

“Provide and Promote”: Transport In Wales 2040

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1 INTRODUCTION

There is a generally accepted view that the long term (30 – 40 year time span) solution to the energy and pollution consequences of the motor car in Europe and the other oil using areas of the world (see Fig 1) must be the delivery of an integrated transport policy. Wales is, at least, representative of the EU as a whole.

As a relatively small country with an established pattern of spatial development, Wales has clearly definable areas, namely:

- major urban areas;
- Valleys communities;
- rural areas (affluent, often referred to as “urban shadow”);
- rural market towns
- remote (often called “deep rural”) rural areas.

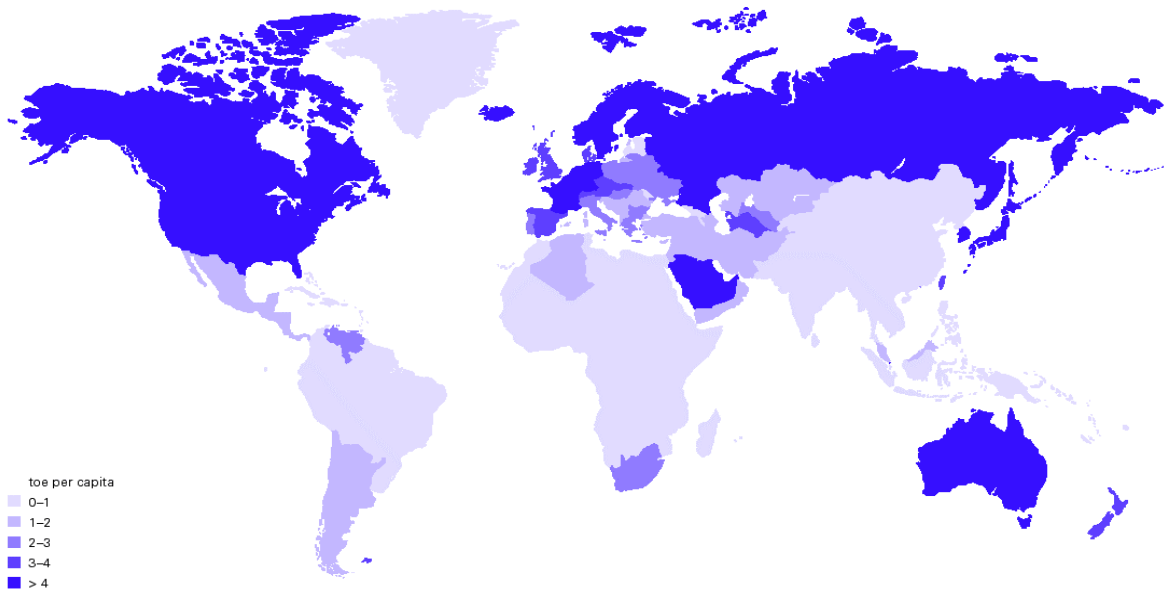
Each of these area types has particular transport needs. Future aspirations for transport service provision in each area type need to be explicitly stated so that a blueprint may be developed with appropriate targets for service provision by each transport mode.

The Assembly Government, both directly and by commissioning studies and reviews, has made strides towards recognition of transport problems and has identified some possible solutions. These include the extension of transport concessions, extension of Transport Grant allocation to cover a three year period and increased use of transport telematics.

There is a clear recognition that it is the urban journey to work movement where the most dramatic changes must occur. This does not mean that other aspects of policy, such as greater inclusivity with a focus on accessibility rather than simply mobility should not be vigorously pursued, in parallel. However, without addressing the journey to work problem, it is unlikely that other aspects will achieve or deliver overall aspirations.

FIGURE 1: Who Uses the Energy?

energy consumption per capita
Tonnes oil equivalent



2 ABSTRACT

The Welsh Transport Strategy Group (WTSG) believes that its contribution to the transport debate in Wales could best be focussed on a generation ahead. It considers that present policy analysis is too much governed by “where we are now” and are based on building from that position. That is often the consequence of short term needs to satisfy the current demands of the population, and decision makers often have insufficient financial resources available to them to do more than that. The policy was also for many years one of “predict and provide” often only in relation to road transport. This paper takes a different view – one of “provide and promote” where it argues that sustainable forms of transport have to be provided if economic well being is to continue, but where that provision has to be promoted amongst users so that its full sustainability potential can be achieved. WTSG is unable, at present, to detect a clear, long term vision, and believes that enhanced effort must be directed at its achievement. That is the basis of this paper.

This paper examines the transport needs of Wales over the next 30 years, which, assuming conventional travel continues (see Fig 2) will see significant rises in car based travel. It questions whether these demands are sustainable over that period.

The current policy requirements expressed by Government and Committee show the optimistic and realistic levels of investment. Integrated transport is the base of the solution – at a strategic and an operational level. Its rationale and elements are considered.

The use of the 4I's, and in particular investment, are fundamental to its achievement. However the underlying questions remain – is investment at a sufficiently high level to influence modal split, and what are the future sources of funding.

The paper then switches to 2040 when predictions (from, for example BP,) indicate the oil will have run out ! It illustrates the position in relation to current energy sources for motorised transport and to its unsustainable position unless investment in more efficient or alternative energy sources (eg hydrogen) are used.

FIGURE 2a:

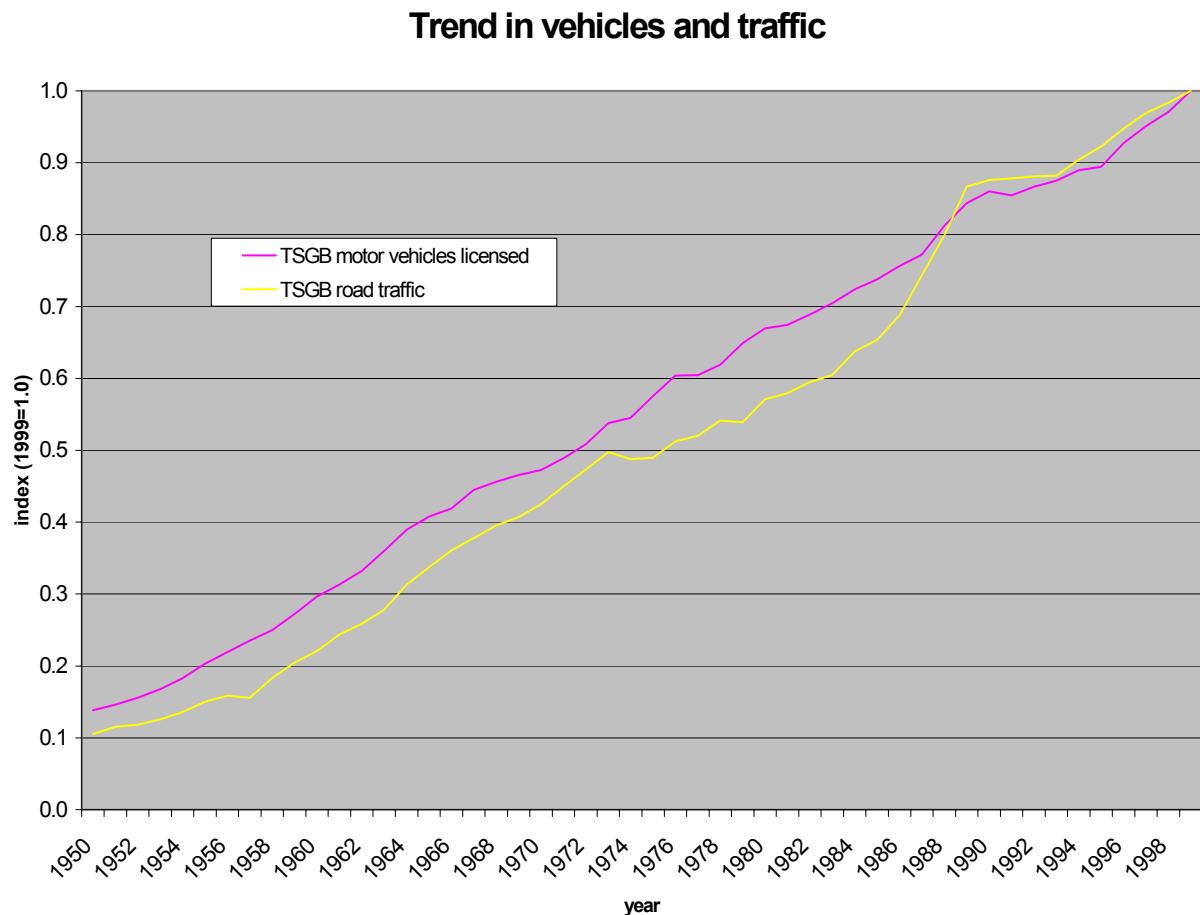
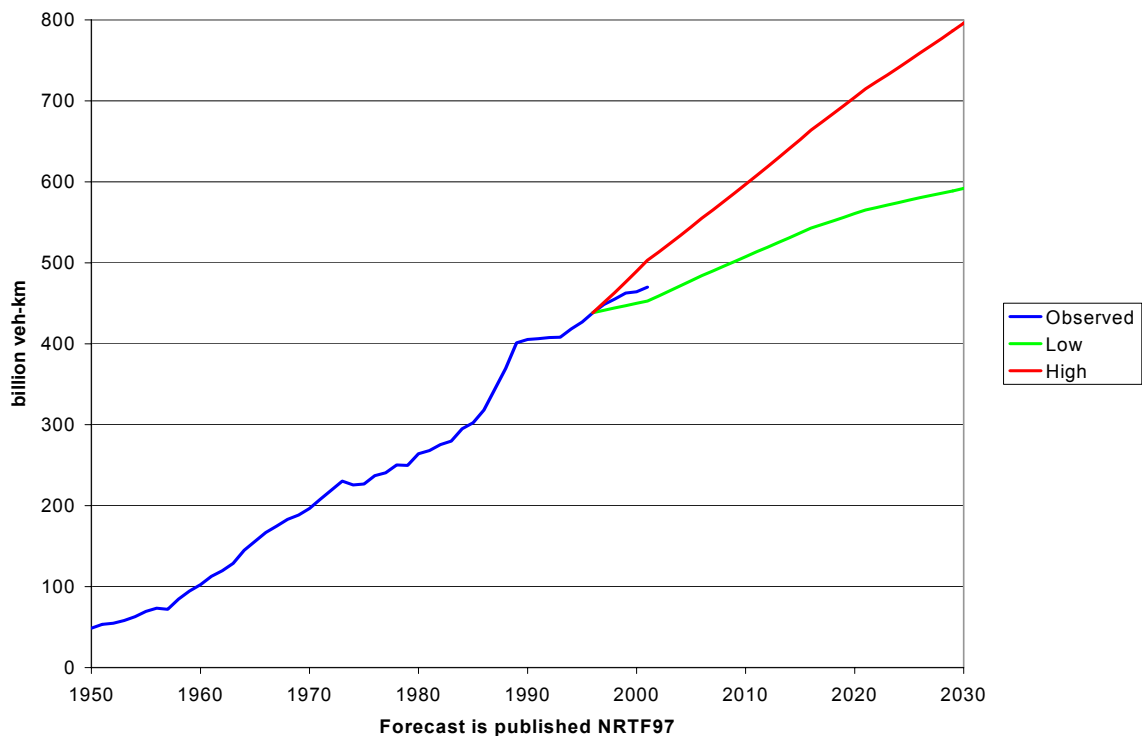


FIGURE 2b:

Observed & forecast traffic growth



3 TRANSPORT LINKS REFLECT DEMAND

Historically the land transport network, both road and rail, in Wales was London oriented.

In some ways this has been of value in linking Wales to major markets in Southeast England and in other European Union countries. East – west links in the north and south of Wales provided for the development of markets in England for industrial, agricultural and tourism products through both road and rail.

So what are the current needs of transport in Wales? There is a need to provide high quality links giving reliability and minimum journey times to markets; which provide for increased social inclusion; which link north to South Wales, and which link the Canolbarth into primary markets.

Wales has, for too long, been seen as a peripheral part of the United Kingdom. The prime objective has therefore to be a transport network linking all of Wales to its markets.

Links to London

Improved rail services from north Wales (every hour), mid Wales (every 2 hours) and south Wales (every 30 minutes) will begin to attract more car users. However, first and last train departure times will have to be extended and journey times reduced to the level of TGV services in France. In Welsh terms this means investment in the FGW/Siemens 200 mph proposal for the South Wales Main Line (Cardiff – London 50mins, Swansea – London 1h 30m) with 200 mph operations on the West Coast Main Line and North Wales Main Line at 100+ mph. To meet a 2040 deadline the plans currently in hand for the WCML will have to be modified now and the funding found from public and private (if available) sources.

The Air Wales Swansea-Cardiff-London service, three times a day will also have its effect. Road links from both north and south Wales' coastal areas are of a high standard but links to mid Wales do not meet the needs of inward investors.

Links to major English markets

North Wales links to Manchester and Yorkshire and south Wales links to London and Southeast England by rail and road are good but require improvements. These regions also require reduced journey times by high quality routes to the English midlands. Rail services on these routes have to be improved and a new half -hourly service from Bangor to Birmingham via Wrexham and Shrewsbury introduced. These will be increased line speeds and capacity providing a significant improvement to services serving Wrexham and Northeast Wales.

Road improvements are part of this development based on a high quality core road network, which will link into the A55/M56 in the north, the M54 in mid Wales and the M4/M48 in the south. This will facilitate low energy, LPG and low pollutive long distance coach operations.

Links to European Union countries

By road the internal network (figure of 8) will link via England's motorway network to the Channel Tunnel and channel ports and onwards via the Trans European Network (TENs). However the "motorway of the seas" (proposed by the European Union) connected to Wales by the ports of Swansea, Pembroke, Fishguard and Holyhead can provide high quality links with western France, Spain, Portugal and Ireland and some inter-continental destinations more efficiently and with less pollution. A proposal for a link between Fishguard and Roscoff, Brittany, to parallel the route to Plymouth and Rosslaire is currently being considered (Western Mail 8 April 2003). This requires improved road links and for rail freight links to those ports. Investment in the A40 and specific access roads will be forthcoming.

By rail via the Channel Tunnel

By air on one of the following airlines with direct links from Cardiff to other European destinations or with one change:

- BMI baby and its development of services
- Air Wales via interlining at London City airport
- Further interlining through the established KLM services via Schipol (Amsterdam)

Links within Wales

The need for a high quality internal road network linking all four corners of Wales with economic growth, increased employment and income per head as the primary drivers. A good quality internal transport network (by road and/or rail) is essential in attracting inward investment and tourists - two of Wales' primary job creators.

Long distance public transport network

The network of long distance public transport would be based on the core rail and road networks. The rail network could provide train services:-

- at 10 minute intervals on all urban services in the Cardiff and Newport travel areas (SWIFT/TIGER) either through heavy rail or light rail.
- at 15 minute intervals between Bangor and Chester; Newport and Carmarthen and a return to the Swanline concept for Swansea;
- half-hourly between Holyhead and Bangor; Milford Haven/Pembroke Dock and Newport; Bridgend and Cardiff via Rhoose (Cardiff International Airport); Shrewsbury and Aberystwyth; Cardiff and Manchester/Birmingham/Bangor/ Chester; Bangor and Wrexham/Shrewsbury/Birmingham. Existing hourly services not specified elsewhere;
- hourly between Machynlleth and Pwllheli; Llanelli and Shrewsbury.

The long distance bus and coach network would link directly to the rail network with an integrated timetable and seamless interchanges at key locations such as Cardiff, Merthyr, Bridgend, Carmarthen, Haverfordwest, Aberystwyth, Bangor, Blaenau Ffestiniog, Wrecsam, Shrewsbury, Llandrindod Wells, and Hereford. Hubs at locations such as Rhaeadr could provide connections within the long distance road passenger network. Bus priority measures would be introduced in towns and on the core road network.

Local bus networks

These would be the joint responsibility of public transport boards and bus service providers (both public and private sector). The current consortia could be strengthened and through primary legislation would franchise bus services and create local ticketing systems. The national free travel service could be extended from the elderly to the under-18's and to the unemployed. This would contribute to the increase in social inclusion through increased mobility. The Wales Flexipass ticket could be better promoted to encourage the use of bus and trains. In rural areas, alternative means of providing public transport through demand-responsive services linked to conventional bus and rail services could be introduced to improve the possible number of departures from small communities.

Questions: Can these links be sustained in the long term at present and forecast levels of traffic growth? What energy sources would be used? What is the most efficient (in social cost benefit terms) means of moving urban dwellers

4 CURRENT POLICY

The current policies of the various governance bodies with a responsibility for Wales are agreed on the need for transfer of certain powers but are also aware that the current levels of expenditure on capital schemes require considerable enhancement if we are to achieve a provision of sustainable forms of surface transport by 2040.

Several reports have recently considered the issues:-

- the Policy Review of Public Transport (Environment, Planning and Transport Committee, (EPT)National Assembly for Wales, 2000)
- Transport Framework for Wales (National Assembly for Wales, 2000)
- Transport in Wales (House of Commons Select Committee on Welsh Affairs, 2003)
- Welsh Assembly Government's (WAG) response to the House of Commons Report (2003)
- Minister of the Environment /Cabinet statements on transport to Plenary, National Assembly for Wales
- Transport in Wales : Response of the Government(UK) (2003)

4.1 INTEGRATED TRANSPORT POLICY

Definition

Considerable discussion has surrounded this policy but what does it mean?

An Integrated Transport Policy examines four relationships:

- integration within and between different types of transport - better and easier interchange between car/bus/rail etc. with better information on services and availability of integrated tickets. Thus it is between public and private transport, between motorised and non-motorised (walking, cycling) transport and within public transport
- integration with the environment - considering the effect of transport policies on the environment and selecting the most environmentally friendly solution whenever possible.
- integration with land use planning - to reduce the need for travel and to ensure new developments can be reached by public transport.
- integration with policies on social welfare, education, health and wealth creation so that cross-cutting policies on issues such as social inclusion, school travel, cycling and walking, and the profitability of business work together rather than against each other.

The preferred structure to achieve such integration nationally, regionally or locally has three prerequisites:-

- a a single policy and budgetary authority at the strategic (geographic) level both national and regional

- b a single co-ordinating body for all modes of transport at the strategic (geographic) level both national and regional
 - c operational level co-ordinating bodies to achieve seamless interchange between modes, within modes, and between modes and land uses/human activities. This relates to physical interface and the provision of through ticketing.
- While services in (c) may be provided by contractors, (a) and (b) must involve a single body.

The parallel for such a system exists in other member states of the European Union where high investment levels, with co-ordination policies of services, fares and infrastructure developments, may be found in major centres as well as in local areas. The Regional Councils of France have transport as a major policy issue with their responsibility covering local railway services (with SNCF) and for bus operations in the municipalities. In Sweden regional public transport bodies run local bus and rail services in a country with many rural areas, a small population (8m) and a concentration of people in a small part of the total land area. The Netherlands has a national ticketing system for local public transport (the Nationale Strippenkaart) and a national railway service but with provinces being responsible for all bus, rail and train-taxi services and for stations. Track operations are retained by the State-owned Railned. In Austria, the Land (equivalent to the consortia areas) has responsibility within its areas for all local public transport and land use planning and which link into a national policy for rail services. Joint ticketing exists on all services within the Land. The proposals for Wales, equate in many ways to these, would be taken further to the point where control and finance, policy and service provision, though not necessarily all operations, would be conducted by one national , and five associated regional bodies based on the consortia.

Elements

If the analysis is confined (for the moment) to passenger transport then the elements may be integrated (with a trade off in expenditure between them based on a single multi-modal evaluation technique). The elements are :-

- road investment
- rail investment (infrastructure/rolling stock)
- bus investment (terminals and vehicles)
- public transport interchanges
- walking/cycling facilities investment
- traffic management (physical and fiscal)
- public transport fares levels) and consequent
- public transport service level) contractual payments

Rationale

The key objective of integrated transport is to provide for a split between accessible and affordable modes of travel which are both sustainable and become the preferred modes of travel in Wales.

However, Wales has different spatial characteristics from densely populated urban areas (e.g. Cardiff, Newport, Merthyr, Ebbw Vale, Swansea, Wrexham), through major towns (e.g. Neath, Port Talbot, Llanelli, Aberystwyth, Llandudno) and important rural centres (e.g. Carmarthen, Haverfordwest, Castell Newydd Emlyn, Llandeilo, Brecon, Newtown, Ruthin, Denbigh) to deep rural Wales (e.g. Ceredigion, Gwynedd). The potential for transfer to public transport therefore, varies between urban and rural areas. But even such a difference can be narrowed.

However, improvements are required in the public transport system before car users can be persuaded to change and non-car owners be able to make reasonably timed and priced journeys.

Its responsibilities only provide the National Assembly with a national role in roads and a role in road/rail transport through its links with local authorities. This therefore severely limits its ability to balance investment between the best solutions to transport problems. This is highlighted in two analyses of options for transport investment in the south Wales corridor and the Cardiff-Newport conurbation. An Arup report (1999) showed the bus/rail/traffic management schemes had a significantly higher economic NPV (return) compared with the road options. A paper for the Institute of Welsh Affairs, (Cole, *in Agenda*, 2000) compared the costs of the M4 investment proposals to a series of rail enhancement expenditures suggested a similar outcome.

Local Transport Plans (LTP's), the centrepiece of the UK Government's proposals for the co-ordination of transport movements, have a crucial role in promoting integrated and sustainable transport. They must be seen in the context of users and suppliers and backed by appropriate policies, powers and resources. The policies and proposals in the LTP's must relate and support the UDP's and be compatible in a regional context. An integrated transport policy is not anti-road nor pro-public transport; rather it seeks to optimise investment expenditure on a sustainable basis. It means getting best value for the investment made but bearing in mind the long-term consequences which personal travel and movement of freight has on the environment, health and quality of life. It is not a low cost policy nor need it be unaffordable.

The models discussed in the Policy Review of Public Transport (PRPT, 2001) present several options. The proposal set out above formalises much of what is currently the reality. A national/regional model offers benefits in terms of a framework for policies to be consistent in all parts of Wales to fund and deliver public transport.

The provision for bottom up decision making by county councils through the consortia/boards will ensure that the diverse characteristics of need are provided for. The distinctive needs of urban Wales and rural Wales highlight the reality that while decisions on the rail franchise have to be made by the Assembly, decisions on local bus and associated public transport (including taxis) have to be made regionally/locally, and the whole operation has to be integrated into one total journey network.

If Wales is to develop its own integrated transport policy best suited to the needs of Wales, certain key functions have to be transferred from UK institutions. The Policy Review sets out (p.29) the need to link a series of key activities and their provider(s):-

- a national Wales rail network (Wales and Borders franchise) PTP (NAfW)
- the national road network NAfW
- bus policy (regulation) NAfW (from Df)
- regional public transport policies PTB's/CC's
- local roads CC's
- land use planning CC's
- bus quality partnerships CC's
- traffic management CC's

- NAfW - National Assembly of Wales
- DfT - Department for Transport (GB/England)
- CC'S - County Councils
- PTB's - (Passenger transport boards – groups of county areas)

The suggested structure will achieve all the requirements of an integrated transport policy, but the concerns that it will lead to a top down approach although understandable, can be overcome if the function of the national and regional bodies are clearly set out.

Transfer of powers

If the desire is to achieve an integrated transport policy for Wales the following responsibilities, powers and functions would need to be transferred from London to the Assembly Government and local authorities who between them would have the policy making role for, and power to finance:-

- road construction investment and maintenance
- bus service frequencies, routes, and subsidy/contract payment levels
- investment incentives
- rail investment (DfT/Network Rail/SRA)
- rail passenger service levels and contractual arrangements with TOC's (SRA) (block grant would be increased by an amount commensurate with current expenditure)
- environmental issues
- land use/development
- current powers of the Traffic Commissioners (DfT)
- traffic reduction/traffic management policy and regulation (DfT/NAfW)
- personal safety of pedestrians, cyclists and provision for those groups
- mobility impaired people
- liaison with Sustrans in Wales
- airport development and air service development and regulation (with appropriate private sector involvement) (DfT, CAA)
- bus industry regulation (DfT)
- public transport policy generally (DfT)
- rail regulation (Rail Regulator) and user group representation (RPC-Cymru Wales)
- regulatory framework for taxis/private hire cars (part DfT, local councils)
- port development and shipping services promotion (DfT)
- integration of road/rail freight operations (PACT) (Network Rail, DfT)

- NAfW - National Assembly for Wales

DfT - Department for Transport (GB/England)
SRA - Strategic Rail Authority (GB)

(Note: Names in brackets indicate present holders of that responsibility where these are not the National Assembly.)

The 4I's

In an English Tourism Council study (ETB, 2000; ETC, 2001) the following 4 Is were identified as the integration equation for passenger transport:-

Information + Interchange + Investment = Integration

The absence of any of these elements will hinder or even prevent the development of an integrated passenger transport system.

Information

Visitors, particularly those coming from overseas, need to know more than simply how to undertake the first stage of their journey. They need to know how to travel beyond any given intermediate transfer point and on to their chosen destination - the Dutch refer to this as trip chain management through the Planner Plus information system. Each mode of transport can provide information about its services, such as the National Rail Enquiry Service, airport hotlines, as well as coach and bus timetables and route planners.

The drawback of the existing systems is that whilst they work for single one-mode journeys, planning more complex travel in advance is not well served. Additionally, it assumes that all travellers are the same, and does not cater for differences in visitor types or specific markets such as people with disabilities. Transport Direct Cymru's Journey Planner currently (2002) being developed out of Traveline is expected to have this total approach.

Train and bus operators have low budgets (£20m p.a. on rail advertising, £2.5m on Traveline) available to promote these modes when compared with car manufacturers (£480m p.a.). The majority of the public may also perceive car travel costs as being petrol only and, subsequently have little appreciation of the true costs of motoring, and the relative costs of train/bus options.

Currently, the pricing structure of rail tickets (where the cheapest fares can only be booked in advance) penalises both tourists making last-minute plans as well as those not aware that tickets bought on the day of travel are more expensive. Greater information needs to be made available here with a simplified, easier to understand fare structure for the railways.

The ultimate goal must be along the lines of the Planner Plus system introduced by Netherlands Railways (NS) ten years ago. It provides all the travel information identified in the **Information Needs of the Independent Traveller** study recently completed by the Wales Transport Research Centre for the Welsh Assembly Government, (WTRC, 2003). These are:-

- train, bus and coach times and taxi telephone numbers, and fares, as the primary needs (air/ferry information was also identified)
- rail information is well provided for by the NRES telephone line but is difficult to find on the internet
- simplified fares structure is complex; _
- bus information available locally is usually good. Traveline Cymru provides a telephone service and when completed will come near to "Planner Plus" for local bus information
- timetables are difficult to read and not lit at bus stops and railway/bus stations

- signage outside bus/rail stations is in general poor and at best average. Full clear signage does not exist
- railway station on-platform information on buses, taxis, routes to telephone, and village/town centre requires improvement
- connecting services bus/rail are often unco-ordinated
- there is a need for travellers to have their own pre-information on locations. More training in route geography for call centre staff was identified
- printed versions of through travel information as produced by Planner Plus in the Netherlands would be welcomed by travellers.
- although not an information issue, a lack of left luggage facilities was criticised compared with other EU member states. The security issue was dismissed by most travellers

The Wales Tourist Board Destination Management System could also provide comprehensive information for visitors via the internet and will incorporate an online facility to book tourism products. It can have a rôle to play in providing all modal information to visitors.

Interchanges

High quality seamless interchange facilities are an essential requirement to match the convenience of private vehicles. Particular attention needs to be paid to the ease of ticketing arrangements e.g. tickets that allow travel on different types of transport, and the physical environment of interchanges.

- a. Ticketing - The ability to purchase tickets for the entire journey, across all transport modes, needs to be improved, without introducing complex pricing structures that become a disincentive to travel. In addition, the case for issuing tickets allowing entry to certain attractions, as well as travel, needs to be considered.
- b. Physical environment - Tourists, usually with luggage, require ease and comfort when changing between transport modes, otherwise it will be difficult to persuade people of the benefits of using public transport. In order to make interchanges attractive and user-friendly, there is a need to provide for ease of movement; luggage storage facilities; secure parking for cycles, cars and motorcycles; undercover links; clear signage and timetable displays; short walking distances; well maintained facilities; and personal safety and security.

The visitor is likely to be burdened down with luggage; they may well have young children with them or could be impaired in terms of their mobility due to age or physical disability. The ease with which they can change between modes from train to bus or taxi will be critical to determining their experience of public transport and whether they would wish to use it again.

Studies into traveller needs (ETB, 2000; DSW, 2001;WTRC 2003) have suggested the following criteria for seamless interchanges:-

- clear, comprehensive information on the interchange characteristics.
- ease of movement (particularly for those with heavy luggage or young children).
- secure parking for cycles, cars and motorcycles.
- undercover links between modes.
- clear directional signs, between modes and to local destinations (e.g. town centre, hotels).
- short walking distances.
- good timetable displays.
- well maintained infrastructure, clean toilets, etc.
- personal security.
- left luggage facilities.
- car hire provision.

Action has to be taken to implement these policies so providing seamless interchange between train, bus and taxi. As with many policies their success lies in the positive impact on traveller convenience.

INVESTMENT

On the strategic level the achievement of travellers requirements - the prerequisite to inducing modal change - is through funding and organisation of change.

There is a general recognition that changes in personal commitment is the real key to achieving more sustainable mobility. Changing personal behaviour is not easy particularly when motor car advertising is twenty-four times that of railway expenditure. Blaming the government (whether Welsh or UK or European) is a familiar excuse, in that it might be argued that public awareness of the public transport options is its responsibility. Making the train or bus more attractive requires investment. Sometimes it needs to smarten up the image and the service quality. Often, because of long term under-investment, a more radical and more expensive expenditure programme is needed.

The argument that as the transport industry is in the private sector then public funding should not be forthcoming is now recognised as unrealistic and the product of political dogma rather than rational thought. Public funding on a large scale is however the answer to improved quality and reliability; but in a business context where a financial commitment has been made over a longer term than that provided by the UK Treasury. The National Assembly's five-year financial commitment provides the way ahead for long term funding.

"Provide and Promote" in the title of this paper revolves around the issue of adequate funding for the effective implementation of any policy. So how far are we along the road (excuse the pun!) to providing a sustainable service which we can promote

The primary means of affecting modal split in the short term is through attracting more passengers out of their cars and onto public transport. The opportunities to reduce leisure journeys are few; some opportunities exist for some people to work from home on say one day a week but service providers and production workers, by the very nature of their jobs, are excluded.

Questions:

The Visions of UK white papers and reports in Wales are a reconciliation of the need - the best transport system in Europe - and the reality. Is the policy achievable? Will the investment be provided?

What of rural Wales? Road improvements will be vital for both public and private transport use. But will the car have to continue to be the most common means of travel and is any other alternative better in energy/pollution terms given the sparsity of the population. New techniques for controlling bus operations in use in Gwynedd and being discussed for an experiment in Carmarthenshire will assist in modal transfer. Tourist honeypots may also be considered as small urban solutions because of high passenger flows and a current CPRW (2003) study will provide further insights later this year.

The paper returns to the issue of funding in more detail later.

4.2 THE WAY FORWARD FOR THE SHORT TO MEDIUM TERM

In situations where road space is at a premium, it may be argued that multi occupancy vehicles need preferential treatment over other vehicles. This is already occurring with ceding of priority and re-allocation of road space, such as selective detection at signals and bus lanes respectively. However, to ensure that a supply driven approach is adopted to public transport provision, this will develop into physical segregation in the form of guided bus tracks or (in limited cases) LRT tracks or other futuristic urban transit systems. The adage here as a policy for public transport may be *'provide and promote'* as opposed to the previous approach of *'predict and provide'* that had hitherto been adopted for road infrastructure.

Relevant authorities need to identify and reserve land now, against this future requirement.

A road-based guided urban transit system needs to be piloted in Wales in order to evaluate the wider applicability of such a system. Equally, the role of rail in contributing to local transport needs to be fully exploited. As a target, it would seem appropriate to aim to supply 10 new busway projects and at least one light rail project in urban areas in Wales by 2015.

There is a strong argument to promote, over a realistic time scale through the planning process, reservation of land for transport interchange development. Demonstration projects to promote exemplars of public transport interchanges in Wales should be established.

There is little evidence in Wales of fully integrated transport. Progress in this respect will require forward planning and resources, probably beyond the capacity of individual agents in the transport system to deliver. This will inevitably mean land acquisition and capital expenditure.

The Passenger Transport Information (PTI) Cymru initiative must be supplemented by widespread introduction of real time passenger information. This is a major confidence building factor in assuring the public that public transport is for them. Mobility Centres as introduced by the Rhine-Main Authority (RMV), encompassing Frankfurt and its surrounding region, seem an admirable way forward. The centres, introduced by the public sector Authority, cover all forms of transport, ticketing, information, enabling, cross reference to social service transport and special needs transport.

In considering transport schemes often widely differing in nature and type, demonstration projects and pilot schemes are needed to increase the knowledge base and experience in new areas of activity. Investment thereafter would be informed by monitoring and evaluation of the demonstrations and pilots. Examples of possible demonstration projects for Wales might include:

- Interchange Demonstration Project - 4 schemes in 5 year finance period, one per region of Wales
- School Transport Demonstration Project - long term procurement for bespoke school buses

- Guided Bus Pilot Scheme – demonstration length of heavily trafficked urban radial route

Welsh experience and good practice in the above areas, where currently there is neither, should be built up on the basis of the demonstration projects so as to inform future investment decisions in a more meaningful way.

4.3 FUNDING OF TRANSPORT

In following this principle, several questions arise. How, for example, would the funding for different modal options be achieved through the National Assembly? What levels of funding will be available and how will the evaluation and allocation of the funding be decided? A national transport partnership could also be seen within a supportive fiscal framework using various fuel taxes. A land use planning policy should be integrated with transport infrastructure through the county councils. Changes in the decision making process inherent in the proposals outlined above, the setting of environmental targets promoting greener forms of transport; and landscape and countryside protection policy could then provide a sustainable integrated transport policy for Wales within the context of the Transport Framework for Wales.

The Assembly could currently make a decision on these options but there are financial implications and issues in relation to funding sources (e.g. block grant or taxation levels; current SRA payments, DFT investment funding for railways) which would need to be considered.

Adding the railways to the National Assembly's expenditure portfolio, under the current system of governance would require a negotiated Welsh Block Grant settlement in respect of the payments currently made by the SRA to train operating companies with services in Wales or through direct infrastructure payments. The current cost of the annual operating subsidy has been estimated by the SRA as £94.7m (not dissimilar to the author's calculation of £100m based on passenger miles within each franchise) which could become a matter for Assembly expenditure priority decisions.

This paper considers funding within the present fiscal and governance context although the next 30 years may bring major changes in Wales the UK and the European Union, at present they remain speculative.

The current institutional, legislative and administrative structures in the UK do not aid the processes of integration of transport service provision. Indeed, transport provision in the UK is not treated as a public service and hence a worthwhile cause for investment (capital and revenue) of public funds in the manner that has occurred in other EU countries. Research by the Commission for Integrated Transport (CfIT) has shown that the UK generally has suffered from massive under-investment in transport for half a century. This situation has forced greater dependence on the car.

Comparisons within Europe

In the immediate past, the UK has typically invested less than 1% of its GDP in transport infrastructure. This is less than the EU average. For bus systems, the UK has provided

the lowest levels of support in the EU. For rail, the UK has provided higher levels of support but considerably lower investment in infrastructure than comparable EU countries (France and Germany).

In Wales, Cardiff, our capital city is twinned with other EU cities - Stuttgart and Nantes – both of which have considerably higher car ownership than Cardiff. It might, therefore, be instructive to consider the level of investment in transport in those cities compared with a sample of UK cities, as identified by CfIT research and summarised below:

	Expenditure in euros per capita	
	Public Transport	Roads
Stuttgart	341	228
Nantes	130	310
Bristol	17 ⁽¹⁾	25 ⁽¹⁾
Newcastle	13 ⁽¹⁾	113 ⁽¹⁾
Leeds	7 ⁽¹⁾	34 ⁽¹⁾
Cardiff ⁽²⁾	37	86
Cardiff ⁽³⁾	60	86
Cardiff ⁽⁴⁾	235	269

⁽¹⁾ Estimate based on Local Transport Plan

⁽²⁾ excluding concessionary fares, based on 2002-03 Budget Cardiff City Council

⁽³⁾ including concessionary fares based on 2002-03 Budget Cardiff City Council

⁽⁴⁾ Based on the expenditure of Stuttgart and Nantes (average of the two) and applied to Cardiff on a pro-rata euro per capita bases. This is what Cardiff would/should receive to be comparable with the average of the two other cities.

The UK has amongst the highest public transport fares in the EU. Comparison of the cost of public and private transport per km in a sample of European cities has suggested that using the car is cheaper in UK cities than elsewhere.

In the UK, public transport operators cover 75% or more of their operating costs through commercial revenue. This compares with operators covering 35% - 63% of operating costs in other EU countries. In terms of support for public transport, the following figures have been quoted in CfIT research:

	Commercial Revenue %	Subsidy %
Stuttgart	46	54
Nantes	47	53
Bristol	82	18
Newcastle	86	14
Leeds	66	34
Edinburgh	80	20
Cardiff ⁽¹⁾⁽²⁾	97	3
Cardiff ⁽³⁾	66	34

⁽¹⁾ Source: Cardiff Bus/Cardiff City Council 2002-03 Budget

⁽²⁾ Excluding concessionary fares

⁽³⁾ Including concessionary fares

From the foregoing, it can be seen that the public sector in other countries in the EU provides greater support to transport service provision than hitherto has been the case in the UK. However, in the area of concessionary fares for public transport the situation in Wales does bear favourable comparison with the remainder of the EU.

The conclusion of the CfIT research is that transport is under-funded in the UK. How can this be remedied? To begin with, there would appear to be flaws in the current appraisal process for transport schemes. The fundamental approach to economic appraisal has changed very little since its introduction in the 1960s. The benefit to cost ratio from the economic assessment has held significant sway in the overall assessment of transport schemes. This form of appraisal could be accused of being overly clinical and a somewhat simplistic representation of benefit. Herein may lie the reason why there has been a consistent lack of investment in transport schemes in the UK over the past five decades.

Rail network strategy

If we consider the recent debate on railway funding (and here our bus colleagues will accuse us of ignoring them - not so) where investment figures have been calculated, how does Wales investment programme fit these criteria?

The recent discussions on the SRA (2002) Strategic Plan provide an illustration of this dichotomy. Three separate public bodies have produced conclusions reflecting the needs. The House of Commons Transport Committee 2002 concluded “that despite an increase of the UK Government’s share of rail investment to **£33.5bn**, it is still dwarfed by the real cost of modernising Britain’s railway network“. The aspirations of the Rail Passengers Committee specification for incremental outputs (RPC, 1999) and the Assembly Government’s guide for franchise bidders (NaFW, 2000) provide the basis for a much welcomed, but only a smartened-up railway. The comparison in Tables 1 and 2 below illustrates the mid - 19th century financial proverb “you pays your money and you takes your choice” dichotomy.

Rail infrastructure budget

Table 1 Alternative expenditure levels

	Thoroughly European (Reflection of the Vision)	Modern Railway	Smartened-up Railway (SRA proposal)
New Investment	£m		£m
South Wales ML	400		200
Valley Lines	250		
North Wales ML	150		
Other (inc. Wrexham, Manchester, Cambrian)	400		
TOTAL COST	1,200		

Sources: Agenda, Summer 1999; Swift; RNMS 2000; SRA, 2002; various rail studies (1996-2001)

Table 2 10-year investment programme (£bn)

	<u>Vision</u>	<u>Expected</u>
New investment	1.2	0.2
Renewals and maintenance	0.8	1.0
Contractual payments (subsidy)	1.0	
TOTAL COST	3.0	1.2

Notes on Table 2

Public and private expenditure on the railway system is in two parts:-

- new investment - enhancement of the service (through new/upgraded track, signals, stations and trains)
- revenue support/contractual payments and renewal of the existing infrastructure.

If the public/private partnership split in the UK Government report “ Transport 2010” is taken then about 50% of the cost of the above programme would fall on the public sector. However forms of finance other than PPP’s, e.g. bonds, may be used instead.

Railways (not currently a devolved responsibility) are only a part of the integrated equation. The roads programme in both urban and rural Wales involves connections within Wales, from Wales to the rest of Europe and by - passing key settlements on major routes. Buses are the biggest carrier of passengers. Therefore, despite the more complex disaggregated nature of the operation, bus operator and county council activities require funding of sufficient bus priority routes, newer vehicles, higher quality waiting facilities and interchanges at an estimated forty locations throughout Wales, and much improved real time information for passengers.

Future Sources of Funding

The straightforward solution would be to request that central government increases its funding levels for transport to those occurring in comparable EU countries. The likely answer can be predicted with reasonable certainty, so that we must look beyond the straightforward solution. In many ways government is already attempting to do that. However, it is not at all proven that the existing approach through PFI to PPP can deliver sufficient funds to meet current and future needs.

Perhaps other funding sources should be identified to supplement the current approach. This is an area for research that might be accorded a high priority. There are three principal suggestions that come to mind and these may be worth of further investigation. They are briefly discussed below.

Adoption of a Gain with Pain Culture

Experience from the September 2000 fuel crisis suggests that congestion charging (pain) will be a success (gain) – people are far more flexible and versatile than their objections to new transport measures would often lead us to believe. Research during the fuel crisis (Chatterjee and Lyons, 2002) found that a third of commuters used public transport, cycled, walked or car shared instead of driving. A quarter of parents walked or cycled their children to school instead of driving and one in seven car users shopped more locally than usual for groceries, going either by car, walking or cycling.

The fuel crisis was an extreme impetus to make more considered use of motorised vehicles and of course it was short lived. Nevertheless, it is an illustration that individuals, when forced, will adapt in a way that the pain in terms of the necessary change in the individual's expectations from and use of the transport systems can be hugely offset by the gain to the community. This truly gives hope that travel behaviour can be influenced in the future to redress the nation's expectations of ever increasing availability of affordable personal mobility. The focus must move to the alternatives. This will not be a trivial debate. Public transport will not simply be the panacea. Land use and transport interaction will be key. However, ultimately those who choose to contribute to the external costs of transport (congestion, pollution etc) should expect to pay.

Local Taxation

On the basis that provision of transport is a public service, a continuous guaranteed source of local income is necessary to properly maintain transport services locally to a level that is desired. It is then equitable that those who have the benefits of such services available to them be required to contribute to the cost of service provision through taxes raised locally.

Value Capture(Development Gain)

The presence of a convenient transport system is a significant factor in establishing land and property values. It is therefore reasonable that a share of the increase in value that is created as a result of the transport system is captured for investment in transport. As the capture of value has hitherto not been recognised as a potential source of funding, there are few instances where private investors have promoted and taken equity in transport schemes. Nevertheless, this is an entirely reasonable proposition. In the past, timing has been the key issue, whereby private investors have needed to be brought on board before routes/services have been finalised/announced. Involving interested parties such as landowners, major employers etc in the formulation of transport initiatives as potential investors could become standard practice. Once the principle is accepted, it should also be possible to levy a capital gains tax/payment on those who benefit substantially directly as a consequence of provision of transport services.

5 FREIGHT

Freight Transport in 2040

Assuming continued economic growth, there will be a greater volume of products to be transported in 2040. Generally, for a 1% growth in GDP, freight transport grows by about 0.9%. Much of the transport will still be by road, although rail will have a greater share due to the increased cost of road haulage and services that are deemed innovative in 2003.

Environmental pressures will also result in an increase in reverse logistics. Certain products (such as cars) will be moved to processors. Here, they would be broken down into their component parts and either disposed of, recycled or remanufactured and returned to the forward supply chain. Therefore, additional transport movements will be created to collect products from consumers.

Consumers will be more aware of the environmental impacts of their purchasing decisions. Consequently, the distance between the points of production and sale will be much reduced. Indeed, supply and distribution villages may be established, with manufacturers locating their premises adjacent to the distribution centres of retailers.

The taxation structure for transport will change, with costs being more representative of the total costs incurred. Therefore, environmental externalities will be internalised and costs relating to the provision of infrastructure will also be borne by the users. Incentives for making the best use of the infrastructure will also be introduced. There will be a tax relating to vehicle fill taking into account the amount of potential capacity not used plus the distance travelled and monitored through digital tachometers. Consequently, very few journeys will be made empty, against current figures of around 30%.

The use of alternative fuels will be more widespread, due to shortages in oil significantly increasing prices plus tax benefits possible through being more environmentally friendly. In particular, these vehicles will be the only ones permitted to make deliveries in urban areas.

Rail will have an increased share of volume. This will be in part due to rail being more cost effective over shorter distances. However, developments of the freight multiple unit and Minimodal concepts will have a significant impact. These will be particularly useful in servicing towns within rural areas, where there is enough aggregate demand to fill one or two rail wagons yet individual companies cannot justify a full wagon alone.

Aside from truck and rail haulage, other freight transport options will be developed. In particular, use will be made of spare luggage space within long distance coaches to deliver small consignments or parcels. Such an approach is already used to link towns to cities in rural parts of northern Sweden.

6 WHEN THE OIL RUNS OUT

The discussion so far has identified the action that governments at a Wales, UK and EU level have to take if a sustainable alternative to the motor car is to be a serious proposition in a well developed, wealthy, industrial society which we anticipate Wales continuing to be by 2040. This paper puts Wales forward as a microcosm of the European Union in its expanded form. What has to be done here has to be replicated in other member states. But the reader may say – “what’s the panic? Surely we have 30 years before we have to take action”.

In considering this option London provides a lesson and its serious congestion (despite road charging) and environmental pollution. The roads and public transport are seriously overcrowded. Yet in 1974 and again in 1989 detailed reports on new lines – CrossRail, Chelsea/Hackney tube and others - were proposed and would have reduced all but the worst sections to below the planning standard for load factors. The lead time required for capital investment can easily be 15 years and often over 30.

The predictions for how long the known oil reserves will last vary but based on research by BP and Laherrere, 2040 appears to be the best guess at present. Of course the reserves thought to lie under Kazakhstan and Uzbekistan, and surrounding areas, in the vicinity of the Falkland Islands or indeed in the Celtic Sea have been identified. However, the quantities have not made public by either governments or prospective licencees. There is also a suggestion of a moratorium on oil extraction in the United States which wishes to retain its current reserves.

If the evidence is put forward on the supply side - the sources of oil, the oil depletion dates of the producing countries, and the remaining oil reserves (proven, probable and possible) (Figs 3,4,5). If this is then compared with evidence of demand - the users of energy (mostly the northern hemisphere), population growth and energy demand, the link between energy use and GDP, and transport being the fastest growing energy using sector in the UK while other sectors are stable (Figs 6,7,8,9) then the conclusion is inevitable in terms of the passenger market :

7 CONCLUSION

WTSG believes that an approach which involves looking beyond the three year budget should be factored into future transport planning in Wales as a matter of policy and that there is a need to significantly increase investment targets for transport provision. The time for study and endless analysis is over, and the time for massive financial input into transport to deliver the Assembly's social and economic objectives, beyond the immediate three year programme, has arrived.

The energy sources are becoming depleted while at the same time there is a predicted growth in traffic, transport use of oil is increasing and transport is the only sector where energy efficiency is not improving. Transport therefore has to make its contribution. There are several ways to do this

- 1 reduce the need to travel for work. While this is possible in some jobs, there are a majority in for example manufacturing or distribution where it is not possible to telework.
- 2 Reduce the amount of leisure travel. In an advanced democratic society such as the European Union this is unlikely to be achieved by law. People have the funds. They (the 80% of total travellers) want to travel for fun. However it might be achieved if travellers were persuaded to use more sustainable means of transport, but this requires a major shift in personal behaviour patterns.
- 3 improve transport and land use planning links
- 4 invest in public transport service quality, improved information, and seamless interchanges within and between modes
- 5 follow this with reductions in city centre parking spaces (as in Amsterdam 2001)

- 6 encourage walking and cycling through psychological advertising (as with reduction in tobacco use and acceptance) references to health and the environment
- 7 improve car efficiency in fuel consumption terms with a 200kph passenger vehicle
- 8 consider the travel needs of those requiring medical treatment in terms of travel by doctors rather than by patients.
- 9 retail household delivery by van rather than by 25 cars with orders by email, fax and phone
- 10 alternative sources of energy e.g. fuel cells, hydrogen and other renewable energy sources
- 11 reduce the unit costs of production for those sources in (7) to the same level as for petroleum and diesel fuel.
- 12 provide a distribution network for these fuels.
- 13 persuade government finance departments not to introduce excise duties on the new energy sources (sarcasm, sorry !!)

This is not an exhaustive list. It is intended to suggest some ways forward. One of the processes is to pursue an integrated transport policy. This paper suggests that as an immediate way forward. It suggests that the policies are now in place. The investment in sustainable means of transport to support those policies must follow now.

NOTE

This paper will form the basis of a report from WTSG to the Wales Transport Forum chaired by the Minister of Transport and Regional Development, Andrew Davies. This conference provides an opportunity for the transport community in Wales to contribute to that discussion.

If you wish to contribute please send your views, comments etc to Professor Stuart Cole. He with Stuart Watkins, Denys Morgan and Andrew Potter will then consider these in drafting the report to the Wales Transport Forum

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