

19 WWAY - Qualitative Option Appraisal

19.1 Overview

- The WWAY rapid transit scheme options have been assessed against central government's transport criteria – environment, safety, accessibility, economic and integration. Each of the WWAY route and technology options have been assessed against a do-minimum scenario which would include the continuation of the existing Metro bus service along the various routes in West Belfast. The results are presented in an Appraisal Summary Table.
- The Guidance on the Methodology for Multi-Modal Studies (GOMMMS) also specifies three important Supporting Analyses to supplement the Appraisal Summary Table. As a result, a high level assessment of the distribution and equity impacts; affordability and the financial sustainability of the scheme; and practicality and public acceptability issues for the scheme options have also been carried out.

19.2 Introduction

It is often difficult to apply a monetary value to some of the costs and benefits associated with each of the options. These non-monetary costs and benefits should not be discounted as being any less important than the monetary values, indeed in many cases they are crucial in the decision making process. Therefore a suitable method of evaluating these non-monetary factors must be applied.

Throughout the New Approach to Appraisal (NATA) process the Government's five objectives for transport as outlined in the White Paper are central to the rapid transit proposals for BMA. These include:

- Environment.
- Safety;
- Accessibility;
- Integration; and
- Economy.

Each of the central government objectives are looked at in turn in relation to the proposed WWAY rapid transit options. The appraisal process is also in line with the approach used in the appraisal of transport schemes in detailed in the DfT Transport Analysis Guidance Website – WebTAG Unit 3.5.4 – February 2006.

19.3 Environment Objective

The Environment objective considers the general environmental impacts of the scheme proposals under a total of 10 headings. These are outlined in detail below. At this stage in the assessment only published information relating to the scheme proposals has been examined. The following sources of information have been used:

- Draft Belfast Metropolitan Area Plan (BMAP);
- Environment and Heritage Service (EHS) Designations; and
- EHS Monuments and Buildings Record Search.

19.3.1 Noise

The WWAY proposals on the on-street sections within Belfast city centre and other roads within West Belfast are assumed to make no significant difference to the noise climate in neighbouring areas. The existing roads are all heavily trafficked and include a significant proportion of buses. In the longer term, the successful implementation of the WWAY proposals will result in an increase in buses (or LRT vehicles, depending on the option chosen) and a reduction in private cars. The overall scale of change is likely to be much less than the 30% change in traffic flows generally regarded as necessary to give rise to a perceptible change in noise levels. In the longer term a benefit in terms of reduced noise can be anticipated. However, even if this is perceptible, it is unlikely to be of more than slight positive significance. However, LRT vehicles, which are electrically propelled, are likely to have a slight beneficial impact on noise levels compared to a bus-based solution. Other environmentally friendly solutions may include the use of hybrid BRT vehicles or use of overhead power lines.

19.3.2 Local Air Quality

The WWAY proposals on the on-street sections within Belfast city centre and other roads within West Belfast are assumed to make no significant difference to air quality in the neighbouring areas. The existing roads are all heavily trafficked and include a significant proportion of buses. In the longer term, the successful implementation of the WWAY proposals will result in an increase in buses (or LRT vehicles, depending on the option chosen) and a reduction in private cars. The overall scale of change is likely to be small, but it is likely to be of slight positive significance for local air quality.

It should be noted that it is difficult at this stage to assess whether the introduction of cleaner technology will produce a significant difference in air quality with the introduction of the WWAY rapid transit options compared to a do-minimum scenario which includes a Metro service.

Translink is currently specifying Euro 4 exhaust emissions requirements for all vehicle deliveries in 2007 and 2008. They will be required to specify Euro 5 emissions requirements for all vehicle deliveries after 2009 which could include any vehicles used for the do-minimum WWAY service. The use of Euro 5 vehicles is likely to significantly reduce exhaust emissions. Translink have also completed a trial for the use of bio diesel fuel and have introduced a number of more environmentally friendly vehicles into the Metro service for use in Belfast city centre. Without having any detailed information on the type of fuel / technology to be used as part of a BRT system, it is not possible to identify any additional benefits other than those outlined above.

With regard to LRT vehicles, which are electrically propelled, these are likely to have a slight beneficial impact on air quality levels compared to a bus-based solution but only if the electricity source is from renewable energy sources.

However, diesel-electric hybrid or gas-powered vehicles also reduce emissions at the point of delivery and reduce noise levels, while trials of hydrogen-powered fuel-cell electric buses are showing promising results without the need for expensive infrastructure. All are more expensive technologies and while gas-powered and hybrid buses are working in Continental Europe and America, there have been technology problems with them in the UK. However, with announcements of new hybrid designs at Eurobus Expo in November 2006 the hybrid era may just be beginning in the UK. Wrightbus hybrid vehicles are currently being trialed in London.

19.3.3 Greenhouse Gases

Encouraging more people to use public transport, rather than private cars, is expected to help reduce greenhouse gases. The provision of park-and-ride proposals should encourage commuters to use the rapid transit service over the private car. It is therefore expected that this will help to reduce congestion on roads elsewhere and hence reduce the level of greenhouse gases produced.

19.3.4 Landscape

Within Belfast city centre streets and other streets within West Belfast, the proposed WWAY rapid transit route is within an urban context and no changes to the landscape would result. For the inner section, the most prominent impact of the scheme would probably be the proposed bridge over the Westlink (option I1). This is considered to have a slightly detrimental impact on landscape (and townscape).

With regard to the wider route options, Route Option O2 (Falls Road / Andersonstown Road) would run past a larger number of Local Landscape Policy Areas than the other two routes. The Areas of Local Landscape Policy Areas (as defined in the draft BMAP) are as follows:

- St Mary's Local Landscape Policy Area – Route Options O2, O3 and O4;
- Milltown Urban Landscape Wedge – Route Options O2 and O3;
- Falls Local Landscape Policy Area – Route Options O2 and O3;
- Milltown / Bog Meadow Local Landscape Policy Area – Route Options O2 and O3;
- Trench Local Landscape Policy Area – Route Option O2;
- Woodvale / Springtown Local Landscape Policy Area – Route Option O4;
- Colin Glen Urban Landscape Wedge – Route Option O2;
- Colin Glen Local Landscape Policy Area – Route Option O2; and
- Laurel Glen Local Landscape Policy Area – Route Option O2.

19.3.5 Townscape

Through the city centre, the WWAY proposals will pass through a range of landscape character zones including areas of architectural and historical character and conservation zones. The existing streetscape in these designated areas reflect the themes for which they are important i.e. the conservation areas have period style street furniture and small scale stone sets. The existing planting is limited to on-street tree planting. It is assumed that the rapid transit route will run on-street within the existing highway boundaries and therefore no widening of the carriageway will be required except possibly at localised sites to accommodate turning radii. Therefore the impact on existing street trees is expected to be minimal. Within the urban area of the city centre, the introduction of the rapid transit scheme will bring a new modern and dynamic visual element into the area. New shelters, signage and street furniture designed to be in character with Belfast city centre will enhance the visual quality of the town centre.

With regard to the wider route options, Route Option O2 (Falls Road / Andersonstown Road) would run past a larger number of Areas of Townscape Character than the other two routes. The Areas of Townscape Character (as defined in the draft BMAP) are as follows:

- Falls / St Mary's Area of Townscape Character – Route Options O2 and O3;
- Falls / Donegall Road Area of Townscape Character – Route Options O2 and O3;

- Fruithill Area of Townscape Character – Route Option O2; and
- Stockman’s Lane / Mooreland Park Area of Townscape Character – Route Option O2.

19.3.6 Heritage of historic resources

For the purposes of this assessment, a high level review was undertaken on cultural heritage within the study area which includes known / unknown archaeology, buildings of historic and archaeological interest and industrial archaeology. A search of the Environment and Heritage Service (EHS) Monuments and Buildings Record (MBR) was conducted as part of this investigation.

There are a number of sites of historical significance close to the scheme including industrial and defence heritage sites and listed buildings but it is not expected that these would be directly impinged upon by the scheme. However, their presence does suggest that where land affected by the scheme has not previously been disturbed, the potential for finding remains is high.

For Route I1 there are 6 listed buildings and 1 feature of industrial heritage located within 100m of the proposed rapid transit scheme. For Route I2, there are 7 listed buildings and 5 features of industrial heritage located within 100m of the proposed rapid transit scheme. For Route O2 (Falls Road / Andersonstown Road), there are 20 listed buildings, 6 features of industrial heritage and 2 features of defence heritage located within 100m of the proposed rapid transit scheme. For Route O3 (Falls Road / Glen Road), there are 22 listed buildings, 8 features of industrial heritage and 2 features of defence heritage located within 100m of the proposed rapid transit scheme. For Route O4 (Springfield Road), there are 6 listed buildings, 17 features of industrial heritage and 2 features of defence heritage located within 100m of the proposed rapid transit scheme.

19.3.7 Biodiversity

A high level review was undertaken to identify features of biodiversity in close proximity to the scheme. A review was undertaken of the biodiversity features identified in the draft BMAP as well as EHS’s designations for Areas of Special Scientific Interest, Special Protection Areas, Special Areas of Conservation, National Nature Reserves and Ramsar Sites.

An examination of the EHS records determined that there are no designations in close proximity to the WWAY proposals. The Slievenacloy Area of Special Scientific Interest is located between 1.5km and 3.5km from the proposed routes. It is unlikely that the integrity of any designated sites would be affected by the proposed rapid transit scheme and it is considered at this stage that the overall impact on biodiversity would be neutral.

19.3.8 Water Environment

The designated Blackstaff River and Pound Burn flow in a culvert adjacent to the inner route options for WWAY and there may be an increase in run-off due to the proposed scheme. In addition, a number of watercourses flow adjacent to the proposed routes such as the Derriagh River Extension, Blackstaff River Extension, Turf Lodge Stream, New Barnsley Stream, Whiterock Stream and the Falls Road Stream. The pollution threat could include exhaust emissions, fuel and oil spills and tyre degradation, however these threats already exist for the majority of the route options. Mitigation measures for both the construction and the operation stages of the scheme should minimise any threat. It is considered that the proposed scheme’s

impact on the water environment would be neutral based on the information that is currently available.

19.3.9 Physical Fitness

The key objective of this sub-objective is the contribution of the proposed scheme to overall health by increasing levels of physical activity. People switching from car to public transport would achieve the recommended minimum distance/time to obtain significant fitness benefits. In this regard, the proposed rapid transit scheme is likely to lead to a positive impact on physical fitness.

The WWAY proposals along Route O4 (Springtown Road) will directly impact on the existing cycle lane between Springfield Primary School and Whiterock Road. In order to maintain access to the cycle way and to continue to improve physical fitness, the WWAY scheme will need to maintain these facilities.

19.3.10 Journey Ambience

A prime objective of WWAY is to improve the quality of the passenger's experience. For users of WWAY, this will clearly improve substantially. Modern vehicle designs with good heating, ventilation, seating, luggage space and ride quality would improve passenger care and the provision of better travel information, including real time public transport information, would reduce stress for passengers. Passengers would also benefit from new and better designed waiting and boarding facilities and from vehicles giving a less stressful, smoother journey.

In overall terms, the proposed WWAY rapid transit scheme is anticipated to have a slight beneficial impact on journey ambience.

19.4 Safety objective

Within GOMMMS there are two sub-objectives under the safety heading: Accidents and Security. These are dealt with separately below.

19.4.1 Accidents

In calculating the present value of benefits relating to accidents, the key quantitative indicators for the assessment of proposals are the number of accidents and the number of casualties. Combining these numbers with values for the prevention of accidents provides a monetary estimate of the overall accident benefit of a scheme.

Three main groups of transport user will benefit from changing transport mode to rapid transit services:

- Those car users who transfer from cars who benefit from switching to a safer mode than previously used;
- Those car users who continue to use the car but whose accident risk is reduced as a result of reduced road traffic levels; and
- Pedestrians and cyclists who will benefit due to reduced car traffic.

The assessment considers rapid transit user accidents only and is based on the change in vehicle kilometres between the do-minimum and do-something scenarios.

The transportation modelling undertaken calculates the passenger kilometres saved across the network between the do-minimum and do-something scenarios. The rapid transit options were seen to have little impact on the overall passenger kilometres travelled (less than 2% change) therefore the impact on safety is seen as neutral.

The provision of dedicated lanes that allow the segregation of rapid transit vehicles from other traffic and from pedestrians increases the level of safety and decreases the probability and severity of collisions by rapid transit vehicles.

19.4.2 Security

Passenger's perceptions of their personal security can be a key influence on whether people choose to use public transport. Perceptions of lack of security can impact disproportionately on particular users at particular times of day. For example, vulnerable users (such as unaccompanied females or the elderly) may be more concerned about personal security during hours of darkness.

For public transport passengers, the DTLR (now DfT) Mobility Unit has produced best practice guidelines for railway stations and public transport operators. This raises a number of key security issues and gives guidance on design and management practices and this document will be referred to in detailed design. Although security issues have not been considered in detail at this stage in the assessment process, it is recommended that the following items are considered:

- Effective CCTV system in place designed to encourage staff surveillance and group passengers;
- Passenger information and good lighting at stops and accesses to stops;
- The provision of facilities to ensure that the driver can see the inside of the vehicle;
- Two-way communications between the vehicle driver and the control centre; and
- Good provision of emergency phones, help points, public telephones and information on emergency help procedure.

19.5 Accessibility Objective

The total accessibility benefits are captured effectively by the user benefits included in the economic appraisal. The accessibility objective is therefore limited to the following three sub-objectives:

- Option Values;
- Severance; and
- Access to the Transport System.

Each of these is outlined in more detail in the following sections.

19.5.1 Option Values

Option Values are associated with the unexpected use of a transport facility which is not built into the forecasts produced by the modelling stage, and which would otherwise not appear in the appraisal as a benefit. Hence, option values are, to some degree, a measure of the individual's

attitude to uncertainty, in that it represents the amount that a person is willing to pay to have the option of using the rapid transit facility at some unknown point in the future.

Option values are related to the size of the community that is likely to be affected by the introduction (or removal) of a service. Since the introduction of a rapid transit network between Belfast city centre, Royal Victoria Hospital and the wider West Belfast community is likely to affect a large community greater than 2,000 people, then it is possible that the magnitude of the impact of the introduction of this proposal could be deemed to be 'strongly beneficial', according to the definitions set out in GOMMMS (WebTAG Unit 3.6.1).

19.5.2 Severance

The severance sub-objective is used to measure the extent to which the rapid transit scheme reduces the level of hindrance experience by pedestrians.

The infrastructure associated with different types of rapid transit technology can result in varying degrees of severance depending on the location. For example, a guideway with high kerbs could have a significant adverse effect on pedestrian movements in a busy shopping district.

The introduction of a rapid transit service in Belfast city centre could result in an increase in severance due to the introduction of additional public transport vehicles but this is likely to be offset by the implementation of traffic management measures and pedestrian priority measures through the BMTP City Centre Traffic Management and Public Realm proposals. The WWAY rapid transit route will run alongside a number of Quality Walking Network including Belfast city centre streets such as Donegall Square South, Howard Street and Grosvenor Road. It will therefore be important to consider improved facilities for pedestrians, including crossing facilities, as part of the detailed design process. The ability to integrate the design of the alignment within the WWAY detailed design proposals will reduce the likely level of severance.

19.5.3 Access to the Transport System

Access to the transport system is influenced by a number of factors, including the availability of a car. However, aspects of the proposed public transport service should also be considered. With respect to the service frequency, the development of a new public transport corridor would enlarge the catchment area of public transport and the travel speeds for public transport users will improve significantly as the segregated sections will reduce public transport journey times. The general quality of the service is also expected to increase, with new halts and vehicles providing greater levels of comfort and convenience. In addition, the introduction of new, modern low floor vehicles (which comply with current government guidelines) may also help to improve access to the transport system for disabled users.

19.6 Integration objective

19.6.1 Policy

The policy context for the development of rapid transit in Belfast is well defined. The Regional Development Strategy (RDS) outlines a transportation vision for Northern Ireland to "*have a modern, sustainable, safe transportation vision which benefits society, the economy and the environment and which actively contributes to social inclusion and everyone's quality of life*". The RDS identified that if this vision was to be achieved it would be important to improve

public transport services in the Belfast Metropolitan Area and it made such improvements a Strategic Planning Guideline. RDS stated that if public transport was to become a real alternative to using the car then these improvements needed to be substantial and it recognised the high quality, high capacity, accessible services that could be provided by the development of a rapid transit network for Belfast.

The Regional Transportation Strategy (RTS) developed the transportation policy of RDS at a strategic level. It identified that the future development and prosperity of Northern Ireland depended on a step increase in the level of provision of transport infrastructure and services. The RTS did not include commitments on individual schemes; this was to be done through three Transport Plans. However, it did include an indicative future integrated public transport network for Belfast, incorporating a rapid transit system.

The Belfast Metropolitan Transport Plan (BMTP) is the Transport Plan for the delivery of the RTS in the Belfast Metropolitan Area (BMA). It went through a systematic process of problem identification, consultation, plan development and appraisal which included consideration of a wide range of public transport solutions in each of the BMA's main transport corridors. The BMTP process identified that there were significant opportunities to substantially improve the quality and scope of public transport provision across the BMA.

The BMTP process included investigation of the role of different forms of public transport in each of the main transport corridors – termed Metropolitan Transport Corridors (MTCs) as per the RDS. It concluded that, longer term, there would be the demand for and opportunities to introduce rapid transit in most of the MTCs radiating out from Belfast city centre – complementing rather than replacing existing rail and bus services.

Analysis of value for money, needs and feasibility indicated that four main corridors should be considered first including EWAY, WWAY, CITI and SuperRoute. The development of the WWAY rapid transit scheme also supports other Government policies such as:

- The Department of Culture, Arts and Leisure objective to foster a creative, informed and active lifestyle would be supported by measures to improve the accessibility of Belfast city centre and measures to improve accessibility by all modes of transport;
- The Department of Enterprise, Trade and Investment objective to encourage growth of the economy is supported by measures to improve accessibility to a Strategic Employment Location;
- The Department of the Environment objectives for the environment would be supported;
- The Department of Health, Social Services and Public Safety objectives to develop policies that will lead to good health and well-being would be supported by measures to improve public transport;
- The Department for Employment and Learning objectives promoting living standards and accessible employment would be supported by improvements to public transport;
- The Department for Social Development objectives to tackle disadvantage would be supported by measures to improve public transport.

19.6.2 Transport Interchange

The implementation of the WWAY rapid transit scheme would have a beneficial impact on transport interchange since it would facilitate improved interchange by the provision of quality waiting facilities and greatly improved public transport timetable and route information.

Operation and ease of use of the transport system will be improved both by creating new direct journey opportunities and by improving interchange between modes, facilitating a greater range of other movements. The rapid transit service will also provide new and improved interchange opportunities along the whole of the route. One of the main objectives of the scheme is to provide improved interchange with the Europa Buscentre / Great Victoria Street Rail Station.

None of the specific routes offer any additional interchange opportunities as the route options do not link with the railway network or any major bus stations (other than the Europa bus centre mentioned above). However, all routes do integrate with the existing Metro bus and West Belfast Taxi Association networks. In addition, WWAY route options O2b, O3 and O4 will also interchange with new proposed park-and-ride sites.

In addition, existing bus and taxi services meeting the quality threshold will be able to utilise the rapid transit infrastructure along the length of the route which will minimise the requirement for interchange and allow users of existing buses/taxis to derive benefit from the rapid transit network.

19.6.3 Land-use policy

The implementation of the WWAY rapid transit scheme supports the RDS's concept of urban hubs with public transport infrastructure, and a modern integrated transport system for the BMA. It also supports the draft BMAP land use strategy of:

- Improving accessibility to the major development locations and strategic employment locations identified in the RDS;
- Improving public transport accessibility within the Metropolitan Transport Corridors to support the focus of higher density development within these corridors;
- Facilitating the regeneration and environmental enhancement of specific sites and areas within the BMA; and
- Providing the level of accessibility required to support the expected future population and demographic characteristics of the BMA.

With regard to specific routes, the inner section of route (I1) which would run through the Europa Buscentre and over Westlink is proposed for protection under the draft BMAP. None of the remainder of the route options is proposed for protection in the draft BMAP as it was anticipated at that time that the rapid transit services would run on-street within the existing highway boundaries. The concept designs, however, show that on-line widening may be required if full rapid transit priority lanes are to be provided in each direction. It is likely that this could present planning & land ownership issues, especially if a significant number of different landowners are present along the route.

19.7 Economic objective

19.7.1 Economic efficiency

The economic effects of the rapid transit network are largely quantifiable have been examined as part of the quantitative analysis completed in section 18. Transport Economic Efficiency has been estimated in terms of:

- User benefits related to travel time;

- Private sector provider impacts on the operating environment; and
- Public sector provider impacts on the public sector revenue (along side capital and operating costs).

Other government impacts have also been taken into consideration such as VAT and present value calculations have been estimated for both cost and benefit.

19.7.2 Reliability

This sub-objective summarises the rapid transit proposals' impact on the objective to improve journey time reliability for transport users, including both passengers and freight.

The rapid transit service should provide public transport users with an improved level of reliability due to the implementation of extensive public priority measures along the route and the provision of a regular 5 minute frequency.

19.7.3 Wider Economic Impacts

The rapid transit scheme is likely to deliver significant wider economic benefits. Key benefits include the facilitation of future development in Belfast city centre and West Belfast. Improved transport infrastructure and public transport services will help address the existing transport problems, which restrict the operation and growth of these economically important areas. Links to key facilities and centres of employment such as the Royal Victoria Hospital, St Mary's College, Kennedy Shopping Centre & industrial estate, Westwood Shopping Centre and the Dairy Farm centre as well as interchange with other public transport services in the city centre will improve accessibility for existing residents along the route as well as serving future developments. In particular, the provision of a rapid transit service along Routes O3 and O4 could facilitate new development at the Glenmona / Hannahstown Hill areas.

Within inner West Belfast there are areas which are located close to the routes being considered for WWAY and which have higher than average unemployment when compared to other parts of Belfast. These include areas within the Falls, Clonard, Whiterock and Upper Springfield wards. Public transport is important to these areas because lack of mobility has been shown to be a key barrier to unemployed people getting work and car ownership levels are very low in the wards in question. The rapid transit service could provide the opportunity to provide a high quality and accessible public transport link to and within West Belfast which will reduce the difficulties of unemployed people gaining access to the workplace and overcoming social exclusion.

Opportunities for employment will also arise as a result of the proposals, particularly during construction of the scheme. Although direct employment generation will be relatively low, staff and managers will be required to operate the service as well as any new park & ride sites. New driver jobs will be created, although a proportion of these may be diverted from existing bus services.

If the services are operated by a private operator, increased competition and choice of services could lead to an overall improvement in standards of public transport in the area.

However, it should also be noted that the route options for rapid transit in West Belfast would require a significant level of on-street priority and on-line widening in order to be feasible. The negative impact of this on the possible removal of on-street parking and hence the wider impacts on local businesses / traders could be significant.

19.8 Supporting Analysis

The Guidance on the Methodology for Multi-Modal Studies (GOMMMS) specifies three important Supporting Analyses to supplement the Appraisal Summary Table. These require assessments to be made of the distribution and equity impacts; affordability and the financial sustainability of the scheme; and practicality and public acceptability issues.

19.8.1 Distribution & Equity

The Department for Regional Development is committed to the promotion of equality of opportunity, to tackling factors leading to social need and social exclusion and to promoting good relations between the communities in Northern Ireland. This Distribution and Equity supporting analysis considers the distribution of the overall impacts of the rapid transit scheme, thereby enabling a judgement to be made about the fairness of the impacts on those affected. This supporting analysis has been prepared in accordance with the principles underpinning Section 75 of the Northern Ireland Act 1998²⁰ and the Department's commitments under the New Targeting Social Need policy.

19.8.1.1 Anti-Poverty and Social Inclusion

In line with the Regional Transportation Strategy, initiatives resulting in new or improved public transport services will contribute to the Government's objective of working towards the elimination of poverty and social exclusion by 2020.

Analysis presented in the 2006 Translink Passenger Profile illustrates that public transport users are predominantly drawn from socio-economic groups that represent those in greatest need (see Table 19.2 below).

Table 19.2 – Public Transport Passengers by Socio-Economic Group

Socio-Economic Group	NIR	Metro	Ulsterbus
AB	29.5%	13.4%	16.9%
C1	28.9%	32%	30.4%
C2	21.4%	20.8%	20.8%
DE	20.2%	33.8%	31.9%

Customer Satisfaction Survey, PriceWaterhouseCoopers carried out on behalf of Translink, Spring & Autumn 2006.

A total of 58.4% of rail passengers fall into the ABC1 Socio-economic Group compared to 45.2% of Ulsterbus passengers and 45.4% of Metro passengers. The socio-economic profile of public transport users clearly demonstrates that investment in these services targets resources at those in greatest social need. The lowest rate of public transport use (buses) is among the most affluent (AB) groups while the largest rate of bus users is among the poorest socio-economic (DE). The DE group also forms the largest single user group of Metro and Ulsterbus services with around a third of users coming from this group. When taken together with the C2 group, this accounts for over half the passengers of these services. Therefore, the proposed investment in public transport schemes, such as rapid transit, is particularly supportive of the objectives of New Targeting Social Need.

²⁰ Northern Ireland Act (1998), HMSO

However, abstraction from existing bus services onto rapid transit services may be a cause for concern, as reduced bus passengers may require increased bus subsidy to maintain adequate existing services or a reduction in the services.

19.8.1.2 Contribution to Increasing Social Inclusion

The scheme proposals have a beneficial impact in promoting social inclusion. The provision of high standard low floor vehicles (BRT only) will enable improved accessibility to vehicles for those with disabilities, whilst older people on low incomes, who travel without charge, benefit from the introduction of a new public transport system.

Improvements in access to employment, leisure, education and shopping to groups who are currently poorly provided with public transport and have no access to a car will be provided. Public transport accessibility will be greatly improved for the communities along the route. The proposals will increase the range of transport choices, reduce journey times and improve journey time reliability.

19.8.1.3 Access to Employment

Within inner West Belfast there are areas which are located close to the routes being considered for WWAY and which have higher than average unemployment when compared to other parts of Belfast. These include areas within the Falls, Clonard, Whiterock and Upper Springfield wards. Public transport is important to these areas because lack of mobility has been shown to be a key barrier to unemployed people getting work and car ownership levels are very low in the three wards in question. There is therefore a need to provide a high quality and accessible public transport link to and within West Belfast which will reduce the difficulties of unemployed people gaining access to the workplace and overcoming social exclusion. In addition, there is also a need to provide access to these areas of employment from areas of new residential development, such as the Glenmona Development at Monagh Bypass / Glen Road, which may include a proportion of affordable housing.

19.8.1.4 Access to Education

Access to educational institutions is an important service for public transport. In most of the electoral wards in West Belfast, the percentage of the population that are full time students is less than the average for the Belfast Metropolitan Area (BMA). These are important figures in overcoming social exclusion. A good level of education is increasingly a key requirement in the workplace; particularly for better paid jobs. Access to educational institutions is an important service for public transport because many students, or potential students, rely upon it. The development of a rapid transit route would therefore provide an important public transport link between West Belfast and colleges and universities.

Northern Ireland's third largest third level education institution, Belfast Metropolitan College, has announced plans to locate a new campus at Titanic Quarter. Good public transport links into and across Belfast city centre into Titanic Quarter would encourage people from West Belfast to attend it.

19.8.2 Affordability and Financial Sustainability

Consideration must be given to the funding required to deliver the WWAY rapid transit proposals and the extent to which the proposals are sustainable in the longer term. Affordability is a measure of the likelihood that funds will be available to deliver the WWAY rapid transit scheme. Financial sustainability is a measure of the extent to which the scheme can be financially supported. Issues of Affordability and Financial Sustainability are considered in more detail later in this report.

19.8.3 Practicality and Acceptability

Two important and interlinked considerations in developing the rapid transit proposals have been that:

- They must be practical i.e. the scheme must be capable of being implemented within the required timescales; and
- The scheme must have a high degree of acceptability among both the general public and the key stakeholder groups, including those who will be involved in the implementation of the scheme.

Each of these topics is discussed in more detail below.

19.8.3.1 Practicality

In assessing practicality, it has been necessary to consider the following issues that could hinder or block the implementation of the rapid transit scheme:

- Technical issues;
 - Legal issues;
 - Availability of funding and resources;
 - The need for enforcement of priority measures; and
 - Complementarity and conflicts.
- A comprehensive assessment of each of these issues is provided below.

Technical issues

Implementation of the rapid transit scheme is expected to involve the use of new and developing technology and could, therefore, present technical issues that would need to be resolved at the detailed design stage to allow full implementation of the scheme. Examples include:

- Using Information technology to detect rapid transit vehicles and give them priority at junctions;
- Using Information technology for enforcement;
- Using SMART cards (Self Monitoring Analysis and Reporting Technology) to implement fares;
- Using an Automatic Vehicle Location system (AVL) to provide real-time information to passengers on rapid transit vehicles and at stops and waiting areas;
- Using new methods of rapid transit route and timetable information for the management of the system and to provide information to customers e.g. internet; and

- Use of bus rapid transit guidance technology on segregated sections of the route.

The adoption of best practice within the industry should allow these and any additional technical issues to be resolved at the detailed design stage. It is considered that no elements of the rapid transit scheme should require technology which has not been used before and it should therefore not present insurmountable difficulties in this regard.

In addition, the WWAY proposals are anticipated to involve widening of the carriageway and loss of on-street parking at various locations along the route. The practicality and public acceptability could be significant and it is recommended that this is looked at in detail as part of the preliminary and detailed design of the scheme.

Legal issues

The implementation of elements of the rapid transit scheme will be subject to legislative constraints and regulation. While the requirements do not rule out the scheme, they could, in practice, delay implementation on the ground. These include the following:

- Changes to the Transport Act (NI) 1967 for new public transport services may be necessary;
- New rapid transit vehicles will have to satisfy accessibility regulations under the Disability Discrimination Act 1995;
- New legislation to enable the enforcement of shared bus/rapid transit lanes in non-segregated sections using camera technology;
- New legislation to enable rapid transit services to be delivered and/or operated by the private sector;
- Development of a rapid transit scheme that would require significant land-take would require Planning Approval or an Amendment to the Belfast Metropolitan Transport Plan;
- The implementation of the rapid transit may require an Environmental Impact Assessment under the Roads (NI) Order 1993;
- If third party land is required, the scheme may require a Vesting Order / Direction Order.

Availability of Funding and Resources

The Regional Transportation Strategy identifies rapid transit as one of the areas that has the greatest potential for private sector funding. The section on 'Affordability and Financial Sustainability' discusses the availability of funding in more detail.

There will be a need to provide professional resources in undertaking and developing the detailed design, procurement and implementation of the scheme proposals. In addition, the successful delivery of the rapid transit services will be dependent on the recruitment of additional operating staff. Recent experience has shown that such resources are not readily available.

Enforcement

Extensive use of shared bus/rapid transit priority measures and running on segregated sections will require rigid enforcement if rapid transit services are to operate effectively. This is expected to entail use of fixed and vehicle-mounted enforcement cameras on all rapid transit routes and an appropriately administered fine system to penalise offenders. Enforcement of shared bus / rapid transit priority measures would need to be tied in with parking controls and enforcement as necessary.

Complementarity and conflicts

The rapid transit scheme will need to be implemented in conjunction with traffic management measures, improved public transport interchange, park-and-ride, demand management and travel awareness campaigns.

19.8.3.2 Acceptability

Public acceptability for the rapid transit proposals can be demonstrated through:

- The Regional Transportation Strategy (RTS) and its comprehensive consultation process. Public acceptability was the primary reason for supplementing the RTS with additional initiatives including an additional £76million to provide £100million for rapid transit in Belfast;
- The Belfast Metropolitan Transport Plan (BMTP) Working Conference and the BMTP itself – a draft Preferred 2025 Strategy and an Emerging 2015 Plan were presented at the BMTP Working Conference on 10th February 2003. The conference was attended by over 200 delegates presenting a wide range of stakeholders. An independent report of the conference, produced by Community Technical Aid presented the views and comments expressed by the delegates regarding the Draft Preferred Strategy and Emerging Plan. Rapid transit was seen by delegates as a positive step forward to enhance public transport; and
- Political support – the rapid transit proposals are likely to receive broad political support from Belfast City Council and Lisburn Borough Council as well as political parties and a number of Members of the Assembly.

19.9 Conclusion

The Appraisal Summary Table (AST) is a record of the degree to which the five Central Government objectives for transport (environment, safety, economy, accessibility and integration) would be achieved and provides a summary of the impact of the route options. Tabulated overleaf is a summary of the AST assessment scores for each sub-objective for the four options. A more detailed AST is included in Appendix O.

Table 19.2: Summary of AST Assessment Scores

	Sub-Objective	Route O2a/b	Route O3	Route O4
		Falls Road / Andersonstown Road	Falls Road / Glen Road	Springfield Road
Environment	Noise	Neutral	Neutral	Neutral
	Air Quality	Neutral	Neutral	Neutral
	Greenhouse gases	Slightly beneficial	Slightly beneficial	Slightly beneficial
	Landscape	Slightly adverse	Neutral	Neutral
	Townscape	Slightly beneficial	Slightly beneficial	Slightly beneficial
	Heritage of historic resources	Neutral	Neutral	Neutral
	Biodiversity	Neutral	Neutral	Neutral
	Water environment	Neutral	Neutral	Neutral
	Physical fitness	Slightly beneficial	Slightly beneficial	Slightly beneficial
	Journey ambience	Slightly beneficial	Slightly beneficial	Slightly beneficial
Safety	Accidents	Neutral	Neutral	Neutral
	Security	Slightly beneficial	Slightly beneficial	Slightly beneficial
Economy	Transport economic efficiency	LRT BCR = 0.1/0.0 (NPV = -£289m) / -£369m BRT BCR = 0.6/0.3 (NPV = -£14.6m / -£31.9m)	LRT BCR = 0.4 (NPV = -£103m) BRT BCR = 2.4 (NPV = £42.6m)	LRT BCR = 0.4 (NPV = -£110m) BRT BCR = 2.3 (NPV = £45.4m)
	Reliability	Moderately beneficial	Moderately beneficial	Moderately beneficial
	Wider economic impacts	Slightly beneficial	Slightly beneficial	Slightly beneficial
Accessibility	Option values	Strongly beneficial	Strongly beneficial	Strongly beneficial
	Severance	Neutral	Neutral	Neutral
	Access to the transport system	Slightly beneficial	Slightly beneficial	Slightly beneficial
Integration	Transport interchange	Neutral	Neutral	Neutral
	Land use policy	Neutral	Neutral	Neutral
	Other Government policies	Slightly beneficial	Slightly beneficial	Slightly beneficial