cycling lanes have been created but not protected and do not seem to make people feel safe when cycling. In rural areas there is very little provision for cycling. As a result, we agree that safety is the main reason that people would not consider cycling.

The Copenhagen targets are interesting but even more interesting is how they will achieve them. Is there any information available on their strategy that may be relevant to Ireland?

Basically the number of people walking to work has remained constant but the number of schoolchildren walking has fallen dramatically and this may be due again to the safety issue.

- 4) How can existing bus and rail services be improved for customers? See link to Transport Infrastructure.
- 5) In addition to the investment in Transport 21, what other measures are needed to improve and expand services? See link to Transport Infrastructure.
- 6) How should these improved and expanded services be funded? See link to Fiscal Instruments for Sustainable Transport.
- 7) What further measures are needed to improve transport integration? See link to Transport Infrastructure.
- 8) Does this issues document generally identify the key measures to be considered in promoting public transport? Yes, see comments above.
- 9) What course of action should be taken to encourage more people to walk and cycle? See link to Alternative modes of transport to cars – Bicycling.
- 10) Does this issues document generally identify the key measures to be considered to encourage healthy travel options? Yes it does.

## From Chapter Five – Moving Goods

### Comments

The fuel efficiency of road freight has decreased over the period discussed. Normally you should expect a technical improvement of the new fleet of 1-2% per year but here there is a 3% increase in fuel consumption per road freight (units a bit ambiguous, probably per tonne); the reasons for this should be explored. There are other problems such as road damage on county roads due to freight transport which are not mentioned.

More details are needed on why rail freight share is so dramatically lower than in EU27. What are the reasons for this? If we are happy to accept this then some justification is needed, otherwise we need to examine the barriers to rail freight and address them.

Do regional airports carry much freight? We expect that it is mainly passengers and if so their discussion belongs in Ch 4, an aviation section is missing there.

How do shipping and air transport compare with road in environmental terms per tonne freight?

**11)** What are the steps needed to reduce the environmental impact of road freight?

**12)** What is the future for rail freight and how should it be supported?

**13)** Apart from action at international level, are there changes in current policy or additional national measures that can be taken to reduce the environmental impact of aviation and maritime transport?

These questions are addressed in the section Recommendations on freight transport.

## From Chapter Six – Additional Measures to Achieve the Vision

### Comments

There is a comprehensive outline of various policy measures available to address the transport sector. However it is difficult to see from this description, which are least cost and most effective? A multicriteria analysis of all measures is required. National policies and local policies should be discussed separately.

Regarding fiscal measures, the revenue generated should be used for sustainability-enhancing measures as well as to help rural/vulnerable groups. While CO<sub>2</sub> – differentiation of vehicle taxes has been implemented, ongoing review is necessary to see whether it is optimal or does it need changing? Product pricing can help consumers make the right product choices as well as changing behaviour.

Infrastructure charging/congestion charging and road pricing all need technological support; assessment is needed of whether we have the capability and resources. The DTO 2004 study on congestion charging shows that it could be very effective, discussion is needed as to why isn't it being implemented?

Good question on air subsidies; if we think we have to do this strategically then how to do it best for the environment?

A section 6.3.3 on good consumer information and labelling is needed and is crucial so that consumers have the information to go with fiscal incentives.

The discussion on demonstration towns should mention Transition towns and the possibility for overlap/collaboration.

Biofuels – there is no mention of biofuels obligation scheme due to commence in 2009 – what should be the overall strategy for Ireland here? SEI land resource study also relevant.

What is the objective of leasing one hybrid bus? There will be little achieved environmentally and any experience will be gained on one bus and may not be generalisable.

While we have little influence over fuel economy and other emissions standards, we can influence the prices consumers pay. The idea is to ensure that the best available technology is incentivised in advance of its becoming law. This is true of CO<sub>2</sub> emissions but also of other environmental characteristics, for example over the last 5 years in many countries particulate filters on diesel cars have been incentivised. This has resulted in all diesel cars sold in Germany and France having a particulate filter, while in Ireland it is still impossible to find a diesel car with one.

- 14)** What should be done to encourage more flexible working arrangements to reduce commuting travel? See Seminar 3: Transport demand management – “soft” policy measures.
- 15)** Should measures which influence behavioural change be made mandatory and, if so, which measures and in what circumstances? See section on Fiscal Instruments for Sustainable Transport.
- 16)** Will new fiscal measures be necessary to move to more sustainable trends? See section on Fiscal Instruments for Sustainable Transport.
- 17)** If so, what are the optimum measures? See section on Road User Charges.
- 18)** What regulatory measures might be necessary? Adjustment is needed to the biofuels scheme. See the section Recommendations on Biofuels.
- 19)** Does the issues document generally identify the key measures to be considered in changing personal travel behaviour? See comments above.
- 20)** What additional measures can be taken to promote fuel efficiency and alternative technologies? See Fiscal Instruments for Sustainable Transport.
- 21)** Does the issues document generally identify the key measures to be considered to promote fuel economy and alternative technologies? See comments above Fiscal Instruments for Sustainable Transport.

## From Chapter Seven – How Will a New Approach Be Delivered Effectively and to What Timelines?

### Comments

- The Dublin Transport Authority needs not only power but also financial resources.
- A central transport research and data centre needed.
- More work is needed on local/regional/national implementation options for transport. Cooperation is needed between local authorities, CIE, DoEHLG, and the DoT. Perhaps the Local Government Reform could address some of this.

**22)** What changes are required to institutional structures at national, regional or local level to meet the sustainable travel challenge? See comments above.

**23)** How can sustainable travel be best delivered at an all-island level?

**24)** Given the target date of 2020 in this document, what do you consider to be the short, medium and long-term priorities?

See the section Fiscal Instruments for Sustainable Transport and the related timeline. Once fiscal measures are in place, the funding for infrastructure will be generated and planned accordingly.

**25)** How ambitious should the targets be to achieve the vision set out in Chapter 2?

The targets need to be set extremely high in order to achieve the vision. Ireland was allocated a 20% reduction in the non-Emissions Trading sectors in the January Climate and Energy package by the European Commission. This would require emissions from the transport sector to be reduced to 10.4Mt CO<sub>2</sub> per annum by 2020, however the business as usual scenario shows that emissions could be 19Mt per annum by 2020. The gap of 8.6Mt per annum is very high, particularly in the context of the historical growth in the sector.

**26)** Does the issues document generally identify the key measures to be considered for the effective delivery of sustainable travel and transport?

Yes, however it is difficult to see how many of the key measures can be implemented without significant institutional reform, since many of the policies needed cross across several different Government departments under current arrangements.

# Appendix II Summary of Comhar SDC Transport Policy Seminar Series Reports

## Seminar 1: The role of walking and cycling in Irish transport policy

*Meeting report by Thomas Legge, 10 July 2007*

On 21 June 2007 Comhar SDC hosted a half-day seminar on “The role of walking and cycling in Irish transport policy” (agenda in Appendix 1). The purpose of the seminar was:

- To identify the potential role of walking and cycling in national transport policy, including by referring to international best practices
- To help Comhar SDC formulate policy recommendations to Government, specifically to feed into the upcoming Action Plan on Sustainable Transport

There were 37 participants, all with a professional interest in the subject of sustainable transport (see Appendix 2).

### 1) Presentations

**Matthew Page**,<sup>46</sup> University of Leeds (Institute for Transport Studies), provided an overview of some modelling work on cycling and walking and the assessment of cycling and walking schemes in appraisal. He described a disaggregate model of cycle commuting developed by the Institute and based on revealed preferences and stated preferences of individual commuters gathered from a range of sources. This model estimated people’s willingness to cycle to work based on the provision of cycle facilities of different kinds and other factors and could therefore be used to estimate how changes in these factors would affect cycling to work for journeys of 12km or less. The work suggested that about 60 percent of people could not be persuaded to cycle under any circumstances. For the remainder of the population the provision of segregated off-road cycling facilities for half the journey would increase the modal share of cycling from 5.8% to 7.0% of all relevant journeys and making a daily payment of £2 would increase it to 10.9%. The greatest impact results from a package of different measures (17.8%), which implies that an integrated policy approach to cycling would be most effective. An aggregate model of cycle commuting was also described, which used the 2001 UK census data to elicit relationships between ward level features and cycle commuting behaviour. Hilliness was found to have a large effect, of the policy sensitive factors, length of off road cycle route had a significant effect, but not as pronounced as in the disaggregate model. Some recent work on the valuation of features of the pedestrian environment was also presented. The remainder of the presentation

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<sup>46</sup> Matthew Page, Institute for Transport Studies, University of Leeds, Leeds, LS2 9JT, United Kingdom. Tel: +44 113 343 1789. Email: M.Page@its.leeds.ac.uk

was an overview of the development of a methodology for appraising the walking and cycling schemes so that they can be compared and prioritised. As well as some impacts traditionally valued in appraisal, the method suggests that journey ambience (environmental quality and lack of danger from motorised traffic) and physical activity benefits can be very significant for cycling and walking schemes. The methodology has been used to assess three case studies which suggested these cycling and walking schemes have very high benefit-to-cost ratios:

PROJECT	COST	BENEFITS	NET PRESENT VALUE	BENEFIT-TO-COST RATIO
Upgrade of existing 1km traffic-free route	£111,724	£1,455,057	£1,343,333	<b>13.0</b>
Upgrade of 6km of canal towpath with high commuting	£1,126,712	£24,891,736	£23,765,024	<b>22.1</b>
New Toucan crossing	£195,574	£2,296,463	£2,100,889	<b>11.7</b>

**Niels Jensen**,<sup>47</sup> City of Copenhagen, provided examples of international best practices for cycling from Copenhagen, Denmark. Copenhagen experienced a steady decline in numbers of cyclists from the 1950s until the 1970s, when the number of cyclists entering the inner city every morning dropped from 45,000 to about 5,000. From 1980, partly in response to massive public demonstrations that raised the profile of cycling as a mode of transport, successive policy interventions have seen a rise in cycling to current levels of about 20,000. Policy measures include a national cycling policy, the provision of high-quality infrastructure like cycle paths and bicycle-parking facilities, and traffic-management measures like the “green wave for cyclists”, by which traffic lights are timed to accommodate an optimal average bicycle speed of 20 km/h. Overall, about one third of Copenhagen’s commuters travel by bicycle, with a further one third travelling by public transport. A political target adopted in spring 2007 foresees a rise in the modal share of cycling to 50 percent of all trips to work and education. This is a highly ambitious figure that will require not just infrastructure improvements but also punitive measures like introducing parking fees and road pricing.

**Damien Ó Tuama**,<sup>48</sup> Colin Buchanan Transportation Consultants, spoke about what needs to be done at the levels of Local Authorities and Government departments and agencies to promote cycling. O Tuama has worked with many local authorities in Ireland on the BYPAD (Bicycle Policy Audit) project, which evaluates bicycle policies across 25 European countries according to criteria ranging from planning to actions to the effects of cycling policy. The essential assumption of the BYPAD audit is that cycling

47 Niels Jensen, Traffic Department, City of Copenhagen. Tel. +45 3366 3500. E-mail: niejen@tmf.kk.dk

48 Damien Ó Tuama, Principal Transportation Consultant, Colin Buchanan Transportation Consultants, 8 Windsor Place, Dublin 2. Telephone 01 6693628. Email Damien.otuama@cbuchanan.ie



policy is a dynamic process and depends on many mutually supporting components. Those countries with well developed, comprehensive cycling policies are more likely to increase their cycling numbers. Under **planning**, cycling policies depend on leadership from politicians and senior officials. It is also essential that the necessary personnel are available to develop and, more importantly, implement policies. **Actions** include the provision of safe and attractive cycle-friendly infrastructure but also complementary measures like bicycle maps, bicycle training for children, awareness-raising events, and communication strategies. Finally, the audit assesses the **effectiveness** of cycling policy. This would include monitoring cycling numbers, cycling accidents, and the quality of projects implemented. The audit concludes with detailed recommendations for the local authorities. O Tuama also described the projects that his company was engaged in, notably in the development of a national strategy funded by Fáilte Ireland for the development of Irish cycling tourism. (This project arose in response to a drop in visits to Ireland by overseas cyclists from 130,000 in 2000 to just 60,000 in 2005)

The BYPAD audit leads to several recommendations for national policy, notably official acknowledgement of the many benefits of cycling, a national strategy coordinated by a single body but involving many others (e.g. transport, health, education), support for skilled personnel, legislative changes and the alignment of the activities of other bodies (e.g. Irish Rail) with the needs of cyclists.

## 2) Discussion

### Latent demand, unexploited potential

Ireland has experienced low, and declining, rates of cycling since the 1980s. In 2002 only 3.8 percent of persons in Dublin travelling to work or school did so by bicycle, a decline of 17% since 1996. Outside Dublin the rates were still lower, and the rates of decline were higher (ranging from 27% in Galway to 57% in Limerick). Perhaps the most dramatic decline has been in the number of teenage girls cycling: in 2002 barely 1% of girls between the age of 12 and 18 cycled to school. This decline is puzzling, given the many benefits of cycling, the apparent latent demand for cycling, and the large increase in expenditure on infrastructure: since 1994 (almost €30m has been spent on the provision of cycling facilities in the Greater Dublin Area, including the provision of 220km of cycle lanes).<sup>49</sup> Many seminar participants returned to the point that cycling requires an integrated approach, and the provision of infrastructure, though important, will not be sufficient on its own to realise the potential role of cycling. This is because much cycling policy is patchwork, whereas cycling depends on a network. Individual stretches of bicycle lanes are not useful if the bicycle-friendly environment stops short of the junction.

<sup>49</sup> "Sustainable Transport Policies", presentation by Dr Eimear Cotter, Integrated Transport Unit, Department of Transport, 2006

Like cycling, walking brings many benefits that might be loosely defined as enhancing the “public realm”, such as creating liveable spaces within cities and towns; these are in addition to its significant health benefits. Like cycling, the potential of walking is unrealised. The centre of Dublin was described as “anything but pedestrian-friendly”. Dublin City Council is increasing funding for School Wardens to provide safe access to schools, although one participant pointed out that Wardens are only allowed to accompany children across streets, not adults.

### Costs and benefits

The benefits of cycling and walking can be categorised into three main areas. The **environmental** benefits are reduced CO<sub>2</sub> emissions and reduced local air pollution due to displacement of private cars. Both pollutants would fall further if congestion is reduced as a result of policy measures (see below).

The **health** benefits derive from the reduction of pollution and the personal benefits from active forms of transport through increased fitness, reduced exposure to heart problems and reduced vulnerability to falls and other accidents, according to the Irish Heart Foundation.

The **economic** benefits derive from reduced congestion, which has estimated costs every year of about 2 percent of Gross Domestic Production (according to the Organisation for Economic Cooperation and Development). Indirect benefits derive from the attractiveness of more “liveable” cities that accommodate cyclists and pedestrians rather than private cars.

### Barriers, real and imaginary

There are many barriers to the realisation of the potential contribution of cycling and walking to the Irish transport mix. Anecdotal evidence suggests that some perceived barriers dissolve with experience. Bad weather is often cited as a reason not to cycle, even though weather conditions en route are usually favourable. In any case, the weather in Copenhagen – at least as bad as Dublin’s – does not stop most people commuting by bicycle. In Copenhagen 33% of non-cyclists cite bad weather as a reason not to cycle (in Dublin 19% of car commuters gave a similar answer in a 2005 survey<sup>50</sup>), although it rains on only 3.5 percent of all bicycle trips. Such negative perceptions are real barriers to increasing the modal share of cycling but they should be addressable through education and public-awareness campaigns.

Other barriers are real and substantial. The **institutional** barriers include the failure by various agencies to take cycling and walking into account. According to one local

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50 Keegan, Owen & Julie Galbraith, “Attitudes of Cyclists and Car Commuters to Cycling in Dublin”, paper presented at Velocity conference, Dublin 2005

authority, the Railway Procurement Agency has been unwilling to provide bicycle facilities for cost reasons. Irish Rail was cited as an agency in particular need of persuasion on the merits of cycling; inadequate bicycle parking at railway stations and insufficient or non-existent space on trains for the carriage of bicycles are frustrating obstacles. The example of the RPA indicated that **financial** barriers also exist, despite record sums of money being made available for transport infrastructure. The Dublin Regional Authority found that lack of funding was the main issue in the provision of the Sutton-to-Sandycove promenade (which would serve both pedestrians and cyclists, and would have a recreational as well as commuting purpose). **Personnel** issues were perhaps the most significant barriers to implementation and most frequently cited by participants. Several representatives of local authorities commended the BYPAD audit of bicycle policies but stated that the audit's recommendations will never be implemented with existing human resources. Local authorities need to be able to hire and train key staff to oversee sustainable transport solutions in the same way that heritage officers were recently hired. Another area of concern is **enforcement**. One participant mentioned an incident (apparently common) of a car failing to stop after knocking a cyclist off his bicycle; whatever about the willingness or not of some cyclists to obey traffic rules (many of which are not designed with the cyclist's needs in mind), the perceived dangers of cycling are a real deterrent especially to neophyte cyclists.

### Lessons from international best practices

The Danish experience provided an enticing vision of how Irish towns and cities could improve their environment and create beautiful, liveable spaces while escaping some of the problems of congestion and social exclusion. Copenhagen witnessed a decline in numbers of cyclists until a concerted policy change from the 1980s, to the extent that 36% of all journeys in Copenhagen are by bicycle (and a further 33% are by public transport). The articulation of such a vision for Irish towns and cities would itself be a useful stimulus for a change in Irish transport policy. Another lesson from Denmark is that carrots – top-quality infrastructure, secure parking, showers at the workplace, etc. – will only go so far. If Copenhagen is to increase cycling numbers to the new political goal of 50 percent, it will need to introduce some sticks – road pricing and further restrictions on use of road space by cars. In the Irish context congestion charging has been considered a political impossibility to date, but this and other forms of demand management must eventually be considered if we are to realise the potential of cycling and walking in transport policy.

### Leading by doing

Many participants returned to the issue of capacity and willingness at all relevant levels to implement cycling and walking policies. Political leadership is critical, and the phenomenon of two new Government ministers commuting to work by bicycle is an opportunity to raise the profile of cycling as a normal mode of transport. The civil service could itself play a leadership role, however. At the moment it sometimes plays

a negative role, as many civil servants benefit from free car parking and many public buildings have inadequate cycling facilities (e.g. a lack of outdoor parking, secure indoor parking or shower and changing facilities). Public initiatives like the annual car-free day in September receive indifferent support from the very agencies that could be championing them. Although civil servants take their lead from the political process, there is much potential for the public sector to improve the environment through its own operations and the example it sets. Different agencies and government departments must link up the different components of the policy mix. At the local level, providing funding and training for personnel will be essential to improve the cycling and walking environment across the country.

### The crying need for a national policy

The current framework for national transport policy is to be found in the Department of Transport's *Statement of Strategy* and in Transport 21, the Department's programme of funding for transport infrastructure. Cycling and walking receive perfunctory mention at best. This seems to be a wasted opportunity, given the potential contribution of these modes to the overall aims of national transport policy (especially promoting a modal shift but also optimising the use of the transport network<sup>51</sup>) and to sustainable development more generally (see benefits, below). One of the positive outcomes of the seminar was the evident enthusiasm among many different stakeholders (Departments of Transport and Environment, Dublin Transport Office, Health Service Executive, Office of Public Works, local and regional authorities, private companies) for promoting cycling and walking in Ireland.

### The time is (perhaps) right

The current period may be particularly appropriate for the development of a national policy for cycling and walking. The Department of Transport is currently drafting a Sustainable Transport Action Plan, due to be published in 2008, which will guide overall government policy on all aspects of transport with a view to reducing the environmental impact of transport while providing for its economic and social benefits in a cost-effective manner. The fact that the Department of Environment is involved in the plan at an early stage is a promising signal that the relevant officials are taking an integrated approach to the problem. Ciarán Cuffe TD (Green Party) warned of previous "false dawns" for cycling policy but said that the current period is a profoundly different time with the Green Party in government and with generally increased awareness of the environmental, social and economic costs of a car-dominated transport system.

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51 Department of Transport (2005), *Statement of strategy 2005-7*, pp. 19-20

### The under-represented role of walking

Although the subject of the seminar was cycling and walking, much of the discussion focused on cycling policy. In part this is because the two policies are often complementary: what is good for cycling (e.g. traffic calming) is also good for walking. Nevertheless, there may be a need for a more specific focus on walking as a “mode” of transport in future discussions and in national policy itself.

### 3) Next steps

Comhar SDC will post this meeting report on its website ([www.comhar-nsdp.ie](http://www.comhar-nsdp.ie)).

Comhar SDC proposes to draft concrete recommendations to Government, and particularly the Department of Transport and Maritime Affairs, for consideration in the forthcoming Sustainable Transport Action Plan. These recommendations will be drafted by the end of September 2007. Contributions from participants and other stakeholders are welcome and may be received up until Monday 10 September 2007.

## Appendix 1: Agenda

### The role of cycling and walking in Irish transport policy Half-day seminar hosted by Comhar Sustainable Development Council

Date: Thursday 21 June, 09.30-13.00 (followed by light lunch)

Venue: Comhar SDC, 17 St. Andrew's Street, Dublin 2 (2nd floor, above ENFO office)

Contact: Thomas Legge, thomas.legge@environ.ie, tel: +353 1 8883917

The purpose of the seminar is twofold:

- To identify the potential role of walking and cycling in national transport policy, including by referring to international best practices
- To help Comhar SDC formulate policy recommendations to Government, specifically to feed into the upcoming Action Plan on Sustainable Transport

The meeting will be a half-day seminar with about 30 participants, all with a professional interest in the subject of sustainable transport. The discussion will focus on national policy: the role that cycling and walking could play in Ireland's transport policy. We will avoid discussion of technical, engineering or local issues, except insofar as they are generalisable.

**Matthew Page**, Leeds University (Institute of Transport Studies), will provide an overview of the evidence base, including his work on including the costs and benefits of walking and cycling in the appraisal of transport infrastructure. **Niels Jensen**, City of Copenhagen, will provide examples of international best practices from a city where declining trends of cycling and walking were reversed. **Damien Ó Tuama**, Colin Buchanan Transportation Consultants, will speak about his experiences of facilitating local authorities in Ireland in creating and implementing cycling policies and strategies.

Cycling and walking in Irish transport policy  
Half-day seminar at Comhar SDC, St Andrew's Street, 21 June 2007

**Final agenda**

- 9.30 Registration and coffee**
- 10.00 Chairman's welcome**  
Pat Mangan, Department of Transport
- 10.05 Background/issues**  
Thomas Legge, Research Fellow, Comhar SDC
- 10.10 Costs and benefits of a shift to walking/cycling**  
Matthew Page, University of Leeds Institute of Transport
- 10.30 International best practices: the experience of Copenhagen**  
Niels Jensen, Copenhagen City
- 10.50 The challenge of implementation**  
Damien Ó Tuama, Colin Buchanan Transportation Consultants
- 11.10 Coffee**
- 11.30 General discussion**  
Led by: Ciarán Cuffe TD (political perspective)  
Dave Fadden, Department of Transport (cycling/walking in the forthcoming Action Plan on Sustainable Transport)
- 12.55 Conclusions and next steps**  
Frank Convery, Chairman of Comhar SDC  
Pat Mangan, seminar chairman
- 13.00 Lunch**

## Appendix 2: Participants

NAME	ORGANISATION
Adrian Thompson	Senior Engineer, Dun Laoghaire & Rathdown County Council
Bill Ebbitt	Health Service Executive, National Functional Manager – HP Policy & Strategy
Brendan Walsh	UCD emeritus professor
Ciarán Cuffe	Green Party TD
Colm Ryder	Senior Engineer, Office of Public Works
Conor Faughnan	Public Affairs Manager, AA
Damien O Tuama	Colin Buchanan Transportation Consultants
Dave Fadden	Department of Transport
David Pryor	Fingal County Council Development Board
Derek Peppard	Dublin Cycling Campaign
Eimear Cotter	Environmental Protection Agency
Fergus O’Carroll	Fingal County Council Parks department
Frank Convery	Chairman, Comhar SDC Secretariat
Jeremy Ryan	Senior Transportation Planner, Dublin Transport Office
Julie Galbraith	Dublin Transport Office
Laurence Gill	Trinity College Dublin
Matthew Page	Leeds University, Institute of Transport
Michael Byrne	Road Safety Officer, Dublin City Council
Muiris O’Keeffe	Senior Engineer, Traffic & Transport, South Dublin County Council
Niall Cussen	Department of Environment
Niall Gormley	Dublin City Council, Senior Executive Engineer
Niall McGuirk	Fingal County Council Community Recreation & Amenities
Niels Jensen	Traffic Department, City of Copenhagen
Paddy O’Mahony	Fáilte Ireland
Pat Mangan	Assistant Secretary, Department of Transport
Patricia Potter	Director, Dublin Regional Authority
Robert Parkinson	Dublin Transport Office
Rosie O’Reilly	Cultivate
Stephen Hickey	Dublin City Council, Senior Staff Officer, Dublin Cycling Forum
Steve Margolis	Senior Planner, Dublin City Council Planning Department
Thomas Legge	Research Fellow, Comhar SDC Secretariat
Tony Pollins	Dun Laoghaire & Rathdown County Council
Yvonne Kelly	Irish Heart Foundation
Lisa Ryan	Comhar SDC Secretariat
Elaine Conlon	Graduate Engineer
Jonathan Daly	Colin Buchanan Transportation Consultants
Claire Breslin	Colin Buchanan Transportation Consultants



## Seminar 2: Rural and social exclusion

*Meeting report by Thomas Legge, 2 October 2007*

On 27 September 2007 Comhar SDC hosted a half-day seminar on the theme of “Rural transport and social inclusion” (agenda in Appendix 1). The purpose of the seminar was twofold:

- To facilitate a discussion on the challenges of sustainable rural transport and social inclusion
- To help Comhar SDC formulate policy recommendations to Government, specifically to feed into the upcoming Action Plan on Sustainable Transport

There were 27 participants, all with a professional interest in the subject of sustainable transport (see Appendix 2).

### 1) Presentations

**Professor Jim Walsh**, Deputy President of NUI Maynooth, illustrated the social and economic changes that have transformed rural Ireland in the recent past. Drawing especially from the results of the 2002 census, he outlined many of the unsustainable trends and outcomes that have characterised Ireland’s recent development; there is no reason to think that these trends will not have worsened by the time of the 2006 census (the relevant results are expected to be published in November 2007). Transportation issues in rural areas of Ireland vary according to the characteristics of sub-groups in the population. Ireland’s population growth has been accompanied by a repopulation of many rural areas, in large part by people who have employment, have young families and have higher levels of education. There is still a residual proportion of the rural population that is made up of elderly people. Accompanying the demographic shifts in Ireland has been a move towards ever-greater car dependency. This is not just for work: there has been a phenomenal growth in the numbers and proportion of primary-school children being driven to school (women start work on average one hour later than men because they are predominantly found driving children to school), and students are increasingly driving to university. In addition, an increasing number of rural workers travel 10 miles or more to work, and about 10-15 percent of people spend at least 90 minutes getting to work every day. At the same time, there are many car-poor areas, especially in areas with rural economies or with a high proportion of elderly populations. But even in car-rich areas there is inadequate access to transport because the car of a single-car household might be used for the daily commute and is therefore unavailable for the working day. The lack of a strategic approach to spatial planning, including transport, has brought about many unsustainable outcomes, but there are still policy options. A stronger commitment to comprehensive strategic spatial planning is required.

**Dr. John McDonagh**, National University of Ireland (NUI) Galway, discussed how current transport policy affects the social and economic potential of rural dwellers in Ireland. The main policy framework for the development of transport in rural Ireland is the National Development Plan (NDP). This foresees that all residents, whether they live “in a county town or a rural area ... can look forward to a better quality of life in a sustainable environment with a progressive and dynamic economy and society”.<sup>52</sup> This implies that those living outside the five main urban areas of Ireland should be able to rely on rural transport that is available, accessible, affordable and sustainable. In practice, however, national transport planning is still based on the philosophy of “predict and provide”, in which infrastructure (often roads) is built to cater for projected demand rather than considering the wider implications of policies and trends. As many as 380,000 rural dwellers in Ireland have unmet transport needs, according to the 2002 National Rural Transport Survey, and this figure could increase to 450,000 rural dwellers by 2021. This trend is exacerbated by changing population patterns, dispersed rural settlement, urban sprawl and a historically under-resourced public transport network. Social exclusion is a major problem in rural Ireland, defined not just by poverty and deprivation but also part of broader political and structural obstacles to opportunity. In an increasingly car-dependent society, the lack of access to a car causes social exclusion because social activities, including participation in decision-making, become increasingly inaccessible except by car. This particularly affects the elderly, the young, women, those with mobility impairments and those with low incomes. In any case, rising car ownership does not address the problems of lack of access and immobility in rural areas. Meanwhile, rural travel accounts for 80 percent of annual vehicle-kilometres, according to Dr. McDonagh.

Sustainable development is the essential idea around which rural transport should be organised, but the concept is notoriously slippery and has been used to justify the building of more roads (for instance) that do little or nothing to improve mobility, accessibility, quality of life or balanced regional development. National policy remains inadequate, and largely Dublin-focused. The National Spatial Strategy (2004) represents a missed opportunity to move towards more sustainable regional development by failing to take hard decisions in favour of focusing development in the main urban centres; like decentralisation, the NSS looks like it is based on “back-of-the-envelope” planning. Transport 21 represents major investment in transport infrastructure but there is insufficient emphasis on a modal shift away from private cars. The Rural Transport Programme is a first attempt to address rural transport needs, but it is inadequate and effectively abdicates responsibility to rural communities, who are incorrectly treated as a homogenous group and who should not be expected to deliver the best solutions even if they are in a position to identify them.

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52 NDP 2007-2013 p.10

**Hendrik van der Kamp**, Head of the School of Spatial Planning at Dublin Institute of Technology, surveyed the policy approaches to improving transport's accessibility to all citizens. The first kind of policy approach is based on extending public transport to rural areas. The 1999 White Paper on Rural Development identified problems of marginalisation as a result of the lack of public transport in many rural areas, itself due in part to low population densities.<sup>53</sup> The White Paper proposed that each County Enterprise Board would conduct an audit of local transport needs and services and would identify, with relevant partners, the most appropriate coordination and delivery mechanism to ensure effective local transport provision in its area. Recent national development plans have allocated funds for public rural transport initiatives: following pilot programmes, the current National Development Plan (2007-2013) has allocated EUR 90 million for the Rural Transport Initiative. This has led to a vast range of experiments in rural transport throughout the country, such as school buses that run as tailor-made taxi services at costs below regular but underused bus services. The second policy approach is to look at spatial planning. The solution will not lie in moving more people to towns but rather in basing solutions around the deep-rooted characteristics of Irish spatial settlement. Some kinds of urban sprawl, with many different journey origins and destinations, provide poor scope for public transport, car-pooling, car sharing or other approaches. There are more opportunities for car-pooling or public transport in urban sprawl where many journey origins converge in few destinations (e.g. rural-to-urban commuting). An imaginative approach to future rural transport would be to look to motorway interchanges to act as transport hubs, where fast buses would carry people long distances; people would live walking or cycling distance from these hubs in largely self-sufficient communities providing their own food and fuel (through biomass). Another approach would be the development of a new kind of rural housing, the "tall house", which would have the same footprint of an existing house but would hold up to four families on four storeys, thus providing concentrated journey origins and therefore more scope for car-pooling or public transport.

## 2) Discussion

### Ineluctable trends, intractable problems?

Rural Ireland's transport challenges are the result of decades of development, personal preferences, policy decisions and policy and planning mistakes. Rural transport is forced to deal with the legacy of planning mistakes going back 20-30 years, as seen especially in urban-generated rural housing and urban sprawl that has spread cities' commuter belts deep into the countryside. Perhaps the greatest legacy is the increasing car-dependency of much of Ireland, urban and rural. It is politically impossible to force people to settle within a certain distance (e.g. less than 2 kilometres from the nearest

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53 Department of Agriculture and Food, "Ensuring the Future – A Strategy for Rural Development in Ireland – A White Paper on Rural Development", 1999

town, because the current political, social and economic culture allows people to bear only so much pain (in other words, planning permission will be granted even for inappropriate development). But addressing the externalities of the planning system will be necessary, even if difficult. Today's new bungalow dwellers are tomorrow's isolated elderly. Driving children to school makes it more dangerous for other children to walk to school, creating a self-reinforcing dynamic of ever-increasing car-dependence. Chauffeured children brings major long-term social impacts: international evidence indicates that children who are driven to school arrive more stressed and more isolated from their environment than those who walk to school or are bussed. In rural Ireland the great majority of children are bussed to school, but a significant minority live within a certain radius and are driven. Another underlying cause is the low marginal cost of using a car. In Ireland buying a car can be a major expense, but using it is relatively inexpensive, which provides a disincentive to using public transport once a car is available. Moreover, public transport remains unattractive due to its infrequency, irregularity and relative lack of comfort (bus shelters in rural Ireland are almost non-existent).

### Current policy initiatives are on the right track, but inadequate

Current policy initiatives, although often positive, are inadequate to meet the challenges of rural transport. Transport 21 is increasingly acknowledged to be inadequate to bring about a sustainable transport system. Likewise, the Rural Transport Programme, which is based on the assumption that local communities do know best when it comes to their transport needs, is not sufficiently holistic because it is an almost entirely bottom-up approach, depending on the demands and initiatives of self-organising community groups. Such a demand-driven approach has many merits but it should be accompanied by a more integrated policy approach that involves excluded groups more systematically and operates across all relevant sectors, including all relevant government departments, local authorities and large employers such as universities.

### The importance of land-use planning

Inadequate spatial planning in the past is at the heart of many of the problems of rural transport in Ireland, but there are opportunities to address this. Providing safe routes to schools will be essential to give parents the peace of mind to allow their children to walk or cycle to school, if they are not being bussed. It is difficult and expensive to retrofit good design principles – bicycle paths, schools, recreation areas – into existing developments, so developments should include these services as a matter of course. National and local authorities are increasingly working with developers at the local level to influence developments at an early stage. There is likely to be a willingness on all sides to stimulate better planning, so there may be an opportunity to increase local capacities as well as creating better national standards and guidelines. More fundamentally, there needs to be a shift to frontload the development of services (especially schools and public transport) before areas are settled, even if this means that services are running under capacity for 15 years or more.

## Obstacles

Existing regulatory structures can impede the development of promising public-transport solutions. Under the 1932 act that governs taxis in Ireland it is illegal for a taxi driver to collect several passengers along a single journey, even though such an approach might be more efficient than a dedicated public-transport service along the same route.

## Equitable instruments

There is a particular need to consider the impacts of transport policy on rural areas. A case in point is the proposed carbon tax, which is foreseen in the new Programme for Government as a priority for addressing Ireland's greenhouse-gas emissions. Given that 80 percent of all vehicle-kilometres in Ireland occur in rural Ireland, the impact of a carbon tax on fuel prices would be particularly significant in rural Ireland. An equitable carbon tax would require that the tax's revenues are recycled to society by some means. This could include using the revenues to increase funding to rural public transport or measures to encourage more clustered spatial development. Another approach would be to compensate rural residents directly through a tax rebate or increased social-welfare payments. Ultimately, however, a carbon tax is intended to correct a market failure by causing fuel prices to reflect their external costs, so any compensatory mechanism should not act as a subsidy for dispersed rural housing.

## National policy frameworks

The Sustainable Travel and Transport Action Plan provides an opportunity for innovative policy approaches. The STTAP is due to be published as a discussion document in January 2008, with a final document foreseen for March 2008. The main goals of the STTAP are to effect a considerable modal shift, reduce travel times and reduce the greenhouse-gas emissions from the transport sector. It will look at fiscal measures and how they affect non-discretionary transport in rural areas. It will also look at spatial planning by encouraging local authorities to produce integrated land-use plans centred around hubs. Other approaches could include a national cycling network and national workplace travel strategies.

## Appendix 1: Agenda

### Rural transport and social inclusion

#### Half-day seminar hosted by Comhar Sustainable Development Council

Date: Thursday 27 September, 10.00-13.00 (followed by lunch)

Venue: East Room, Custom House, Department of Environment,  
Heritage and Local Government

Contact: Thomas Legge, thomas.legge@environ.ie, tel: +353 1 8883916

The purpose of the seminar is:

- To facilitate a discussion on the challenges of sustainable rural transport and social inclusion
- To help Comhar SDC formulate policy recommendations to Government, specifically to feed into the upcoming Action Plan on Sustainable Transport

The meeting will be a half-day seminar with about 20 invited participants, all with a professional interest in the subject of sustainable transport. The discussion will focus on the challenges of ensuring that national transport policy includes the demands for social inclusion as part of the provision of a modern transport system, particularly with regard to rural areas.

**Dr. John McDonagh**, National University of Ireland (NUI) Galway, will discuss how current transport policy affects the social and economic potential of rural dwellers in Ireland. **Professor Jim Walsh**, Vice-President for Innovation at NUI Maynooth, will illustrate the social and economic changes that have transformed rural Ireland in the recent past. **Henk van der Kamp**, Head of the School of Spatial Planning at Dublin Institute of Technology, will survey the policy approaches to improving transport's accessibility to all citizens.

## Rural transport and social inclusion

Half-day seminar at Comhar SDC, Custom House, 27 September 2007

### Final agenda

- 9.45 Registration and coffee**
- 10.00 Chairman's welcome**  
Brendan Walsh, Emeritus Professor (Economics), University College Dublin,  
chairman of the Comhar Working Group on Sustainable Transport
- 10.05 Comhar SDC's work on sustainable transport**  
Thomas Legge, Comhar SDC Secretariat
- 10.10 Transport policy and rural development**  
John McDonagh, National University of Ireland (NUI) Galway
- 10.30 The social and economic transformation of rural Ireland**  
Jim Walsh, Vice-President for Innovation at NUI Maynooth
- 10.50 Policy approaches to accessibility in transport**  
Henk van der Kamp, Head of the School of Spatial Planning, Dublin Institute  
of Technology
- 11.10 Coffee**
- 11.30 General discussion**  
Led by: Dave Fadden, Department of Transport (accessibility in the  
forthcoming Sustainable Transport and Travel Action Plan)
- 12.55 Conclusions and next steps**  
Brendan Walsh, Chairman of the Comhar WG on Sustainable Transport
- 13.00 Lunch**

## Appendix 2: Participants

NAME	ORGANISATION
Brendan Walsh	UCD emeritus professor (Economics)
John McDonagh	NUI Galway
Jim Walsh	NUI Maynooth
Henk Vanderkamp	Dublin Institute of Technology
Noel Casserly	Director, Comhar SDC
Lisa Ryan	Director of Research, Comhar SDC Secretariat
Thomas Legge	Research Fellow, Comhar SDC Secretariat
David Browne	Department of Transport
Ornagh Darcy	Irish Rural Dwellers Association
Tony Larkin	Wexford County Council
Niall Cussen	Department of Environment, Heritage and Local Government
David Meredith	Teagasc
Damien O Tuama	Colin Buchanan Transportation Consultants
Noel Singleton	Department of Transport
Des Coppins	Department of Transport
Erin Sugrue	Pobal
Louise Weir	University College Cork
Walter Carpenter	Chartered Institute of Logistics and Transport
Dharragh Hunt	Irish Rural Link
David Walsh	Department of Environment, Heritage and Local Government
Joe O'Doherty	ESRI
Karen Mayor	ESRI
Billy Murphy	PLANET
Kevin Murphy	UCD
Karen Flynn	Department of Community Rural and Gaeltacht Affairs
Patrick O'Sullivan	Department of Environment, Heritage and Local Government

Total attendees: 26

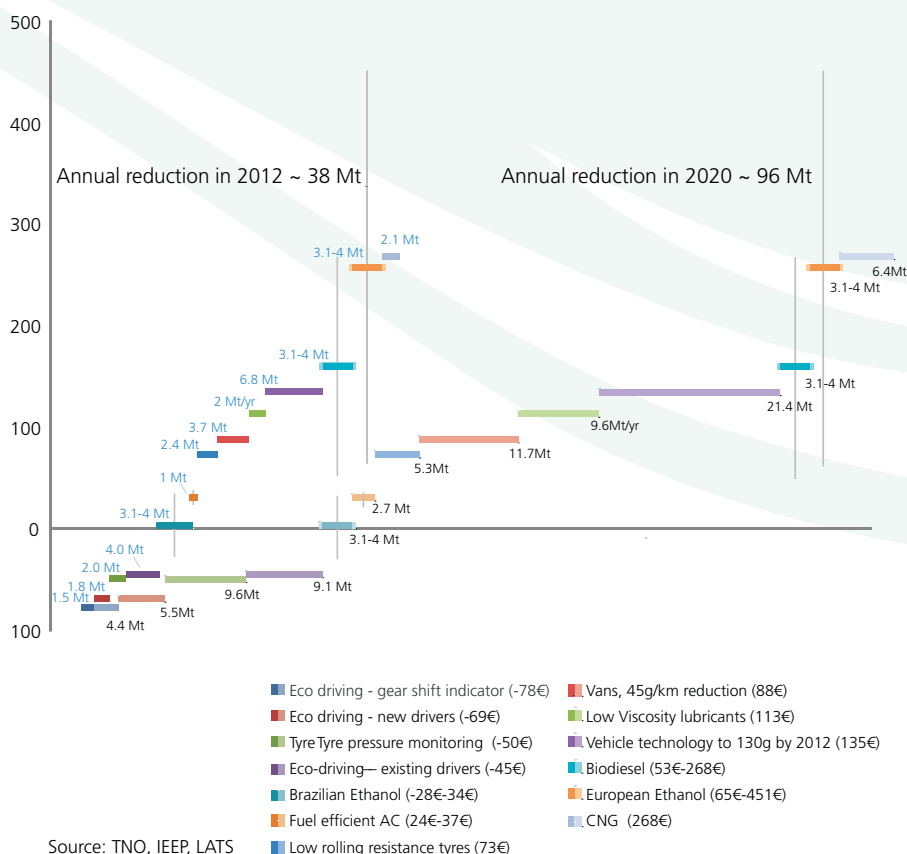


## Seminar 3: Transport demand management – “soft” policy measures

4th December 2008

### Philippe Crist, OECD/International Transport Forum – International best practices: Corporate mobility management and eco-driving to manage transport demand and environmental impacts

Ecodriving is a low cost policy measure to reduce CO<sub>2</sub> emissions from transport. When marginal abatement cost (MAC) curves for the transport sector are compared, it can be seen that ecodriving initiatives can have negative costs to society, thus making it an attractive alternative in a sector with relatively high abatement costs compared with other sectors.



Ecodriving consists of changing drivers’ driving style to reduce the amount of fuel consumed. The following are the main recommendations given to drivers:

- Shift up a gear as soon as possible: at 2000 – 2500 revolutions/minute
- Maintain a steady speed, using the highest gear possible

- Look ahead as far as possible and anticipate surrounding traffic.
- Decelerate smoothly by releasing the accelerator in time, leaving the car in gear
- Check tyre pressure monthly
- Use in-car devices such as revolution counter, onboard computer, cruise control, shift indicator, tyre pressure monitor, etc.
- Reduce or eliminate idling
- Close windows at high speed, take roof rack off if unused, and keep unnecessary weight out of boot.

The impact of ecodriving on fuel economy can be considerable. It ranges between 5-15 percent CO<sub>2</sub> emissions reduction in cars, buses, and trucks, with the best drivers achieving up to 50 percent reduction. The effect of ecodriving training tends to wear off after a period but the long term reduction effects are estimated to remain at 5 percent. When instrumentation such as fuel consumption indicators is used the effect lasts longer. In fact even without ecodriving training, the installation of fuel consumption display instruments alone is estimated to achieve a reduction of 5 percent in fuel consumption.

Government intervention is needed to encourage ecodriving because although many fleet operators will do it voluntarily, many more join in if there is financial or institutional support, as the up-front costs are more visible than savings. Private drivers need help, either from the government or through driving clubs. Platforms of stakeholders work best to develop ecodriving programmes. Information programmes and fuel consumption indicators in cars are crucial in encouraging both private and commercial drivers to start ecodriving. Government support for ecodriving training is needed to make it part of learner driver training, driving instructor training, and one of the test criteria for commercial and general driver licenses. Fiscal incentives are also needed for the installation of in-car instruments and 8th gear technology.

Ecodriving should be a central rather than a secondary part of CO<sub>2</sub> emissions reduction strategy. It can be key in stimulating other measures, for example logistics management, car purchase choice, and even household energy saving. While there should be monitoring of the success of the programme, the monitoring requirements should not be in excess of those for other policy measures such as biofuels etc.

The International Transport Forum also carries out research on Corporate Mobility Management Plans and their success. Their impacts on CO<sub>2</sub> emissions are not often quantified but the magnitude of impact can be significant (-15%-20% for each trip alone). A significant incentive is often the avoided company parking costs. In many countries there is now a requirement for companies over a certain size to implement corporate mobility management plans in order to reduce congestion and parking space requirements.

## Una McGrath, Vipre Ltd – National experience: workplace travel plans in Dublin

Workplace travel plans are a subset of transport demand management and mobility management policies. They work by focussing on the user at the centre of trip generation to induce travel behaviour change within the existing transport context. The objective is to maximise use of existing transport resources and reduce single occupancy car use. This is done by removing the existing barriers to using sustainable modes while adding barriers to car use. Workplace travel plans can be used to address multiple challenges facing businesses such as a scarcity of employee parking, a lack of accessibility due to congestion, lack of space forcing land acquisition, and a difficulty in encouraging employees to travel with other modes of transport than cars. The benefits to employers can be summarised as following:

### *Facilities*

- Released land opportunity per car space relinquished
- Improved accessibility to the workplace for staff and visitors
- Satisfaction of planning authority conditions for new developments
- Reduced demand on parking
- More efficient and user-friendly parking policies and procedures

### *Overheads*

- Reduce parking overheads (approx 3000 euro p.a. in Dublin)
- More efficient business travel
- Reduce land acquisition costs through parking space release

### *Social and Environment*

- Reduced CO<sub>2</sub> emissions from fleet, business travel or commuting
- A more sustainable workplace
- Reduced traffic and noise emissions in the community
- Improved Corporate Social Responsibility

### *People*

- Improved recruitment and retention by caring for staff travel
- Healthy workforce and reduced absenteeism through active commuting

### *From the cities perspectives there are the following benefits*

- Reduced congestion especially at peak commute times
- Reduced emissions

- Reduced noise pollution in communities
- Improved access
- Better mobility
- Better information on travel options
- More active travel and healthier communities
- Pleasant and sustainable civic spaces
- Cost – and time-efficient mobility for individuals and business
- Improved social capital through enhanced mobility and spaces

The Mater Misericordiae University Hospital commissioned Vipre Ltd consultancy to implement a workplace travel plan in order to manage the planned reduction in parking places at the hospital during the upcoming construction work. The objectives of the project were to change employee travel behaviour and therefore reduce the number of cars on site by 20 percent over several years, satisfy city council requirements, update parking operations, and to mitigate staff unrest due to lack of parking availability. Key stakeholders were consulted and two travel centres set up within the hospital to advise individual commuters on the options available to them. While in the UK there is centralised guidance on workplace travel plans from the NHS, in Ireland the HSE does not do the same. Therefore a challenge was to win support from senior management in the hospital to implement the plan. Another issue was that the development of the hospital kept changing which brought uncertainty and slowed decision-making on the travel plans. By 2006, as a result of the travel plan, there was a 16 percent reduction in car use among staff compared with 2003. Some of the lessons learned from this project are the following:

- People will try to drive if it is made easy for them – “If I CAN drive I will”
- Greater barriers exist to sustainable travel than to driving
- Inequity – drivers get more benefits than other transport mode users
- Management fear brave action notably around parking policy – external policy can assist to support them
- Users are influenced by cost of driving ...or are they?
- It's all about how information is presented. Habits need to be challenged

The UK, Austria, the Netherlands, Sweden, Switzerland, Germany and France are good examples of best practice in Europe in mobility management and policy. As a result of this work the following recommendations on soft measures are made to Government:

- 6) Introduce Commute Trip Reduction legislation. Extend existing requirement for travel plans beyond a development control requirement – what about existing travel magnets?

- 7) Make existing Employer Travel Pass Scheme mandatory in organisations with employee count >x and promote/make explicit the cost savings
- 8) Extend Travel Pass Scheme to universities. Embed the cost into student enrolment fees.
- 9) Impose workplace car parking charges within canals. Make parking subject to BIK
- 10) Support niche markets for alternative travel services.

### Prof. Austin Smyth, University of Westminster – Transport 21: Sustaining transport or addressing sustainability?

Transport 21 is a programme of investment of €34 billion in transport infrastructure in Ireland. In general, the key goals for transport investment should include:

- promotion of economic competitiveness;
- balanced regional development;
- environmental sustainability; and
- social inclusion.

The question is whether Transport21 address these challenges. Proponents of Transport 21 argue that it will:

- Address Ireland's infrastructure deficit.
- Meet Ireland's mobility needs/congestion and the slow inter urban road journeys.
- Promote a modal shift to public transport.
- Underpin Ireland's competitiveness.
- Meet the country's spatial development needs.

Detractors of Transport21 say that it will:

- Promote use of less sustainable modes by investing even more heavily in roads
- Fail to address greenhouse gas emissions targets under Kyoto.
- Promote sprawl through increased construction of motorways
- Not address congestion and safety issues.

Regarding using transport infrastructure to improve Irish competitiveness; there is little consensus among experts on the overall effects of transport on economic development. Improvements to transport infrastructure yield small cost savings and gains to firms and so transport costs are not the primary business location driver at an international and national scale. However, levels of prosperity remain unevenly distributed throughout the country and populations without reliable access to transport and related services

tend to be poorer than those with reliable access. Transport 21 must align strongly to the National Spatial Strategy if economic prosperity and balanced regional development in line with decentralisation are to be achieved. Of the transport provisions in the NDP, the inter-urban road programme is likely to yield most benefits, mostly involving redistribution of relative competitiveness within the country. Large scale public transport investment in the Greater Dublin Area should contribute to a more efficient city region providing it is allocated efficiently across the area and maximises the exploitation of network effects.

The measures planned under Transport 21, more effective land use, and other existing policy measures are projected to reduce Irish transport CO<sub>2</sub> emissions in 2008-2012 by 6%. Of the Transport21 measures planned, it is the Interconnector that is foreseen to bring the most environmental and commercial benefits and this should be fast tracked to secure early benefits. The very limited extent of the Metro is estimated to only make a marginal contribution to greenhouse gas reduction on a national or even city basis.

Investment in roads in Ireland has been significantly higher than in rail for many years. Investment in roads is higher in Ireland than in Northern Ireland, Scotland and Wales whereas investment in public transport in Ireland lags behind Scotland. The road programme under Transport21 is likely to encourage greater use of private cars as the relative competitiveness of a modestly enhanced inter-urban rail system is eroded. The road programme will also tend to promote further spatial dispersal and rural isolation as it becomes increasingly expensive to sustain local public transport.

The effectiveness of any transport measures will be determined to a large extent by the effectiveness of supporting regional development and planning policies. There have been large increases in household numbers, in addition to associated employment, services and facilities in the Greater Dublin Area. As house prices have spiralled, particularly in areas close to Dublin, long distance commuting has become increasingly the norm. The typical low-density suburban housing meeting much of this demand generates increased car travel as low densities cannot easily support public transport services. Future development must attempt to avoid urban sprawl and promote public transport oriented urban areas. The most influential policy measures to address the environmental sustainability challenges of transport may be the combined effect of housing policies and prioritisation of urban consolidation as envisaged under the National Spatial Strategy.

The Irish population flies significantly higher amounts per capita than other similar island countries. The pass-through of the true environmental and economic costs of the use of unsustainable transport modes to users, as well as attractive rail services could encourage mode switching away from private cars. An improved rail system would reduce the need for a domestic air service and the related subsidies.

## Following Discussion

Ecodriving can be set at national policy level so that it is coordinated institutionally such as in driving training centres. The advantage is that it can reach individuals and their personal driving behaviour. The partnership of car manufacturers is very important to ensure the incorporation of fuel consumption and gear shift indicators in new cars. In Austria it has been found that buses show a good success rate, with the fuel consumption improvement sustained over a longer period than in private car users.<sup>54</sup>

Would a single parking policy across a city achieve more than piecemeal “soft” measures such as travel plans and eco-driving? There is often an information mismatch and people may not know what charges are being applied and therefore parking policy may not be the most efficient way to handle GHG emissions from road transport. The use of revenue from parking and other transport-related charges is important in order to get public buy-in to the policy. For example in Portland, Oregon the parking charge revenue was used to fund a travel centre. Similarly in London the congestion charge had many beneficiaries through the improved public transport system and very few payers. There are concerns that the implementation of a congestion charge in Dublin might damage the competitiveness of businesses. Free commercial parking in Dublin appears to be mainly for public sector use. The government will need to lead by example and rectify this.

Better planning must be utilised to encourage sustainable transport and travel. There are still developments being built which will require the use of a car to access services and employment centres.

Several further recommendations were made regarding transport infrastructure and policies:

- The Interconnector should be prioritised in Transport21 programme
- Dublin airport should become a rail hub for passengers and freight, similar to Schiphol in the Netherlands,
- Political transparency is required in Transport21,
- National fiscal policies incentivising non-car modes of transport are required to encourage the use of modes other than private cars.

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<sup>54</sup> Even though bus transmissions are automatic, drivers focus on improving fuel consumption during acceleration and deceleration in traffic.

## Seminar 4: Transport demand management – fiscal measures

21 November 2007

### Presentations:

#### Stef Proost – Instruments to manage transport demand and environmental impacts

Transport makes up between 15 and 30 % of total CO<sub>2</sub> emissions in EU but is continuing to rise.

The research project TRENEN II has shown that the social marginal costs of a trip into a city by car are higher than the costs generally paid in fuel costs, parking charges, and congestion tolls. Conventional emissions such as emissions of particulate matter (PM), nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), and hydrocarbons (HC) have been significantly reduced through emissions standards. These regulations were relatively cost-effective because there were easy technological fixes (fiscal policies could have done the job too but extra welfare gain is small). The emphasis for air pollutant emissions has now shifted to non-road modes, such as ships, rail, and aviation.

Fuel efficiency regulations are being proposed for new cars in the EU. The voluntary agreement in place to reduce CO<sub>2</sub> emissions from passenger cars to 140 g/km by 2008 has been abandoned and the Commission is now in favour of introducing a regulation that would impose a maximum (tradeable average) of 120 g CO<sub>2</sub>/veh km (= 5 litre/100 km) in 2010-2012 and even less in future. This would be made up of an average of 130gCO<sub>2</sub>/km through vehicle technological improvements and another 10g/km through soft measures such as ecodriving, increased tyre pressure etc. The new 120g/km target would mean that new cars sold in Europe have lower CO<sub>2</sub> emissions than anywhere else in the world. There are various ways to assess the efficiency of such a regulation but simple analysis shows that:

- The lower bound for the welfare cost of saving a litre of fuel through fuel efficiency regulation is approximately €0.8 per litre.
- The estimated cost of forcing a 6.5L/100km vehicle to consume 5L/100km is €300-600 per tonne CO<sub>2</sub> emissions saved.
- When a fuel efficiency policy is effective, it cannot be cost efficient because there is already a high gasoline tax (similar to a CO<sub>2</sub> tax) in place
- We need to also consider the impact a fuel efficiency standard in EU will have elsewhere. There may be fuel-efficient technology transfer to countries that have no fuel tax (China) or low fuel tax (US) and are not yet in a global international agreement



- While there are no other instruments (road pricing) to limit traffic growth in congested areas high fuel taxes are probably a good policy compromise.

Policy instruments are not equally efficient (or inefficient), as the example for Brussels shows:

POLICY	RELATIVE EFFICIENCY
Benchmark	0%
Higher Fuel taxes	5%
Public Tr.Pricing	5-10%
Parking Charges	30%
Cordon Pricing	52%
Social MC pricing	100%

There have been large subsidies in the EU to encourage freight transport to switch modes from road and this motive is one of the major official drivers for the big EU subsidies to transport infrastructure. However rail freight has continued to lose market share in Europe, while road freight has become more efficient. There have also been subsidies of 15 to 30% of high speed rail project capital costs to encourage a switch from air transport and environmental levies have been put on aviation. However these initiatives have in the main not been successful. In fact these policies have tended to increase overall transport volumes and energy consumption.

Overall some of the current policies to reduce CO<sub>2</sub> emissions from transport are not cost effective (fuel efficiency regulation) or do not work (Modal shift in freight). Conventional vehicle technologies such as petrol cars will remain the main vehicle technologies for the foreseeable future.

General policy recommendations to reduce GHG from transport:

- Stick to high fuel prices if nothing else is around
- Switch to distance charging for trucks, i.e. road pricing, as this will reduce congestion, accidents and may generate some small free CO<sub>2</sub> emission reductions (5 to 10%)

### Marian Jongman – Road Pricing in the Netherlands

The Netherlands is planning to introduce national road pricing from 2012. This was already proposed and rejected in 2001 and some lessons have been learnt since then. Overall people are not willing to pay more taxes but they are willing to pay fair prices. Public and political acceptance is very important for the introduction of a national road pricing scheme. It is also important to keep the design of the scheme simple and to start as soon as possible, even if only on a small scale. Politicians are needed with courage for the successful implementation of road pricing.

In order to get buy-in, extensive negotiations were held with stakeholders such as motorists association, environmental groups, representatives of employers and employees, regional governments, etc. The chairman chosen was a former opponent from the previous initiative in 1999. The recommendations made by the group were for a **km-price** that varies according to time, place and the effects on the environment (all roads, all motor vehicles). They also proposed that the current tax system (for purchase and ownership of a vehicle) be converted into the new system (use of the vehicle).

Various schemes were considered but the kilometre charge was selected, which requires all vehicles to have a GPS system installed. The objective is to reduce congestion and environmental damages. The expected charge will be €0.03-0.04 – 0.10/km depending on the type of vehicle, time of day, location. It will be revenue neutral compared to the current vehicle tax system. There will be phased implementation with the scheme operating on a small scale with volunteers and commercial users first. The Cabinet approved the scheme in December 2007 and it will start with freight transport in 2011. This will require intensive technical and policy-related cooperation with Belgium, France and Germany. Passenger cars will follow a year after the launch of freight transport. The complete system roll-out will be scheduled for 2016 and beyond. As part of the introduction of the price per kilometre, there will be extensive trials to test the technology and assess the behavioural and accessibility impacts, especially in the congested areas in the Northern wing of the Randstad (*Noordvleugel*).

### Jeremy Ryan –TDM for Dublin

The Department of Environment and Local Government initiated a preliminary study into the potential for road pricing in the Greater Dublin Area in 1998. Road pricing was examined in isolation from other demand management measures and the DoELG Study found that it had the potential to contribute to the more effective management of traffic in Dublin. The Study recommended that relevant authorities undertake further work, in the context of the DTI Strategy, to investigate feasibility of introduction of road pricing. The DTO is charged with preparing regional transport strategies for the Greater Dublin Area and work has recently begun on preparing a new strategy.

The two elements of the strategy are (i) infrastructure and service improvements, and (ii) transport demand management. The population of the GDA by 2021 is forecast to grow to above 2 million. Therefore if the second strand is not implemented it is forecast that by 2016 the hours spent travelling by car will more than double and that the distance travelled by car will increase by 90%. More people are working and travelling further to get to work. Outside the M50, more than 80% drive to work.

A study on transport demand management for GDA was commissioned in 2002. It found that no single measure would be sufficient to solve the problem and recommended three types of measures:

- 1) Land use planning measures
- 2) Measures to promote travel demand management
  - Workplace travel plans
  - School travel plans
  - Virtual mobility
  - Individual marketing
- 3) Charges and levies
  - City centre congestion charging
  - Workplace parking levy elsewhere

The impact of good planning is longer term. But without land use measures the population dispersion will intensify. Several fiscal measures were considered but only congestion charging within the canals was recommended for further investigation. The rationale is based on the fact that people have alternative transport options in the city centre. It was also perceived to be beneficial and workable in principle to be extremely effective in reducing demand and congestion.

Complementary measures such as the following were also expected to make congestion charging more palatable:

- Additional buses/other public transport
- Additional bus priority
- cheaper public transport
- Park and Ride
- Pedestrian improvements, or other amenity
- Traffic management and local road improvements
- Parking controls
- Non-transport measures

The expected reduction in CO<sub>2</sub> emissions is 14,000t per annum. The Steering group recommended that the land use measures, “soft measures” (i.e. promotion of travel demand management) be implemented; that the Workplace Parking Levy not be implemented and that further investigative work/study was needed on congestion charging to commence in 2007.

### Main points from the discussion that followed:

#### General

- If the cost benefit ratio is greater than 10% then a policy measure is not worthwhile.
- Traffic cordons on the canals predict a 25% drop in cars with a congestion charge.
- National per km charging was considered by DTO but not for at least 10 years.
- The priorities for DTO policy for the GDA are to (i) reduce CO<sub>2</sub> and air pollutant emissions, (ii) reduce congestion, (iii) improve economic competitiveness.
- The price elasticities of demand for Ireland have not been estimated.
- Competitiveness is very important; Dublin competes globally and so don't want firms leaving the city.
- The announcement of a km-charge might reverse the land use trends and encourage people to live closer together.
- If the message is repeated long enough people will accept it

#### Fiscal measures and Revenue use

- The question of revenue use is very important, as it should be used to take care of vulnerable groups.
- Without a regional tax system it is difficult to hypothecate revenues and return money locally.
- It is not the tax that will determine the impact on marginalised people but how the revenue is used.

#### Policy recommendations

- There may be no real urgency to implement fiscal measures while other cheaper measures ("soft") measures have not yet been implemented.
- Easy policy measures would be to (i) make diesel vehicles more expensive to pay for their increased AQ emissions, (ii) implement a parking charge and give the revenue back to companies, (iii) encourage flexibility in work hours.
- Vehicle taxes must be removed and user charges implemented with credits for marginal groups.
- The visibility of any measure is very important to raise awareness and acceptability.

## Seminar 5: Report on road freight transport policy seminar

*15th January 2008*

### Walter Carpenter – Sustainability, Economic Growth and Freight Transport in Ireland

Up to the seventies Transport regulations were still strongly influenced by the 1933 Road Transport Act, which was implemented to protect the rail industry and address the disorganized road freight industry. During World War II This led to a boom in rail, canals and coastal transport. After the war road transport began to dominate again despite the very restricted licence requirements under the 1933 Act. In 1973 there was a change in food policy and Ireland became an exporter of meat to the EEC. There were a number of licence liberalisations measures implemented to facilitate this. In 1988 the market was completely opened for freight transport and the number of licenses issued became unlimited.

Of the 286,547 commercial vehicles registered in Ireland the vast majority are not of license size, which means that they do not require a Certificate of Professional Competency (CPC) and therefore may be unfamiliar with the rules and regulations of freight haulage. There has been huge growth in the numbers of vehicles in the range 2.5-4.5GVWR, however many of these are used as vans in the construction industry and cannot be called haulage vehicles, although they are classed as such.

Enforcement of the complex range of road transport regulations and legislation remains a problem in Ireland. In particular it is very difficult to enforce weights and many vehicles are operating above their legal weight. There are several agencies with responsibility for enforcement of freight regulations such as the Gardai, RSA, HSA, and C&E and this can lead to confusion.

The environmental impact of road freight has improved on a per vehicle basis since emissions standards have lowered the permitted emissions of particulate matter (PM), nitrogen oxides (NOx), carbon monoxide (CO), and hydrocarbons (HC) significantly since the first "Euro truck" emission standards were introduced in 1988. The emissions of PM and CO are an indication of the engine combustion efficiency and therefore as these have reduced the fuel consumption of the vehicles has improved also.

There are several issues that can be addressed to improve the environmental impact of road transport. Logistics can achieve much; for example vehicles should not travel the return part of a journey empty but should try to attain a "backload". However, it can be difficult for small operators to find backloads and some vehicles may not be suitable to transport different goods from those on the outgoing journey. Haulage operators have

difficulties cooperating and thus achieving extra operating efficiencies. Pallet networks have recently been formed by some medium sized hauliers as one way to tackle this. Supply chain management tools can be very useful in achieving efficiencies. As supply chains have improved, (as well as other efficiencies, e.g. vehicle efficiencies) there have been significant reductions in transport prices. The cost savings have been passed through to consumers so that haulage firms profit margins have reduced. Packaging has become a big part of haulage volumes and therefore consumers need to refuse packaging in order to reduce the amount of packaging used. There can be fuel savings by moving to larger trucks such as the Eurocombi in Germany, which has 50% extra capacity and 15% less fuel per t/km. However, some people have safety concerns with such big freight vehicles. The total life cycle impact of products should be analysed and it can show that in many cases that most of the "embedded carbon" of the product is in the plastic body of the container or in the packaging or intensive agricultural methods for products that could grown more sustainably in the third world.

### Gerry Duggan – The Neglected Issue

Cement production and road transport have accounted for 70% of the increase in Irish CO<sub>2</sub> emissions between 1990-2005. There has been a rise of 205% in the fuel consumed by road freight over the same period. Construction materials (aggregate = sand, gravel, crushed stone, rock) make up most of the road freight in Ireland and the distances for freight transport in Ireland are short. As a result the increase in tonnes transported is significantly higher than the increase in tonne-km. Both rates of growth are substantially higher than the increase in GDP over the period. There is more paved road per capita in the Republic of Ireland than any other EU country and we are predicted to have a higher number of motorway kilometres per capita by 2010 as a result of the Transport21 building programme. Motorway construction has a higher requirement for aggregate than other roads. Civil engineering practices should be revised to reduce the use of aggregate by no longer removing large quantities of soil and filling with aggregate.

There are several ideas that could help more efficient freight movement around Dublin and Ireland. North Dublin is becoming a distribution hub for many firms and this could be facilitated by moving Dublin port to a north Dublin site. Currently there is a large oil storage depot in Dublin port but this could be moved and oil could be pumped from the port. An idea to reduce congestion and improve logistics in Ireland would be to have large ships dock in Waterford and send the freight by rail directly to Galway where there would be a new distribution centre. It is expected that milk output in Ireland will increase by 50% by 2015. A central milk processing centre would be desirable from a logistical point of view. It could be located at Limerick Junction for good access to rail transport.

Scope to Reduce Road Transport CO<sub>2</sub> Emissions:

- Terminate Motorway Programme Post 2010

- Revise Civil Engineering Design Standards (to require less aggregate use in construction)
- Change Construction Practices
- Radically Review Proposals for New Towns
- Develop Alternative Transport Modes
- Incorporate Transport Planning in Dairy
- Restructuring Planning

### Roisin Byrne – HGVs and Dublin

The Irish HGV segment is forecasted to grow to 3,200 per year by 2010. The largest share of goods delivered in Dublin (in 2004) was food and beverage deliveries (38%) and the majority of deliveries were made by van (55%) and truck (39%). The dwell times for retail deliveries are the longest and can range from 7 minutes (for office materials/stationary to 22 minutes (for clothing). The success of the Irish economy has driven the upward demand for commercial vehicles.

The EU Noise Directive (2002/49/EC) and rising traffic in Dublin has required Dublin City Council to produce a Noise Action Plan for Dublin. Due to congestion in the city and the ban on HGV 5-axle trucks since February 2007, deliveries are increasingly being made by night. A quarter of deliveries in the city centre are now made before 7AM. The challenge is to ensure low noise during deliveries to minimise the disturbance of residents of city neighbourhoods. DIT has partnered with a consortium of businesses, Enterprise Ireland and Dublin City Council to work on a project "Low Noise Solutions for Night Deliveries". A hypothetical case study involving a scenario comprising a 5 vehicle fleet making 636 deliveries during a 6 day week from a single depot demonstrated that savings of €80,000 per year could be achieved by moving deliveries to the night. Estimates by the EC of the economic and social costs of traffic noise disturbance vary from 0.2% to 2.0% of European GDP. An estimate of 0.2% would be equivalent to €12 billion per year.

The Dublin City Council Management Plan requires premises receiving deliveries using vehicles with 5+ axles to register with Dublin City Council. They are obliged to submit mitigation plans to show how they intend to reduce the number of deliveries using five axle vehicles using the Dublin Port Tunnel.

#### Research on the Dublin Port Tunnel (DPT)

- In 1994, total tonnage of Dublin Port was 9.5 million tonnes. In 2006, this had risen to 29 million tonnes.
- DPT opened 20th December 2006.
- Access to the M50 from Dublin Port takes approximately six minutes.
- 65% of HGVs accessing DPT are 5 axle.

- Number of over height trucks applying for permits to transit the cordon is 30-40 per day compared with the 10,000+ HGVs using the tunnel daily.
- There have been significant reductions in 5-axle HGVs using routes such as the quays, the East Wall road, Sean Moore road.
- *Heavy Vehicle Strategy* introduced to encourage maximum use of Dublin Port Tunnel and enhance the city centre environment.

Further research will need be carried out and funded to examine the impact of the DPT on Dublin traffic, in particular on HGV traffic. A guidebook aimed at developers and architects has been produced for best practice in low noise freight deliveries and this will be promoted.

#### Main points of discussion ensuing:

- Design of roads:
  - Damage associated with HGVs is higher than for passenger cars.
  - County roads are not strengthened to take HGVs, and the proposed larger trucks will cause even more severe damage. HGVs are restricted from some roads/areas and can be restricted from more, this occurs in many European Countries.
  - A motorway strategy for Ireland should have been produced a long time ago, the planning has been very piecemeal and now we have situations where motorways run alongside national roads.
  - Bicycles and HGVs should not mix. Proper cycle lanes are needed to ensure that bicycles are separate to traffic. Cycle lanes should be taken off main roads and put on small roads. They should be enforced properly.
  - Bus lanes could be dedicated commercial traffic corridors in off-peak hours.
- The social cost of bigger (super-) trucks needs to be examined to test whether they are a good idea.
- Reducing CO<sub>2</sub> emissions from freight transport:
  - Without an alternative to road freight there is little chance of achieving reductions in freight transport CO<sub>2</sub> emissions – rail freight needs to be developed. After construction goods, consumer goods are the biggest volumes of freight moved in Ireland. Because of the population densities and distributions in Ireland road freight distribution will remain the most practical method for many locations in Ireland. Almost all rail trips begin and end with a road trip.
  - Improvements in efficiencies due to better supply chain management could contribute to carbon emission reduction rather than to cost as is now the norm.
  - We need to change consumption patterns, in particular to reduce packaging.
  - There is little incentive for haulage operators to pay a higher price for more environmentally-friendly vehicles.



- A regulator needs to be appointed to catch the illegal operators. Enforcement of the present regulations is currently the main problem.
- Rail freight
  - Rail freight has not been successful partly because it is not harmonised across EU. Signalling and track gauges differ across countries and this makes it difficult to transport by rail across multiple countries.
  - It could be possible to transport freight by rail on old passenger lines in goods vans. Irish Rail already does this to distribute car parts. Perhaps a freight carriage could be put on passenger trains.
  - Turn times on passenger trains may not be suitable for freight transport. If this is so then the Luas lines should be considered, as they are not utilised at night. In Amsterdam urban passenger rail is used for freight also.
  - There should be a rail head at Spencer Dock to facilitate rail transport freight.
- Suggestions for government intervention:
  - There are many small freight transport operators with little coordination so external leadership and funds are needed to establish a municipal freight distribution centre facilitating night deliveries.
  - An independent/state container depot is required that can operate 24 hours a day; currently many of the operators have long leases in Dublin port and close at 17.30, which makes night deliveries very difficult.
  - A subsidy could be given to night-time deliveries and retro-fitting low-noise technologies (as they do in Holland with the “PEAK” Project).
  - Put in an oil pipeline from Dublin port to north of Dublin to replace the oil depot in Dublin port.
  - Put in school bus services in urban areas.
  - A north-south corridor is needed from Dublin airport to Sandyford, investigation is needed to assess whether the metro/Luas be able to take freight.

# Appendix III Cap and Share Research Project: Terms of Reference

30th August 2007

## 1) Background

Comhar Sustainable Development Council is inviting proposals from interested organisations and individuals to undertake a study on the feasibility and possible effects (especially on the economy) of the “Cap and Share” policy instrument to control greenhouse gas emissions. The output of the study will inform Comhar SDC recommendations to Government on Ireland’s future climate-change policy.

## 2) About Comhar SDC

Comhar SDC was established in 1999 as Ireland’s forum for national consultation and dialogue on all issues relating to sustainable development. Comhar SDC works in partnership with stakeholders across Irish society and advises Government on policies that support sustainable development. Comhar SDC works in three-year cycles and began its third term in January 2006. Comhar SDC’s 25 council members are drawn from five pillars: the State sector, economic sectors, environmental NGOs, social/community NGOs and the professional/academic sector. Comhar SDC is supported by a full-time executive and secretariat based in St. Andrew Street, Dublin 2. Further information is available at [www.comharsdc.ie](http://www.comharsdc.ie)

## 3) Context for the research project

Ireland’s overall greenhouse gas emissions rose by 23.1 percent between 1990 and 2004, according to the Environmental Protection Agency. Under the Kyoto Protocol, Ireland has committed to limiting its reductions to 13 percent above 1990 levels. Emissions are projected to rise to 74 Mt CO<sub>2</sub> equivalent by 2010, which is 37 percent above 1990 levels,<sup>55</sup> meaning that Ireland will be required to make additional policy interventions or purchase credits through the Kyoto Protocol’s flexible mechanisms (International Emissions Trading or the two project-based mechanisms, Joint Implementation and the Clean Development Mechanism). Moreover, Ireland can expect to be faced with more stringent emission-reduction targets in the future as the European Union has made a political commitment to reduce EU emissions by at least 20 percent below 1990 levels by 2020, with further reductions anticipated afterwards. In the new Agreed Programme for Government the following commitments are included:

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55 Sustainable Energy Ireland, “Energy in Ireland 1990 – 2004: Trends, issues, forecasts and indicators”, January 2006, pp. 29-30

- The Government will set a target for this administration of a reduction of 3% per year on average in our greenhouse gas emissions and mandate the Department of Environment, Heritage and Local Government to publish an Annual Report setting out progress.<sup>56</sup>
- The Government will mandate the Minister for Finance to present an outline carbon report (“carbon budget”) in conjunction with the annual financial Budget. This will be followed immediately by a report from the Minister for Environment, Heritage and Local Government outlining our use of energy in the preceding year, the progress made in meeting the reduction targets, and government plans to meet the target in the following year.<sup>57</sup>

The most significant and sustained increase in Ireland’s emissions has been in the transport sector, where emissions have increased by at least 160 percent; this increase is due almost entirely to the growth in road transport. Emissions from the residential sector fell somewhat as households shifted from coal and peat to oil and natural gas, but this trend has been countered by recent increases in population and housing stock. Emissions in the agriculture sector increased over the course of the 1990s but have since declined as a result of a decline in both livestock populations and fertiliser use. Emissions from the energy-industries sector in 2004 were almost 35% above 1990 levels but have declined since 2001. Emissions from the industry sector, following increases over the latter part of the 1990s, have stabilised somewhat in recent years.<sup>58</sup> It is clear that to meet Ireland’s ambitious emission reduction targets will be impossible through domestic policies and measures unless there is progress on addressing the growth in transport-related emissions.

The EU Emissions Trading Scheme introduces an innovative policy instrument, tradable permits, which uses market incentives and opportunities to limit emissions at a lower cost than with more traditional “command-and-control” instruments like direct regulation. The EU Emissions Trading Scheme covers mainly fixed-point sources of emissions from large industrial installations (e.g. heavy industry, electricity generating stations); as a result, significant areas of the EU economy are not covered by the scheme, notably transport and the residential and agriculture sectors. Moreover, the EU Emissions Trading Scheme is only one of many possible applications of the tradable emission permits policy instrument and is the result of specific political decisions on the scope of coverage (mainly the industrial sector), point of control (“mid-stream”), method of allocation (mainly by grandfathering) and others. Other proposals for tradable emission permits have been proposed. One approach is through “upstream” trading, in which energy-producing companies would be obliged to trade: in this case

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56 Government of Ireland, *An Agreed Programme for Government*, June 2007, p. 19

57 Government of Ireland, *An Agreed Programme for Government*, June 2007, p. 20

58 Environmental Protection Agency, “Ireland’s emissions of greenhouse gases for the period 1990-2004”, March 2006

there would be a much smaller amount of entities involved in the trading system. An alternative approach is through personal carbon trading, a “downstream” trading system in which trading takes place at the individual level. Several models have been proposed with various design approaches to the practical issues posed by individual carbon trading, including tradable energy quotas, domestic tradable quotas and personal carbon allowances.<sup>59</sup>

Feasta, an Irish based research and advocacy institute focusing on the economics of sustainable development ([www.feasta.org](http://www.feasta.org)), has proposed a trading system called “Cap and Share” that combines upstream and downstream features. Cap and Share envisages the establishment of an overall cap on greenhouse gas emissions and, subsequently, the allocation of “entitlements” to every resident based on an equal division of the overall cap. Upstream companies (fuel importers, refineries, etc.) would be required to purchase sufficient entitlements to match the emissions from their operations. Feasta promotes the Cap and Share approach as an equitable and politically acceptable way of reducing emissions and is advocating its adoption at the international level. A more limited introduction at national or even sectoral level would also be possible.

In the Irish context Feasta has proposed the introduction of Cap and Share to cover those parts of the Irish economy that are not covered by the EU Emissions Trading Scheme. It points out that, at 32 percent, the proportion of emissions covered by the Emissions Trading Scheme in Ireland is less than the EU average (45%) and that this creates a greater need in Ireland than elsewhere for a means of reducing emissions outside the EU Emissions Trading Scheme. It also argues that it would be politically difficult to achieve 3% annual reductions envisaged in the Programme for Government through a carbon tax.

A Cap and Share scheme could work as follows. The tonnage of CO<sub>2</sub> emissions from fossil fuels used in Ireland in the sector(s) to be controlled would be calculated in the baseline year and divided by the number of people on a register compiled by combining the electoral register and each individual’s Personal Public Service (PPS) number. Each registered person would then be sent a certificate conveying their share of the emissions tonnage, which they would sell to a bank or post office. The tonnage purchased would be consolidated by the financial intermediaries, who would have to maintain an emissions account with the issuing state agency. The permits would then be sold on to companies importing or refining motor fuels in Ireland. Customs and Excise would verify that each firm had bought enough emissions rights when it collected the duty on the fuel. Each year, as the emissions from the controlled sectors were reduced by distributing a smaller and smaller emissions tonnage, the price of each person’s

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59 For a survey, see Simon Roberts & Joshua Thumin, “A Rough Guide to Individual Carbon Trading: The ideas, the issues and the next steps”. London: Department for Environment Food and Rural Affairs, November 2006. Available to download on [www.cse.org.uk/pdf/pub1067.pdf](http://www.cse.org.uk/pdf/pub1067.pdf)

entitlement would rise. This would compensate them, at least in part, for higher bus fares and other effects of increased fuel costs. Anyone who was, directly or indirectly, using less fossil fuel than the Irish average should come out better off. And, although the cost of living index would rise because of the additional cost of fuel and transport services, there should be no effect on wage claims as negotiators would know that everyone had already been compensated for the increase.

## 4) Scope of the project

The research project should take place in two parts: *policy analysis* (a desk study of approximately 20,000 words) and *impact modelling*, using existing modelling resources where possible.

### 1) Policy analysis

A desk study of the different policy approaches, policy constraints and design issues that should be considered in addressing the fossil-fuel emissions that are not currently covered by the EU Emissions Trading Scheme.

#### Policy approach:

- Overview/survey of different approaches to emissions trading with an emphasis on personal carbon trading.
- Comparison of personal carbon trading approaches with non-trading approaches to emission reduction, e.g. regulation, taxation. This should focus on emissions that are not currently covered by the EU Emissions Trading Scheme.

#### Policy constraints:

- What sectors of society are likely to be particularly affected by the scheme? Attention should be paid to the differences in impact between the rich and poor.
- Would the Cap and Share approach be consistent with EU Internal Market rules?

#### Design issues:

- What proportion of the population would be covered in the scheme (and how best to target those resident in the state not on the electoral register or holding a PPS number)? How should visitors and resident children be treated?
- What administrative and institutional arrangements (including awareness raising and capacity building) would be necessary for the operation of the scheme?
- What would be the transactions costs for the establishment and administration of the project?
- What would be the transaction costs for those participating in the scheme?
- What would be the optimal tonnage of CO<sub>2</sub> emissions allocated to each person?

- Would it be worthwhile/practical to restrict Cap and Share to just the transport sector (excluding other sectors not covered by the EU Emissions Trading Scheme, e.g. home heating fuel)?
- Could the scheme be extended to cover the whole island of Ireland? What would be the cross-border effects if Northern Ireland were not covered by the system?

## II) Modelling the economic impact

The economic impact of Cap and Share, compared with the counterfactual scenarios of reducing emissions through other policy approaches outlined in Part I (e.g. increased excise duties on fuels), with regard to:

- a) Impacts on GDP, employment and the distribution of income
- b) What sectors of the economy, if any, are likely to be particularly exposed to competitiveness pressures as a result of the scheme?
- c) Impacts on energy prices
- d) Impacts on price of emission allowances in the EU Emissions Trading Scheme
- e) If the cap was just left at the initial level, how rapidly could the price per tonne be expected to rise?
- f) If the cap was reduced annually at various percentage rates, how would this affect the CO<sub>2</sub> price?
- g) What effect would selected tonnage prices have on various fuels, and associated motoring and freight-transport costs, and on public-transport (bus and train) fares?
- h) What would be the impact of the higher transport costs on competitiveness?
- i) Estimating the “do nothing” scenario and the effect of alternative policy approaches, e.g. raising excise duties on transport fuels.

The contractor should establish contacts with relevant officials in various Government departments and agencies and seek to use existing resources wherever possible.

Following the acceptance of the tender, Comhar SDC will invite the successful tenderer to an initial consultation with Comhar to finalise the details of the contract. In addition, Comhar SDC in cooperation with the contractor will organise a stakeholder review of the preliminary findings of the research project, the results of which should be incorporated into the final report.

Tenderers should give a separate quote for the policy analysis (the first part) and the impact modelling (the second part). Comhar SDC will not be obliged to proceed with the second part of the project having assessed the outcomes of the first part.





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