5 TRANSPORT REPORT

Department for Social Development

Downpatrick Draft Masterplan

Report on Transport Proposals

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Downpatrick Draft Masterplan

Report on Transport Proposals

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1 Introduction

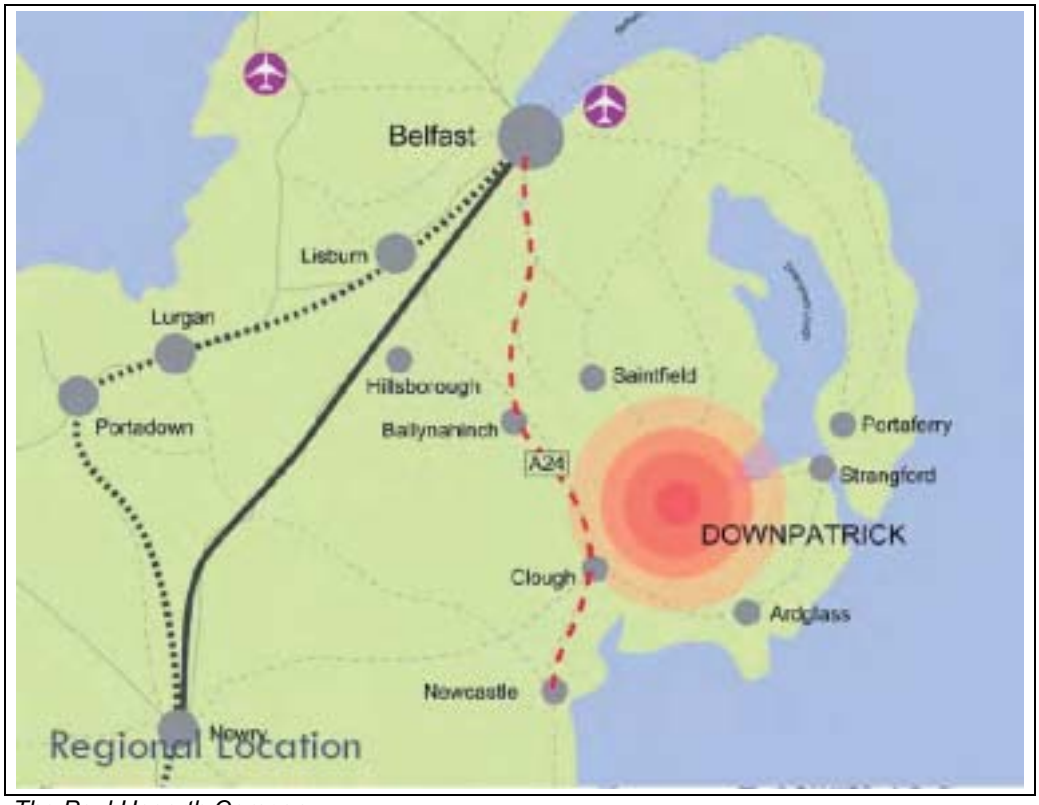
1.1 JMP Consultants Limited has prepared this document to inform the Downpatrick Town Centre Masterplan commissioned to identify a shared vision for taking the town forward by encouraging private development, supporting local trade and enterprise and providing an attractive environment for all.

1.2 This report outlines the transportation policy context as it relates to Downpatrick in addition to some preliminary analysis. It assesses how the transportation proposals comply with the masterplan and how they will help to bring about the desired outcomes from it.

2 Masterplan Objectives

2.1 Downpatrick is the county town of Down, located approximately 22 miles south-east of Belfast (see **Figure 2.1**). In the 2001 census, just over 10,000 residents were recorded as living there. The town is of great historical significance, having strong links with St. Patrick whose tomb is alleged to be situated in the grounds of Down Cathedral.

Figure 2.1 Regional Location



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2.2 The Downpatrick Draft Masterplan is a culmination of a number of long-term aspirations for the town and the surrounding area. These include the following goals set out in the Ards and Down Area Plan 2015 (which was adopted in 2009);

- to promote Newtownards and Downpatrick as main towns within Northern Ireland and to strengthen their role as the principal administrative, trade, employment and residential centres within the Plan area;
- to facilitate appropriate development within existing urban areas that will promote urban renaissance, create ease of access to services and community facilities, and to maximise the use of existing infrastructure;
- to facilitate integration between land-use planning and transportation in order to reduce congestion and the need for car journeys and to encourage a shift to more sustainable modes of transport, in particular walking and cycling;
- to promote vital and viable town centres.

2.3 Public aspirations for the town are perhaps best represented by the feedback obtained during the consultation period for the masterplan[1], which ran from 22nd January to 19th March 2010. The three aspirations which attracted the vast majority of public support were (in order of support);

- to make Downpatrick a quality shopping destination;
- to make the town pedestrian-friendly;
- to enhance Downpatrick as a tourist destination.

2.4 The masterplan contains very specific and ambitious proposals for the development of the town in order to achieve some of the aspirations expressed by the public and planning organisations alike. It can be seen from the mission statement below that Downpatrick is a town rich in culture and heritage, but also one which is failing to fulfill its potential at present. The mission statement summarised this as follows;

"*Downpatrick Town Centre will be rejuvenated as an energetic and vibrant destination in which all its residents can take pride. Its unique historic environment, particularly its early Christian heritage, will be leveraged and complemented by exemplary development, establishing Downpatrick as a special place to visit. The town will also take advantage of its natural setting. Its buildings, streets and spaces will be attractive, safe and friendly, providing a focus for community life and an attraction to the increasing numbers who visit."*

2.5 This statement was communicated to the public as part of the exhibition boards used for the aforementioned consultation. These are contained for reference in **Appendix A** to this report. The slides highlight five title aims of the masterplan, towards which proposals should contribute. These are to;

- Make Downpatrick a destination;
- Turn constraints into opportunities;
- Realise environmental qualities;
- Integrate development of town and region;
- Manage growth through sustainable neighbourhoods.

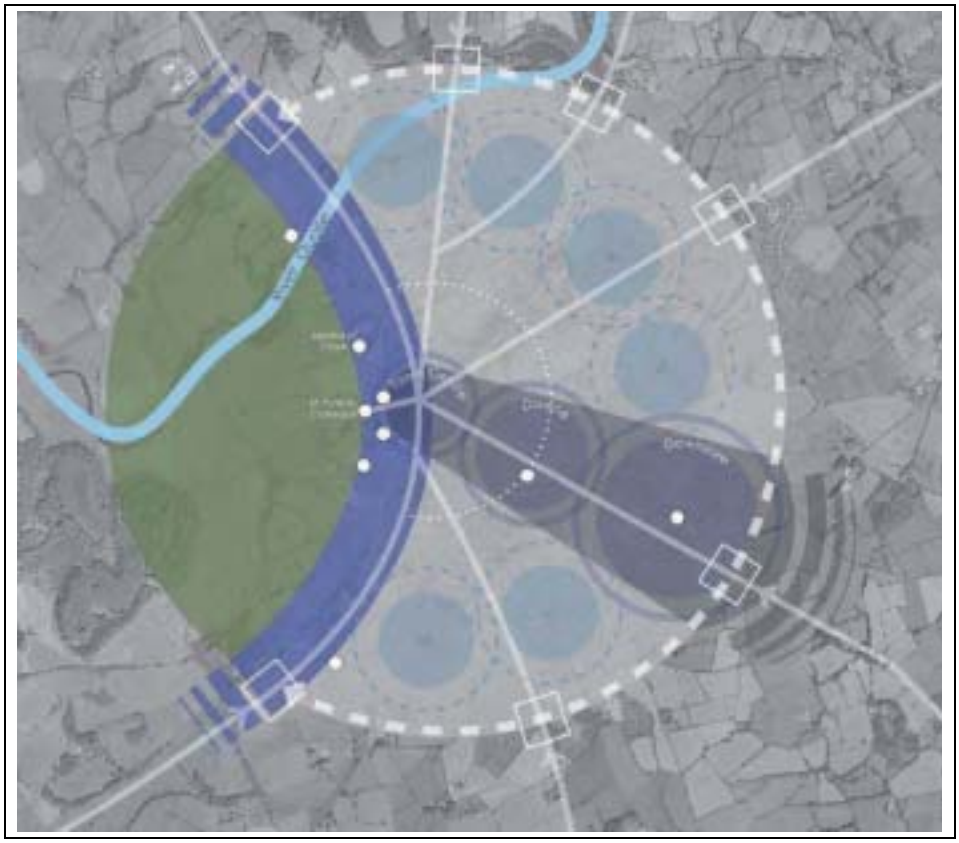
2.6 These aims pose a particular challenge given the significant and daily road traffic congestion which blights the town centre. Therefore, transportation issues underpin a significant element of the above objectives and, as such, are critical to the success of the masterplan.

2.7 More defined objectives and draft proposals relating specifically to transport are summarised in **Table 2.1** below. These are reproduced from the Department for Social Development brief, the Ards and Down Area Plan 2015 (Adopted Plan), the Masterplan Team's understanding of both the brief and the town centre, as well as the Scope of Work for the masterplan.

2.8 The masterplan proposals are influenced particularly heavily by the Ards and Down Area Plan as it has earmarked large areas of land to the east of the town centre for housing development, further weighting the town to the east and away from the town centre. The council offices are currently in the process of moving to the Downshire Hospital site to the south-east of the town centre. The effect of this movement is shown in **Figure 2.2**, where the town centre becomes a peripheral feature, marked primarily by its location on the main through-route in the town.

[1] Reported in 'Findings of the Public Consultation Process (Draft Report)' - 14 April 2010, The Paul Hogarth Company

Figure 2.2 Downpatrick Schematic Layout



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2.9 The land to the west of the town centre is unsuitable for development due to historical and geographical constraints. The area is marshland and any significant building work would require piled foundations. However the Down Business Centre continues to develop on the A7 to the north-west of the town centre, requiring good transport links to the existing town centre and areas of future expansion.

2.10 The more recent emerging development opportunity at the Downshire Hospital site, located off the Ardglass Road and to the east of the town centre, will also require suitable transport links.

2.11 Transport therefore becomes a main driver for retaining a sense of coherency in the town, requiring the town's dispersed amenities to be linked effectively. There are a number of proposed transportation methods for tackling this issue; these will be explained in the relevant subsequent sections covering the varying difficulties facing Downpatrick. These are covered under the following headings;

- Existing Transport Provision;
- Through-Travel in Downpatrick;
- Local Travel in Downpatrick;
- Active Travel Solutions.

Table 2.1 Masterplan Objectives

Main Objective	Sub-objective
Restructuring & Redevelopment: ..promote approaches to design, development, movement and management that is sensitive, practical, achievable & complementary…...	• assist in the regeneration of Downpatrick, for example, by extending its town centre boundary and by the identification of a number of development opportunity sites • Accommodate a balance of land uses
Retail & Residential Investment: To promote investment in quality niche retail business which will set Downpatrick apart from its neighbouring competitor locations	• The provision in Market Street and Irish Street and other streets must be improved, strengthened and diversified, creating an increasingly distinctive retail environment for the town. • Address ….local issues such as the limited local catchment area of the town, accessibility of competitor locations
To develop residential activity in the town centre to offer an attractive choice of property and to strengthen the town as the economic driving force of Down District.	• allocate sufficient land in the town to provide for approximately 3100 units over the Area Plan period • protect the heritage and landscapes around the west and north sides of Downpatrick
Arts Culture & Heritage: To build on Downpatrick's rich culture, arts and heritage thereby realising the areas full potential as a captivating tourism destination…...	• Promote linked visits between the new Visitor Centre, Cathedral, Museum and Railway, generating a 'critical mass' of interest around which other opportunities can be promoted. • Ensure that the experience and sustainable use of locations of interest are not undermined by vehicular and pedestrian circulation.
Improving the Environment & Attracting Visitors: To create a high quality, safe environment…and improve the town centre visitor offer.	• Demonstrate a legible hierarchy of public realm, building on the agreed initial phase of investment and as appropriate influencing future works.
Access & Movement: To build on the proposed Public Realm scheme to improve access to and within the town centre and make the town more user-friendly.	• provide for a major distributor road..with…release of housing lands to connect the Strangford Road with the Ardglass Road….which could also create an alternative route around the town, avoiding the town centre • Distribution and connections relating to existing parking provision must be robustly addressed to reduce the volume of circulating vehicles and to better meet the needs of visitors, shoppers and local people. • Consider opportunities to mitigate the impact of through traffic. • Articulate a clear transportation strategy, including parking, providing ease of access and circulation…….give consideration to the viability of establishing Link Road connections….
Area Planning: To pro-actively advance the medium-long term planning framework for the area in order to maximise regeneration and development activity	• Setting clear delivery mechanisms of funding strategies for the major elements of infrastructure, such as the provision of a Link Road, where options, including forward-funding and developer contributions are evaluated.

3 Existing Transport Provision

3.1 The private vehicle dominates Downpatrick, with the main road network in the town centre converging at the constrained junction of Market Street, Irish Street, Scotch Street, English Street and Church Street. As a result, both Market Street and Irish Street function as local distributors for traffic to and from residential and commercial areas, and as routes for through traffic, in addition to their role as shopping streets.

3.2 The layout of the junction at Market Street/Irish Street is constrained by the historic buildings directly adjacent, making the movements of large vehicles particularly challenging.

Strategic Road Network

3.3 Downpatrick's location is remote from the main motorway network or Key-Link-Corridors in Northern Ireland as it lies to the east of the main link between Belfast and Dublin. The town is therefore connected to Belfast via a Link Corridor (A-road). This status undermines the investment in the link with the Key Transport Links given a higher priority. Notwithstanding, the proposed A24 Ballynahinch By-Pass is contained in the Strategic Investment Board forward planning schedule which envisages the scheme being implemented within the next 10 years. The scheme will significantly improve journey time to Belfast along the A24 and could impact on route choice from Downpatrick or from the areas south of the town.

Local Road Network

3.4 Downpatrick serves a large, mainly rural hinterland dependent on the private car for travel to access the town. As mentioned above, a number of roads converge in Downpatrick:

- A25 Newry to Strangford: runs north-south through the town;
- A7 is the main route to Belfast and it starts in the town (designated as a link corridor);
- A22 to Comber; and
- B1 to Ardglass and the south.

3.5 The main north-south route through Downpatrick includes Belfast Road, Church Street and Market Street. Commercial activity in the town centre is focused along Market Street and St Patrick's Avenue, with some activities on parts of Irish Street. Irish Street and Killough Road link with Market Street at the Irish Street/Market Street junction.

3.6 In addition, there are a number of additional minor roads in the town centre which act as links between the main routes. Market Street and Irish Street, as a result, function as local traffic distributor roads, in addition to their role as shopping areas.

3.7 It is the significant mix of functions which the town centre streets support that makes the balance of performance so difficult to maintain. Through and local traffic, parking, servicing, accommodating HGV's and buses all have specific demands on the street and the combinations of demand contribute to congestion.

Walking and Cycling

3.8 Pedestrian activity in the town centre is concentrated on Market Street; and sections of Irish Street, English Street and St Patrick's Avenue and is also apparent at Stream Street/ Killough Road junction, which serves Downe Hospital. Pedestrian activity can also be observed around the local schools in town and on routes between the schools and the bus station.

3.9 Pedestrian links between attractions including the bus station, car parks and shopping areas are not strong.

3.10 Downpatrick's cycling infrastructure is limited to some tracks on the outskirts of the town which do not extend into the town centre. Therefore, cycling in the town centre, particularly on heavily congested roads, is neither supported nor encouraged.

Public Transport

3.11 There are no formal taxi ranks in Downpatrick and public transport is generally facilitated by local and inter-urban bus services.

3.12 The role of Downpatrick as a hub for the surrounding area is no better portrayed than in the extensive network of principle bus services through the bus station. Outwith the local area Belfast is the primary destination and is supported by hourly Goldliner services; all other major destinations are serviced by less frequent services.

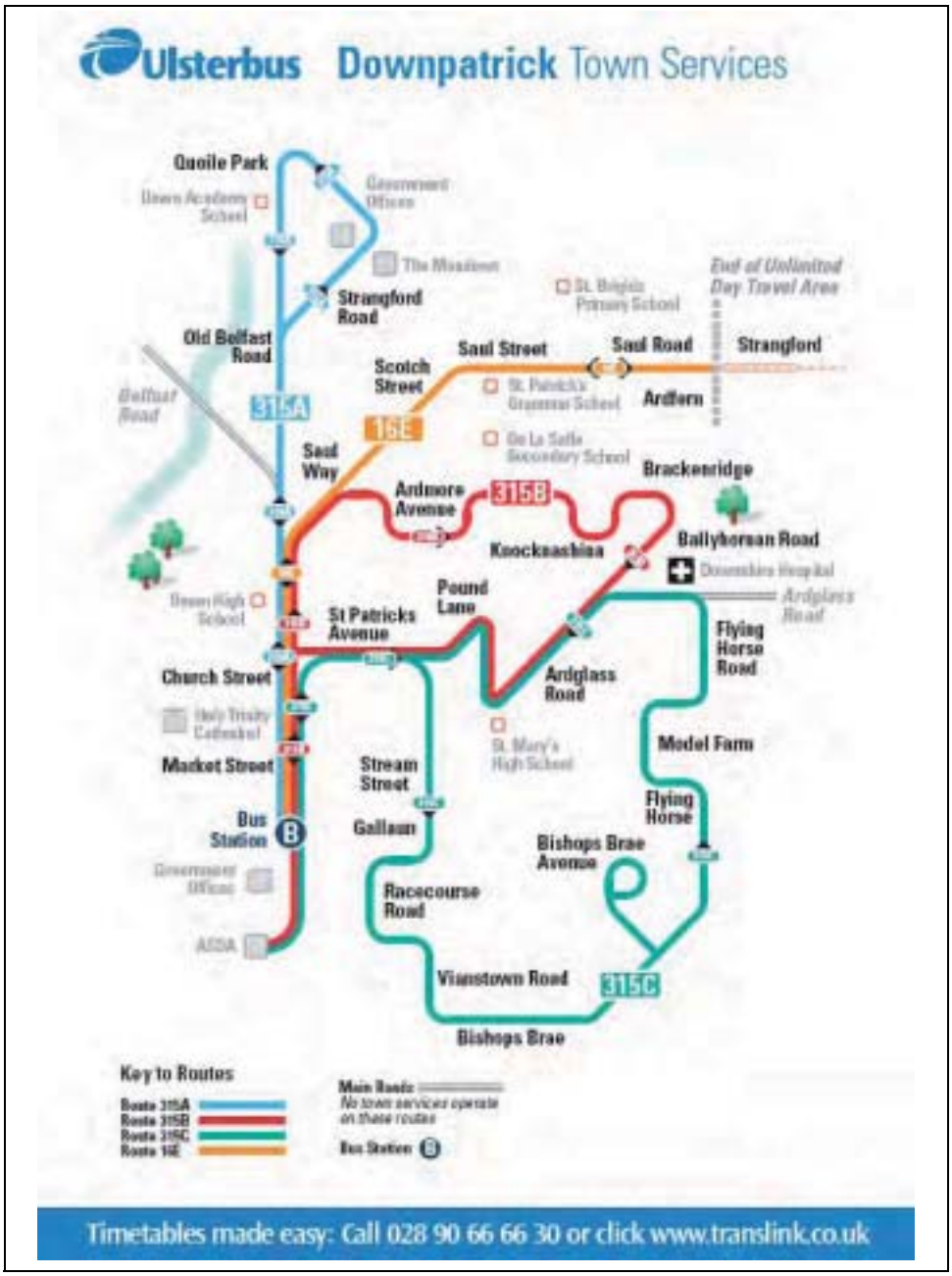
3.13 Locally, however, key junctions affecting network operations are the Market Street/ St Patrick's Avenue traffic signals and Market Street/ Irish Street traffic signals. Congestion through this area can lead to significant impacts on buses meeting their timetables.

3.14 There are currently three circular bus routes to the main residential areas of the town as well as a linear route to Strangford which fall under the label of local services. These are shown in **Figure 3.1.**

3.15 With buses running approximately every hour on each route, services terminating at around 7pm, and no services running on Sundays, there is good reason to believe that the transport mode of choice for journeys in and out of the town centre from the surrounding residential areas would be the private car.

3.16 The central location of the bus station is a significant advantage in terms of accessibility. However, with that advantage comes the consequence of loading so many bus movements in an already congested and physically constrained town centre network. Furthermore, the bus station and depot accommodates a significant site area and consideration should be given to moving non-passenger focussed operations from this central site to a less central location.

Figure 3.1 Existing Bus Routes in Downpatrick



Translink

Future Investment

Sub-Regional Transport Plan

3.17 The Sub-Regional Transport Plan 2015 for Down District Council gives more detailed information on the current transport behaviour in Downpatrick and the future proposals for the town. This information is given in **Appendix B** for reference.

3.18 The document identifies three key issues with transport in Downpatrick at present. These are;

- Excessive delays at signalised junctions during peaks hours and especially at the Irish Street/ Market Street junction;
- Parkers preference for on street parking causes illegal parking and traffic congestion;
- Poor pedestrian links to / from major car parks coupled with inadequate footway provision and crossing facilities in the town centre.

3.19 The document also highlights 7 transport improvement schemes to be given future consideration. These are;

- Improved walk/cycle access to bus/rail station or principal stops;
- Refurbishment of bus station (already complete);
- Improved local bus services;
- Bus stop improvement strategy;
- Increased parking at bus/rail station;
- Taxi stand;
- Transport programme for People with Disabilities.

3.20 With regard to road improvement proposals, the plan identifies the Eastern Distributor Road as a key mechanism to serve new development. Within the town centre, the plan promotes a new link road between Irish Street and St Patricks Avenue which would also allow a one way system to be introduced. Local and strategic road improvements are discussed later in this report.

3.21 Proposed investment levels for the various measures outlined in the sub-regional transport plan are given and show a significant weighting towards highway works in the town in order to address the problems experienced at the Market Street/Irish Street junction and to provide an alternative route around the town. The plans also show significant investment in measures to encourage walking in the town.

3.22 These investment proposals are seen as generally complimentary to the proposals outlined in the masterplan and give an indication that there are resources available to help implement some of the proposed transport solutions covered in this document.

Development Plan for Downpatrick (Ferguson McIlveen LLP)

3.23 The study, undertaken on behalf of Down District Council in 2006, sets out a vision for the future of Downpatrick Town Centre and considered physical and environmental improvements. Traffic congestion and parking were raised during the consultation process with key issues including:

- Vehicular access and circulation;
- Parking;
- Pedestrian access and circulation.

3.24 An assessment of transport related issues generally mirrored the conclusions of the JMP assessment. The study also generally endorsed the walking and cycling blueprints included in the sub-regional transport plan. However, it was recognised that the blueprints did not specifically address the:

- Requirements to develop links in the town centre between car parks and the bus station to land uses;
- Requirement to provide cycle networks that penetrate the town centre to supplement those proposed on the periphery.

3.25 With regard to highway improvements the study supported the proposed new link road between Irish Street and St Patricks Avenue and the Eastern Peripheral Route, with the caveat that the East Link should where possible be more direct and eventually link directly onto the Belfast Road. The uncertainty over the delivery of the East Link was also recognised and a recommendation that the Department commit to intervene in the delivery if necessary.

3.26 The study also identified an opportunity to link Ballydugan Road to St Patricks Avenue to relieve the Market Street junction.

3.27 With regard to parking, the level of parking in the town was deemed to be appropriate, however, some locational issues were raised along with recommendations to improve signage, linkages and layouts.

Downpatrick Town Centre Data Base Line Project Report (RSC and PSC Ltd)

3.28 The study, undertaken in early 2010 in tandem with the masterplanning exercise was to collate data and provide an underpinning knowledge document to inform future developments. The study focussed on the "core" of the town centre and included traffic, parking and pedestrian surveys.

3.29 The study included a retail assessment audit which concluded that traffic impact, parking and cycling provision all required improvement to sustain viability.

3.30 The audit of car parking identified a total of 685 parking spaces including Rathkeltair. While Rathkeltair is significantly larger than all other car parks, 93% of those surveyed indicated that at 360m from the town centre, the car park was too far to walk. Of the other town centre car parks, Irish Street was the most popular with more than twice the number of vehicles using the site than the next busiest, Market Street, even though both are of a similar scale (around 86 spaces).

3.31 With regard to junctions, the survey confirmed earlier information that the busiest junction in the town centre is the Irish Street / Market Street junction. Market Street was also the busiest road in the town centre followed by St Patricks Avenue.

3.32 With regard to Saturday flows, generally peak hour traffic volumes decreased with an increase in the off peak period. Market Street and St Patricks Avenue, which demonstrated a significant increase in off peak traffic volumes on a Saturday, were the busiest streets in the town centre.

3.33 A "Civic Pride" survey identified that poor traffic management (25.6%) was the element with the most negative impact on the sense of pride while inadequate car parking (16.3%) was the third most significant factor.

3.34 Respondents were asked which key changes they wished to see and more effective traffic management (51%) and additional car parking (32%) were the two highest changes indicated. A

more detailed exploration of these answers indicated strong support for a one-way system (45%) and for more on-street parking (32%) as the top two issues.

3.35 From a selection of additional responses the key comment, highlighting all of the frustration relating to traffic congestion in the town was, *"Sort out the traffic, it is bedlam most of the day. Put in the one way system, that might help, but for goodness sake do something".*

3.36 The study conclusions indicated that care would be required to ensure that any road improvements did not exacerbate traffic congestion, indicating that the key challenge in Downpatrick is to re-direct traffic which is intending to by-pass the town to ensure a clear route for those wishing to access the town.

3.37 It should be noted that although the principal of providing a "by-pass" of some form could be a solution to traffic issues in Downpatrick, it is not specifically supported by the report.

4 Local Transport Interventions

4.1 One of the primary concerns arising from the public consultation on the draft masterplan is the issue of vehicular congestion and lack of pedestrian provision in the centre of Downpatrick. In proposing alterations to the infrastructure in the immediate town centre area, JMP consider that improvements can be made which would result in a more efficient flow of traffic and more pleasant conditions for pedestrian activity.

4.2 The signalised junction of Church Street, English Street, Irish Street and Market Street is situated on the A7 in Downpatrick town centre. The roads form a staggered junction requiring a hard right turn when travelling south on the A7 (consequently a hard left turn when travelling north, see **Figure 4.1**, and circled on **Figure 4.2**). Its location at the north of the town centre means that through-traffic, as well a large proportion of Downpatrick residents, currently traverse the junction in order to enter/exit the town.

Figure 4.1 A7 Junction, Downpatrick Town Centre

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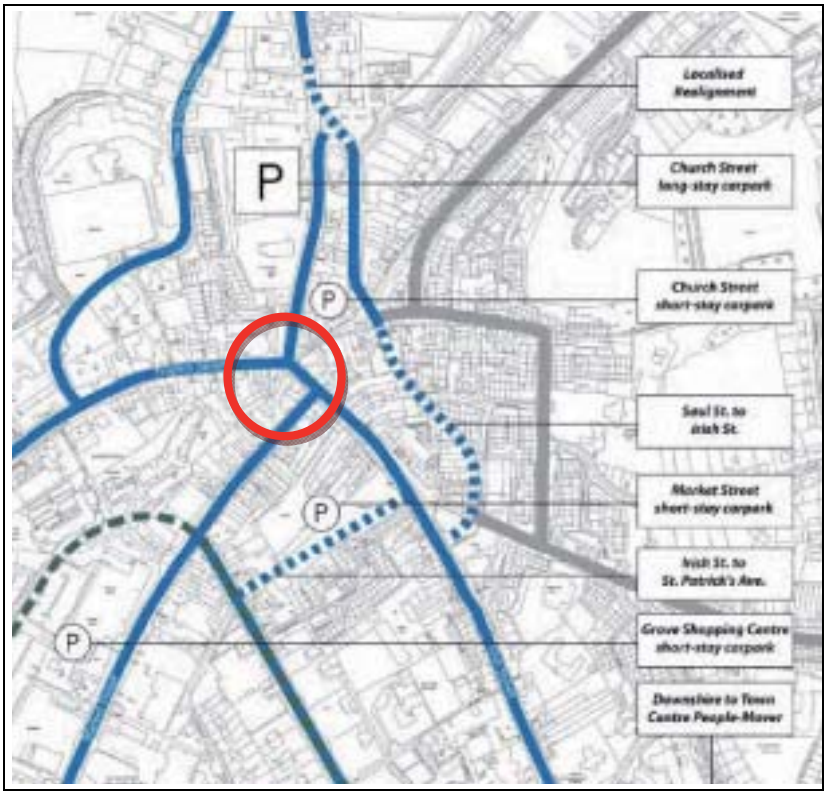
4.3 In addition, the area surrounding Downpatrick has a strong agricultural heritage and, consequently, there is significant agricultural traffic movement through the town centre as local producers travel to/from the commercial hubs to the north. This can result in significant numbers of large agricultural vehicles which experience difficulty in manoeuvring through the above junction. This can result in lengthy tailbacks for other vehicles, with travel time through the junction occasionally as high as 10 minutes.

4.4 The junction has been identified as a bottleneck in the town centre and there are proposals to divert traffic away from this problem area. A 2005 study commissioned by Roads Service, and included in **Appendix C**, considered options to alleviate the problem and concluded that the traffic benefits of a western bypass would be considerable in this local area, diverting over 1100 vehicles per hour from the town centre at peak times.

4.5 The option was not progressed at the time due to environmental and cost considerations; however it was clear that there were significant benefits to be enjoyed in the town centre if a suitable alternative were proposed. JMP has considered a revised strategy for the Western By-Pass route which is outlined in **Section 5**.

4.6 JMP has also sought to identify an alternative solution which would perform a similar function to the Western By-Pass option within the town centre. The key benefits would be to contribute to alleviating the current town centre congestion without the same environmental and cost impact as large-scale strategic interventions.

Figure 4.2 Plan of Local Routes in Downpatrick Centre



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Irish Street / St Patricks Avenue Link (Roads Service Scheme)

4.7 Roads Service has identified the opportunity to construct a new link road between Irish Street and St Patricks Avenue and with the link in place, introduce a new one-way system in Downpatrick town centre. JMP are supportive of the scheme and recognise that while the proposal will not remove traffic from the town centre, it will provide an opportunity to maximise the capacity of the junctions by reducing traffic conflicts.

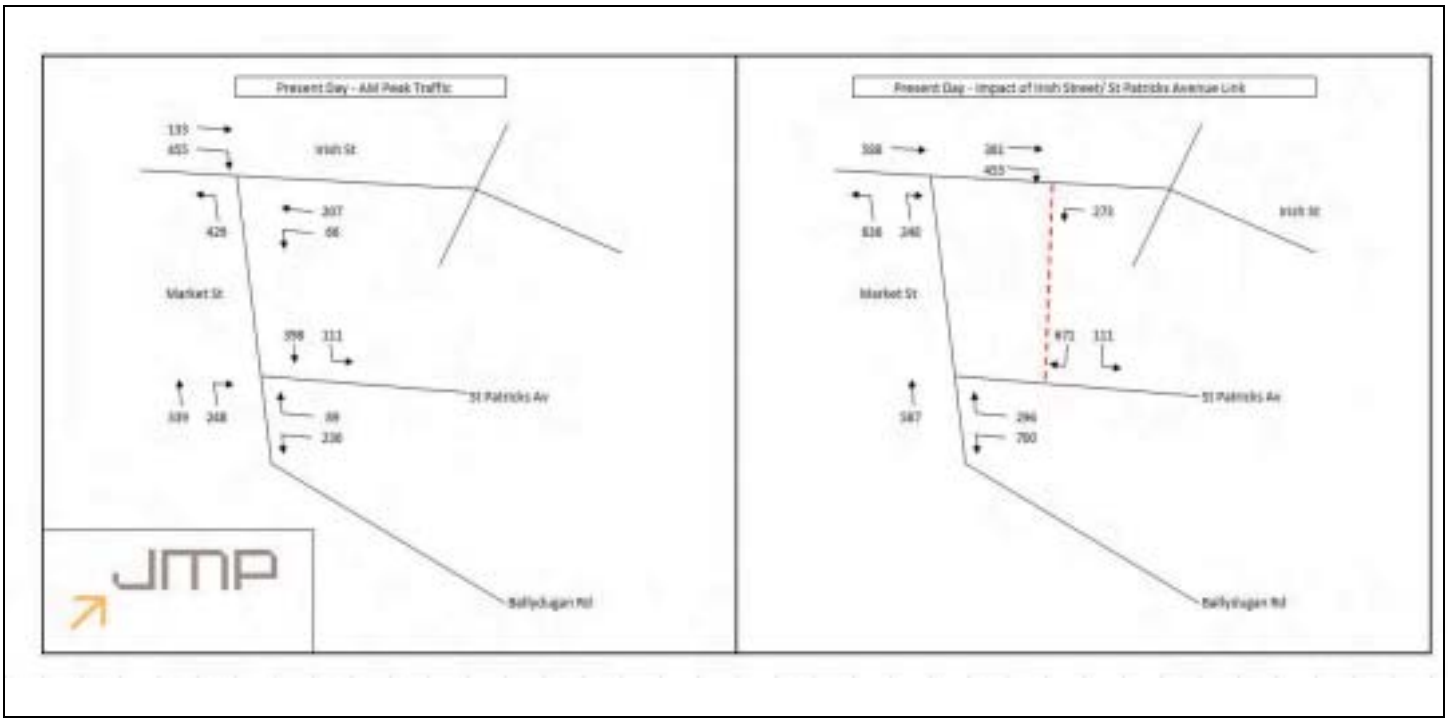
4.8 The proposed one-way system would include a clockwise loop with the section of Market Street between St Patricks Avenue and Irish Street one way northbound, the Irish Street section to the new link road operating one-way eastbound, the new link road southbound and St Patricks Avenue westbound.

4.9 The key changes as a consequence of the one way system would be:

- An 11% and 14% increase in traffic at the Market Street / St Patricks Avenue and Irish Street / Market Street junction respectively;
- A 6% decrease in traffic on Market Street and
- A 106% increase in traffic on Irish Street.

4.10 The impact of the scheme cannot be measured in traffic flows alone. The opportunity to rationalise the junctions, particularly the difficult right turn manoeuvre for larger vehicles into the north end of Market Street and the opportunity to formalise on-road parking will also arise as a consequence of the proposed improvement.

Figure 4.3 Present day impact of Irish Street/ St Patricks Avenue Link



Saul Street Extension

4.11 Given the key benefits relating to diverting traffic away from the Irish Street / Market Street junction, JMP have considered the opportunity to provide a Saul Street Extension which improves the linkage between Saul Street and Irish Street, giving traffic the opportunity to re-route around the critical Irish Street / Market Street junction.

4.12 There are two alternative options for such a link and the impacts of each are indicated below. With regard to traffic diversion, the shorter the diversion route the higher the number of vehicles that could be encouraged to use the link.

4.13 An assessment of the impact of the proposed Saul Street extension without the one-way system indicated above is:

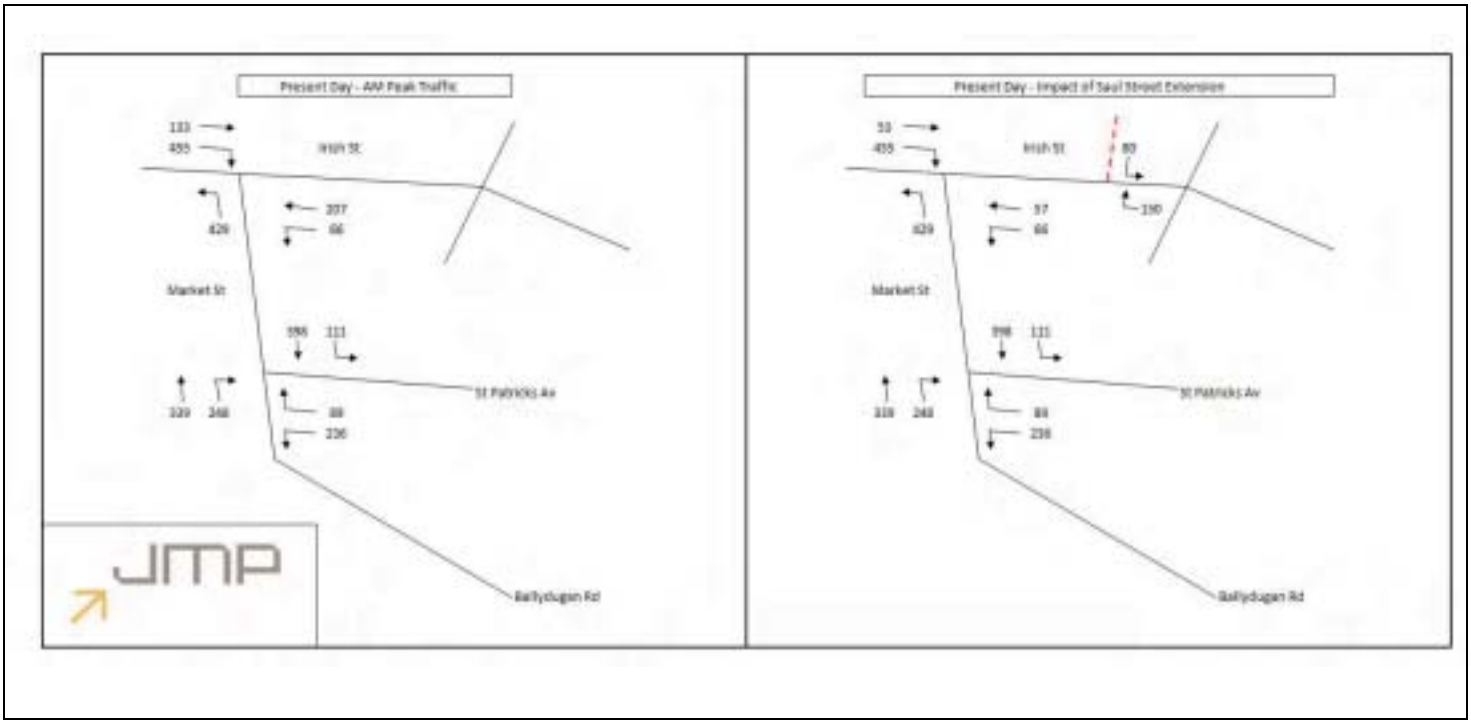
- An 18% reduction in traffic through the Irish Street / Market Street junction;

- A 40% reduction in traffic on Irish Street.

4.14 While these impacts are more localised, they do directly impact on the critical junction in Downpatrick's road network. If the one way system were in place, the reduced volume of traffic would be similar to above but the percentage reductions would be a 19% reduction in traffic on the section of Irish Street between Market Street and English Street and a further 17% reduction on Market Street to supplement the 6% decrease provided by the one-way system.

4.15 The alternative alignments of such a scheme are discussed in detail below. With regard to the traffic impacts estimated above, these may be slightly underestimated for Alternative 1 - Saul Street / Meadowlands and slightly overestimated for Alternative 2 - Fountain Street.

Figure 4.4 Present day impact of Saul Street extension

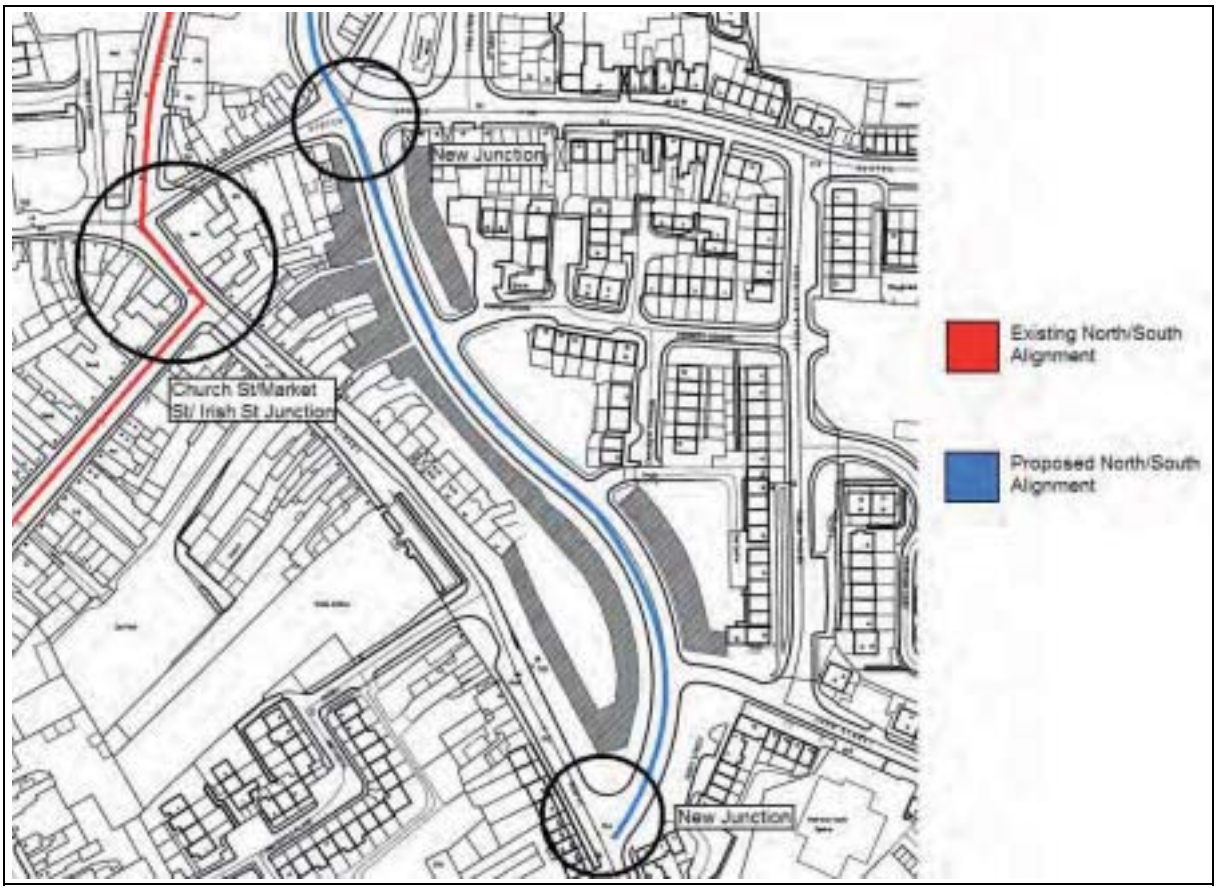


Alternative 1 – Saul Street / Meadowlands Extension

4.16 A proposed extension of Saul Street/Meadowlands southwards to connect with Irish Street south of its junction with Market Street, bypassing the signalised junction in the centre of the town. This is shown dotted on **Figure 4.2** above and in more detail in **Figure 4.** below. The two routes converge to the north of the diagram at a signalised junction which could be re-prioritised to favour the new route.

4.17 A new section of carriageway would be constructed between two new junctions; one with Scotch Street at the northern end, and one with Irish Street at the southern end. Scotch Street is already pedestrianised to the west of the proposed junction; hence the junction would function as a T-Junction with priority given to vehicles travelling across Scotch Street. A turning facility into the western end of Scotch Street would have to be maintained for access vehicles. At the southern end of the route, John Street would require truncation at a junction with the new route.

Figure 4.5 Saul Street Extension Proposal



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4.18 The proposed alignment would present an opportunity to rejuvenate the town centre by providing a new thoroughfare close to the existing centre; flanked by fresh, well-presented development. However there is an impact on existing development, with a number of residential and commercial units requiring relocation in order to implement the proposal.

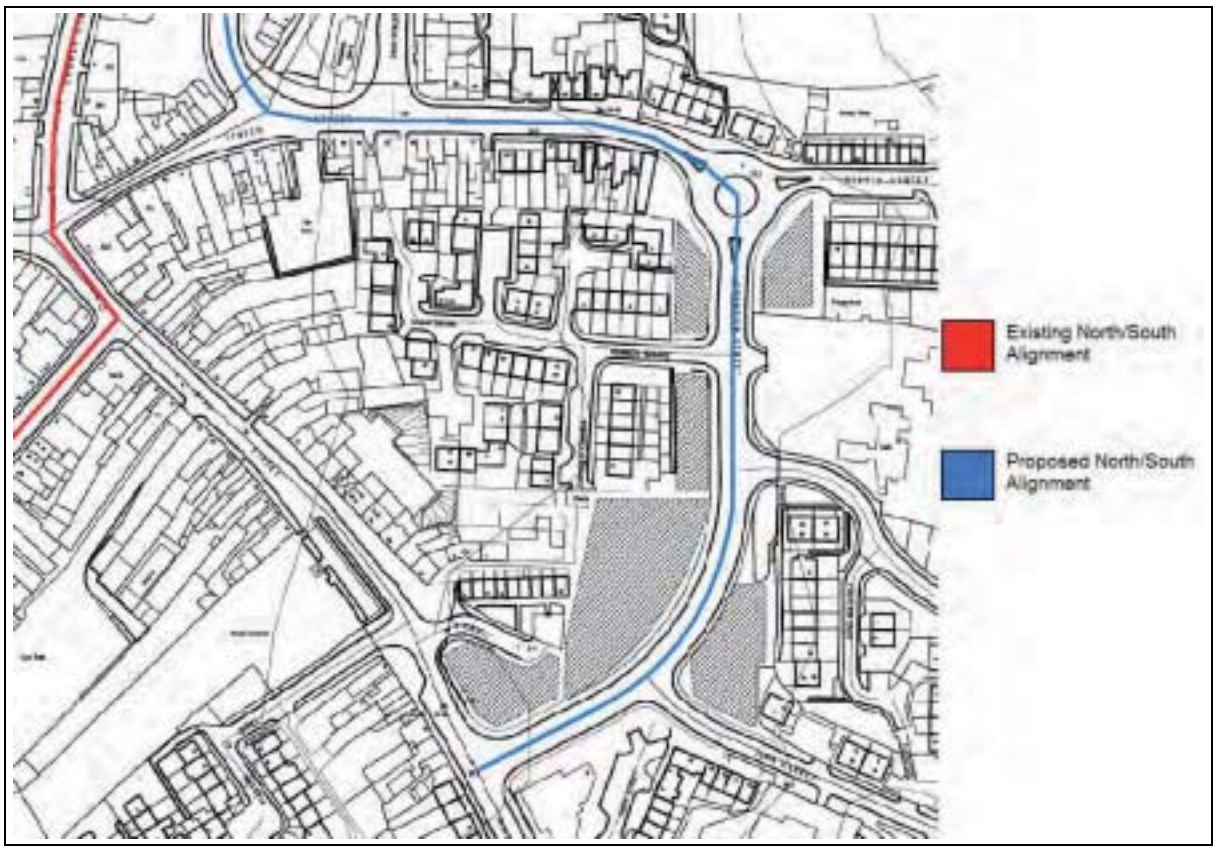
4.19 There is also a topographical constraint related to the proposal, due to the significant gradient the new alignment would have to traverse. The result would be that in order to comply with road standards, the road would require cutting into the terrain along certain lengths, using the new adjacent development as retaining structures. This would inevitably add cost to the construction; hence JMP have explored alternative proposals.

Alternative 2 - Fountain Street Realignment

4.20 An alternative alignment for the Saul Street link has also been considered which seeks to reduce the impacts of the road. The proposal involves redefining Fountain Street as a north/south thoroughfare, hence bypassing the town centre without the significant engineering constraints of the Saul Street solution. Junction improvements would be implemented, and the carriageway widened in order to emphasise the change in the nature of the road.

4.21 The road would also be realigned at its southern end to form a junction directly between Fountain Street and Irish Street. At the northern end a roundabout would be formed to facilitate traffic turning from Scotch Street onto Fountain Street. Some of the residential units currently lining the road would require relocation for the realignment of the road. These would be replaced by new development although, due to the increased distance between Fountain Street and the existing

Figure 4.6 Fountain Street Proposal



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4.22 As for the Saul Street proposal the alignment rejoins Irish Street and would require the Irish Street/St. Patrick's Ave link in order to complete a bypass of the town centre. This proposal also requires John Street to be truncated but, unlike the Saul Street proposal, the Fountain Street alignment would safeguard the properties on Arderin, opposite the police station on Irish Street.

4.23 The circuitous nature of the proposed route is noted and it was questioned whether drivers would select this over the existing route, given that under normal circumstances the existing route would present a lower travel time.

4.24 **Table 4.2** below allows for a quantitative comparison of the two options mentioned above.

4.25 In summary, the proposed Saul Street extension has clear traffic related benefits which contribute to relieving congestion at the critical Irish Street / Market Street junction. The proposal would continue to have benefits if the town centre one way system is implemented. The principle issue is the balance of the costs (financial and impacts) against the benefits (contribution to reducing congestion) which the scheme generates which determines whether the proposal is viable. Assessing these costs and benefits is an exercise which sits outwith the masterplan brief.

Table 4.2 Comparison of Town Centre (Re) Alignment Proposals

	Option 1	**Option 2**
Location	**Saul Street/Meadowlands Extension**	**Fountain Street Realignment**
Demolished Properties	3 retail units (17-21Scotch Street) * residential units (Kennedy Square) * residential units (off John Street) 1 outbuilding (rear of 30 Irish Street) 1 garage (off John Street) 1 derelict office (former NIE building – John Street) 1 office building (Housing Executive – Irish Street)	* residential units (Fountain Street) – due to new road alignment * residential units (Fountain Street) – due to changed nature of street 1 Day Care Centre and adjacent building (rear of 29-37 Fountain St) 1 derelict office (former NIE building – John Street)
Affected Properties	7 gardens plots reduced (rear of 18-58 Irish Street) 2 car parking areas reduced (Scotch/John St) 2 vacant plots reduced (off Kennedy Square)	-
Advantages	• More direct southbound route • Enables mixed uses along length - high street scenario • Potential for active frontages along full extent of route • Enables significant development opportunities • New development could act as retaining structures where topographical challenges arise • Increased permeability with Kennedy Square • Enhanced connections between existing neighbourhoods • Results in tighter urban grain	• Maximises the use of existing infrastructure - only involves upgrading of an existing street for more than half its length – resulting in reduced costs • Creates significant development opportunities • Takes traffic further away from town core area
Disadvantages	• Significant demolition of existing properties and grounds • Potential topographical challenges • Entirely new route=potentially more costly option • Located in close proximity to the town core	• Significant demolition of existing properties and grounds • Will compromise the residential nature of Fountain Street • May encourage mixed use development in a location which is somewhat remote from the town centre • Poses additional access problems due to the new roundabout arrangement • Residential communities located on the eastern side of the route may experience an increased sense of isolation from the town centre proper (e.g. Fountain Court)

Additional notes:
(1) The hatched areas, indicated within JMP's plans accompanying the above options, represent new development opportunities along both routes, with the masterplan currently reflecting option 1. While some of these new development blocks appear to be a like-for-like replacement of existing building footprints (particularly option 2), these new blocks would take the form of mixed use development as opposed to stand-alone residential units.
The rationale here is to maximise the potential for through routes to create lively, viable mixed use areas. In terms of combining the capacity and character of street types, the urban design compendium advocates that Local Distributors (which both options are effectively achieving) should ideally take the form of a High Street incorporating a mix of uses and active frontages (section 4.4.1 - pg 75). In addition, vehicular access and residential parking along these routes would pose an issue given the new role they will play as local distributor roads. 'Creating Places: Achieving quality in residential environments' advocates that, "In the interests of road safety, restrictions on direct vehicular access to dwellings and parking spaces are necessary along local distributor roads. " (para 10.34). In this regard, it is proposed that stretches of residential units in both options are replaced by new mixed use blocks given that the character of the route will change to that of a Local Distributor.

Ballydugan Road – Killough Road Southern Bypass

4.26 The masterplan also includes a proposed route to bypass the town centre; in this instance to the south of the town. The Ballydugan Road – Killough Road alignment is further removed from the town centre than the proposals detailed to this point and would form part of a potential Eastern Periphery Route (see **Section 5**) by distributing traffic entering the town from the south-west to the areas of development to the east of the town.

4.27 This route will be of particular importance as a means to access possible future development land to the south of the town and provide a more direct access to the Downshire Hospital site which is also being redeveloped. The proposed route would pass through an area of open land east of Ballydugan Road.

4.28 Connection of the proposed link with the Ballydugan Road would be relatively straightforward given that there are no topographical issues. It may be appropriate to seek to make such a connection coincide with access into the existing retail park on the west side of Ballydugan Road at Rathkeltair. Connection between the new link and Killough Road would be more challenging given the level differences in the area. As a consequence, the south side of Stream Street would require to be raised to connect with the new road. North of the new link it is highly unlikely that the short stretch of Stream Street up to the junction with St Patricks Avenue would be able to be connected, becoming a dead end, served from St Patricks Avenue. Similarly, Racecourse Hill be reconnected to the south section of Stream Street to maintain access.

4.29 The current road alignment adjacent to the new cinema development and the proposed alignment at its more constrained eastern end are shown below in **Figure 4.** and **Figure 4.** respectively.

4.30 The route will link to a new cinema complex on a section of road between St Patrick's Avenue and Stream Street. The cinema opened in June 2009 and is an important leisure hub for the town and the surrounding area. Completing a link between Ballydugan Road and Killough Road would improve access to this facility from the south-west, from towns such as Newcastle which have no such leisure facilities of their own.

4.31 The route will also form a first section of the Eastern Distributor Road and as a consequence would provide an alternative route for traffic between the south and east. This traffic currently contributes to the level of congestion at the Market Street / St Patricks Avenue junction, which is the second busiest junction in the town centre.

4.32 A summary of the benefits of the link are:

- The route provides a local by-pass of a critical town centre junction and an alternative route for traffic not requiring to access the town centre;
- The route would be a local distributor acting as a means of access between local areas;
- Improved access to the Downshire Hospital site and the development proposals therein;
- The road would form an access into future development proposed in this part of Downpatrick.

4.33 With regard to traffic impact, the new link would provide a 30% reduction of existing traffic through the Market Street / St Patricks Avenue junction and 35% decrease on the heavily queued Ballydugan Road approach to the junction.

Figure 4.5 Present day impact of Ballydugan Road/ Killough Road link

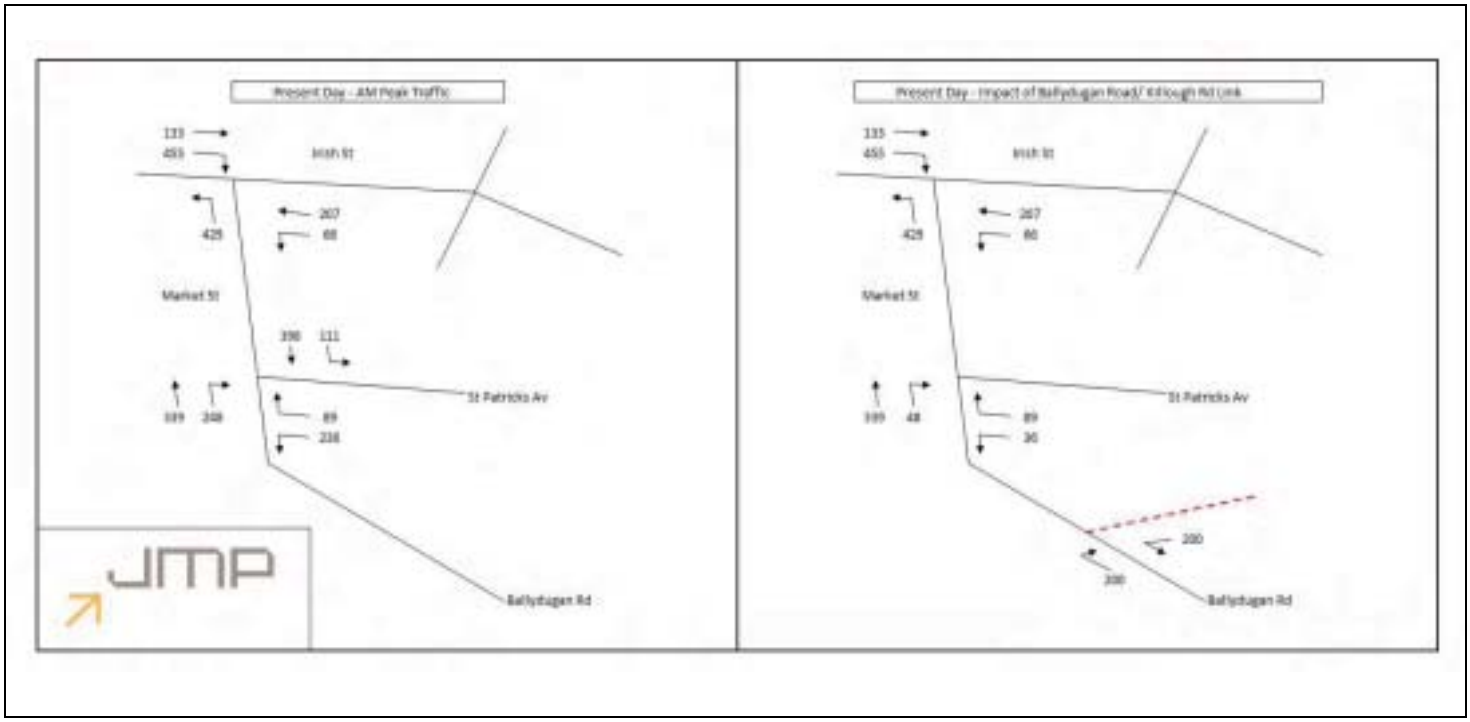
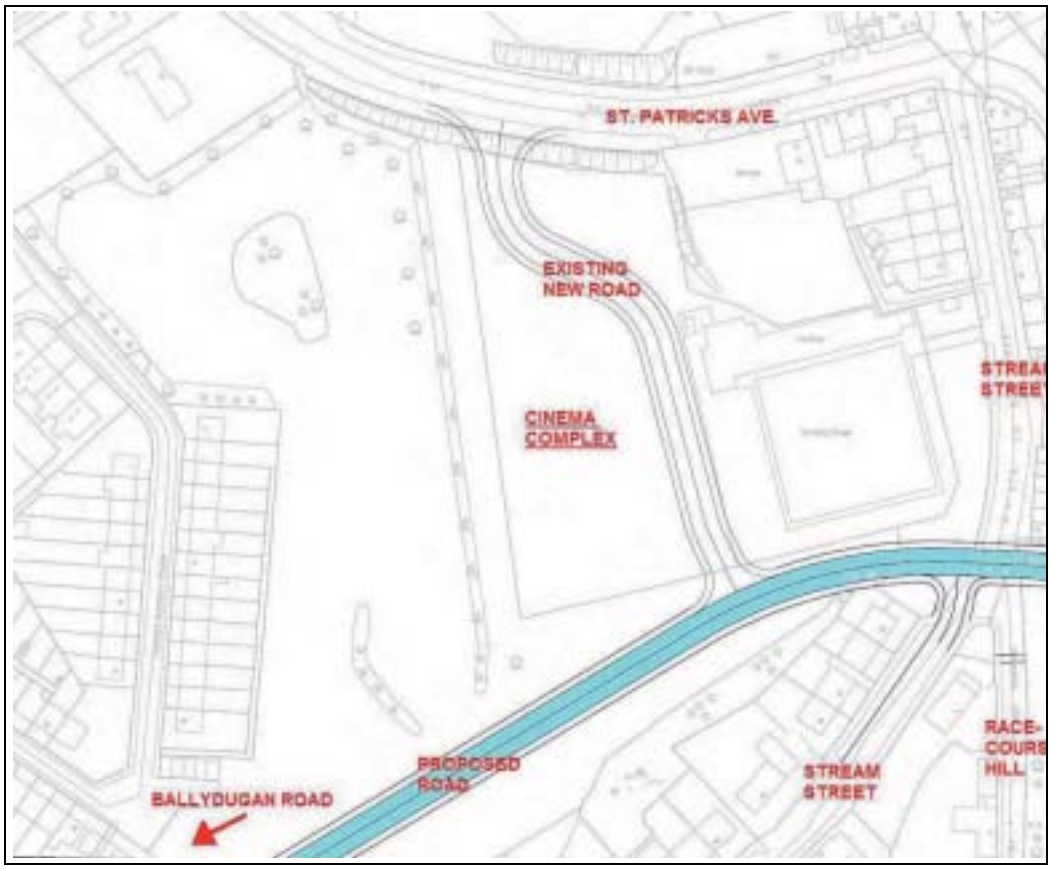


Figure 4.8 Cinema Location

Armstrong Taylor Engineers

Figure 4.9 Southern Bypass



JMP

Local Park & Ride Strategy

4.34 One of the principal masterplan aims is to reduce the volume of circulating traffic in the town centre. It is suggested that this can be achieved by an effective parking strategy. The masterplan indicates a number of potential sites for car parks around the town, including long stay sites at key locations to intercept trips before they reach the town centre.

4.35 Despite the compact nature of the town centre, it is still considered that a shuttle service to offer access to the heart of the town centre from these locations is a worthy consideration and may attract car users who would otherwise park in the town centre.

4.36 Public transport should be targeted at delivering commuters from within the town and the surrounding area to their place of employment with minimum congestion on the town centre road network. As such, it is fundamental to operate strong services to/from the main areas of employment, these being the proposed Downshire Hospital Site and the Down Business Park.

4.37 With the potential for the construction of an eastern peripheral route to distribute traffic around these planned areas of expansion, there may be scope to introduce a radial bus route to link the Downshire Hospital site with the Down Business Park via the residential developments which lie between these. This proposal would remove the need to travel through the town centre completely; however fares would need to competitive to attract car-based commuters. Separate services would then link these areas with the town centre amenities, potentially following the line of the 'linear park' proposal (see **Section 6**).

4.38 In the masterplan a shuttle link is planned along a corridor between the town centre and the Downshire Hospital Site in order to encourage sustainable travel. In this regard it would be recommended for the shuttle to have zero/low emissions at street level (i.e. an electric or low emission vehicle) in order to retain the park as an attractive place for pedestrians and cyclists. Similarly the design of the supporting infrastructure would require to be sensitively designed through these high quality zones.

Car Pools

4.39 With the relocation of the council offices to the Downshire Hospital Site, incentives could be made to employees to encourage car sharing. This may take the form of a 'Carrot and Stick' approach where rewards for car sharing would be offset by deterrents for single-occupancy vehicles. For example, parking spaces may be limited in an attempt to reduce vehicles accessing the site.

Summary of Local Infrastructure Interventions

4.40 In summary, there are three key road schemes which will assist the operation of the town centre in Downpatrick. In order of importance and contribution to reducing congestion, the most important is the Roads Service proposed one-way system which would maximise the potential of the existing road network. Although this proposal does not remove traffic from the town centre it does provide the opportunity to streamline movements through key junctions. The second most important scheme is the Ballydugan Road / Killough Road links, which could provide significant benefits in the south of the town centre with immediate improvements to the Market Street / St Patrick Avenue junction and the removal of non-town centre traffic from the town centre. The Saul Street Extension is the third-most important and most controversial of the schemes given the likely impacts of implementation. Preliminary assessment demonstrates that the scheme would have benefits for the Irish Street / Market Street junction. The balance of costs and benefits will be critical to ensure that the scheme provides good value.

5 Strategic Transport Interventions

5.1 Downpatrick is constrained as a consequence of its topography. This has affected the direction of growth of the town and the development of the road network in and around the area. One of the principle difficulties related to traffic within the town centre is the combination of a historic road network pattern plus the need for local traffic and through traffic to route through this historic core. It has already been discussed in this report why, as a consequence of the topography, development of the town has been weighted significantly to its eastern side as this has provided the most suitable land for construction.

5.2 Downpatrick is situated on the A7 trunk road, which links the town with Belfast via the A24 (which the A7 joins at Carryduff). The A7 terminates in Downpatrick and there are few significant settlements beyond the town. The draw of Belfast brings traffic from these towns through Downpatrick to join the A7. The route of the A25 also carries through-traffic between Strangford to the North East and Newcastle, Newry and Dundalk to the South West.

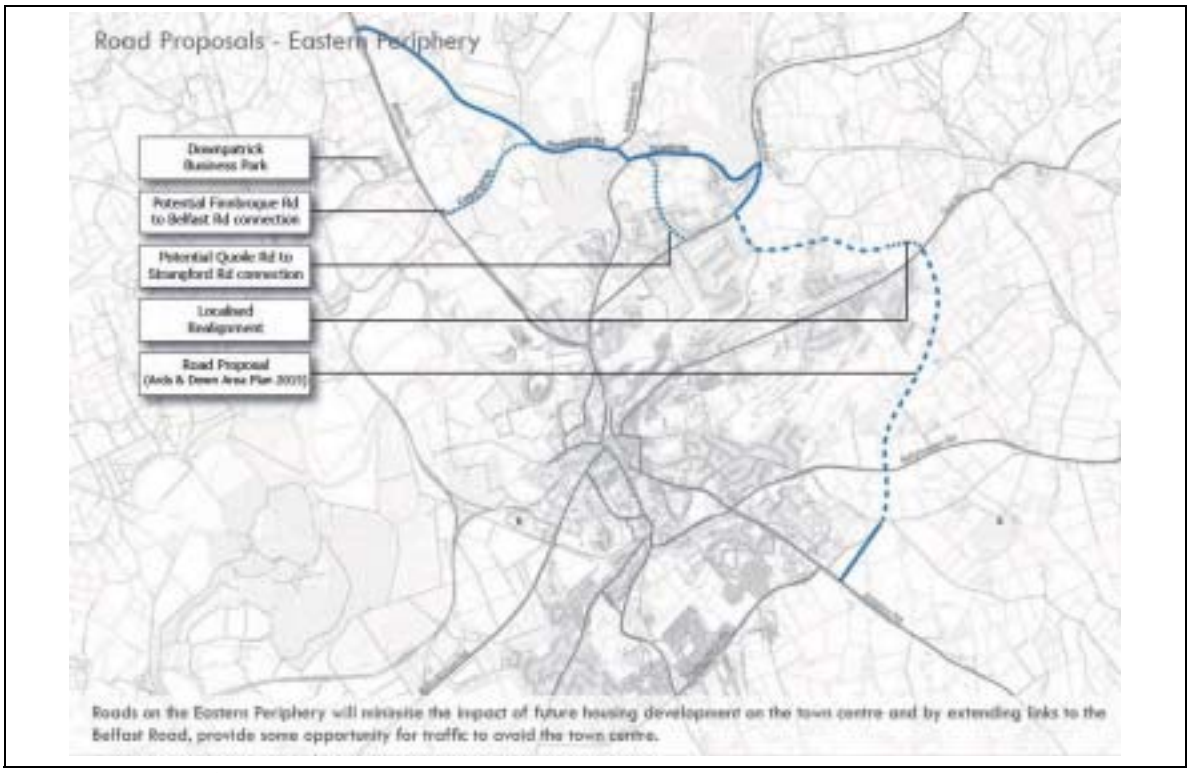
5.3 Previous studies of the town have identified the significant traffic related benefits of providing a by-pass along with the challenge of effectively delivering such a route. Previous consideration has been given to a Western By-Pass, linking the Belfast and Ballydugan Roads and to the opportunity relating to an Eastern Distributor Road, principally providing a mechanism for traffic to move between radial routes without accessing the town.

5.4 Therefore JMP considered strategic transport solutions which would aid the flow of traffic around the town, whilst providing strong, coherent links with the areas of current and future development. The options considered are indicated below.

Eastern Peripheral Route

5.5 The proposal for an Eastern Peripheral Route (see **Figure 5.1**) is contained in the Ards and Down Area Plan 2015 and is strongly linked to the proposals to provide significant residential development to the east of the town. The route will also aid in delivering effective transport links to the relocated council offices and other development at the Downshire Hospital site.

Figure 5.1 Eastern Peripheral Route



The Paul Hogarth Company

5.6 **Figure 5.2** below shows the extent of the proposed housing for the eastern side of the town centre, with the Phase 1 housing shown in solid brown. The proposed eastern peripheral road is also shown in light blue. It is evident that such a route is a necessity if such large scale expansion is to occur on this side of the town, there is also the benefit of limited geographical constraints in this area.

5.7 Roads Service commissioned an appraisal of the route (reported in August 2005) which was undertaken by Faber Maunsell. And demonstrated that the link road had positive economic benefits. Notwithstanding, there is a key risk that the delivery of the scheme, which is principally the responsibility of Developers, may not occur in the short term, leaving congestion issues in the town centre.

5.8 JMP propose two changes to the current EDR proposals.

5.9 Firstly, an extension of the EDR to link to the Belfast Road and hence provide an alternative route to and from Belfast, the principal traffic generator. This could be achieved either by the use of the existing Finnbrogue Road, which is of a reasonable standard. Alternatively, and the favoured option, would be an improvement of Cotterhill Road, which currently provides a poor standard link between Finnbrogue Road and Belfast Road in the vicinity of the Down Business Park could be considered. The benefit of such an improvement would be the provision of a more direct link between Downpatrick housing, Belfast and a major employment zone.

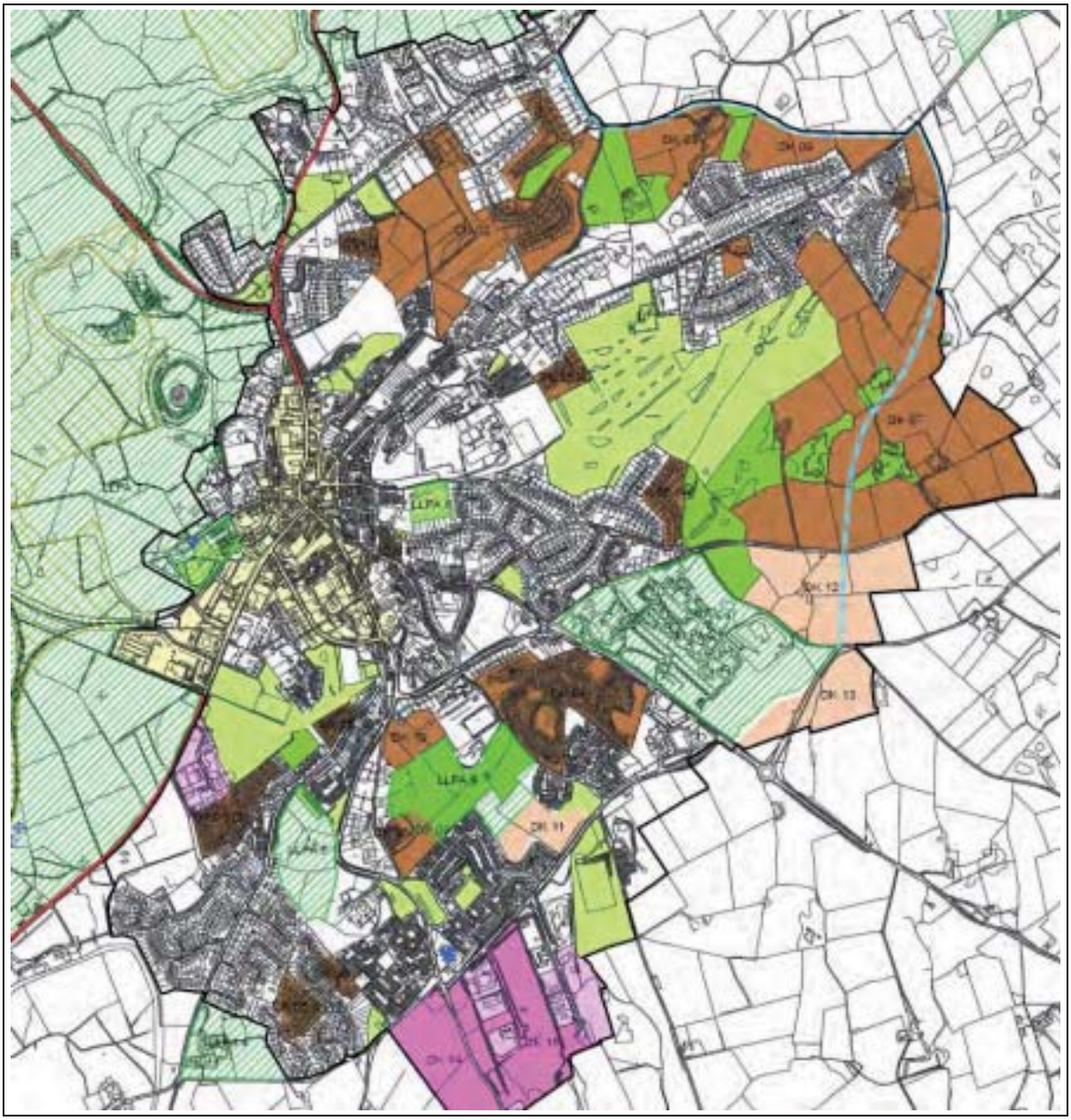
5.10 Secondly, a proposed Quoile Road to Strangford Road connection constructed in association with the proposed relocation of the High School to make the route more direct.

5.11 The proposed Ballydugan Road to Killough Road link in the south of the town centre would provide an effective final link to complete the eastern distributor road round to the south of the town centre (see **Section 4**), the proposed peripheral alignment also has the potential to act as a diversionary

route of the A25 Newcastle to Strangford road. The proposed road would divert traffic around the town centre, and would be likely to result in a travel time saving for through-traffic despite the increased distance.

5.12 JMP's proposal to go beyond the peripheral route by adding in the southern section between Ballydugan Road and Killough Road (as detailed above) is driven by the masterplan objectives which champion an *'alternative route around the town, avoiding the town centre'*. Also it is key to providing a link between the existing transport hub around the bus station (and train station which may be reopened in a non-leisure capacity) in the west of the town centre and the proposed development to the east without causing traffic to pass through the narrow, congested streets of the town centre.

Figure 5.2 Ards & Down Area Plan 2015



The Planning Service NI

Western Peripheral Route

5.13 The concept of a Western Peripheral Route providing a by-pass along the western side of Downpatrick has been a long-standing proposal in the town. The proposed route reflects a key movement of vehicles traversing the town. The general principle is that the by-pass would significantly reduce traffic through key town centre junctions.

5.14 In 2001 Faber Maunsell (Aecom) undertook a transportation study of the town and in 2005 was asked to review the information to ascertain the feasibility of a road route to bypass the town on its western side. The route was seen primarily as a bypass. The report concluded that the costs of a Western By-pass, both financial and in association with environmental impact outweighed the benefits, primarily due to the sensitive nature of the land to be covered by the road. Not only is the land marshy, but it is also an area of significant archaeological interest. This rejected alignment is shown in **Figure 5.3** in green and labelled 'Assessed Option'.

5.15 JMP are supportive of the principal of a Western By-pass but understand that such an option has failed to provide evidence to demonstrate the benefits of such an extensive investment.

5.16 To revive the concept of a western bypass of Downpatrick, JMP have considered an alternative alignment and approach to that assessed by Faber Maunsell in 2005. The alignment primarily seeks to take advantage of the alignment of the current Downpatrick and County Down Railway (DCDR) heritage line, which runs between Downpatrick and Inch Abbey, west of the town. The DCDR line currently serves as a part-time leisure route, running on weekends between June and September, as well as other selected holidays throughout the year. It is run by volunteers and is a non-profit making organisation.

5.17 Consideration has been given to developing a new road link or an alternative public transport link all with the intention of identifying a solution which is deliverable and can provide a valuable contribution to improve access to the town. The route options available and likely impacts of the road or public transport based alternatives are also discussed.

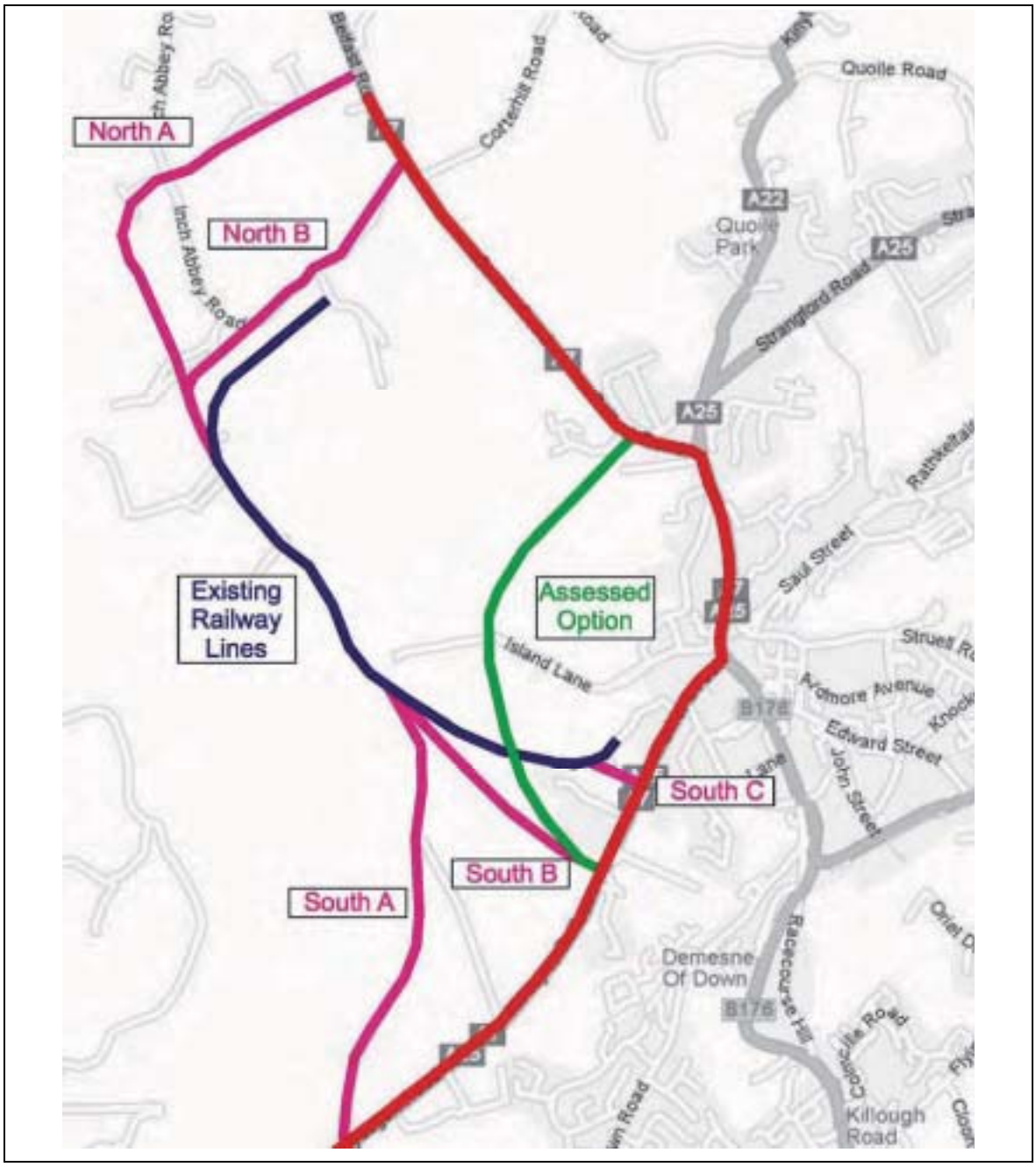
Proposed Routes

5.18 As detailed on **Figure 5.3** it is proposed that the line could be extended beyond its current terminus at Inch Abbey towards the Down Business Park – a major trip generator in its own right, and a potential location for a park and ride. It is situated on the A7 Belfast Road just north of its junction with Inch Abbey Road.

5.19 The two options for an alignment at the north end show an alignment heading directly into the Down Business Complex in Alignment A, while Alignment B shows Inch Abbey Road being used as part of the alignment to connect the route with Belfast Road.

5.20 Three alternative options are also shown for the southern end of the proposed link. Alignment A uses another section of existing track which runs to 'King Magnus's Halt' before a short extension connects it to Ballydugan Road, Alignment B cuts across to Ballydugan Road in the vicinity of the proposed Ballydugan Road / Killough Road link and Alignment C extends the end of the current track to connect with Market Street in the centre of Downpatrick.

Figure 5.3 Western Bypass Options



JMP

Alternative Road Line

5.21 Consideration has been given to replacing the rail line with a new road line. The preferred route for a new road would be utilising the section of the Down Business Park access road (North A), replace the rail line and tie in south of Rathkeltair (South B) to link through to the proposed Ballydugan Road / Killough Road link.

5.22 A road link to bypass the town to the west would have significant benefits in diverting traffic away from the centre of Downpatrick, delivering approximately 25%[2] travel time saving compared to travel through the town centre and the removal of around 1000 vehicles per hour[3] from key town centre junctions during peak periods. By following the route of the DCDR, many of the obstacles

[2] Figures from Downpatrick Road Scheme Study: Faber Maunsell, 2005
[3] Figures from Downpatrick Road Scheme Study: Faber Maunsell, 2005

and costs foreseen in the 2005 appraisal are removed. However, a decision must be made as to the nature of the proposed road and whether it is to accompany the train line or replace it.

5.23 By replacing the rail line with a road alignment a saving would be made on potential construction costs, as only minimal widening of current cuttings and embankments would be required. However, this would result in the loss of one of the primary heritage assets of Downpatrick which are clearly key to the masterplan goals. In addition to this, the anticipated public opposition to such a move may render it unlikely to be progressed.

5.24 Constructing a carriageway adjacent to the DCDR is also likely to meet with tested opposition from certain quarters as it will detract from the rural, heritage feel of the line. As such this can be seen as conflicting with certain aims of the masterplan. In addition to this there are also significant construction costs associated with such a proposal, as a much wider corridor will be required than is currently available.

5.25 The key issues which arise are:

- Although the alignment is through better ground conditions than encountered by the original alignment, it is around twice the length and therefore just as costly as the original route;
- The road would require the removal of the rail line;
- The alignment would improve links between the Down Business Park and the town centre, helping to capture the economic benefits of staff working in the area;
- The benefits of the proposed road route are likely to increase as a consequence of the masterplan proposal to concentrate development in the south part of the town and to provide a link road to the east.

5.26 An assessment of the potential for such a link has identified that:

- The environmental impact of the previous alignment can all but be avoided;
- The steam train and rail line would be lost as a consequence of the proposal and
- The cost of the proposed link will continue to be significant and hence more significant benefit would require to be accrued for the cost / benefit balance to make sense.

5.27 In these circumstances it is clear that while the principal of a Western By-pass remains positive, the cost of delivery as a new road link is likely to exceed any benefits which accrue from the link being in place. Notwithstanding, the proposed masterplan includes a number of proposals which would clearly optimise the benefits of any new road link, including development which would be accessed using the link road at both ends and extended connections around the town to attract east / west traffic.

Alternative Public Transport Link

5.28 The choice of route and modal provision for the alignment depends on its likely predominant use and the associated construction costs. The cheapest solution would be to run a public transport shuttle along the corridor, which would link the Down Business Centre (Alignment Option North A) with the south of the town and the town centre (Alignment Option South C). The link would clearly only be of use to local residents and employees who make this specific journey; there would be no through-route.

5.29 Using the route as a modern contribution to public transport provision in Downpatrick met with support from the DCDR during public consultation[4].

5.30 The key issues which arise are:

- The main section of rail line is in place with the extension to Down Business Park generally following the historic route to Belfast;
- The extended line can be made available in a relatively short time;
- Strengthening public transport links between the Down Business Park and the town centre will help capture the economic benefits of staff working in the area;
- Provision of an adjacent P&R site would provide an opportunity for commuters and visitors to the town to access the service.

5.31 An assessment of the potential for such a link has identified that:

- The environmental impact of the proposed line would be negligible;
- The steam train would be retained as a heritage facility and
- The cost of the proposed link will be significantly less than the alternative road scheme, however, the benefits are also likely to reduce.

Rail Shuttle

5.32 The solution involving the least disruption to the existing infrastructure would be to implement a public transport commuter shuttle, which would link a site at the Down Business Park with the town centre and/or Ballydugan Road. Park & Ride site would be established at either end of the route, maximising the potential to reduce traffic through key junctions.

5.33 The installation of a commuter rail link along the existing DCDR corridor carries with it a number of benefits; none less so than the fact that the infrastructure for such a proposal is already largely in place. In addition to this there is unlikely to be any conflict on the line between services, as the existing steam leisure services run almost uniquely on weekends and public holidays when there will not be so much of a demand for commuter services.

5.34 Consideration would need to be given as to whether the DCDR's existing fleet of steam trains would be used for such a link, or whether such industrious use of these engines may be detrimental to the engines as well as the environment.

5.35 In place of these engines, much quicker and more environmentally attractive solutions may be available. Given the short distance to be covered by the shuttle between termini (in the order of 2.5 miles) there is scope for the implementation of a 'Parry People Mover' (PPM) (see **Figure 5.4**) – a lightweight, hybrid-power vehicle which operates using a flywheel, vastly reducing energy consumption compared to conventional trains. They are also much lighter, reducing wear on the track.

[4] http://www.downnews.co.uk/latest-news/downpatrick-masterplan-may-drive-downpatrick-railway-forward

Figure 5.4 Parry People Mover

geograph.org.uk

5.36 Parry People Movers[5] run on standard-gauge rail lines and there is already one instance in the UK where they are being implemented for passenger service, over a similarly segregated short section of track at Stourbridge in the West Midlands[6]. Here, over 200,000 passengers have been transported since the implementation of the service in March 2009.

5.37 Other light rail options are available, however many of these would require electrification of the line. Conventional overhead lines would not only be incompatible with steam services running on the same line, but would also be extremely costly. In this regard, the PPM appears to be a suitable vehicle to satisfy the role at an economical and environmental level.

Bus/Rail Shuttle

5.38 An alternative option would be to provide a surface upon which both trains and buses could run. This would be similar to the road surfacing used currently at level crossings (see **Figure 5.5**) but would stretch for the entire length of the track. Buses and other authorised vehicles would then be permitted to use the track at times when the trains are not operating.

5.39 While the cost of preparing the route would be higher than maintaining the rail bed, there would be the possibility of opening the corridor up to more public transport traffic. To avoid the need for significant widening to support two way traffic flows, a number of passing places could be provided to suit the service frequency.

[5] http://www.parrypeoplemovers.com
[6] http://en.wikipedia.org/wiki/Stourbridge_Town_Branch_Line

5.40 A key benefit to allowing buses to circulate on the alignment rather than a Parry People Mover is that the bus could extend its route beyond the boundaries of the DCDR alignment to connect other areas of the town. This is particularly relevant to completing a highly branded service between the town centre and Downshire Hospital site, a future major employment zone.

5.41 A high-quality bus service, such as the FTR brand of buses (see **Figure 5.6**) which have been implemented in a number of UK cities, helps to raise the profile of these services and public confidence in them.

Figure 5.5 Rubber Road/Rail Surface

Vulkan Guma-Belt

Figure 5.6 FTR High Quality Bus

First Group

5.42 Beyond the overall public transport link benefits indicated above, the bus orientated system would:

- Better integrate with the town's current bus services;
- Allow a through connection, beyond the limits of rails, to destinations beyond the town centre;
- Be more cost efficient in operational terms because of the shared purpose of vehicles being used.

Summary of Options

5.43 **Table 5.1** below summarises the options discussed for the western bypass proposal;

Table 5.1 Summary of Western Bypass Options

Solution	Costs	Advantages	Disadvantages
Commuter PPM to run Mon-Fri on existing rail line.	**Low** - price of 2 PPMs (approx. **£450k** each) and associated construction costs of a depot.	Uses existing infrastructure, cheapest option and most likely to meet with public approval.	Will not divert through journeys away from town centre. Only effective during hours of operation.
Bus service to run along hybrid road/rail line.	**Medium** - price of modifying track to accommodate buses and the cost of new vehicles (**£250k** per vehicle).	Uses existing infrastructure, provides wider-reaching links than PPM and environmentally sound.	Not feasible to open route up to all-traffic without widening the alignment, so use remains limited to Downpatrick itself.
Replacement of DCDR with bypass road	**High** – widening of embankments/cuttings required, new length of carriageway to be constructed.	Minimises construction cost of new road, provide effective route around town centre.	Closure of railway – a heritage feature and tourist attraction for the town. Widespread criticism anticipated.
Addition of bypass road adjacent to DCDR	**Very High –** significant widening of embankments/cuttings required and landscaping to attempt to isolate from DCDR.	Offers a road solution whilst safeguarding the DCDR.	Will detriment the character of the DCDR. Most expensive of the options. Likely to be criticised.

Conclusion on Western Peripheral Route Options

5.44 The outlined proposals above give an indication of the issues present along the western corridor around Downpatrick. It is clear that more research is required if one of the options were to be progressed.

5.45 It would be challenging to deliver a road based solution which demonstrated positive "road based" benefits. Any such benefits may be enhanced by the development related benefits arising from the provision of such a link including the proposed Ballydugan to Killough link road which will enhance the use of any such route. Notwithstanding, at this point in time it is difficult to envisage that a road based scheme would be able to demonstrate sufficient benefits to be constructed.

5.46 The implementation of a commuter based public transport service along the line of the existing railway emerges as a potentially cheap and effective proposal, more research would be required to ascertain whether there is sufficient demand to operate such a service successfully.

5.47 A rail based public transport alternative would provide an effective service. However, a “wheel” based system would have the opportunity to leave the track and continue to serve the remainder of Downpatrick through the existing street network or proposed town centre people mover route extending to serve the Down and Downshire Hospital Site both of which are emerging as significant travel generators.

Summary of Strategic Infrastructure Interventions

5.48 The strategic transport improvements that should be incorporated in the masterplan and which are likely to be significant contributors to supporting the masterplan development as well as relieving existing congestion are:

- The Eastern Distributor Road – The route is clearly important to the future development of the eastern side of Downpatrick. Roads Service should consider how its implementation can be assured if Developer support fails;
- Extension of the EDR to the north to connect to the Belfast Road, preferably through Cotterhill Road, to link with the Down Business Park and proposed P&R site;
- Rationalisation of the EDR line to provide a Quoile Road / Strangford Road link and improve the by-pass potential of the route;
- Strategic public transport link along the western corridor utilising the existing rail line, extended to Down Business Park to the north and into the town centre at the south;
- A review of the vehicle type, whether PPM or traditional bus based operation;
- Strategic P&R site located adjacent to Down Business Park on Belfast Road.

6 Parking

6.1 Key issues emerging from the assessment or car parking in Downpatrick are:

- Peripheral car parks are not conveniently located to destinations as most are far away with few pedestrian links to the town centre. Even Rathkeltair is deemed to be too far from the town centre at 360m;
- Poor Pedestrian links between car parks and destinations (including the town centre);
- A better spread of car parking opportunities around the town centre is required;
- Poor access and signage;
- On-street town centre parking requires to be controlled to prevent all-day parking;
- The possibility of the provision of a Park & Share and Park & Ride on Belfast Road.

6.2 The approach adopted in the masterplan is to seek to rationalise parking behaviour by managing parking supply, both in terms of location and duration of stay. The key principle is that areas closer to the town centre will be reserved for short stay parking with long stay parking provided on the edge of the town centre. Consideration should also be given to the provision of Park & Ride or Park & Share on the edge of the town, with a site on the Belfast Road adjacent to the Down Business Park being a key recommendation of the study.

Masterplan Parking Strategy

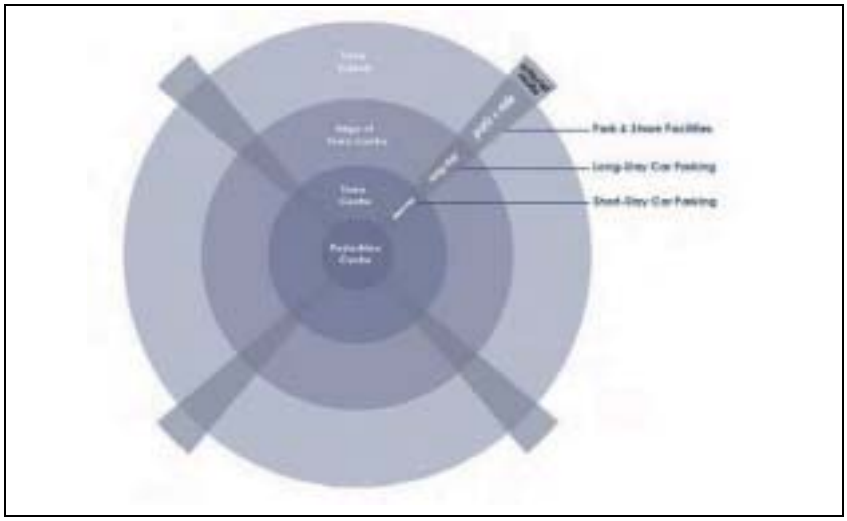
6.3 One of the key requirements of developing the masterplan will be to put in place a parking strategy which ensures that in the short, medium and long term there is an appropriate quantum of parking provision to sustain the vibrancy of Downpatrick and any new and emerging developments.

6.4 In support of the parking strategy is a requirement to develop the following:

- A signing strategy that directs drivers to the nearest appropriate parking opportunity in a way which limits the traffic impact on key town centre junctions;
- A management regime that ensures that the spaces are used in a way that maximises the benefits to the town.

6.5 The Parking Strategy is indicated graphically by **Figure 6.1** below.

Figure 6.1 Parking Strategy



The Paul Hogarth Consultancy

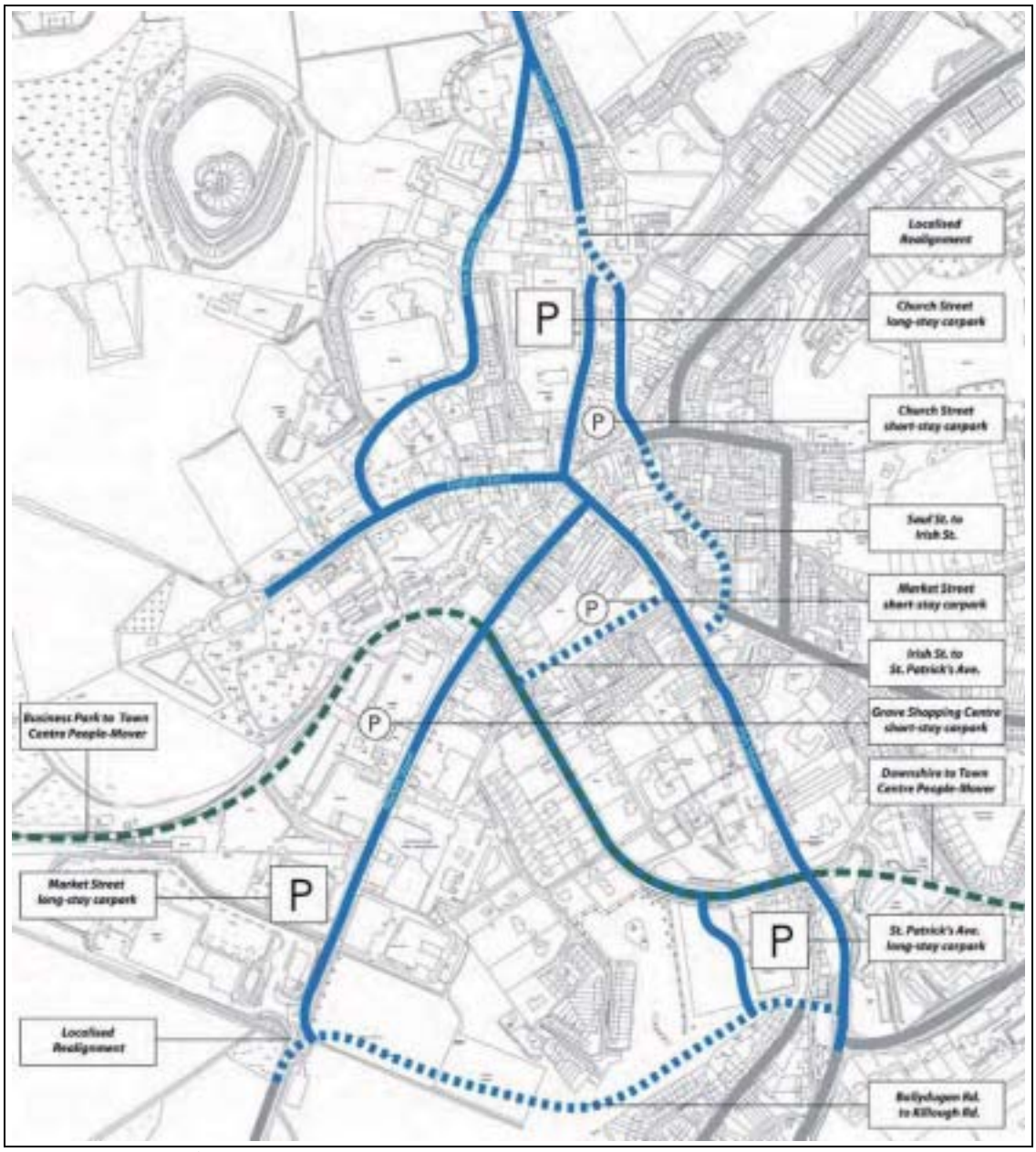
6.6 The key elements of the strategy are:

- **Short stay parking:**
  - Should be accommodated in the town centre;
  - Will be located in current parking areas;
  - Should be controlled, most likely by charging but definitely constrained with regard to parking duration;
  - In the short-term a tariff and management structure requires to be developed which ensures that an appropriate number of spaces remain available throughout the day for short-term occupation;
  - On street parking in the town centre are premium spaces and the management structure must protect these for short stay use to improve town centre viability.
- **Long Stay Parking**
  - Should be large easily accessible car parks accommodated on the edge of the town centre;
  - Possible locations, which accord with the aspirations of the masterplan include Rathkeltair, St Patricks Avenue and Church Street, providing good access from all parts of the town.
  - Should reflect the benefits of the sustainable transport strategy of the Regional and Sub Regional Transport Strategies which may reduce future parking need.
- **Park & Share / Park & Ride**
  - Consideration should be given to the provision of a P&S, P&R facility on Belfast Road adjacent to the Down Business Park;
  - To complement the proposed public transport linkages along the western periphery the opportunity to support Park & Ride adjacent to the town centre end of the route should be explored.

6.7 These three key elements of the car parking strategy combine to meet the needs of all visitors, shoppers and workers who access the town centre.

6.8 **Figure 6.2** below indicates the location of short and long stay parking proposed in the masterplan.

Figure 6.2 Masterplan Distribution of Town Centre Parking



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7 Active Travel

7.1 Despite Downpatrick's relatively compact size, active travel still requires active promotion in order to reduce car usage in the town centre. This is especially important due to the hilly topography of the town, which deters active travel.

7.2 The masterplan proposes a number of public realm measures in order to encourage and attract pedestrians to the town centre; however these must be implemented alongside strong active travel links with the residential areas round the town centre in order to encourage purely active town centre excursions for residents of the town.

Pedestrian Access and Circulation

7.3 Downpatrick's historic narrow streets are dominated by vehicles both parked and moving. Wider footpaths are mainly provided in areas that have been recently developed. Unlike many similar historic towns, Downpatrick has few connections to the town centre from peripheral car parks and routes are often complicated. To compete with other town centres and out of town shopping centres, Downpatrick must improve accessibility for pedestrians. Provision of pedestrian space requires to be balanced against the need to accommodate vehicular movements. A series of paths and cycleways separate from the road network is also required.

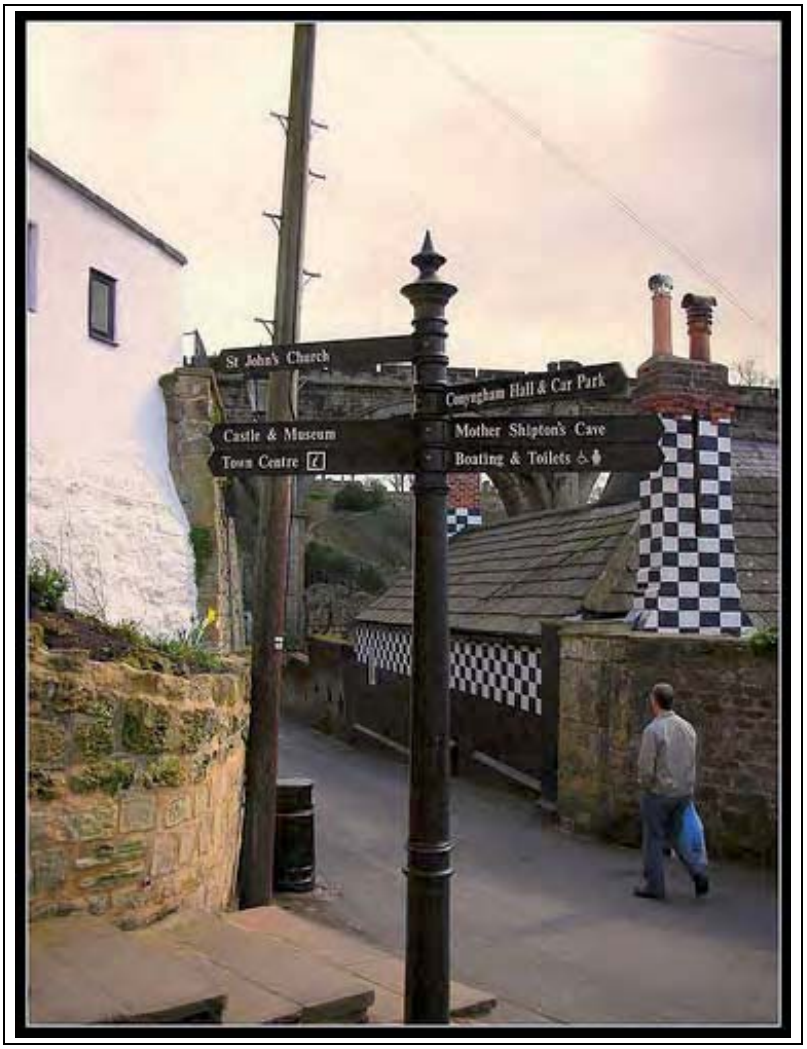
7.4 In general, the recommendations of the Sub-Regional Transport Plan should be adopted and the blueprints for walking and cycling are included in Appendix _.

7.5 Additional key pedestrian and cycling measures include:

- Masterplan proposals including the "Linear Park", "St Patricks Cathedral Link" and ____, which are described below:
- High quality pedestrian signing to improve the legibility of the town centre (as is shown in **Figure 7.1**);
- Linkages from peripheral cycle routes to key town centre locations to improve accessibility by cycle and
- Measures to encourage cycling to better link the large travel generators on the edge of the town centre

7.6 The integration of high quality walk and cycle facilities within the masterplan seek to encourage a higher proportion of trips to be undertaken by these modes which is firstly consistent with national transport strategy and secondly will go some way to reducing short distance trips through key and congested town centre junctions.

Figure 7.1 Tourist Signposting



Flickr

'Linear Park' Proposal

7.7 The masterplan outlines proposals for a linear park between the Downshire Hospital Site and the town centre to encourage active travel between these locations upon relocation of the council offices to the Hospital site.

7.8 The park would provide a key arterial route for pedestrians and cyclists to access these two sites and JMP would wish to see this scheme complemented by strong links to the residential areas predominantly to the north of the proposed park to ensure that residents in this area have good access to this link.

7.9 However, the distance between the town centre and Downshire may be challenging for some both in terms of distance and in terms of time, particularly if the opportunity to ensure employees at Downshire Hospital site can access the town centre during the day.

7.10 To support movement between the Downshire and town centre a number of options should be considered, including the Cycle Hire Scheme discussed below and a "People Mover" operation, an as yet undefined public transport option to link both sites.

7.11 Some of the possible “people mover” alternatives include:

- Travellator – Covered moving walkways to shorten the time and effort required to access the town centre. The largest outdoor travellator is in Hong Kong (**Figure 7.2**). It is likely that any such facility will require to be covered to protect both people and equipment from the weather;
- Eco Friendly Shuttle Bus – A low floor low emissions, possibly electric midi-bus shuttling between both options (**Figure 7.3**). Given that the majority of the route will be within a “linear park”, the design of the roadway would require to be sensitive to the surroundings and the other park users most of whom will be on foot.

7.12 Clearly any people mover scheme will require to be financially viable and a more detailed evaluations of options will require to be considered which reflects the public transport provision on the west side of the town.

Figure 7.2 Outdoor Travellator (Hong Kong)

Google

Figure 7.3 Eco Friendly Bus

Google

St Patricks Cathedral Link

7.13 The Cathedral provides an important contribution to tourism in Downpatrick. However, the topography between the Visitor Centre and the Cathedral is extreme and sufficient to deter some tourists from walking between them. Both these attractions would be of interest to the same demographic of tourist as they are strongly linked, and are located only a few hundred yards from each other.

7.14 A solution such as an outdoor conveyor (as shown in **Figure 7.**) may encourage movement between the two sites and help to establish a firm tourism identity for Downpatrick as the centre for Saint Patrick heritage tourism. The key issue is the responsibility for the conveyor. While Roads Service are responsible for footways, this link is more likely to be the responsibility of the Tourism Department. As such, access to the link is best maintained through the visitor centre and access controlled by gates and barriers when the centre is not open.

Figure 7.4 Outdoor Conveyor

vibrantvictoria.ca

Cycle Hire Scheme

7.15 Cycle hire schemes are becoming a popular way to encourage active travel in cities across Europe. Schemes have proved successful even in hilly towns and cities such as Lyon in France, with the attraction that the bike does not have to be collected and deposited in the same location.

7.16 The general principle is that a customer can hire a bike for a short duration with pick up and drop off points around the town centre. This would be particularly advantageous when used in conjunction with linking Downshire and the town centre.

Appendix A

Draft Boards

Please refer to APPENDIX 4: CONSULTATION REPORT to view the Masterplan Exhibition Boards

Appendix B

Sub-Regional Transport Plan Extract

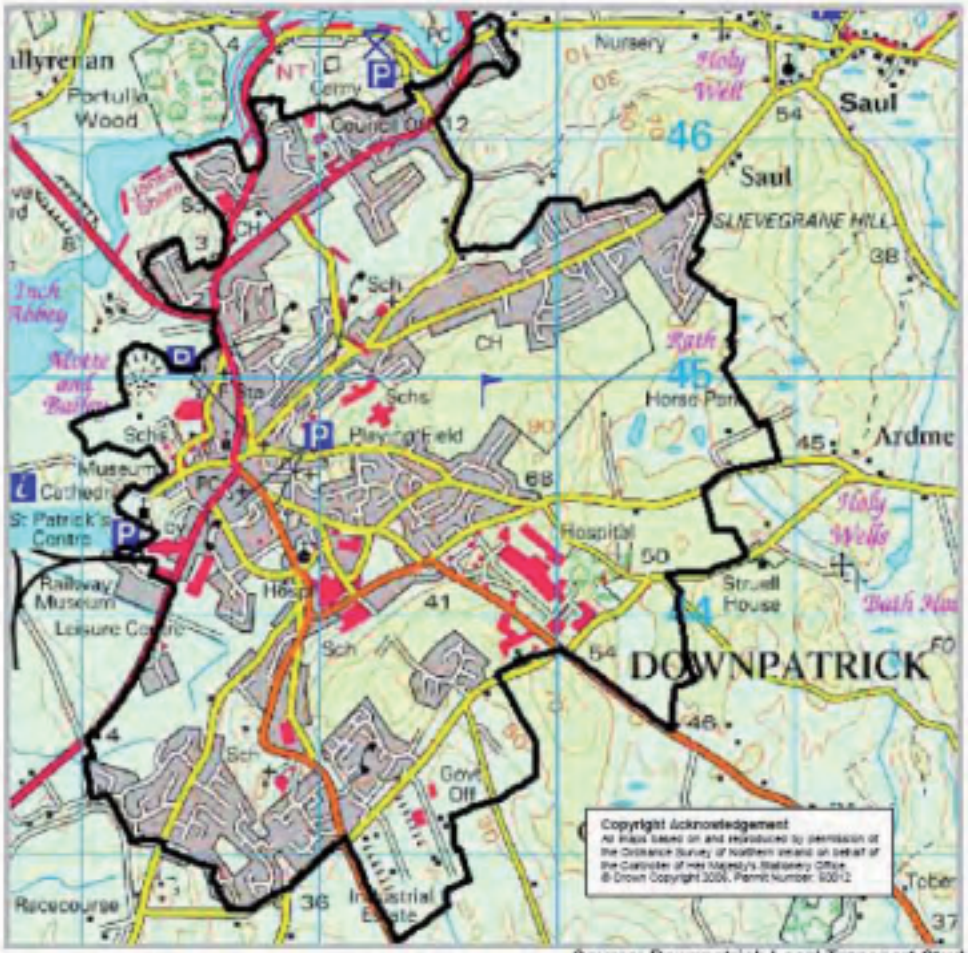
5 Transport Overview

5.1 RDS Settlement Characteristics

Settlement Status: Main Hub

Settlement Location: Located on a Link Corridor linking to the Key Transport Corridor (The Eastern Seaboard Corridor).

Study Boundary



Source: Downpatrick Local Transport Study

5.2 Settlement Demography and Travel Characteristics

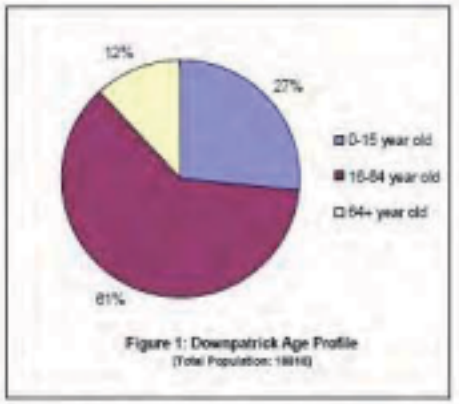


Figure 1: Downpatrick Age Profile
[Total Population: 10010]

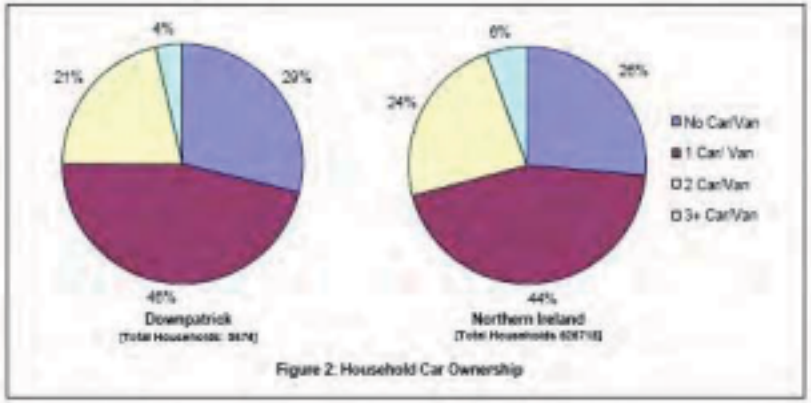


Figure 2: Household Car Ownership

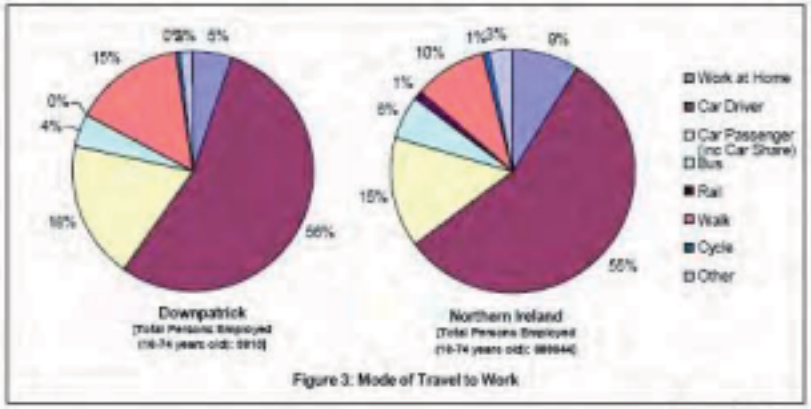


Figure 3: Mode of Travel to Work

Source: NISRA

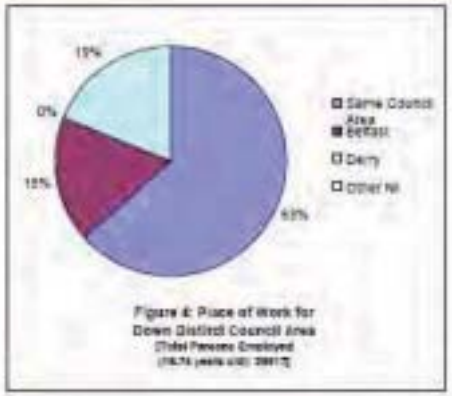


Figure 4: Place of Work for Down District Council Area (Total Persons Employed (16-74 years old): 39617)

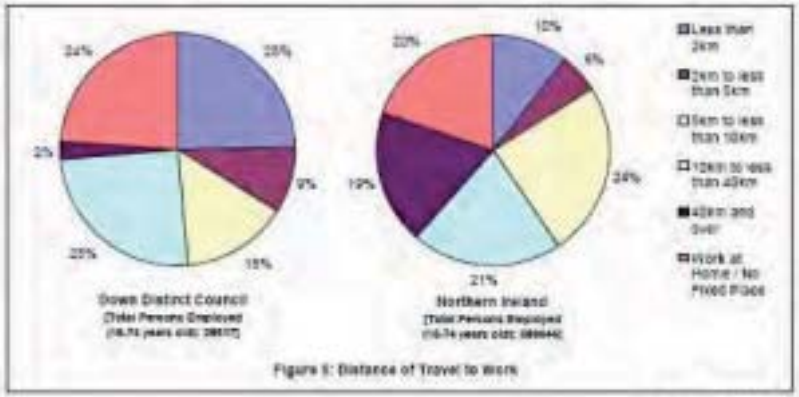


Figure 5: Distance of Travel to Work

Source: NISRA

5.3 Transport Conditions

Weekday Annual Average Daily Traffic (AADT)

Route	Site	Location	Two Way AADT (5 Day)
A7	513	Belfast Road, Downpatrick, at Quoile	12,360
A25	514	Downpatrick - Clough, at Tullymurry	7,200

Source: Roads Service Traffic Census Report (2004)

Study Area Traffic in Morning Peak Hour (Vehicles)

To Town	From Town
2500	1500

Source: Downpatrick Local Traffic Model

Local Bus Network Service Coverage (Subject to review)

Source: Translink

Local Bus Network Service Details (Subject to review)

Downpatrick Town Services	Weekday start time	Weekday finish time	Weekday Frequency
315	09:00	16:30	6
315 A	10:30	16:30	5
315 B	09:45	17:20	8
315 C	07:45	16:20	9
Total	**07:45**	**17:20**	**30**

Source: Translink

Publicly Available Parking Spaces and Usage (Typical Weekday)

Public Car Parking	On Street	Off Street	Total
Available Spaces*	889	972	1861
Maximum Spaces Occupied** (% of Available Spaces)	533 (60%)	393 (40%)	926 (49.8%)
Daily Parking Acts (Space Turnover)	982 (1.1)	1615 (1.7)	2597 (1.4)
Illegal Parking Acts (% of Daily Parking Acts)	108 (11%)	Not Available	108 (6%)

*Includes privately owned car parks

**Time of occurrence of peak occupancy does not necessarily correlate for on and off-street

5.4 Current Principal Problems

- Excessive delays at signalised junctions during peaks hours and especially at the Irish Street/ Market Street junction.
- Parkers preference for on street parking causes illegal parking and traffic congestion.
- Poor pedestrian links to / from major car parks coupled with inadequate footway provision and crossing facilities in the town centre.

5.5 Housing Growth

Estimated number and percentage of new dwellings for Down District Council Area

Existing Dwellings (1998)*	RDS HGI 2015 Dwellings**	Percentage Increase
22,300	9,450	42%

Source: Review of the Regional Housing Growth Indicators
[*Appendix 4a; **Table 3]

6 Proposed Public Transport Improvements

Proposal	Proposed in SRTP
Improved walk/cycle access to bus/rail station or principal stops	✔
Refurbishment of bus station	✔ *
Improved local bus services	✔
Bus stop improvement strategy	✔
Increased parking at bus/rail station	✔
Taxi rank	✔
Transport programme for People with Disabilities	✔

* complete

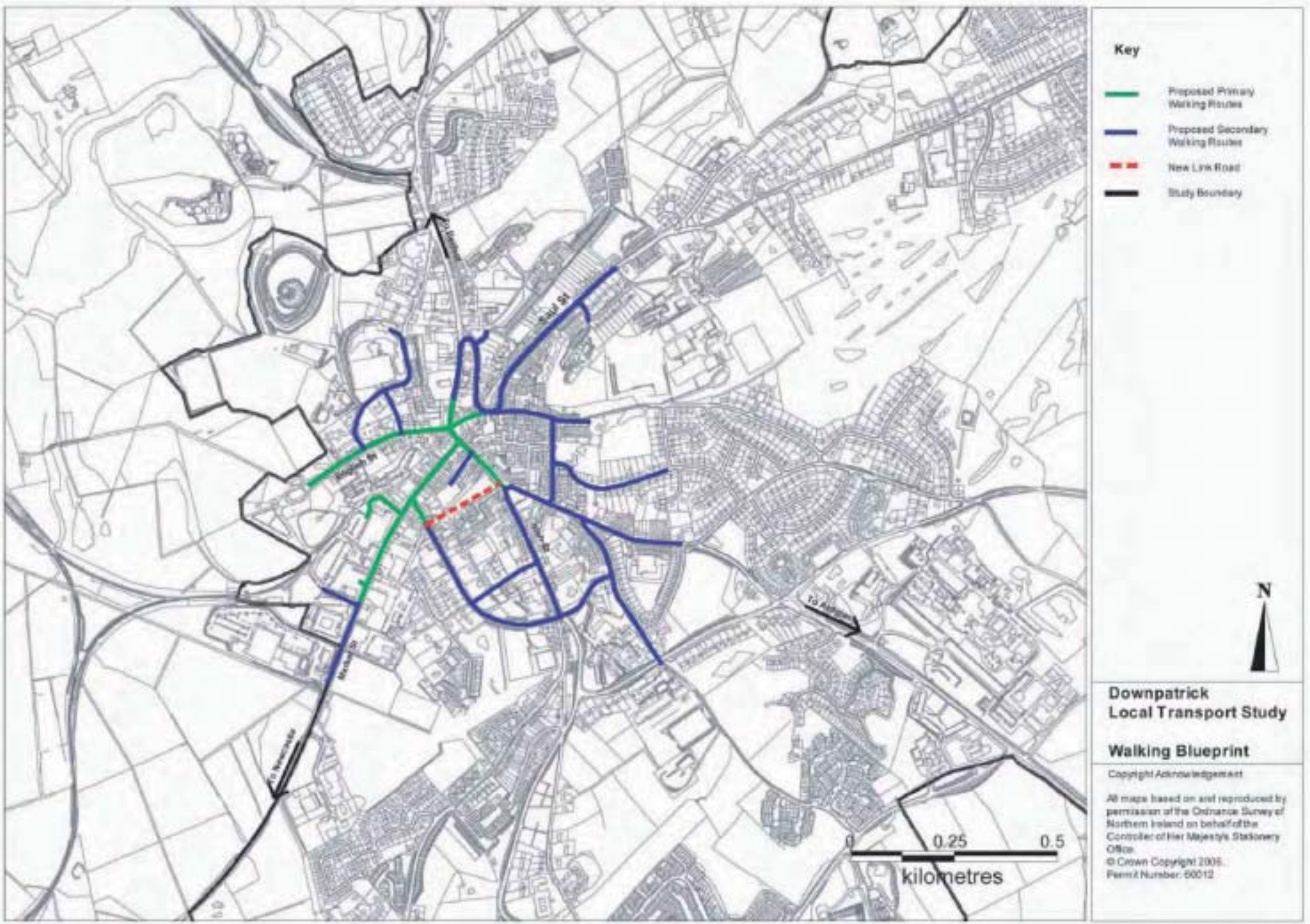
7 Proposed SRTP Investment for Measures Shown in Blueprints

Mode	Proposed Investment*
Walking	£546,000
Cycling	£7,000
Highways	£8,420,000
Total	**£8,973,000**

* Excludes funding from Regional Strategic Transport Network Transport Plan (RSTNTP) and private sector developments.

8 Proposed Transport Blueprints (over page)

- **Walking**
- **Cycling**
- **Highways**


Key
Proposed Primary Walking Routes
Proposed Secondary Walking Routes
New Link Road
Study Boundary
N
Downpatrick
Local Transport Study
Walking Blueprint
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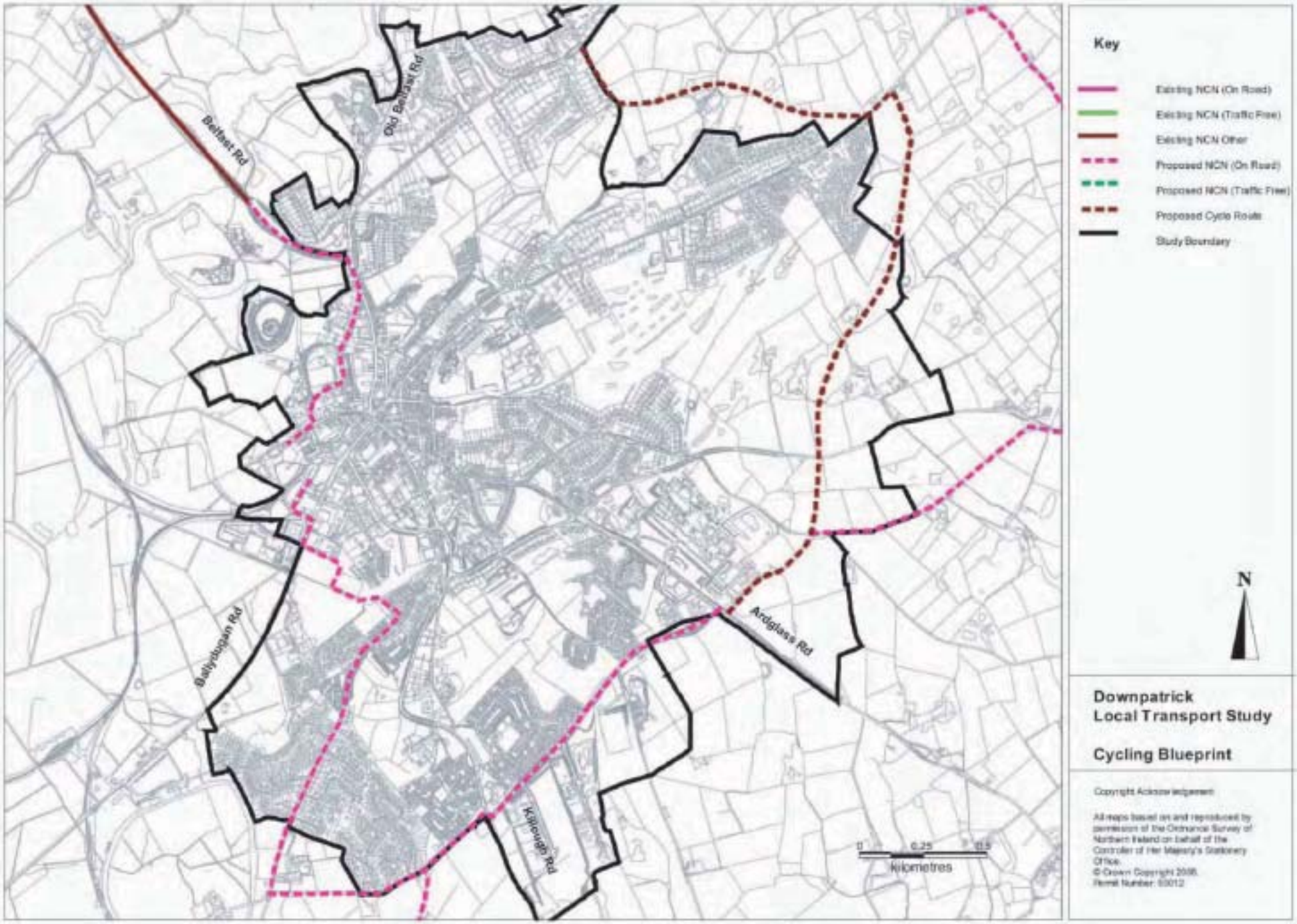
Belfast Rd
Old Belfast Rd
Ballydugan Rd
Ardglass Rd
Killough Rd
Key
Existing NCN (On Road)
Existing NCN (Traffic Free)
Existing NCN Other
Proposed NCN (On Road)
Proposed NCN (Traffic Free)
Proposed Cycle Route
Study Boundary
N
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kilometres
Downpatrick
Local Transport Study
Cycling Blueprint
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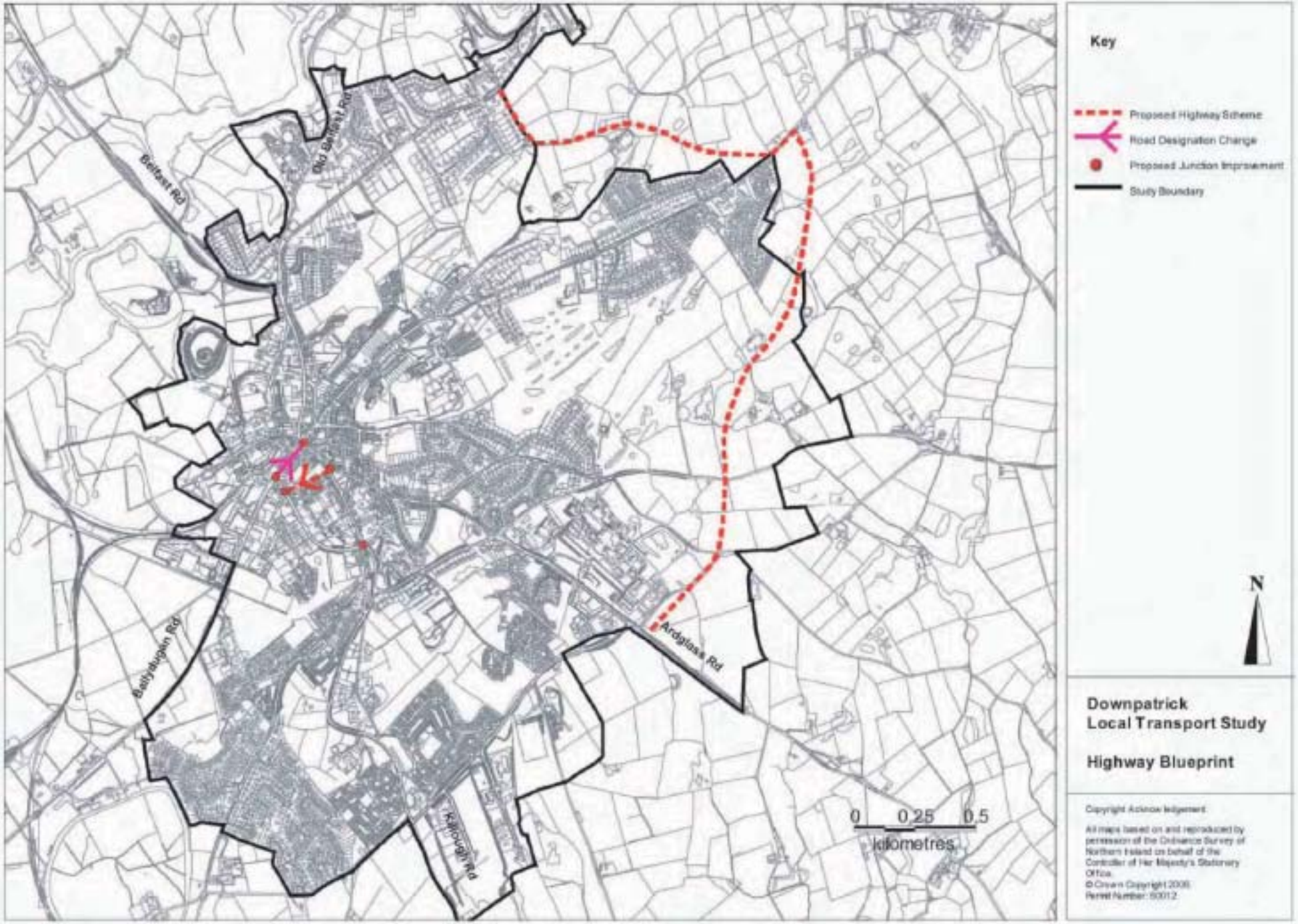
Key
Proposed Highway Scheme
Road Designation Change
Proposed Junction Improvement
Study Boundary
N
Downpatrick
Local Transport Study
Highway Blueprint
Belfast Rd
Old Belfast Rd
Ballydugan Rd
Killough Rd
Ardglass Rd
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Appendix C

Faber Maunsell Downpatrick Road Scheme Study Report, 2005

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1 Introduction

1.1 Background

Faber Maunsell undertook a transportation study of Downpatrick in 2001 as part of the process of developing the area plan for Ards and Down. The Downpatrick Road Scheme Study involved assessing the implications of different highway schemes on Downpatrick including on future land-use options being developed for input into the emerging area plan. As part of this study a western by-pass alignment option was assessed, both in transportation and environmental terms.

Faber Maunsell have now been requested by Roads Service, Southern Division to review the following information with regard to the western alignment in this report:

- Projected traffic figures;
- Key environmental issues;
- Estimated cost of the scheme; and
- Cost Benefit Analysis of the scheme.

2 Traffic Modelling & Forecasting

The TRIPS software package has been used to assess the traffic impacts of both changes to land use and the highway network in Downpatrick.

The by-pass has been modelled on both a 2001 base year model and a 2016 forecast year model. The model is an AM peak hour model.

The 2016 forecast flows were calculated based on the 2001 traffic flows growthed by 26.2% (central National Road Traffic Forecast growth) plus the addition of development traffic generated by the land-use zonings included in the 2015 Area Plan (2975 housing units).

Table 1 shows the key performance indicators extracted from the TRIPS model.

Table 1 - Summary of Effects on Overall Network Performance

TOTAL NETWORK PERFORMANCE INDICATOR	2001 FLOWS			2016 FLOWS		
	WITHOUT BY-PASS	WITH BY-PASS	DIFFERENCE	WITHOUT BY-PASS	WITH BY-PASS	DIFFERENCE
Total Vehicle Distance (Veh-Km)	28883	29339	+456	60499	60675	+176
Vehicle Travel Time (Veh-Hrs)	601	554	-47	2093	1549	-544

The western by-pass option shows flow reductions on some network links, but the overall network performance indicators give a more balanced view on the effect of the option on the entire highway network for Downpatrick.

Table 1 also shows that although the by-pass saves vehicle travel time on the network, it increases the total vehicle distance on the network i.e. although vehicles are experiencing less delays, they are travelling further on the network than they did without the by-pass in place.

It should be noted that the overall network performance indicators do not uniformly increase in 2016 from 2001. This is due to a number of reasons:

- The traffic in the 2016 forecast model includes traffic generated by the proposed development zonings included in the Area Plan. The majority of these zonings are in the eastern and north-eastern areas of the town and therefore do not provide a uniform increase in traffic on the network. This has the effect of altering the overall trip patterns on the network, effecting distances travelled;
- The TRIPS model is a route choice model, reflecting actual driver behaviour i.e. traffic diverts to a quicker route when ‘heavy’ delays are experienced.

In 2016 the forecast flow on the western by-pass is 1106 vehicles (two-way) in the AM peak hour.

It should be noted that the flows taken from the model for this report, confirm the figures previously included in the Downpatrick Road Scheme Study Report produced by Faber Maunsell on 3 December 2002, which was used in support of the 2015 Ards and Down Area Plan.

3 Environmental Assessment

3.1 Introduction

A detailed environmental assessment was undertaken by FaberMaunsell in 2001. This section summarises the assessment, with additional comments from Environment and Heritage Service.

3.2 Consideration in the 2015 Area Plan

The area through which the alignment passes is classified as a Local Landscape Policy Area, an Area of Significant Archaeological Interest and an Area of Archaeological Potential in the 2015 Area Plan.

3.2.1 Local Landscape Policy Area

The Inch Abbey, Mound of Down, Down Cathedral, Quoile River and associated lands including Cotter Hill, Hollymount and Ballydugan contribute to the environmental quality, integrity and character of the area and cumulates in the designation of the area as a local landscape policy area. A list of the important features in this area is as follows:

- A series of significant archaeological sites;
- Prominent features in the form of the listed Down Cathedral, the Motte and Bailey and the listed Quoile Bridge;
- Nature conservation interest provided by part of the attractive open and flat Quoile marsh landscape;
- Important tree groups at Hollymount and Ballydugan which provide attractive approaches to the town and contain a number of archaeological remains, listed mills and areas of national nature conservation significance; and
- Significant areas of woodland, including remnants of estate planting and Portulla Wood of nature conservation and landscape significance to the setting of the town.

3.2.2 Area of Significant Archaeological Interest

The area of Significant Archaeological Interest has been identified in the Quoile Valley to the west of Downpatrick and includes Cathedral Hill, the Mound of Down and Inch Abbey.

Cathedral Hill, Mound of Down and Inch Abbey are landmark features of historical and archaeological significance. The importance of these features is related to their location beside the Quoile, and to their association with the original town of Down.

3.2.3 Area of Archaeological Potential

The area of archaeological potential identified in the area plan through which the route passes reflects the area of pre-historic, medieval and post medieval settlement where, on the basis of current knowledge, it is likely that archaeological remains will be encountered in the course of the development.

3.3 Faber Maunsell Environmental Assessment of Alignment

3.3.1 Noise and Vibration

The alignment will have a moderate adverse impact with regards to noise pollution. The main source of noise pollution is from road traffic due to traffic flows, speed of vehicles and road surface characteristics. Noise is most prevalent on the A7 between Downpatrick and Belfast.

3.3.2 Air Pollution

Emissions especially from heavy goods vehicles, within the town centre may impact pedestrians. Overall the alignment will have no significant impact on air quality in Downpatrick. However the alignment may contribute to improvement in air quality in the town itself due to reduced traffic flows.

3.3.3 Landscape Affected

The alignment will have a major impact on the landscape character of the Quoile Valley. There will be visual impact on views from Inch Abbey, Mound of Down and Church of Ireland Cathedral. There would be major environmental impacts on the following:

- River Floodplain habitat;
- Local Nature reserve;
- Downpatrick and Ardglass railway would be adversely affected;
- Severing impact on the wetland habitat;
- Severing impact on the settings of historic features, building and artefacts;
- In addition, the alignment would contribute to a major impact on associated lands including Cotter Hill, Hollymount and Ballydugan local landscape;
- Public footpaths and facilities along the Quoile River providing access to a diversity of wildlife and heritage interest for passive recreation would be adversely impacted;
- Areas of woodland, remnants of archaeological remains, listed mills and areas of nature conservation would be affected; and
- Attractive parkland landscapes at Hollymount and around Ballydugan House would be adversely impacted.

3.3.4 *Townscape Affected*

There would be a major impact on the townscape in Downpatrick, detracting from the aesthetic quality of the town including:

- Devaluing the character of the Old Market Town;
- Obliteration of ancient sites and monuments;
- Degradation of the quality of historic parks and gardens; and
- Degradation of listed buildings within the old quarter of the town.

Notwithstanding the above, the alignment would include slight benefits, as reduced traffic in town centre would result in less noise, air pollution and visual intrusion.

3.3.5 *Biodiversity Affected*

The proposed alignment would have a moderate adverse effect on the variety of plants and animals resulting in:

- Loss of grazing marshland associated with Quoile River Floodplain; and Downpatrick Marshes Site;
- Loss of hedgerows, lakes, rivers and streams (key habitats for wildlife affected);
- Loss of Hollymount Area of Conservation (SAC);
- Hollymount Area of Special Scientific Interest (ASSI);
- Hollymount Forest Nature Reserve (NR); and
- Potential loss of wetland habitats.

Notwithstanding the above, reduced traffic on the Quoile Road would have some benefit for the Quoile Pondage Nature Reserve.

3.3.6 *Water Environment Affected*

There would be slight adverse impact on rivers, lakes and marshland. The water quality may be adversely affected due to water run off from the proposed alignment into rivers and lakes. Drainage of the grazed marshland would also be adversely affected.

There would be an impact on the Downpatrick Marshes Site of Local Nature Conservation Importance (SLNCI). Grazing marsh and the flood plain along the river support a variety of flora and fauna including flowering rush, water dock and grazing wildfowl.

3.3.7 *Geology & Soils Affected*

The alignment would pose no major problem to underlying rocks, soils and groundwater. However, some areas of marshland would be adversely affected.

3.3.8 *Heritage of Historic Resources*

The alignment would contribute to a major adverse impact on the heritage of historical sites in Downpatrick. The several ancient sites or monuments adversely affected by the alignment include:

- Ecclesiastical Site--Inch Abbey-erected in 1180 on site of an Early Cistercian monastery, dated 800 AD;
- Mound-Magnus Grave-A small flat topped triangular earthen mound;
- Pottery Kiln -Excavated in 1960-items of kiln furniture were recovered;
- Fortification-Situated on east facing slope on Hogg Island;

- Standing Stone-Situated on lower slopes of Drumlin Ridge;
- Enclosure-A rectangular earthwork consisting of earthen bank and traces of an outer ditch;
- Occupation Site and Earthworks-Excavated in 1982;
- Ecclesiastical Site-A high cross stands in front of the Cathedral and suspected that St. Patrick's grave is in the cemetery;
- Motte and Bailey -Site consists of large oval earthwork, surrounded by massive ditch and bank; and
- Earthworks –Located in a well-defended location, bordered by the Quoile River.

3.3.9 *Land Use & Community Affected*

The alignment would have a moderately adverse affect on the land use as:

- Severance could occur at Island Lane;
- Alignment crosses a section of railway line;
- School, playing fields adversely affected;
- ASDA Supermarket car park affected; and
- Parking areas to the SE of the A25 Ballydugan Road affected.

3.3.10 *Construction Phase*

The construction phase of the alignment can contribute to the degradation of the environment due to noise, dust, and visual impacts. Also the impact of additional traffic to and from construction sites can detract from the quality of the environment.

However, traffic effects at access points used during construction are small in magnitude and of local significance. Import of material used for alignment construction is only likely to have adverse effects if traffic needs to pass through Downpatrick town centre.

4 Cost Estimate of Scheme

Faber Maunsell have undertaken a review of the scheme costs. This has entailed walking the proposed route. This was undertaken for a number of reasons in particular to take cognisance of the topography of the alignment and recognition of the prevailing ground conditions.

In addition it also assessed any impacts to the alignment due to developments in the interim period, which would infringe upon the proposed line of the by-pass. This provided a more detailed assessment of the costs of the scheme than that was previously undertaken.

The revised cost estimate for the scheme is approximately £24 million (£26.5 million allowing for optimism bias). The breakdown of the costs is shown in Table 2 below.

Table 2 - Scheme Costs

ITEM NO.	EARTHWORKS				
1	Strip Topsoil (4500m^3)	m^3	£3.65	£	16,425.00
2	Excavation of unacceptable material (3.5m x 1800m x 15m) 94500m^3	m^3	£2.48	£	234,360.00
3	Disposal of unacceptable material (assume 5km haul)	m^3	£14.36	£	1,357,020.00
4	Cutting 18000m^3 excavation	m^3	£3.79	£	68,220.00
5	Disposal (assume disposed of on site)	m^3	£3.69	£	-
6	Fill – Low Areas (18000m^3)	m^3	£4.61	£	82,980.00
7	Deposition of fill	m^3	£0.56	£	10,080.00
8	Compaction of fill	m^3	£0.43	£	7,740.00
9	Fill – is of excavated x 15m = (5x1800x15)=(135000m^3)	m^3	£15.75	£	2,126,250.00
10	Deposition	m^3	£0.56	£	75,600.00
11	Compaction	m^3	£0.43	£	58,050.00
12	Junction	-	£100,000.00	£	100,000.00
13	Roundabout x 2 (40m ICD)	2	£500,000.00	£	1,000,000.00
14	Underpass Railway assume14mx5mx10m	m	£18,647.79	£	186,477.90
15	Culvert – River 4000x2500x1 (say 10m)	m	£4,695.00	£	46,950.00
16	Culvert – Pitch 3000x2000x1 (say 10m)	m	£3,756.00	£	37,560.00
17	Urban Link Road	m	£1,560.00	£	2,808,000.00
18	Piling Assume £4000 per metre	m	£4,000.00	£	7,200,000.00
	Sub Total			**£**	**15,415,712.90**
	10% Prelims				£1,541,571.29
	SubTotal				£16,957,284.19
	10% Contingency				£1,695,728.42
	SUB TOTAL				**£18,653,012.61**
	Preparation (3% of sub total)				£559,590.38
	Supervision (2% of Subtotal)				£373,060.25
	Land Costs (2000x50@ £450ha) - assume development land				£4,500,000.00
	Subtotal				**£24,085,663.24**
	Optimism Bias (10% Construction costs and lands)				£2,408,566.32
	GRAND TOTAL			**£**	**26,494,229.56**

5 Cost Benefit Analysis of Scheme

Table 3 below summarises the results of the cost benefit analysis of the western by-pass option based on the updated costs of the scheme. The analysis was undertaken using the costs benefit analysis programme COBA10. Costs within this analysis are discounted to a base year of 1994.

Table 3 - Summary of Updated Cost Benefit Analysis (COBA) of Western By-Pass Alignment

	COST (£1000)
Do-Something Scheme Cost	8,029
Do-Minimum Scheme Cost	0
Time Related Maintenance Cost Savings	0
Non-Traffic Related Costs	-44
PVC (Present Value of Costs)	8,073
Time Savings on Links	480
Time Savings at Junctions	5,142
Veh Operating Cost Savings on Links	-131
Accident Savings on Links	55
Accident Savings at Junctions	498
PVB (Present Value of Benefits)	6,043
NPV (Net Present Value)	-2,030
BCR (Benefit Cost Ratio)	0.749

Notes for Definition of Criteria see Appendix 1.

The COBA analysis shows that economically the benefits of the scheme for road users are outweighed by the costs (in traffic terms). In summary the discounted benefits associated with reduced travel time savings etc. are outweighed by the discounted costs of the scheme.

In purely economic terms, an option considered viable if it has an NPV greater than zero, therefore, in terms of cost benefits analysis, the option performs poorly.

6 Conclusions

6.1 Summary

The effects of an option for a western bypass in Downpatrick have been examined with respects to traffic impacts, environmental impact and cost benefit analysis.

In terms of traffic impacts the option does reduce traffic in the central area of Downpatrick. It does however do this at a cost, slightly increasing the amount of vehicle kilometres on the overall highway network as a result of increased length of trips due to traffic diverting to the bypass.

Environmentally the option alignment travels through a local landscape policy area and an area of significant archaeological interest. The option would therefore have a major impact on landscape and a major adverse impact on the heritage of historical sites. Whilst there are some positive environmental impacts, overall impacts are deemed negative.

The cost benefit analysis, using COBA10, has included revised construction costs for the option having assessed the option in greater detail. This shows the scheme has a negative NPV i.e. the costs are greater than the benefits, so again the option performs poorly.

The western bypass option was one of a number of highway schemes that was assessed as part of development of the area plan other options to the east of the town were also examined. As a comparison, performance indices for an eastern link road have been extracted and these are illustrated in the Table 4 below.

Table 4 - Comparison of Roads Scheme Performance Indicators and Cost Benefit Analysis

PERFORMANCE INDICATOR	DO-MINIMUM NETWORK (WITHOUT BY-PASS)	WESTERN BY-PASS ALIGNMENT	STRANGFORD RD TO ARDGLASS RD LINK
Total Vehicle Distance (Veh-Km)	60499	60675 (+0.3%)	59598 (-1.5%)
Vehicle Travel Time (Veh-Hrs)	2093	1549 (-26%)	1474 (-30%)
Net Present Value (£1000)	n/a	-2,030	3,041
Benefit Cost Ratio	n/a	0.749	4.934

The indicators show that the Strangford Road to Ardglass Road link out performs the western by-pass alignment concerning its effect on the overall network performance indictors i.e. vehicle travel time and vehicle distance. The comparison of the costs benefit analysis of the two schemes also shows that the Strangford Road to Saul Road link is better value for money. In terms of environmental effects the Strangford Road to Ardglass Road link also out performs the western by-pass alignment.

In addition to the above it should be noted that the majority of land-use zonings from the Area Plan are located to the eastern side of Downpatrick. The successful development of these zonings will be dependent of the Strangford Road to Ardglass Road link. The road would also be beneficial to traffic associated with the Downshire Hospital, located in the vicinity of the new road.

Client:

ROADS Service

Southern Division

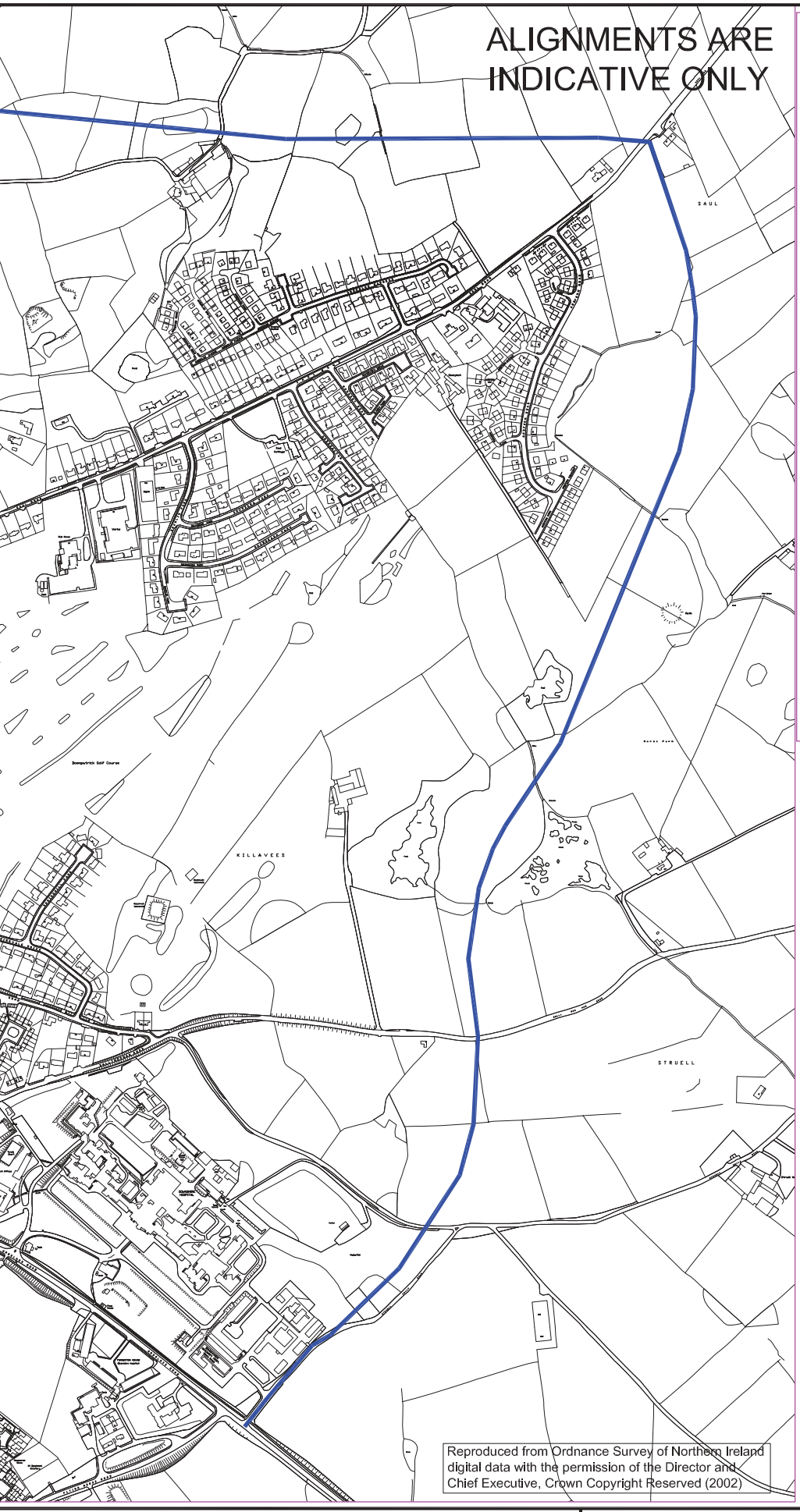
Project:

Downpatrick Road Scheme Study
Supplementary Report

Title:

Road Scheme Options Locations

ALIGNMENTS ARE INDICATIVE ONLY



LEGEND

STRANGFORD ROAD TO ARDGLASS ROAD LINK

HISTORICAL ROADS SERVICE WESTERN BY–PASS ALIGNMENT

FABER MAUNSELL | AECOM

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24 Linenhall Street,
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Design:		CAD:	PC
Chk'd:	TJR	App'd:	TJR
Date:	04.08.05	Scale:	NTS

No. FIGURE 1

Rev:

cm

A3

Appendices

Appendix 1 – Definition of COBA10 Criteria

PVC = (Do-Something Scheme Cost) - (Do-Minimum Scheme Cost) - (Traffic Related Maintenance Cost Savings) - (Non-Traffic Related Expenditure).

PVB = (Time Savings on Links) + (Time Savings at Junctions) + (Veh Operating Cost Savings on Links) + (Accident Savings on Links) + (Accident Savings at Junctions).

NPV = PVB – PVC.

BCR (Benefit Cost Ratio) = PVB/PVC.

Vehicle operating cost savings on links include both fuel and non-fuel.

The benefits of the scheme are computed as the difference in costs deemed to be experienced by society arising out of vehicles driving on the Do-Nothing and Do-Something networks. Only 2 elements of these costs are computed: 1) accident costs and 2) motorist time and vehicle operating costs (usually the dominant factor).

The year of opening of all the road schemes was assessed as 2016.

Future year traffic flows were taken from the AM Peak TRIPS Model and factored by 10 to give approximate AADT (Average Annual Daily Traffic) flows.

The prices in Table 2 are at 1994 rates, discounted to 1994, as per COBA 10.

Prepared by:	Approved by: .....
Emma Morrow	Tim Robinson
Senior Consultant	Regional Director

Downpatrick Road Scheme Study

Rev No	Comments	Date
0	Final Report	04.08.05

1st Floor
24 Linenhall Street
Belfast
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Job No 39231 TUT Reference - Supplementary Report
Review of Western Bypass Option Date Created 4 August 2005

6 DEVELOPMENT CAPACITY OVERVIEW

BUILDING & PARKING	*scale factor*	**FOOTPRINT (m^2)**	**STOREYS**	**GROSS AREA (m^2)**	RETAIL STOREYS	**RETAIL AREA**	OFFICE STOREYS	**OFFICE AREA**
1 PROPOSED HOTEL	*123.54*	**3,391**	**3**	**10,172**				
2 RELOCATED SCHOOL	115.42	**3,168**	**2**	**6,335**				
3 SPORTS COMPLEX	16.01	**439**	**1**	**439**				
4 SITE OF SOCIAL SECURITY OFFICE	*27.82*	**764**	**2**	**1,527**			1	**764**
5a SITE OF TELEPHONE EXCHANGE BUILDING	*47.98*	**1,317**	**2**	**2,634**				
5b SITE OF TELEPHONE EXCHANGE BUILDING	*39.69*	**1,089**	**3**	**3,268**				
6a SITE OF BUILDERS YARD	*120.79*	**3,315**	**2**	**6,630**				
6b SITE OF BUILDERS YARD	*83.89*	**2,302**	**3**	**6,907**	0.5	**1,151**	1.5	**3,454**
7 BUILDING	*36.81*	**1,010**	**2**	**2,020**	1	**1,010**		
8 BUILDING	*60.68*	**1,665**	**2**	**3,331**	0.5	**833**	0.5	**833**
9 BUILDING	*90.42*	**2,482**	**2**	**4,963**	0.5	**1,241**		
10 BUILDING	*16.84*	**462**	**2**	**924**			1	**462**
11 ST. PATRICKS CENTRE EXTENSION	*4.95*	**136**	**2**	**272**				
12 BUILDING	*117.12*	**3,214**	**2**	**6,429**	0.5	**1,607**		
13 BUILDING	*57.46*	**1,577**	**2**	**3,154**	0.5	**788**		
14 BUILDING	*33.08*	**908**	**2**	**1,816**	0.5	**454**		
15 BUILDING AT DE COURCEY SQUARE	*28.13*	**772**	**3**	**2,316**	0.5	**386**		
16 BUILDING	*8.24*	**226**	**3**	**678**	1	**226**	1	**226**
17 BUILDING	*34.45*	**945**	**2**	**1,891**	0.5	**473**		
18 BUILDING	*111.83*	**3,069**	**2**	**6,138**	0.5	**1,535**		
19 BUILDING	*31.74*	**871**	**2**	**1,742**				
20 BUILDING	*39.97*	**1,097**	**2**	**2,194**				
21 BUILDING	*31.14*	**855**	**2**	**1,709**				
22 BUILDING	*117.86*	**3,235**	**2**	**6,469**				
23 BUILDING	*34.28*	**941**	**2**	**1,882**				
24 BUILDING	*43.14*	**1,184**	**2**	**2,368**				
25 BUILDING	*46.14*	**1,266**	**3**	**3,799**	0.5	**633**	1.5	**1,899**
26 BUILDING	*23.01*	**632**	**2**	**1,263**			2	**1,263**
27 REDEVELOPED GROVE SHOPPING CENTRE	*214.97*	**5,900**	**2**	**11,800**	1	**5,900**	1	**5,900**
28 BUILDING	*62.94*	**1,727**	**3**	**5,182**			2	**3,455**
29 BUILDING	*72.04*	**1,977**	**2**	**3,954**				
30 BUILDING	*108.11*	**2,967**	**2**	**5,934**	0.5	**1,484**	1.5	**4,451**
31 REDEVLOPED BUS STATION	*92.9*	**2,550**	**2**	**5,099**			1	**2,550**
32 SOUTH EASTERN REGIONAL COLLEGE	*203.99*	**5,598**	**2**	**11,197**				
33 BUILDING	*126.98*	**3,485**	**2**	**6,970**			1	**3,485**
34 BUILDING	*248.76*	**6,827**	**2**	**13,654**	0.25	**1,707**	1.25	**8,534**
35 BUILDING	*82.64*	**2,268**	**3**	**6,804**	0.5	**1,134**	1.5	**3,402**
36 BUILDING	*46.37*	**1,273**	**2**	**2,545**				
37 BUILDING	*115.82*	**3,179**	**2**	**6,357**				
38 BUILDING	*149.07*	**4,091**	**1**	**4,091**	1	**4,091**		
39 BUILDING	*105.39*	**2,892**	**1**	**2,892**	1	**2,892**		
40 WILDLIFE & ACTIVITY CENTRE	*31.67*	**869**	**1**	**869**				
41 RELOCATED LEISURE COMPLEX	*90.2*	**2,476**	**1**	**2,476**				
42 BUILDING	*71.21*	**1,954**	**1**	**1,954**	1	**1,954**		
43 BUILDING	*142.62*	**3,914**	**1**	**3,914**	1	**3,914**		
44 BUILDING	*107.5*	**2,950**	**2**	**5,901**				
45 BUILDING	*84.11*	**2,308**	**2**	**4,617**				
46 BUILDING	*79.94*	**2,194**	**2**	**4,388**				
47 BUILDING	*98.72*	**2,709**	**2**	**5,419**				
48 CINEMA EXTENSION	*45.13*	**1,239**	**3**	**3,716**				
49 BUILDING	*69.95*	**1,920**	**3**	**5,759**	0.5	**960**	1.5	**2,880**
50 BUILDING	*92.13*	**2,528**	**3**	**7,585**			2	**5,057**
51 BUILDING	*56.4*	**1,548**	**3**	**4,644**				
52 BUILDING (footprints tbc: Health Estates Development Plan)								
53 BUILDING (footprints tbc: Health Estates Development Plan)								
54 BUILDING (footprints tbc: Health Estates Development Plan)								
55 BUILDING (footprints tbc: Health Estates Development Plan)								
56 BUILDING	*13.27*	**364**	**2**	**728**				
57 BUILDING	*87*	**2,388**	**2**	**4,775**			1	**2,388**
58 RELOCATED SCHOOL	*139.71*	**3,834**	**2**	**7,669**				
TOTAL PROPOSED		**120,262**		**244,164**		**34,373**		**51,000**

RESIDENTIAL STOREYS	**RESIDENTIAL AREA**	HOTEL / GUESTHOUSE STOREYS	**HOTEL / GUESTHOUSE AREA**	BUS STATION STOREYS	**BUS STATION AREA**	EDUCATION STOREYS	**EDUCATION AREA**	RECREATION STOREYS	**RECREATION AREA**	CIVIC / CULTURAL STOREYS	**CIVIC / CULTURAL AREA**	OTHER STOREYS	**OTHER AREA**
		3	10,172										
						2	**6,335**						
								1	**439**				
1	**764**												
2	**2,634**												
3	**3,268**												
2	**6,630**												
1	**2,302**												
1	**1,010**												
1	**1,665**												
1.5	**3,722**												
1	**462**												
										2	**272**		
1	**3,214**									0.5	**1,607**		
1	**1,577**									0.5	**788**		
1	**908**									0.5	**454**		
2.5	**1,930**												
1	**226**												
1.5	**1,418**												
1	**3,069**									0.5	**1,535**		
2	**1,742**												
2	**2,194**												
2	**1,709**												
2	**6,469**												
2	**1,882**												
2	**2,368**												
1	**1,266**												
1	**1,727**												
2	**3,954**												
0.5	**1,484**												
				1	**2,550**								
						2	**11,197**						
1	**3,485**												
0.5	**3,414**												
1	**2,268**												
2	**2,545**												
2	**6,357**												
								1	**869**				
								1	**2,476**				
2	**5,901**												
2	**4,617**												
2	**4,388**												
2	**5,419**												
								3	**3,716**				
1	**1,920**												
1	**2,528**												
3	**4,644**												
2	**728**												
1	**2,388**												
						2	**7,669**						
	110,197		**10,172**		**2,550**		**25,201**		**7,500**		**4,656**		

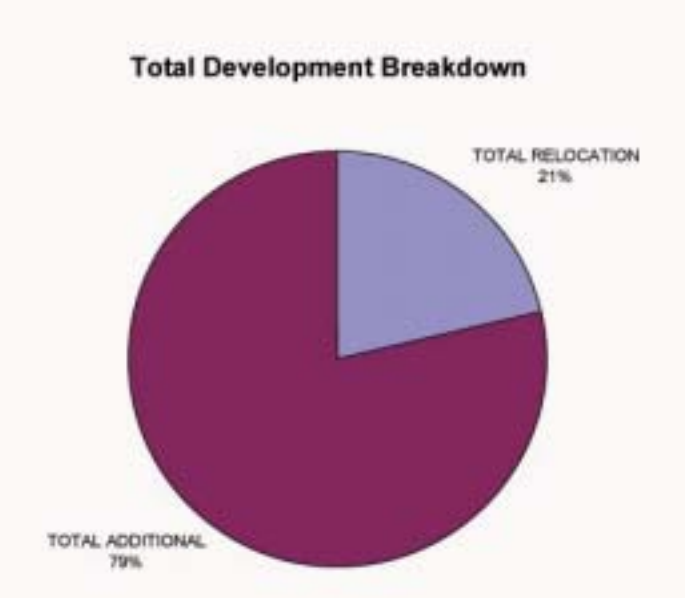
BUILDING & PARKING	*scale factor*	**FOOTPRINT (m^2)**	**STOREYS**	**GROSS AREA (m^2)**	RETAIL STOREYS	**RETAIL AREA**	OFFICE STOREYS	**OFFICE AREA**
RELOCATED DEVELOPMENT								
1 Downpatrick Primary School	*44.9*	**1,232**	**1**	**1,232**				
2 Down High School	*182.66*	**5,013**	**2**	**10,026**				
3 Downpatrick Social Security Office, Bridge Street	*15.45*	**424**	**2**	**848**			2	**848**
4 Telephone Exchange, Church Street	*45.16*	**1,239**	**3**	**3,718**			3	**3,718**
5 Gary Scott Opticians, Church Street	*3.73*	**102**	**2**	**205**	2	**205**		
6 CY Kearney Car Sales, Church Street	*1.57*	**43**	**1**	**43**	1	**43**		
7 Brooks Timber Merchants, Church Street	*9.93*	**273**	**1**	**273**	1	**273**		
8 Plumb Centre, Church Street	*2.68*	**74**	**1**	**74**	1	**74**		
9 Car Garage, Church Street (adj St Margarets Church)	*22.58*	**620**	**1**	**620**	1	**620**		
10 Down Discount Cycles, Church Street	*2.91*	**80**	**1**	**80**	1	**80**		
11 Petrol Station & Shop, Church Street	*3.32*	**91**	**1**	**91**	1	**91**		
12 PM Auto's Car Sales, Church Street	*1.21*	**33**	**1**	**33**	1	**33**		
13 Wrap and Roll Sandwich Bar, Church Street	*0.71*	**19**	**1**	**19**	1	**19**		
14 Fire Station, Church Street	*7.71*	**212**	**1**	**212**				
15 Abbeyfield House / Quoile Fold, Market Street	*72.35*	**1,986**	**2**	**3,971**				
16 Shops and Flats, De Courcey Square, English Street	*18.28*	**502**	**3**	**1,505**	1	**502**		
17 23 Residential Properties, Kennedy Way	*46*	**1,262**	**2**	**2,525**				
18 NI Electricity Bldg, John Street	*12.57*	**345**	**1**	**345**			1	**345**
19 NI Housing Executive Building, John Street	*17.4*	**478**	**1**	**478**			1	**478**
20 Shops on St. Patricks Avenue	*38*	**1,043**	**1**	**1,043**	1	**1,043**		
21 Grove Shopping Centre, Market Street	*144.05*	**3,953**	**1**	**3,953**	1	**3,953**		
22 Public Library, Market Street	*23.19*	**636**	**1**	**636**				
23 Health & Social Care Trust, Market Street	*12*	**329**	**1**	**329**			3	**988**
24 Day Centre, Market Street	*36.5*	**1,002**	**1**	**1,002**				
25 LIDL's Supermarket, Market Street	*55.1*	**1,512**	**1**	**1,512**	1	**1,512**		
26 South Eastern Regional College	*88*	**2,415**	**2**	**4,830**				
27 Bus Station, Market Street	*36.8*	**1,010**	**2**	**2,020**				
28 Rathkeltair House, Market Street	*85.63*	**2,350**	**2**	**4,700**			2	**4,700**
29 Petrol Station & Shops, Market Street	*16.27*	**447**	**2**	**893**	2	**893**		
30 Leisure Centre, Market Street	*91.7*	**2,517**	**1**	**2,517**				
31 ASDA Petrol Station, Market Street	*7.72*	**212**	**1**	**212**	1	**212**		
32 McDonalds, Market Street	*13.23*	**363**	**1**	**363**	1	**363**		
33 Petrol Station & Shop, St. Patrick's Avenue	*3.76*	**103**	**1**	**103**	1	**103**		
34 Owenbeg Bowling Club & Pavillion	*21.38*	**587**	**1**	**587**				
35 Residential Properties, Stream Street	*20*	**549**	**2**	**1,098**				
36 St. John's House, Pound Lane	*41*	**1,125**						
37 Health Centre, Pound Lane	*30*	**823**						
38 St. Patrick's Boys Primary School	*51*	**1,400**						
TOTAL RELOCATION		**36,404**		**52,096**		**10,019**		**11,077**

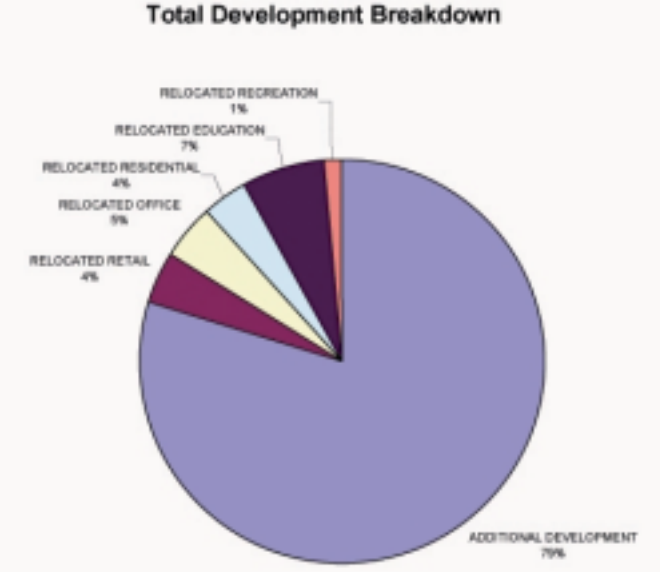
RESIDENTIAL STOREYS	**RESIDENTIAL AREA**	HOTEL / GUESTHOUSE STOREYS	**HOTEL / GUESTHOUSE AREA**	BUS STATION STOREYS	**BUS STATION AREA**	EDUCATION STOREYS	**EDUCATION AREA**	RECREATION STOREYS	**RECREATION AREA**	CIVIC / CULTURAL STOREYS	**CIVIC / CULTURAL AREA**	OTHER STOREYS
						1	**1,232**					
						2	**10,026**					
												1
2	**3,971**											
2	**1,003**											
2	**2,525**											
						2	**4,830**					
				2								
								1	**2,517**			
								1	**587**			
2	**1,098**											
	8,597			**2**			**16,089**		**3,103**			

Development Overview

The Downpatrick Town Centre Draft masterplan proposes a total of:
244,164m2 of development of which:

79% (192,068 m2) is additional development to the town, and,
21% (52,096 m2) is the redevelopment or relocating of existing development





Of this 79% of additional development the following breakdown applies:

53% Residential (101,599 m2)
21% Office (39,923 m2)
13% Retail (24,354 m2)
5% Hotel / Guesthouse (10,172 m2)
5% Education (9,112 m2)
3% Other (6,908 m2)