

1. Introduction

This research (a full version of which is available to download on www.irishrurallink.ie) has been commissioned by Comhar SDC and conducted by Irish Rural Link. Its purpose is to:

Provide a comprehensive overview of the challenges to developing more sustainable travel patterns for those living in rural areas while not increasing transport-related social exclusion, and to provide a range of policy proposals for how these challenges can be overcome or minimised.

The approach of this research is to view rural transport in the broader and necessary context of sustainability. This research is from the perspective that sustainable rural transport must be developed from a consideration of its role in achieving sustainability. Following a review of current trends in rural areas, this research identifies the unsustainable nature of mobility patterns in rural areas. Inadequacies in existing transport provision in rural Ireland are identified. This situation is compounded by a lack of funding, coordinated policies and data.

It suggests that a two pronged approach - one of transport reduction (i.e. reducing the amount of individual vehicle kilometres driven) combined with transport provision – is required when developing a sustainable rural transport policy.

Based on the research findings, and findings from a stakeholder focus group, proposals and suggestions for further research are outlined. It is considered that an appropriate policy should aim to combine a transport network which adequately serves the social excluded (who depend on this service) with a reversal of the reliance on the use of the personal car. This will help overcome our environmental commitments as well as building social capital in order to create sustainable rural communities.

2. Summary Conclusions

The summary conclusions of the report include the following:

- Rural transport is a public good and therefore if examined purely from a private cost basis will always be uneconomic. There are social benefits arising from better public transport provision in rural areas which include greenhouse gas emissions reduction, social inclusion, and rural development opportunities. For this reason, additional public funding is required to support rural transport provision. A portion of carbon tax revenue (in proportion to that paid by rural people/businesses) should be ring-fenced for rural transport.
- It is unlikely that a door-to-door public transport service can be provided to every single household in rural areas. A combination of services at different levels of frequency is needed:
 - High quality national transport services with pickup points on national routes;
 - Better integration of existing services (including bus stops with timetable information and Park and Ride facilities at pickup nodes);
 - Regular commuter services between towns and villages;
 - Mobility management plans for work-places, schools and sporting activities.

Overview

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- Good quality information is needed to link transport systems and enable travel across a range of transport services.
- Rural transport planning should be moved from the Department of Community, Rural and Gaeltacht Affairs to the Department of Transport.
- A group of transport experts from the Department of Transport should be available to communities within the Rural Transport Programme to enable more professional transport planning.
- Local and regional authorities should have a role in transport planning.

3. Findings

The report acknowledges the proactive role national government plays in signing up to the principles under the Kyoto Protocol, which targets a limit in greenhouse gas emissions by 13% above 1990 levels. Although Kyoto, signed as far back as 1997 has not materialised into reduction in greenhouse gases, Ireland has not taken adequate response to the changes needed for many reasons. Rapid economic growth also brought an increase in emissions to 25.5% above the agreed base year. This report showed the importance placed on transport as a means of addressing social exclusion but it also showed the need for change in personal behavior towards achieving sustainable rural transport. This cannot be achieved without the commitment of government policy which can be seen in case studies given from international best practice.

The report took as its starting point that rural transport should be set within the broader context of sustainability. Data has shown that there is a very high trip rate in rural areas and that the primary mode of transport is the private car. This is a result of a complex set of mixtures such as peripherality, low density of population, declining and more centralised services and very little alternatives in terms of public transport. Due to this dependency on the private car, transport plays a significant role in the economic, social and environmental viability of rural areas and rural communities.

Ireland is not unique in the profile of its rural areas. Most other countries experience the same challenges. Therefore, this report provided a review of approaches taken in other countries in order to develop models of best practice in transport provision and transport reduction, giving examples of achievements made in their respective rural areas. Lessons from these case studies were identified with the aim of producing a best practice.

Travel demand issues such as integration, governance, and land use planning are critical factors in examining mobility policy and sustainable travel in rural areas. The UK has recognised the economic value of a sustainable rural transport network, illustrated by its emphasis on accessibility planning. Part of Ireland's quandary regarding sustainable rural transport lies in the lack of integration between policies. A prime example of poor integration, governance and land use planning is the phenomenon of urban sprawl (shown clearly by the Census data). This is where cities like Dublin, Cork, Galway and Limerick have been allowed to spread out with the proliferation of thousands of one-off housing in areas with no local centers or facilities and where residents have a daily commute of one, two or three hours to get to work in the town / city center. So, while one area of Government wishes to reduce carbon emissions and energy costs, and another Department wishes to improve transport links in an efficient and low cost manner, other areas of Local and National Government allow settlement policies that run directly counter to the first two aims. Such lack of integration across Government Departments and their policies and programmes is at the heart of the problem. To leave the status quo untouched while trying to implement a rural transport scheme to help build and sustain rural communities becomes more and more inefficient and energy hungry and more and more unsustainable.

It can be concluded from this report that Ireland's effort to achieve sustainability in rural transport has developed from a narrow focus to reduce social exclusion. This report reveals that rural transport throughout Europe gives people the basic right to freedom of mobility, a right that does not disadvantage people because of where they live. However, McDonagh states in his view on rural transport that "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". When we observe rural transport with a view to addressing its challenges, it is necessary to view it from a measured perspective of social, environmental and economic sustainability viewpoints. In this review, one can make the distinction that environmental sustainability is most at threat due to over reliance on private car usage in the absence of a viable alternative transport model. Nationally and internationally policies have been agreed to reduce emissions and mitigation measures are being pursued.

The OECD has classified greenhouse mitigation measures into three categories:

- Improvements in fuel efficiency,
- Traffic demand management,
- Alternative fuels and technologies.

It is generally accepted that to achieve environmental sustainability we need:

- Cleaner vehicles
- A reduction in the number of vehicles needed to provide adequate rural transport
- Incentives to encourage people to drive less.

The OECD further breaks this down into categories such as:

- Consumer information
- Encouraging modal shift
- Taxes: (on Vehicles and Fuels)
- Road charges and tolls
- Alternative fuels incentives

To meet international and national agreements and to develop sustainable rural transport a combination of these measures are being considered for introduction in rural Ireland. These are necessary and if implemented over the short, medium and long term could lead to sustainable rural transport. However, as this report has found, the complexity of rural transport issues in Ireland may result in an undesired policy outcome if such measures were put in place without additional policy measures. This report has identified a number of challenges and obstacles that must be addressed before other measures are put in place.

4. Challenges and obstacles to sustainable rural transport

This report has found that rural transport in Ireland is faced with a number of challenges and obstacles, namely

- No national rural transport policy
- No national rural public transport service
- Lack of funding
- Lack of coordination of existing services
- Lack of integration of existing services
- No responsible authority for the coordination or delivery of rural transport
- No best practice to inform rural transport provision or reduction
- Current legislation
- Lack of data

Considering the complexity of the situation and the underlying necessity to reduce emissions this report reviewed **reduction** and **provision** measures used in other countries.

Reduction	Provision
Differential fuel taxation	Use of high spec technology
Differential vehicle taxation	Models were people centered
Tax allowance for new vehicles	Demand responsive models
Carbon taxation	Funded
Emission fees	National Policy
Fuel taxes	Integration and co-ordination of services
Congestion charges	Information and Marketing
Parking charges	Governance
Subsidies for less polluting modes	

In order to achieve sustainable rural transport and avoid undesirable outcomes, this report considers that a two-pronged approach to rural transport is necessary. There should be measures that encourage reduction of car use and journeys made but equally important there must be options provided as an alternative means to the use of the private car i.e. provision of alternative modes. The table above summarises measures of reduction and provision that were employed in other countries.

Following on from this the report proposes a number of recommendations.

5. Recommendations

There is a need to develop a national sustainable rural transport policy. Once this is in place a more concerted effort to achieving sustainable rural transport can be achieved through short, medium and long-term measures. Reduction and provision measures must form part of each timeframe.

SHORT	MEDIUM	LONG-TERM
Provision of information	Investigate options for the delivery of sustainable public transport in rural areas	Delivery of a sustainable public transport service for all rural areas
Integrate existing services	Legislation	Fiscal measures
Stakeholder collaboration	Cross sectoral policy integration	National Transport Research Centre
Rural proofing		National policy for alternatives
Mobility management plans		
Research		

5.1 SHORT TERM

Information

There is very little information of the services that do exist. There is a need to improve awareness of these services and provide up to date timetables in the areas where they exist. Integrated timetables with information of connections to other services is also required. Evidence from the West Yorkshire model in England (Chapter 3) showed that with an increase of information the use of public transport increased its passenger numbers eightfold. Information (real-time information) can be a very effective tool towards encouraging modal shift when it includes training.

In addition to this there will be a need to address people's attitude to the use of public transport. There is a need for an all island environmental awareness campaign on transport which informs the motorist as to alternative car usage such as car sharing etc.

Rural proofing

In its compilation, this report has highlighted that rural transport is a complex issue. Not only does rural transport have direct issues (in relation to its delivery) it is also affected indirectly by other policies, e.g. education, planning, health. Therefore, in addressing the issue of rural

transport the impact of other policies must be considered. Rural proofing as espoused in the White Paper on Rural Development must be enacted; otherwise policies outside the direct remit of transport may in fact undermine the sustainability of rural transport.

There are significant constraints in developing new policies to stimulate economic activities in rural areas and the lack of 'rural proofing' of policies increases further the chasm in terms of environmental, economic and social cohesion within and between regions. Some means of reconciling existing conflicts is needed.

Integrate existing services

At present there is very little integration of public transport services in rural areas. This leads to the perception that journeys on public transport are untenable. It is necessary to gather this information to provide for passenger information but also in order to avoid duplication of services, fill gaps in services and ultimately provide a more efficient transport service.

Other measures include the need to provide appropriate facilities, such as

- Bus stops with timetable information
- Park and Ride facilities

A missed opportunity exists in providing parking spaces for cars in rural areas where they join with commuter bus routes. Owners presently park their cars along the side of public roads until their return in the evening. These areas are frequently poorly lit and thus are very dangerous. It should be the remit of the local authority to provide a safe, off road, parking. However, with the aid of rural development funding known as LEADER, private landowners could be encouraged to provide such a service, encompassing conveniences such as information on times and local services.

Mobility Management Plans

- *Work Place plans* should be mandatory for places of employment in rural areas and for those employment centres that have a rural employment base. This requires companies to produce plans with their employees as how best to use public transport. Possible incentives for this initiative, where services are available, could involve companies not receiving tax allowances on cars i.e. depreciation. Instead tax incentives should be given for public transport use.
- *Schools and sports activities plan.* Similar to work place plans, school and sports and activity plans are needed. School parent association and sports clubs would produce a plan as to how children would get 'to and from' particular events without the over duplication of car use.

One of the primary trip producers is the school trip. This is an issue that must be addressed. Current policy measures to reduce financial aid for school buses have had an unintended outcome. The recent school bus budget cuts doubled the fee for its use in some circumstances. This has forced parents with more than one child to rethink the cost of the bus fees and possibly forcing them to take the car. This system does nothing to encourage public transport. The Department have made parents aware that this is not a door to door service, again forcing parents to use their car to join with the bus. There is a need to investigate the delivery of this service. As highlighted in Chapter Three there has been much success in revising the size of buses or indeed the concept of car pooling that are used in particular areas and for particular functions. At present large 52 seater buses with very low occupancy rates are being used for this service.

Stakeholder collaboration

There are a number of transport providers in rural areas. However, there is very little collaboration among the providers. This has led to competition, duplication of services, lack of coordinated services, disharmonious relations and ultimately a process of undermining all transport providers. It is imperative that a process of collaboration is initiated.

Research

The most significant finding in this review was the distinct lack of data on rural transport. While transport is constantly cited as a major problem in rural areas the details of transport behaviour, demand, supply and information of existing services is absent.

This report highlighted a significant lack of data to adequately inform the formulation of a rural transport policy. Gaps in data include:

- Mobility and accessibility levels of rural residents
- Settlement patterns
- Transport needs, demands, behaviour
- Transport providers
- Services and facilities
- Barriers to provision
- Interconnections with urban environments
- Potential of expanding urban services
- Potential impacts of proposed policies

Before any measures, either reduction or provision, are advanced these gaps in data should be filled.

5.2 MEDIUM TERM

Legislation

Regulatory Policy / Transport Act

The monopoly which Bus Éireann presently enjoys could be termed as an anticompetitive policy stance by the Department of Transport. It lacks a foundation both in economics and in the market for bus services. The Department of Transport needs to open real debate on the need to deregulate the bus market. A case could be made as to the need for subvention to Bus Éireann in a rural equation in light of the recent EU public service obligation policy coming into being. Evidently there is need to update Ireland's Transport Act and to this end rural areas need to be acknowledged for the valuable contribution it makes to the economy in general.

Transport requires:

- More competition – allowing for an even playing field to tender for route licences
- Recognition as to the competitive advantage big bus operators have in tendering for route licences - being mindful that companies like Bus Éireann are well established and therefore can use 'economies of scale' to their advantage.
- Increased transparency in the relationship between the Department of Transport and Bus Éireann.
- Procedures to insure that no transport providers can cherry pick profitable routes – preserving the concept of public service obligation (PSO).
- A change in the law that governs taxis - at present it is illegal for a taxi driver to collect several passengers along a single journey route.

Car-pooling

Car sharing / Car-pooling – further investigation of this practice is necessary. However, for it to be successful the issue of insurance too must be addressed. Private car insurance does not cover for 'hire or reward'. This makes drivers apprehensive about sharing their journeys. If this could be reconceived it would allow for more use of the community car approach to rural transport demand.

New Cars

Ireland has one of the highest taxes when it comes to the purchase of new cars. This Vehicle Registration Tax (VRT) should be adjusted to ensure it does not increase the cost of safety and environmental equipment fitted to cars. Rural areas, because of the poor quality of many rural roads, would benefit from this development.

Policy

Sustainable settlement patterns are necessary in order to have a viable passenger base for public transport. Therefore, there is a need to reconsider the various elements of policies that affect rural areas e.g. rural development policy, National Spatial Strategy, transport policy, environmental policy and health policy. To achieve sustainable travel patterns in rural areas there is a need to create sustainable rural communities. This has implications for Spatial Planning policies and the location of services (for example the location of health services are outside the remit of typical planning policies) that are provided in rural areas. In addition to this, funding strategies to support policies need to be aligned. For example, Transport 21 needs to be aligned to National, Regional and Local planning strategies,

5.3 LONG TERM

Delivery of a sustainable public transport service for all rural areas

Following the steps taken over the short and medium term (review of existing services; research of behaviour and needs; models etc.) it should be expected to provide a sustainable public transport service for all rural areas.

Fiscal Measures

This report emphasised the importance of sustainability and the significant role of transport within this setting. It was acknowledged that action is required to address the unsustainable travel patterns of existing trends in rural areas. Therefore it will be necessary if short and medium term measures do not abate these trends to introduce the appropriate fiscal measures.

National Transport Research Centre

This report highlighted the complexity of rural areas and the dependency on the private car concluding that much more research is required before alternative measures are introduced or resources allocated. Therefore it is considered that a National Transport Research Centre should be established. Its remit would include:

1. Co-ordination & Integration of Information
2. Co-ordination & Integration of Services
3. Promotion of Services & Information
4. Quality Assurance
5. Research and Development.

National Policy for Alternatives

Increasing research is providing evidence for new alternative ways to fuel transport vehicles. As such there will be a need to develop an all island policy on alternative transport fuels, which will develop the "government's electric vehicles national policy" as announced in November 2008. Based on research, Ireland needs to determine whether electric powered vehicles, hydrogen fuel cell vehicles or vehicles run on biomass as best suited to our circumstances. The next step is to develop the infrastructure to support the development and rollout of such a policy. Emphasis should be placed on providing the maximum opportunities to distribute economic activity in rural communities. This may perhaps be achieved by micro wind electricity generation in the case of electric vehicles or wind generation to provide hydrogen at community or farm level.

The potential use of rail deserves further investigation. Goodwin (1994) states, "Building more roads, though often advocated, is now viewed as futile. Since the early 1990s research has shown that road building largely results in yet more traffic, congestion and economic inefficiency, as well as it simply being economically impossible to accommodate the pent up desire for car use growth".

6. Options for the delivery of sustainable transport in rural areas

This report has highlighted that at present travel patterns in rural areas are unsustainable. In addition to this it has highlighted that current measures to provide public transport are piecemeal, inefficient and inadequate. It is therefore necessary to consider what form public transport provision should take.

Option 1

Review remit of the Rural Transport Programme

At present the Rural Transport Programme represents the only concerted measure of providing public transport in rural areas. However while this Programme has been successful in the remit it was set (increasing social inclusion) it cannot be seen as a response to unsustainable travel patterns in rural areas in its current form. As the Programme has already established links, networks and has proven capacity it may be possible to reconfigure the remit and delivery of this Programme.

Two possible approaches:

1. Increase funding

This could be used to facilitate the potential increase of groups and thereby geographical coverage. At present increased funding only facilitates the opportunity for groups to expand that group's geographical coverage.

2. Expand its remit

A method of getting areas covered (The RTI recognised that communities may be best placed to identify their needs however not all areas have the capacity to make submissions; perhaps the RTP could work with all areas to make submissions etc.)

- Expand remit to provide transport provision for all areas and all users
- Increase its funding
- Monitoring of services and needs in its areas
- Develop a legal framework for the RTP, which allows it to compete with other service providers but keeping its non-profit status in place.

The Programme would benefit from the increased use of Demand Responsive Transport/ telematics. It is found from both the focus group and previous research that not many of the rural transport services throughout Ireland utilise the use of Demand Responsive Transport / telematics. Some counties use the application of telematics in public / community transport areas but these are "low-tech" and don't cross-pollinate between other service providers.

It was found in Chapter Three that the use of telematics is very effective when integrating passengers and services providers. Transport operators in rural areas have the comparative advantage of being familiar with a wide area. Moreover operators of on-demand systems often know where their customers live and are able to deliver a vehicle to their place of residence or very close to it, within a specified time frame. These characteristics are similar to the requirements of a door-to-door delivery service. A spin off from the successful use of telematics could be the delivery or pickup of goods from store-to-door. New generations of shoppers, who order online, require that delivery times are kept relatively short. Every measure should be exploited to the introduction of new technologies in rural areas. This must include a provision for training of the users in both transportation providers and passengers.

Option 2

The Rural Transport Initiative (now Rural Transport Programme) was established as a pilot programme to investigate the potential of public transport provision in the reduction of social exclusion. This pilot proved that the provision of such a service reduces social exclusion but additionally during this process various models of delivery emerged. This report also identified other models of delivery. Chapter Three provided many lessons for the provision of effective and efficient public transport.

- Vehicle type and size were appropriate to purpose and area
- All models embraced the very latest technology.
- All models were people centered and demand driven.
- All models were supported at national level through policy and in turn funding.
- All models focused strongly on integration and do not act alone.
- All models valued indigenous knowledge.

It is now time to learn the lessons from the various models of delivery. The following exploratory questions could lead to the most appropriate delivery mechanism:

- What models worked best and why?
- What models did not work and why?
- In what type of areas did the projects work best?
- Did area type and model type differ?
- What type of management system worked best and why?

It is envisaged that the findings of this investigation would result in a rural transport typology (Weir, 2008).

Using this typology this research would propose an area pilot project to develop and implement a new model for rural transport. In this instance the model delivered would be based on the area and its population's needs. To achieve this, the following steps are required:

- Build on the rural typology methodology developed in research papers of the National Spatial Strategy
- Area selection (a rural *type*)
- Area analysis (population profile; settlement patterns; employment centres; service centres; urban connections)
- Travel patterns and behaviour
- Review of existing services
- Review of models (national and international) on population needs
- Implement a pilot model - with appropriate support measures (information, timetables etc.

Ultimately it would be envisaged to develop rural transport models based on rural type. This approach offers a focused, concerted and sustainable (social, economic and environmental) approach to addressing rural transport.

6. Conclusion

This report provided a review of existing literature on the state of rural transport in Ireland. It has shown that rural transport in Ireland is a complex set of relations. Rural transport in Ireland is predominantly based on the private car and in this form rural transport in Ireland is environmentally unsustainable. However as this and other studies has shown, due to the lack of alternatives, this form of rural transport is part of the social and economic fabric of sustainable rural communities. Therefore the challenge of achieving sustainable transport in rural Ireland lies in trying to balance the social, economic and environmental elements of rural transport.

The core issue faced by policy makers involved in rural transport centres on the absolute necessity of having a car. Even in less isolated rural areas the car is essential. This dependency derives from a lack of viable alternative modes of transport (public transport). At present rural public transport (excluding some direct Bus Éireann routes) is defined by the 34 local community run transport initiatives in operation. Their remit is largely aimed at people reliant on welfare allowances and who are generally happy with what is often a limited service. While it may be attractive to persuade people to abandon the car by the imposition of punitive taxation, it is unlikely to change the driving habits of people who cannot avail of any other choice. The result of taxation without real transport alternatives will be to increase the general economic burden on everyone at a time when their income is threatened in other ways, or force people to remain confined to their homes because of affordability issues. If sustainable rural transport is about reducing car mileage because emissions must come down, then other options must be developed.

In terms of a delivery of alternative transport this report proposes the development of a Rural Transport Typology that is an area based approach.

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- Review of existing services
- Review of models (national and international) to population needs
- Implement the model (with appropriate support measures (information, timetables etc))

This report has provided a review of existing literature on rural transport in Ireland. While a lack of information on specific detail was one of the main findings it also found evidence that there is an increased awareness of rural transport issues. This report provides a strong foundation from which future research can be developed which will, for the first time, provide evidence based research to inform policy. This can then result in the realisation of sustainable rural transport

The full report is available to download from Irish Rural Link's website www.irishrurallink.ie