

AQW 45505/11-15

DATE FOR ANSWER: FRIDAY 22 MAY 2015

Lord Morrow (Fermanagh and South Tyrone): To ask the Minister for Regional Development, pursuant to AQW 41408/11-15, to provide a copy of, or place in the Assembly Library, the business plan and economic appraisal for this development.

DANNY KENNEDY

Translink has provided me with a copy of the Business Plan / Economic Appraisal for this development which will be placed in the Assembly Library.

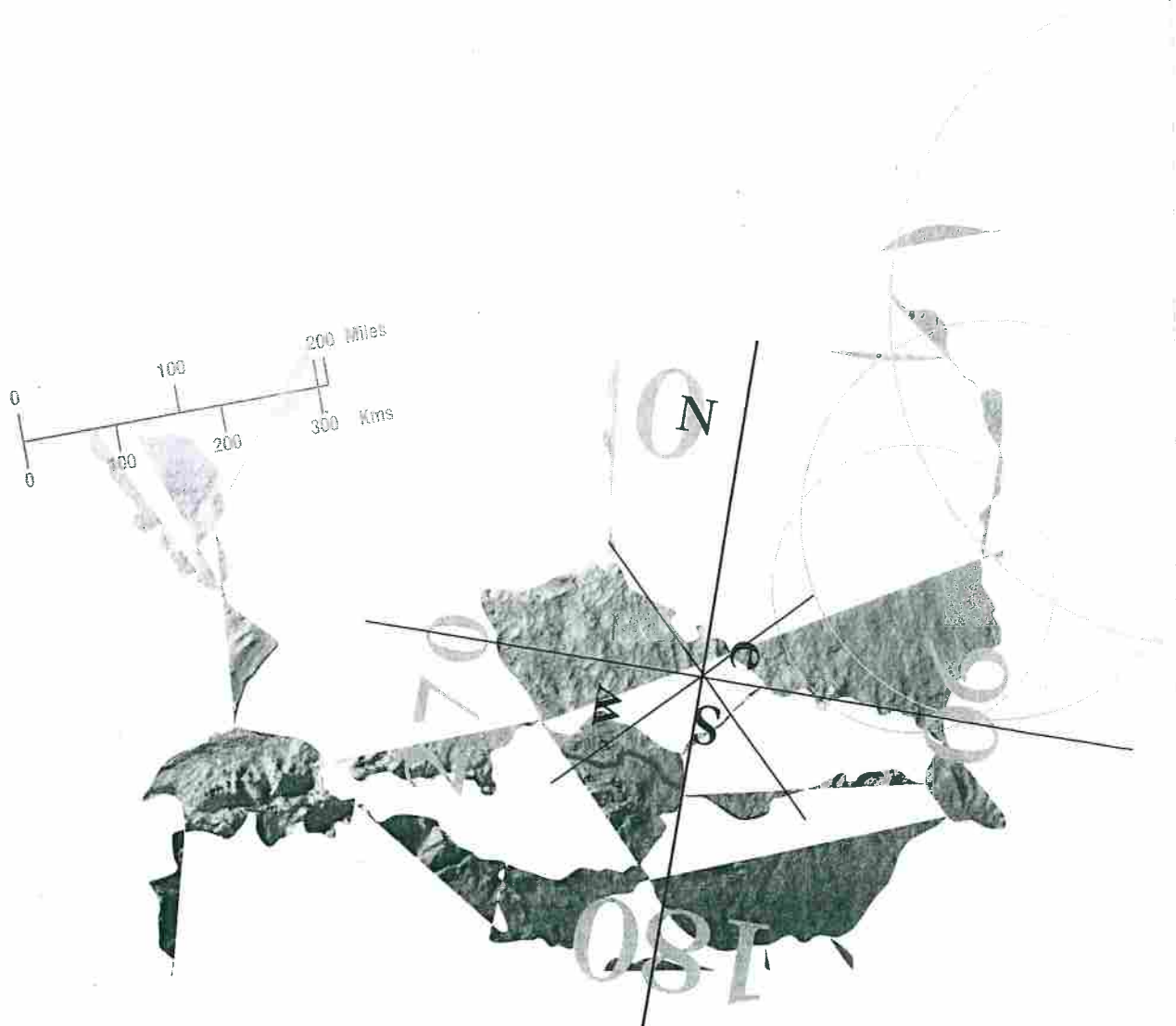
Signed:

Danny Kennedy

Date:

15/05/11

Traffic Management: Central Station, Belfast





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A Report by



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EXECUTIVE SUMMARY

INTRODUCTION & CONTEXT

1. DTZ Piedad Consulting was commissioned by Translink to undertake an economic appraisal prepared in accordance with HM Treasury and DFP Guidelines on proposed adjustments to the traffic management arrangements at Central Station.
2. Translink management considers the current traffic management arrangements at Central Station inadequate. This economic appraisal addresses the actions required in order to meet the current needs identified within Translink to improve traffic management at Central Station. These actions not only aim to enhance traffic flow and in turn road safety in the area but will also provide adequate car parking to accommodate the introduction of the new NIR fleet in 2004 and the expected increase in train patronage associated with this.
3. The Strategic Context for the development is sourced from the following key documents:
 - The Programme for Government
 - Moving Forward
 - The Regional Development Strategy for Northern Ireland
 - The Regional Transportation Strategy for Northern Ireland
 - The Belfast Metropolitan Plan
 - The Belfast Metropolitan Transport Plan
 - NITHCo Corporate Policy
 - Translink Corporate Policy

ASSESSMENT OF NEED

4. A number of factors were highlighted in the assessment that identify the need for the proposed development:
 - The current car park is operating at close to or full capacity – identified through ticket data analysis and the over spill arrangements at Lanyon Place multi-storey.
 - The level of informal parking that exists in and around Central Station.
 - The poor traffic management arrangements lead to questions about road safety and accessibility and diminish the Translink aim of creating an integrated transport system at Central Station.
 - The inability of the car park to facilitate the forecast demand for train services at Central Station.

OBJECTIVES OF THE APPRAISAL

5. The economic appraisal seeks to review how the proposed development can meet the following objectives:
- Facilitate the promotion of public transport at Central Station.
 - Contribute to the continuing economic regeneration of the Laganside area.
 - Enhance traffic management in and around Central Station providing ease of movement for passenger pick-up and set-down.
 - Enhance road safety.
 - Improved access for passengers with a disability.

LIST OF OPTIONS

6. The following options were identified to meet the current needs of Translink and NITHCo.

- OPTION 1** Do Nothing. 150 space capacity.
- OPTION 2** Provision of 191 surface car parking spaces including eight disabled spaces, 18 staff car parking spaces, a bus access road, bus and taxi parking and a drop off point. Appendix 2 contains an architects drawing of this option.
- OPTION 3** Provision of 191 surface car parking spaces including eight disabled spaces, a bus access road, bus and taxi parking and a drop off point. Appendix 2 contains an architects drawing of this option.
- OPTION 4** Build a new mutli-storey with 256 spaces and an area for taxi parking.

ANALYSIS OF OPTIONS

Monetary

7. The capital costs associated with each option are as follows:

CAPITAL COSTS (£)				
	Option 1	Option 2	Option 3	Option 4
Construction Costs	-	450,800	354,800	976,000
Equipment Costs	-	100,000	100,000	100,000
Slewing of Track	-	15,000	-	-
Contingencies/fees	-	56,580	45,480	107,600
Total Capital Costs	-	622,380	500,280	1,183,600

NPV Analysis

8. The results of the NPV analysis are summarised in the table below.

NET PRESENT VALUE	
Option Number	Net Present Value
1	644,386
2	695,353
3	614,013
4	-10,801

9. The results of the NPV analysis indicate Option 2, provision of 191 surface car parking spaces including eight disabled spaces, 18 staff car parking spaces, a bus access road, bus and taxi parking and a drop off point, produces the highest net present value of £695,353. Option 1, the Do Nothing Option, results in the second highest net present value of £644,386. Option 4, the development of a new mutli-storey results in a net present cost of £10,801.

Non-monetary Factors

OPTION SCORE					
OBJECTIVE	WEIGHT	OPTION			
		1	2	3	4
Enhance traffic management in and around Central Station	30	0	20	20	5
Facilitate the promotion of public transport at Central Station	20	5	15	10	20
Enhance Road Safety	20	0	20	20	5
Improved access for passengers with a disability	20	0	20	20	5
Contribute to the continuing economic regeneration of the Laganside area	10	0	17	17	20
Total weighted score for each option :		100	1870	1770	950
Rank		4	1	2	3

10. The results of the weighting and scoring exercise indicate that Option 2 (provision of 191 surface car parking spaces including eight disabled, 18 staff car parking spaces, a bus access road, bus and taxi parking and a drop off point) is the preferred option in non-monetary terms. Option 2 generates 1870 out of a maximum possible score of 2000. The closest alternative is Option 3 with a marginally lower impact on meeting the objectives with a score of 1770. Option 1, the Do Nothing Option, is the least preferred option achieving a score only 5% of the maximum available.

11. The low non-monetary score of Option 1 is a reflection of its inability to contribute toward 4 of the 5 project objectives. As a result of this Option 1, the Do Nothing, is not considered to be an option that Translink should pursue. Therefore the choice of a preferred option is made from Options 2, 3 and 4.
12. As a result of the monetary and non monetary analysis carried out to date, Option 2, (provision of 191 surface car parking spaces including eight disabled, 18 staff car parking spaces, a bus access road, bus and taxi parking and a drop off point) is the preferred option.

Risk & Sensitivity

13. Option 1 has not been included in the sensitivity analysis due to the reasons stated above. Sensitivity analysis has shown that the appraisal is not sensitive to changes in capital cost and train patronage, as under all of these scenarios Option 2 remains the preferred option. However when the sensitivity of the options to the removal of the latent demand element is tested, Option 3 is preferred. The reason for this is the higher capital costs associated with Option 2 over Option 3 and the extra car parking capacity of Option 2 that when the latent demand element is removed does not generate any additional income. However, it should be pointed out that it is very unlikely that the proposed development of Option 2 will not attract additional commuters to the car park.
14. In addition to this, Option 3 is also operating at full capacity after year 12 and will therefore not be able to accommodate the expected 50% increase in train patronage.

Conclusions and Recommendations

15. The results of all aspects of option appraisal are summarised below. Option 1 has not been included in the summary analysis as it only achieves 5% of the maximum score available in the non-monetary analysis, rendering it unable to meet the project objectives set down by Translink.

SUMMARY OPTION ANALYSIS & RANKING			
	Option 2 191 spaces & 18 staff	Option 3 191 spaces	Option 4 Multi-storey
NPV	695,353	614,013	-10,801
Ranking	1	2	3
Non-Monetary Score	1,870	1,770	950
Ranking	1	2	3
Overall Ranking	1	2	3

16. The preferred option for improved traffic management at Central Station, in accordance with DFP guidelines, is the option with the highest NPV and/or non monetary score when compared against all other viable options. On the basis of the combined results we consider *Option 2, (provision of 191 surface car parking spaces including eight disabled, 18 staff car parking spaces, a bus access road, bus and taxi parking and a drop off point), to be the preferred option as it forms highest in the combination ranking.*
17. The development of Option 2 offers a range of advantages and possibilities to NITHCo and Translink, including:
- Adequate car parking facilities to accommodate the expected increase in train patronage from 2004 onwards.
 - Significant enhancements to traffic management in and around Central Station through the development of a bus access road, taxi parking and a drop off point.
 - Provides a situation that is more conducive to road safety over the present situation at Central Station where there is no clearly defined bus route, passenger set down and pick up points and space is at a minimum.
 - The development of an infrastructure that recognises the importance of access for passengers with a disability.
 - The possibility of increased car park revenues by providing adequate spaces to facilitate a future increase in demand.
 - The promotion of public transport through the provision of adequate car parking and access that will help to encourage the use of park and ride facilities at Central Station.
 - Reduces congestion and waiting times for private cars, taxis and buses.

1 INTRODUCTION

BACKGROUND AND TERMS OF REFERENCE

- 1.1 DTZ Pieda Consulting were commissioned by Translink to undertake an economic appraisal prepared in accordance with HM Treasury and DFP Guidelines of proposed adjustments to the traffic management arrangements at Central Station.
- 1.2 Translink management considers the current traffic management arrangements at Central Station inadequate. This economic appraisal addresses the actions required in order to meet the current needs identified within Translink to improve traffic management at Central Station. These actions not only aim to enhance traffic flow and in turn road safety in the area but will also provide adequate car parking to accommodate the introduction of the new NIR fleet in 2004 and the expected increase in train patronage associated with this.

STRUCTURE OF THE REPORT

- 1.3 The remainder of this appraisal is structured as follows.
 - Section 2 presents an examination of the strategic context in relation to the proposed development.
 - Section 3 examines the need for the development.
 - Section 4 outlines the objectives for the proposed project.
 - Section 5 identifies the options for meeting the needs and objectives.
 - Section 6 presents the financial and non-financial appraisal of the options.
 - Section 7 outlines the conclusions and recommendations of the appraisal, identifying the recommended option.
 - Section 8 provides guidelines for post implementation evaluation of the project.

2 STRATEGIC CONTEXT

PROGRAMME FOR GOVERNMENT

- 2.1 The Programme for Government (PfG) embraces the vision for a better transportation system in Northern Ireland and the role it has to play in securing a competitive economy. The Programme highlights the need to address the long-term under-investment in public transport.
- 2.2 The infrastructure developments at Central Station would contribute to the ongoing developments at Central Station and throughout the entire NI network, helping to support a transportation system that would support the aspirations and objectives of the PfG. The North-South transport links provided at Central Station are very important both economically and politically and in this respect Central Station should provide a service, including park and ride and traffic management that is conducive to its position as the hub and flagship of the Translink network.

MOVING FORWARD

- 2.3 The 1998 'Moving Forward' policy statement provided a NI context to the UK governments 1998 Transport White Paper and outlined a strategy for implementing the objectives of the White Paper to reflect the particular circumstances of Northern Ireland.
- 2.4 The overarching aim of the policy statement was to develop a strategy that enables a move away from a transport system dominated by private transport to a more balanced and integrated transport system, where public transport becomes an increasingly attractive option.
- 2.5 The statement recognises that *cars will remain a significant feature of passenger transport in Northern Ireland for the foreseeable future* and that a package of co-ordinated and integrated measures are required to ensure people and businesses in Northern Ireland continue to enjoy high levels of mobility and access.
- 2.6 The proposed developments at Central Station therefore recognise the importance of private transport for many commuters alongside the need for the greater integration and improvement of public transport infrastructure in order to encourage the increased use of public transport in Northern Ireland.

REGIONAL DEVELOPMENT STRATEGY (RDS)

- 2.7 The transport elements of the RDS are developed and discussed further in the Regional Transportation Strategy and, in the context of the Belfast Metropolitan Area Plan (BMAP), and the Belfast Metropolitan Transport Plan (BMTP).

REGIONAL TRANSPORTATION STRATEGY (RTS) FOR NORTHERN IRELAND 2002-2012

- 2.8 The RTS was developed as a result of the RDS consultation process which showed that a modern, integrated and sustainable transportation system, with an emphasis on the combined delivery of economic, social and environmental benefits had to be a central feature of the regions strategic planning process.
- 2.9 The vision for transportation outlined for Northern Ireland is:
- “To have a modern, sustainable, safe transportation system which benefits society, the economy and the environment and which actively contributes to social inclusion and everyone’s quality of life.”*
- 2.10 The RTS sets out a number of key transportation system characteristics that the proposed developments at Central Station will contribute to, including:
- A high quality strategic transport network constructed, operated and maintained to ensure rapid and predictable journey times for public transport (including taxis and community transport as well as conventional bus and rail), goods vehicles and cars.
 - Contributing to a healthy and environmentally aware society choosing to walk, cycle and use public transport for many journeys.
 - An extensive, customer orientated public transport system fully integrated with all modes of travel through high quality interchanges.
 - Efficient and affordable forms of public transport operated to regulated service standards providing all passengers, including people with disabilities, with access to services and facilities.
 - All infrastructure and services used responsibly and managed, operated and maintained to the highest safety standards.
 - A safe environment for pedestrians in general and older people and children in particular.
- 2.11 The RTS highlights the need for the provision of public transport that is accessible to people with disabilities. In Northern Ireland people with a disability account for 19.7% of the working age population, those aged 16-65 (Labour Force Survey 2001).
- 2.12 The proposed infrastructure adjustments at Central Station are in line with the increased focus on accessible transport in NI. The adjustments also improve the accessibility of transport for people with disabilities.

BELFAST METROPOLITAN AREA PLAN (BMAP)

2.13 The plan envisages that transportation provision in the Belfast Metropolitan Area will encompass the five national objectives of:

- Environmental impact - to protect the built and natural environment.
- Safety - to improve safety.
- Economy - to support sustainable economic activity and get good value for money.
- Accessibility – to improve access to facilities for those without a car and to reduce severance.
- Integration - to ensure that all decisions are taken in the context of integrated transport and other government policies.

BELFAST METROPOLITAN TRANSPORT PLAN

2.14 The Department for Regional Development (DRD) is currently developing the Belfast Metropolitan Plan. However a report published in February 2002 presents a *Summary of Transport Problems, Issues and Opportunities* that need to be considered in developing the BMTP.

2.15 A range of key findings were presented in the report outlining generic problems in the BMA including:

- Lack of integration between modes. This includes integration between bus and rail and between car and public transport.

2.16 The proposed development at Central Station will greatly enhance the existing provision for the integration between bus, rail and car at Central Station, through the operation of a system that enhances traffic flow, provides adequate space for customer 'drop off' and increases park and ride facilities.

OBJECTIVES OF NITHCO

2.17 Article 48 of the 1967 Transport Act defines the objectives of NITHCo, which includes:

- To hold and manage the properties vested in it and any other properties acquired by it, and to exercise the rights attached to such properties.
- To acquire and dispose of any property.

TRANSLINK

2.18 Translinks vision is

"To provide co-ordinated bus and rail services which create genuine customer satisfaction and enjoy public confidence."

2.19 The proposed development at Central Station relates directly to two of the five Translink corporate goals:

- Safety – to maintain the highest standards of safety for customers, and the general public.
- Customer - to excel in anticipating and responding to customer needs.

2.20 The proposed traffic management adjustments at Central Station meet these objectives as they significantly improve road safety, providing a higher standard of safety for Translink customers and the general public.

2.21 The proposed development also increases park and ride facilities at Central Station. This increase in capacity is necessary to meet the increased demand for park and ride facilities that will result from the introduction of the new train fleet in 2004.

Safety Decision Making

2.22 To highlight the commitment towards public transport safety in NI and particularly in relation to Translink commissioned Arthur D. Little, supported by its sub-consultant Halcrow Transmark, to conduct a strategic review of all aspects of safety at the NIR network and operations.

2.23 The review was aimed at assessing the adequacy of current safety levels and arrangements for NIR's situation and needs, including identification of matters requiring attention in the following categories: Urgent (Immediate); Short-term (<1 year), Medium-term (1-3 year) and Long-term (3 –10 year). The review included the following main components:

- Safety Management: policies, organisation, procedures, systems, practices
- Safety Culture: behavioural and cultural aspects
- Technical: operations, signalling & telecoms, rolling stock, track & structures
- Risk Assessment: quantified risk assessment to support the Technical assessment

Translink Safety Guidance

- 2.24 The approach to be used to inform the making of safety decisions on Northern Ireland Railways is the same as that used on Railtrack PLC-controlled infrastructure and at stations. This is based on guidance provided by the Health and Safety Executive (HSE) publication 'Tolerability of Risks from Nuclear Power Stations 1992' which introduced the concept of three regions of risk:
- An intolerable region where risks must be reduced.
 - A broadly acceptable region where no further risk reduction measures are required.
 - An intermediate region where the cost and trouble of reducing risk further should be weighted against the benefits, to ensure risks are as low as reasonably practicable (ALARP).
- 2.25 The approach is outlined in Railtrack PLC's Railway Safety Case (RSC) and confirmed in all other Railway Group members' RSCs. This states, in summary, that where risks lie in the ALARP region, decisions on whether to implement further safety measures are guided by balancing the safety benefits of the scheme against the costs of implementation.
- 2.26 It must be stressed however, that this is just one of the considerations that are taken into account when deciding whether to proceed with a safety project or not. The HSE published in May 1999 a discussion document 'Reducing Risks, Protecting People' which proposed that a greater focus should be placed on the hazard rather than the risk and that society's perception of risk should be considered more. For example there is an aversion to instances, which have the potential for multiple injuries and fatalities.

EQUALITY & TARGETING SOCIAL NEED (NEW TSN)

- 2.27 Those for whom equality must be addressed is specified under Section 75 of the Northern Ireland Act 1998. Translink promote equality as a requirement through the operation of all of their services. They promote equality between:
- persons of different religious belief, political opinion, racial group. Age marital status or sexual orientation;
 - between men and women generally;
 - persons with a disability and those without; and
 - between persons with dependants and those without.
- 2.28 The proposed development will contribute towards the promotion of equality within Translink services as it improves accessibility for persons with a disability.

3 ASSESSMENT OF NEED

3.1 This section provides an assessment of the main issues to be considered throughout the appraisal. The main issues to be discussed and the identified need for the project are considered under the following headings:

- Description of the current situation in relation to car parking and traffic management at Central Station.
- Future demands on car parking provision.
- Summary of the identified need for change at Central Station.

CURRENT SITUATION

3.2 NITHCo operate the car park used by railway passengers at Central Station. The car park has 150 spaces and operates on a pay on exit system. It is open from 6.30am to 11.30pm everyday of the week¹. Current car parking charges are as follows:

Duration (hours)	Charge (£)
0-1	1.00
1-2	2.00
2-3	3.50
3-4	5.00
4-5	6.00
5-6	7.00
6-8	8.00
8+	9.00

3.3 A number of concessions are offered to users:

- 50% reduction for train passengers.
- Free staff parking.
- First 20 minutes free.

Analysis of Car Park Ticket Data

3.4 Data on car parking in the Central Station car park was provided by NITHCo for one week periods from 1st January 2002 to 30th June 2002 and on a daily basis for the months of April, May and June 2002. A summary of this data is presented in Tables 3.2 and 3.3 below.

¹ With the exception of Christmas Day

	April 02	May 02	June 02	Monthly Average
Parked per day	182	191	177	183
% General	16	18	19	18
% Public Transport	32	33	33	32
% Staff	27	28	28	28
% No Charge	25	21	20	22
Daily Income	369	375	352	365
Source: NITHCo Ticket Receipts				

Number of Cars	Average Charge (£)	Turnover	Gross Income (£)
1344	1.74	9	2,339
Source: NITHCo Ticket Receipts			

- 3.5 Given the current provision of 150 car park spaces at Central Station and the weekly turnover of each space (9), the potential exits for 1,350 cars to be parked per week (70,200 per year). Ticket analysis in Table 3.3 indicates that the average weekly number of cars parked is 1344, which is close to the total weekly car park capacity.
- 3.6 Discussions with NITHCo have shown that for the majority of time, and particularly at peak times, the car park is operating at close to or full capacity. In order to ensure that public transport users are able to park at a close proximity to Central Station, so as not to discourage the use of public transport, NITHCo have negotiated a reduced rate for train ticket holders in the Lanyon Place multi-storey car park adjacent to Central Station.

Informal Parking and Park & Ride Arrangements

- 3.7 In addition to the over spill arrangement at Lanyon Place multi-storey car park a level of informal parking and potential park and ride arrangements exist. The areas identified are:
- Lanyon Place;
 - Stewarts Road; and
 - in and around Maysfield Leisure Centre.
- 3.8 The Belfast Metropolitan Area Plan highlighted the significant problems that exist in the Belfast Metropolitan Area due to parking supply and parking activity. The Plan also made reference to the increasingly popular trend in the development of informal park and ride arrangements, which cause conflict between the needs of local residents businesses and commuters.

Traffic Management Arrangements

- 3.9 Current traffic management arrangements at Central Station are poor (with the exception of the drop off point outside the main station entrance). Problems include:
- No clear route for the entrance and exit of buses.
 - Inadequate provision for taxi's to enter and exit and to wait in anticipation of customers.
 - No clear route for the entrance and exit of cars.
 - No provision for customer pick up and set down close to Central Station and away from the movement of buses, taxis and cars.
- 3.10 All these factors combine to create a situation that is not conducive to the development of an integrated transportation system at Central Station. However the situation is not easily remedied due to lack of space.
- 3.11 Appendix 1 contains photographs of the current traffic management arrangements at Central Station. The photographs help to illustrate the problems detailed in paragraph 3.9 above where buses, taxis and cars are frequently jockeying for position and space.

FUTURE CAR PARK DEMAND

- 3.12 With the introduction of a new fleet of trains in 2004, Translink representatives have predicted an increase in the level of train patronage at Central Station. It is anticipated that train patronage will increase year on year, building up to a total of 50% over a ten-year period, 2004-2014 (Source RTS). Current analysis of car park ticket data and Central Station passenger flows indicates that 1.74% of station passenger's use the car park at Central Station.
- 3.13 Table 3.4 below sets out Central Station passenger flow taking into consideration the expected increase in train patronage from 2004. Using the fact that 1.74% of train passenger at Central Station make use of the car park the table presents:
- the number of train users parking in the Central Station car park;
 - the total car park use for each year (train passenger plus other users); and
 - the level of under supply given the existing car parking arrangements.

- 3.14 The table shows that the current yearly car parking capacity is not sufficient to facilitate the anticipated increase in rail patronage. This under supply of car park spaces at Central Station may act as a deterrent to the potential train users. Adequate park and ride provision at Central Station should be a priority in order to encourage the public to switch from private to public transport with the introduction of the new fleet in 2004.

CONCLUSION

- 3.15 A number of factors have been highlighted in the assessment that identify the need for the proposed development:
1. The current car park is operating at close to or full capacity – identified through ticket data analysis and the over spill arrangements at Lanyon Place mutli-storey.
 2. The level of informal parking that exists in and around Central Station.
 3. The poor traffic management arrangements lead to questions about road safety and accessibility and diminish Translinks' aim of creating an integrated transport system at Central Station.
 4. The inability of the car park to facilitate the forecast demand for train services at Central Station.

4 PROJECT OBJECTIVES

4.1 This section of the report sets out a number of objectives for the proposal based on the strategic context and the assessment of need described previously.

PROJECT OBJECTIVES

4.2 The economic appraisal seeks to review how the proposed development can meet the following objectives:

- Facilitate the promotion of public transport at Central Station.
- Contribute to the continuing economic regeneration of the Laganside area.
- Enhance traffic management in and around Central Station providing ease of movement for passenger pick-up and set-down.
- Enhance road safety.
- Improve access for passengers with a disability.

5 DEVELOPMENT OF OPTIONS

5.1 In conjunction with Translink and NITHCo we have developed a range of options to undergo analysis. A previous economic appraisal carried out in December 1998 outlined a long list of options that included a range of alternative options including:

- Variations in the cost of parking; and
- passing over of the existing land to allow for the building of a residential facility with an associated mutli-storey car park.

5.2 These Options have not been considered in this appraisal for the following reasons:

Variations in the cost of parking – Consultation with NITHCo has lead to this option being discarded. NITHCo feel that car parking charges are already set at a premium rate and any increase in the cost of parking would only have a negative effect on the attractiveness of the car park to Central Station users.

Passing over of the existing land to allow for the building of a residential facility with an associated mutli-storey car park. This Option has not been considered further as it does not allow Translink to deal in the short-term with the traffic management problems at Central Station. However given the operation of a new fleet of trains from 2004 and the expected increase in train patronage associated with this, Translink consider this development a possibility for the future.

5.3 In addition to the two options outlined above we also considered including an option that would restrict the number of staff and non-public transport users parking in the car park. This option did not undergo analysis for the following reasons:

- *Restricting staff parking.* While the fact was recognised that Translink employees are encouraged, where possible, to make use of public transport to travel to and from work, it was felt that this is not always a viable option. Translink representatives pointed out that many of the operational staff at Central Station start their journeys to and from work before and after public transport operating hours. Restricting staff parking would therefore mean that these staff might be forced to use the unofficial parking arrangements on Stewarts Road and in and around Maysfeild Leisure Centre. This raised two concerns:
 - The impact it would have on the relationship with the surrounding community, where unofficial car parking is already a problem.
 - The problems of personal and vehicle security, especially for staff working late shifts.

- *Restricting non-public transport users (general users).* NITHCo feel that it would be difficult to restrict general users as car parking charges are already set at a premium to discourage use by non-public transport users. Putting charges up further may be detrimental to train users, despite the 50% reduction offered.

5.4 The following short list of options has been devised to meet the current need of Translink and NITHCo.

OPTION 1 **Do Nothing. 150 space capacity.**

Option 2 Provision of 191 surface car parking spaces including eight disabled, 18 staff car parking spaces, a bus access road, bus and taxi parking and a drop off point. Appendix 2 contains an architects drawing of this option.

Option 3 Provision of 191 surface car parking spaces including eight disabled, a bus access road, bus and taxi parking and a drop off point. Appendix 2 contains an architects drawing of this option.

Option 4 Build a new mutli-storey car park with 256 spaces and an area for taxi parking.

5.5 The above options will undergo a rigorous analysis in the following chapters.

6 EVALUATION OF OPTIONS

- 6.1 This section of the report considers the financial and non-financial implications of the options.
- 6.2 The appraisal of each option will be conducted using the following key steps:
- The net present cost of each option - presenting capital costs, operating costs and revenues.
 - Non-monetary evaluation – the weighting and scoring of each option according to its significance to the project objectives.
 - Sensitivity analysis - considering variations in the key variables; capital costs, revenue etc.

GENERAL ASSUMPTIONS

- 6.3 NITHCo, Translink and Hastings and Baird Chartered Quantity Surveyors have provided advice on capital costs and operating cost estimates. We have undertaken no audit work in respect of these figures. Any uncertainties in the figures will be considered in the sensitivity analysis.
- 6.4 The monetary costs and benefits of each option are presented in 2002/03 prices and are discounted at a rate of 6% for 25 years. This discount factor is in line with the DFP recommended rate. For Option 4, where a capital build is proposed, the estimated life of the car park is fifty years. To reflect this we have included a residual value at the end of 25 years.
- 6.5 The appraisal does not take into consideration any of the tax implications that may be associated with the short-listed options. Tax will need to be considered within the appropriate budgets if a decision is taken to adopt any of the options.

CAPITAL COSTS

- 6.6 Capital costs comprise of construction costs, professional fees and equipment costs. The capital costs of each option are as follows. Appendix 3 contains a breakdown of the capital costs associated with each option.

	Option 1	Option 2	Option 3	Option 4
Construction Costs	-	459,348	354,800	976,000
Equipment Costs	-	100,000	100,000	100,000
Slewing of Track	-	15,000	-	-
Contingencies/fees	-	56,580	45,480	107,600
Total Capital Costs	-	622,380	500,280	1,183,600

6.7 Based on advice from professional advisors, the construction of the multi-storey car park will take in the region of 9 months. However our experience in new-build projects has lead us to account for delays in construction. To account for the possibility of a delay we have assumed that the capital costs of Option 4 will occur over a twelve month period, in year one of the project.

OPPORTUNITY COSTS

6.8 An opportunity cost has been included under each option to reflect the cost of the land at Central Station. This has been estimated at £580,000. The high cost of the land is a reflection of its location within a rapidly developing part of Belfast.

OPERATING COSTS

6.9 Operating costs are based on advice from NITHCo and from the 1998 appraisal (adapted to 2002/03 prices). Under options 1, 2 and 3 operating costs are the same and are based on the current operating costs of the car park e.g., labour and supervision. NITHCo estimated the weekly running costs at £750/week totalling £39,000 per annum.

6.10 The operating costs for Option 4 (256 space multi-storey) are based on the assumption that the car park would be manned at all times by at least one member of staff, who would receive adequate supervision. The operating costs also include allowance for overtime/sick leave and uniform costs. Other ancillary running costs have been included to cover the costs associated with stationery, tickets, maintenance, cleaning, electricity, replacement equipment and insurance.

6.11 Table 6.2 below sets out the operating costs for each option.

TABLE 6.2
OPERATING COSTS (£)

	Option 1	Option 2	Option 3	Option 4
Wages and Labour	29,700	29,700	29,700	40,347
Overtime	3,800	3,800	3,800	1,050
Sundries	1,500	1,500	1,500	16,905
Management Charges	4,000	4,000	4,000	13,125
Total Operating Costs	39,000	39,000	39,000	71,427

RESIDUAL VALUES

6.12 Residual values have been included to reflect the value of each development at the end of the 25-year analysis period. A number of residual values are taken into consideration:

- Land – the value of the land is not assumed to reduce over time. To reflect this the residual value is equal to the original opportunity cost.
- Each development (Options 2, 3 and 4) have an estimated life of 50 years. To reflect this the residual value at the end of the 25 years has been calculated at half of the new build capital costs.
- All equipment is expected to have a life of 25 years and therefore produces no residual value at the end of the analysis period.

REVENUE

6.13 In order to get an accurate representation of the profile of users, the level of use and car parking charges we undertook analysis of the existing car park ticket data. Ticket data was obtained on a weekly basis from 1st January 2002 to 30th June 2002 and on a daily basis for April, May and June 2002. The data provided us with a range of information covering:

- Average space turnover per week - 9.
- Average charge per car (yearly income/total car park users) - £1.74.
- Average charge per fee paying car (yearly income/ paying car park users) - £3.48.
- Current yearly income - £121,640.
- Percent of station passengers using the car park – 1.74%.
- Profile of users (general use, train users, staff and no charge):

USER TYPE	% OF TOTOTAL
General Use	17.53
Pubic Transport – Train Users	32.44
Staff	27.90
No Charge (return to car within 20 minutes)	22.13
Fee Paying (general + public transport)	49.97

- 6.14 We feel that the 32.44% public transport users is an underestimation of the number of Central Station passengers that make use of the car park. It is highly probable that the no charge users are connected with Central Station passengers, these car park users may make use of the car park to allow them to collect friends/family/business associates from the Station. In addition, a number of the general use car park users may be train passengers who have mislaid their tickets or have not been aware of the 50% reduction available to train ticket holders. It is therefore likely that around 60% of the car park users are either train users themselves or are assisting train passengers at Central Station.
- 6.15 In addition to car park ticket analysis the expected increase in train patronage, due to the upgrading of rolling stock, had an impact on revenue calculations. Discussions with the Station Manager at Central Station indicated that there are currently 25,000 passengers per week using Central Station (1,300,000/ year) and with the introduction of new rolling stock in 2004 it is anticipated that train patronage will increase year on year, building up to a total increase of 50% over a ten-year period, 2004-2014 (Source RTS).
- 6.16 The above information was used to provide estimated revenues for each option.

Revenue Calculations - Option 1

OPTION SUMMARY
Do Nothing - Current Car Parking remains - 150 spaces

- 6.17 Revenue for Option 1 is based on the current car park revenue. Given that the car park is currently operating to capacity, the expected increase in train patronage from 2004 onwards was assumed to have no impact on revenue calculations.

Revenue Calculations - Option 2

OPTION SUMMARY
Car parking provision of 191 spaces including 8 disabled. Additional staff parking provision for 18.

- 6.18 Option 2 revenue was calculated in a number of stages.
- 6.19 Firstly the impact of the increase in train patronage was taken into account, based on a 50% increase in patronage culminating over a 10 year period from 2004. With 1.74% of Central Station passengers using the car park the extra public transport car park users, over the current situation was calculated.

6.20 To ascertain the additional revenue resulting from the increased use of the car park by public transport patrons the average cost per fee-paying car was applied to each additional user, see Table 6.3 below. Column 3 presents the additional income resulting from the increased train patronage.

TABLE 6.3 IMPACT OF INCREASED TRAIN PATRONAGE OF CAR PARK USE AND REVENUE		
Year	Users	Income (based on average charge per fee paying car - £3.48)
1	0	0
2	0	0
3 (2004)	1133	3,942
4	2267	7,889
5	3400	11,832
6	4534	15,778
7	5667	19,721
8	6800	23,664
9	7934	27,610
10	9067	31,553
11	10201	35,499
12-25 per year	11334	39,442

6.21 In addition to the increased revenue resulting from the train patronage. We have assumed that at present there is a level of latent demand. This latent demand includes unofficial car parking facilities in a number of areas:

- In and around Maysfeild Leisure Centre.
- Lanyon Place.
- Stewarts Road.

6.22 In line with our assumption of existing latent demand a survey carried out in 1998 on behalf of Translink highlighted a high level of unofficial car parking around Central Station.

6.23 In order to calculate the revenue arising from the latent demand element. The following process was carried out. The example presents calculations carried out for Year 5 of Option 2.



Total Weekly Car Capacity – 1719		
Weekly Space Turnover	X	Total Spaces Available
9		191
Total Annual Car Capacity - 89,388 (1719X52)		
Utilised Spaces - 73,278		
Current Cars Parked	+	Train Patronage Increase
69,878		3,400
Unutilised Spaces – 16,110		
Total Annual Car Capacity	-	Utilised Spaces
89,388		73,278
ADDITIONAL REVENUE - £28,676		
Unutilised Spaces	X	Average Charge/Car
16,110		1.78

REVENUE CALCULATIONS - OPTION 3

OPTION SUMMARY
Car parking provision of 191 spaces including 8 disabled.

- 6.24 Under the revenue calculations for Option 3, the number of total car parking spaces has been reduced to 173 to reflect the removal of the 18 additional staff car parking spaces that had been provided under Option 2. It is assumed under Option 3 that staff will now make use of the car park reducing the number of spaces for potential fee paying customers.
- 6.25 The increase in revenue due to predicted increases in the level of train patronage was calculated on the same basis as Option 2 above. This analysis showed that when taking into consideration the increased train patronage from 2004 onwards the car park would reach its full capacity from year 12 onwards.
- 6.26 To calculate the extra income resulting from the attraction of the latent demand in years 1 through to 12 the following calculations were carried out. The following table presents an example of the calculations carried out for Year 5 of Option 3.



Total Weekly Car Capacity – 1557		
Weekly Space Turnover	X	Total Spaces Available
9		173
Total Annual Car Capacity - 80,964 (1557X52)		
Utilised Spaces - 73,278		
Current Cars Parked	+	Train Patronage Increase
69,878		3,400
Unutilised Spaces – 7,686		
Total Annual Car Capacity	-	Utilised Spaces
80,964		73,278
ADDITIONAL REVENUE - £13,681		
Unutilised Spaces	X	Average Charge/Car
7,686		1.78

REVENUE CALCULATIONS - OPTION 4

OPTION SUMMARY
New multi-storey with 256 and an area for taxi parking

- 6.27 Increased revenue resulting from anticipated increases in train patronage was calculated on the same basis as under Options 2 and 3.

- 6.28 In addition to the increased revenue resulting from the train patronage, the latent demand argument was also used under Option 4. Based on advice from NITHCo, the assumption has been applied that the car park will operate at 85% capacity. The table below sets out the calculation to derive the additional revenue from the latent demand.

Total Weekly 100% Car Capacity – 2304		
Total Weekly 85% Car Capacity – 1958		
Weekly Space Turnover	X	Total Spaces Available
9		256
Total Annual Car Capacity - 101,816(1958X52)		
Utilised Spaces - 73,278		
Current Cars Parked	+	Train Patronage Increase
69878		3,400
Unutilised Spaces – 28,578		
Total Annual Car Capacity	-	Utilised Spaces
101,856		73,278
ADDITIONAL REVENUE - £50,869		
Unutilised Spaces	X	Average Charge/Car
28,578		1.78

RESULTS OF NPV ANALYSIS

6.29 The results of the NPV analysis are summarised in Table 6.4 below and set out in detail in Appendix 4. Net present values have been calculated using a discount rate of 6% per annum.

Option Number	Net Present Value
1	644,386
2	695,353
3	614,013
4	-10,801

6.30 The result of the NPV analysis indicates that Option 2, (provision of 191 surface car parking spaces including eight disabled, 18 staff car parking spaces, a bus access road, bus and taxi parking and a drop off point), presents the highest net present value of £695,353. Option 1, the Do Nothing Option, results in the second highest net present value of £644,386. Option 4, the development of a new mutli-storey results is a net present cost of £10,801.

6.31 However in line with Green Book guidance, financial considerations are not the only factors that should be included in the economic appraisal of a development. It is also important to weigh up and consider the non-monetary costs and benefits. The following paragraphs set out the non-financial analysis of each option.

NON –MONETARY EVALUATION OF THE OPTIONS

6.32 This section of the report assesses each of the options in terms of their achievement of the objectives outlined in Section 4, using a weighting and scoring approach. The qualitative criteria against which each of the options will be assessed is as follows:

- Facilitate the promotion of public transport at Central Station.
- Contribute to the continuing economic regeneration of the Laganside area.
- Enhance traffic management in and around Central Station providing ease of movement for passenger pick-up and set-down.
- Enhance road safety.
- Improved access for passengers with a disability.

6.33 In consultation with Translink we have assigned a weight to each objective according to its significance to the proposed project.

Objective	Weighting
Enhance traffic management in and around Central Station	30
Facilitate the promotion of public transport at Central Station	20
Enhance Road Safety	20
Improved access for passengers with a disability	20
Contribute to the continuing economic regeneration of the Laganside area	10
Total	100

6.34 The scoring of each option reflects whether or not the option contributes to achieving the specific objective. In this case objectives are scored from 0 to 20 reflecting 'the extent to which they satisfy the objectives. The results of the weighting and scoring exercise are set out in the Table 6.6 below. The value of the results are to be read in comparing options against one another (and not in absolute values) in order to assess 'utility'.

**TABLE 6.6
OPTION SCORE**

OBJECTIVE	WEIGHT	OPTION			
		1	2	3	4
Enhance traffic management flows in and around Central Station	30	0	20	20	5
Facilitate the promotion of public transport at Central Station	20	5	15	10	20
Enhance Road Safety	20	0	20	20	5
Improved access for passengers with a disability	20	0	20	20	5
Contribute to the continuing economic regeneration of the Laganside area	10	0	17	17	20
Total weighted score for each option :		100	1870	1770	950
Rank		4	1	2	3

- 6.35 The results of the weighting and scoring exercise indicate that Option 2 (provision of 191 surface car parking spaces including eight disabled, 18 staff car parking spaces, a bus access road, bus and taxi parking and a drop off point) is the preferred option in non-monetary terms. Option 2 generates 1870 out of a maximum possible score of 2000. The closet alternative is Option 3 with a marginally lower impact on meeting the objectives with a score of 1770. Option 1, the 'Do Nothing' Option, is the least preferred option achieving a score only 5% of the maximum available.
- 6.36 The low non-monetary score of Option 1 is a reflection of its inability to contribute toward 4 of the 5 project objectives. As a result of this Option 1, the Do Nothing, is not considered to be an Option that Translink should pursue, to reflect this from this point on we will compare the performance of Options 2, 3 and 4 only, all of which make positive contributions towards Translink project objectives.
- 6.37 Option 4 receives a reduced score in 3 out of the 5 project objectives as the plans for the development of Option 4 do not include provision for any infrastructure adjustments, with the exception of taxi parking. Therefore option 4 produces only a slight improvement over the do nothing option, due to the development of an area for taxi parking.
- 6.38 As a result of the monetary and non monetary analysis carried out to date, Option 2, (provision of 191 surface car parking spaces including eight disabled, 18 staff car parking spaces, a bus access road, bus and taxi parking and a drop off point) is the preferred option. Before we undertake sensitivity analysis on the Options, an essential element of Green Book, we highlight the main advantages of Option 2 over the current situation at Central Station.

THE RELATIVE MERITS OF OPTION 2 OVER THE DO NOTHING OPTION

Enhanced Traffic Management Flow at Central Station

- 6.39 Option 2 provides a significant enhancement to traffic management at Central Station over the current situation where buses, taxis and cars jockey for position. The plans for development of Option 2 are set out in Appendix 2 and illustrate the substantial improvements made, they are as follows:
- **The construction of a bus access road** - the construction of this road acts as a significant improvement over the current situation. At present the space available for bus passenger drop off and pick up is minimal and located in an already congested location (beside the entrance of the car park). The photographs in Appendix 1 help to illustrate this point. The development of a bus access road provides a number of benefits over the current situation:
 - It provides a direct route for buses away from the area used by private cars.
 - It provides a drop off and pickup point for Central Station passengers close to the entrance.
 - **The construction of a taxi parking area**— the construction of a taxi area contributes further to traffic management at Central Station. Under the current situation taxis sit at the entrance of the car park, there is no room for them to turn and they frequently jockey for position with the other forms of transport in the area. The development of a taxi parking area under Option 2 provides an official and co-ordinated area for taxis that is easily accessible for both the taxis themselves and for Central Station passengers.
 - **The construction of a passenger drop off point** – the development of a passenger drop off point under Option 2 again represents a significant improvement over the current situation. At present there is no clearly defined area for pedestrian set down and pick up.
- 6.40 The combination of the inadequate bus access, a poorly defined taxi area and inadequate facilities for passenger set down and pick up has led to a poor traffic management situation, especially during peaks periods, and raises concerns around road safety and pedestrian access. The development of a bus access road, taxi area and a drop off point under Option 2 provides a significant enhancement to traffic management in the area by providing an integrated and efficient system for buses, taxis, cars and pedestrians.
- 6.41 In addition to the improvements outlined above, the development of Option 2 will also help to ease congestion around the car park at Central Station during peak periods. By improving traffic flow and access for all vehicles the development will significantly reduce congestion and waiting times for private cars, taxis and buses.

Provides a situation more conducive to road safety

- 6.42 As already discussed above the current situation and its lack of traffic management has led to a situation where public and private transport and pedestrians all use the same area. This lack of co-ordination is removed under Option 2. Option 2 provides a situation more conducive to road safety through the creation of designated access routes for each form of transport and adequate provision for the safe set down and pick up of Central Station passengers, both from private cars and buses.

Provision of an infrastructure that gives due regard to people with a disability

- 6.43 At present the situation at Central Station does not enable cars and buses to pull up alongside the side entrance of Central Station (this is not the case for the entrance located on the East Bridge Street). The combination of this and the fact that the only area provided for pedestrian access is shared with cars, buses and taxis presents inadequate provision for people with a disability and indeed pedestrians in general. The proposed developments under Option 2 remove both access concerns. Option 2 provides access that is close to the station entrance and away from the movement of vehicles.

Facilitate the promotion of public transport at Central Station

- 6.44 Given the inadequacies of the current traffic management and park and ride facilities at Central Station, the development of Option 2 will not only help to promote public transport through the significant traffic management improvements but will also provide adequate car parking facilities. Both these developments will help to encourage the use of the park and ride facilities at Central Station.
- 6.45 The proposed changes to the number of car parking spaces under Option 2 will also provide adequate car parking facilities to facilitate the expected increases in train patronage resulting from the introduction of new rolling stock in 2004.

RISK & UNCERTAINTY

- 6.46 **Say that option 1 has been discarded and why r&u only looks at 2,3 and 4**The Options are subject to a number of different risks and uncertainties that will have an impact on the NPV's presented in Table 6.4. In terms of the appraisal the most important risks to be considered are:
- **Capital cost risk:** the risk that the capital cost of each of the options will differ from that expected. We have tested the sensitivity of the appraisal to a 10% increase in capital costs.

- **Sensitivity of Revenue:** the impact of variations in revenue for each of the options will be considered in a number of ways:
 1. **Train patronage:** based on advice from the Station Manager we calculated a 50% increase in train patronage from 2004 over a 10-year period. We will test the sensitivity of each option to variations of a 10% and 20% decrease in train patronage.
 2. **Latent demand:** when calculating original NPV we included an element of latent demand that led to all available space capacity being filled under each option. Under the sensitivity analysis we will test the impact on each option of the removal of the latent demand element.
 3. **Train Patronage & Latent Demand:** in this instance the sensitivity analysis will include a combination of points 1 and 2 above.
 4. **Increase in Revenue:** we tested the impact on the NPV of Option 4 of 100% take up of car park capacity. We have not quantified an increase in revenues, under Options 2 and 3, as the car park would be operating at near or full capacity at all times.

6.47 Table 6.7 presents a summary of each form of sensitivity analysis.

	Options		
	2	3	4
Original NPV	695,353	614,013	-10,801
Capital Costs Up 10%	641,889	570,951	-111,091
Train Patronage 30% over 10 years	634,697	551,327	-75,457
Train Patronage 40% over 10 years	665,025	581,060	-41,129
Latent Demand	413,029	517,034	-517,135
Train Patronage 30% and Latent Demand	291,718	395,723	-638,446
Train Patronage 40% and Latent Demand	352,374	456,378	-577,790
Option 4 – 100% take up of car park capacity	-	-	346,934
Overall Rank	1	2	3

6.48 The sensitivity analysis has shown that the appraisal is not sensitive to changes in capital cost and train patronage, as under these scenarios Option 2 remains the preferred option. However when the sensitivity of the options to the removal of the latent demand element is tested, Option 3 is preferred. The reason for this is the higher capital costs associated with Option 2 over Option 3 and the extra car parking capacity of Option 2 that when the latent demand element is removed does not generate any additional income. However, it should be pointed out that it is very unlikely that the proposed development of Option 2 will not attract additional commuters to the car park.

- 6.49 In addition to this, Option 3 is also operating at full capacity after year 12 and will therefore not be able to accommodate the expected 50% increase in train patronage.
- 6.50 Under Option 4 the increase in revenues associated with the car park operating at 100% capacity provides a positive NPV of £346,943. This presents a significant increase over the original net present cost of £10,801. Despite this increase Option 2 remains the preferred option.
- 6.51 When considering the preferred option it is important to take into account all elements of option analysis. The following chapter provides a summary of the financial analysis, non-monetary analysis and sensitivity analysis.

7 CONCLUSIONS AND RECCOMENDATIONS

7.1 The results of all aspects of option appraisal are summarised in Table 7.1 below. Option 1 is omitted from this table due to its low non-monetary score.

	Option 2 191 spaces & 18 staff	Option 3 191 spaces	Option 4 Multi-storey
NPV	695,353	614,013	-10,801
Ranking	1	2	3
Non-Monetary Score	1,870	1,770	950
Ranking	1	2	3
Overall Ranking	1	2	3

7.2 The preferred option for improved traffic management at Central Station, in accordance with DFP guidelines, is the option with the highest NPV and/or non monetary score when compared against all other viable options. On the basis of the combined results we consider *Option 2, (provision of 191 surface car parking spaces including eight disabled, 18 staff car parking spaces, a bus access road, bus and taxi parking and a drop off point), to be the preferred option as it forms highest in the combination ranking.*

7.3 The development of Option 2 offers a range of advantages and possibilities to NITHCo and Translink, including:

- Adequate car parking facilities to accommodate the expected increase in train patronage from 2004 onwards.
- Significant enhancements to traffic management in and around Central Station through the development of a bus access road, taxi parking and a drop off point.
- Provides a situation that is more conducive to road safety over the present situation at Central Station where there are no clearly defined bus routes and set down and pick up points and space is at a minimum.
- The development of an infrastructure that recognises the importance of access for passengers with a disability.
- The possibility of increased car park revenues by providing adequate spaces to facilitate a future increase in demand.
- The promotion of public transport through the provision of adequate car parking and access that will help to encourage the use of park and ride facilities at Central Station.
- Reduces congestion and waiting times for private cars, taxis and buses.

8 POST PROJECT EVALUATION

8.1 HM Treasury Guidance emphasises the importance of establishing monitoring and post project evaluation procedures as part of the economic appraisal process. This entails two main elements:

- Project monitoring; and
- Post project evaluation.

PROJECT MONITORING

8.2 *Project monitoring* is carried out during the implementation of the project and concentrates on the efficiency and effectiveness of the project. The implementation of the project will require regular monitoring especially in relation to capital cost and operating costs. The baseline capital costs included in this appraisal should form the baseline criteria for monitoring at this stage.

POST PROJECT EVALUATION

8.3 *Post project evaluation* is carried out after the preferred option has been implemented. In this instance the idea is to examine how the project objectives have been achieved. The following steps provide a guideline to how this can be achieved.

- Define the objectives of the evaluation and what is to be measured/examined;
- determine a baseline that can be used to make comparisons i.e. the goals that are to be achieved;
- compare the achieved targets with the baseline;
- describe any significant differences, and provide explanations for failed targets and alternative solutions to achieve unobtained targets; and
- undergo remedial steps to achieve previous targets and/or maintain current standard.

8.4 This appraisal report has been structured in such a way that it facilitates monitoring and evaluation during the project implementation and operation phases. The project objectives have been clearly defined and can easily be measured.

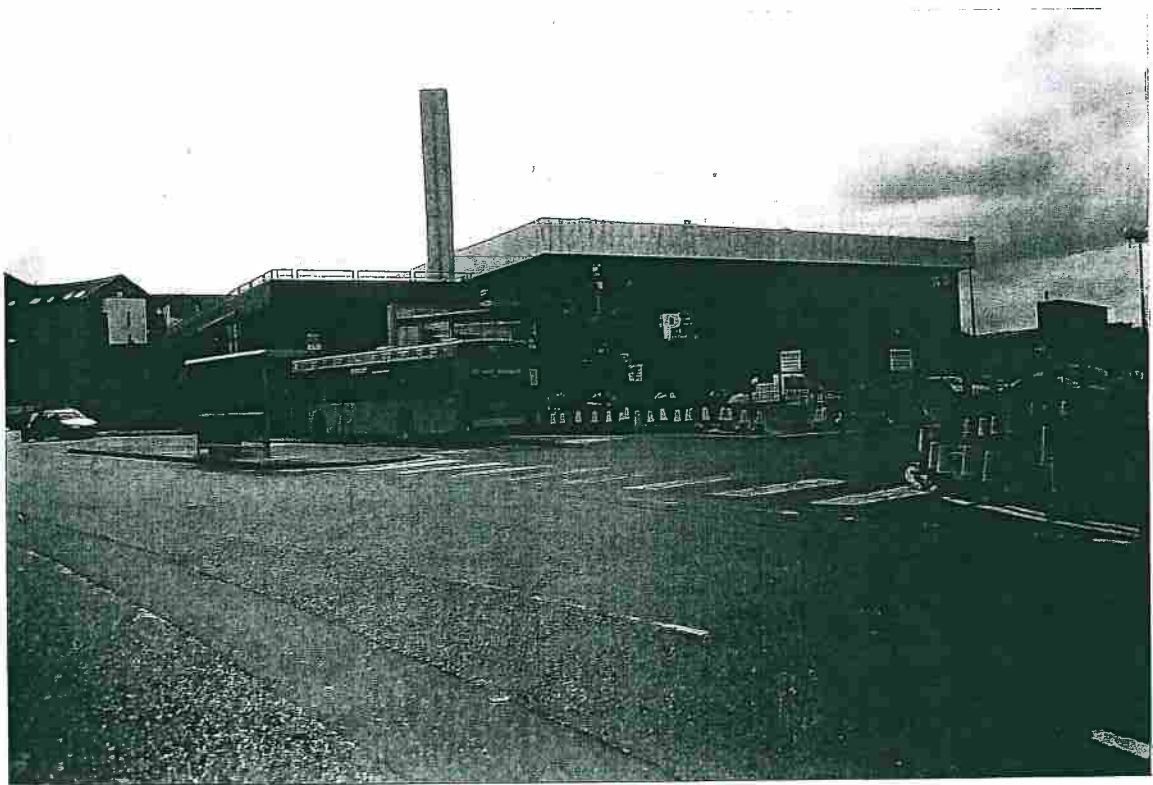
8.5 The key indicators that NITHCo and Translink should use to monitor the implementation and operation of the project include the following:



TABLE 8.1
MONITORING INDICATORS

Inputs	Outputs	Impacts (predominately qualitative)
<ol style="list-style-type: none"> 1. Capital Costs, ensure capital costs do not rise above those outlined by +/- 10% 2. Operating costs 3. Level of car park users (staff, public transport, etc) 4. Effective marketing to ensure passenger awareness of the enhanced traffic management and car parking facilities 5. Ensure construction period is strictly adhered to in order to keep disruption of public transport users to a minimum 	<ol style="list-style-type: none"> 1. An increase in the number of car parking spaces to 191, including provision of 8 disabled spaces 2. Provision of 18 staff car parking spaces 3. Development of a bus access route 4. Development of a taxi parking area 5. Development of a passenger set down and pick up area 	<ol style="list-style-type: none"> 1. Improved traffic flow 2. Improved accessibility 3. Increased public transport use of car park 4. Improved road safety considerations 5. Improved access for people with a disability

APPENDIX 1
PHOTOS







APPENDIX 2
PLANS

APPENDIX 3
CAPITAL COSTS

HASTINGS and BAIRD

147 University Street Belfast BT7 1HR Tel. (028) 9023 3022 Fax. (028) 9043 9626

Chartered Quantity Surveyors
R.J. Allister FRICS

Email. hastingsandbaird@btinternet.com

Misc/RJA/JA

26th June, 2002

T. McClintock,
Property Manager,
Translink,
3 Milewater Road,
Belfast,
BT3 9BG.

Dear Sirs,

Traffic Management, Central Station, Belfast

As requested we have prepared estimated costs for input to the proposed economic appraisal for the above and would report as follows:-

<u>Option 1</u>	Do nothing	£	<u>0.00</u>
<u>Option 2</u>	Provision of surface car parking for 183 spaces plus 8 disabled spaces, together with bus access road, bus & taxi parking and drop off point all as indicated on Design II Architects Drawing No. 01-503 F1-06 and staff car parking for 18	£	<u>565,800.00</u>
	a) Main car park, bus access road, bus & taxi parking	£	354,800.00
	Entrance equipment		<u>100,000.00</u>
		£	454,800.00
	b) Staff car park		96,000.00
	c) Allowance for 'in-house' slewing of tracks & protection to existing signalling cable ducting		<u>15,000.00</u>
		£	<u>565,800.00</u>
<u>Option 3</u>	New build multi-storey with 256 spaces as December 1998 Appraisal for NITHC with update of cost to current levels	£	<u>1,076,000.00</u>
	a) New build car park & taxi parking	£	976,000.00
	b) Entrance equipment		<u>100,000.00</u>
		£	<u>1,076,000.00</u>

Should you require any additional information please do not hesitate to contact the writer.

Yours faithfully,



for Hastings and Baird

APPENDIX 4
NPV ANALYSIS

DTZ Pleda Consulting

SCHEDULE 1

Cost Benefit Analysis

Option 1 - Do Nothing

Year	Capital cost £	Annual operating cost £	Annual benefit £	Net overall result £	Discounted result (annual) £	Discounted result (cum) £	Discount factors 6%
1	580,000	39,000	12,164	-497,360	469,208	469,208	0.9434
2	-	39,000	12,164	82,640	73,549	395,658	0.8900
3	-	39,000	12,164	82,640	69,386	326,272	0.8396
4	-	39,000	12,164	82,640	65,459	260,813	0.7921
5	-	39,000	12,164	82,640	61,753	199,060	0.7473
6	-	39,000	12,164	82,640	58,258	140,802	0.7050
7	-	39,000	12,164	82,640	54,960	85,842	0.6651
8	-	39,000	12,164	82,640	51,849	33,992	0.6274
9	-	39,000	12,164	82,640	48,914	14,922	0.5919
10	-	39,000	12,164	82,640	46,146	61,068	0.5584
11	-	39,000	12,164	82,640	43,534	104,601	0.5268
12	-	39,000	12,164	82,640	41,070	145,671	0.4970
13	-	39,000	12,164	82,640	38,745	184,416	0.4688
14	-	39,000	12,164	82,640	36,552	220,968	0.4423
15	-	39,000	12,164	82,640	34,483	255,450	0.4173
16	-	39,000	12,164	82,640	32,531	287,981	0.3936
17	-	39,000	12,164	82,640	30,690	318,671	0.3714
18	-	39,000	12,164	82,640	28,952	347,623	0.3503
19	-	39,000	12,164	82,640	27,314	374,937	0.3305
20	-	39,000	12,164	82,640	25,768	400,704	0.3118
21	-	39,000	12,164	82,640	24,309	425,013	0.2942
22	-	39,000	12,164	82,640	22,933	447,946	0.2775
23	-	39,000	12,164	82,640	21,635	469,581	0.2618
24	-	39,000	12,164	82,640	20,410	489,992	0.2470
25	-580,000.00	39,000	12,164	662,640	154,394	644,386	0.2330
Totals		975,000	3,041,000	2066,000	644,386	1,288,772	0.2198
NPV	644,386						

DTZ Pieda Consulting							
SCHEDULE 1							
Cost Benefit Analysis							
Option 2 - 183 spaces + 8 disabled + 18 staff							
Year	Capital cost £	Annual operating cost £	Annual benefit £	Net overall result £	Discounted result (annual) £	Discounted result (cum) £	Discount factors 6%
1	1,202,380	39,000	155587	-1085793	- 1,024,333	- 1,024,333	0.9434
2	-	39,000	155587	116587	103,762	- 920,570	0.8900
3	-	39,000	157559	118559	99,545	- 821,026	0.8396
4	-	39,000	159532	120532	95,472	- 725,553	0.7921
5	-	39,000	161504	122504	91,542	- 634,011	0.7473
6	-	39,000	163476	124476	87,751	- 546,261	0.7050
7	-	39,000	165448	126448	84,095	- 462,166	0.6651
8	-	39,000	167420	128420	80,572	- 381,593	0.6274
9	-	39,000	169392	130392	77,179	- 304,415	0.5919
10	-	39,000	171364	132364	73,912	- 230,503	0.5584
11	-	39,000	173336	134336	70,767	- 159,736	0.5268
12	-	39,000	175308	136308	67,741	- 91,995	0.4970
13	-	39,000	175308	136308	63,907	- 28,088	0.4688
14	-	39,000	175308	136308	60,289	32,201	0.4423
15	-	39,000	175308	136308	56,877	89,078	0.4173
16	-	39,000	175308	136308	53,657	142,735	0.3936
17	-	39,000	175308	136308	50,620	193,355	0.3714
18	-	39,000	175308	136308	47,755	241,110	0.3503
19	-	39,000	175308	136308	45,052	286,162	0.3305
20	-	39,000	175308	136308	42,502	328,663	0.3118
21	-	39,000	175308	136308	40,096	368,759	0.2942
22	-	39,000	175308	136308	37,826	406,586	0.2775
23	-	39,000	175308	136308	35,685	442,271	0.2618
24	-	39,000	175308	136308	33,665	475,936	0.2470
25	-805400.00	39,000	175308	941708	219,417	695,353	0.2330
Totals	396,980	975,000	4,254,525	2882545	695,353	1,390,706	0.2198
NPV	695,353						

DTZ Piedad Consulting							
SCHEDULE 1							
Cost Benefit Analysis							
Option 3 - 183 spcaes + 8 disabled							
Year	Capital cost £	Annual operating cost £	Annual benefit £	Net overall result £	Discounted result (annual) £	Discounted result (cum) £	Discount factors 6%
1	1,080,280	39,000	140930	-978350	- 922,972	- 922,972	0.9434
2	-	39,000	140930	101930	90,717	832,255	0.8900
3	-	39,000	142902	103902	87,238	745,017	0.8396
4	-	39,000	144874	105874	83,862	661,155	0.7921
5	-	39,000	146846	107846	80,589	580,567	0.7473
6	-	39,000	148818	109818	77,417	503,149	0.7050
7	-	39,000	150790	111790	74,347	428,802	0.6651
8	-	39,000	152762	113762	71,376	357,426	0.6274
9	-	39,000	154734	115734	68,503	288,923	0.5919
10	-	39,000	156706	117706	65,727	223,197	0.5584
11	-	39,000	158679	119679	63,045	160,152	0.5268
12	-	39,000	161066	122066	60,663	99,489	0.4970
13	-	39,000	161066	122066	57,229	42,260	0.4688
14	-	39,000	161066	122066	53,990	11,730	0.4423
15	-	39,000	161066	122066	50,934	62,664	0.4173
16	-	39,000	161066	122066	48,051	110,714	0.3936
17	-	39,000	161066	122066	45,331	156,045	0.3714
18	-	39,000	161066	122066	42,765	198,810	0.3503
19	-	39,000	161066	122066	40,344	239,154	0.3305
20	-	39,000	161066	122066	38,061	277,215	0.3118
21	-	39,000	161066	122066	35,906	313,121	0.2942
22	-	39,000	161066	122066	33,874	346,995	0.2775
23	-	39,000	161066	122066	31,956	378,952	0.2618
24	-	39,000	161066	122066	30,148	409,099	0.2470
25	-757400.00	39,000	161066	879466	204,914	614,013	0.2330
Totals	322,880	975,000	3,893,889	2596009	614,013	1,228,027	0.2198
NPV	614,013						

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DTZ Piedad Consulting

SCHEDULE 1

Cost Benefit Analysis

Option 4 - 256 space multi-storey

Year	Capital cost £	Annual operating cost £	Annual benefit £	Net overall result £	Discounted result (annual) £	Discounted result (cum) £	Discount factors 6%
1	1,763,600	-	0	-1763600	-1,663,774	-1,663,774	0.9434
2	-	71,427	177212	105785	94,148	-1,569,625	0.8900
3	-	71,427	179184	107757	90,475	-1,479,150	0.8396
4	-	71,427	181156	109729	86,916	-1,392,234	0.7921
5	-	71,427	183128	111701	83,470	-1,308,765	0.7473
6	-	71,427	185101	113674	80,135	-1,228,629	0.7050
7	-	71,427	187073	115646	76,911	-1,151,718	0.6651
8	-	71,427	189045	117618	73,795	-1,077,923	0.6274
9	-	71,427	191017	119590	70,785	-1,007,138	0.5919
10	-	71,427	192989	121562	67,880	-939,259	0.5584
11	-	71,427	194961	123534	65,076	-874,183	0.5268
12	-	71,427	196933	125506	62,373	-811,810	0.4970
13	-	71,427	196933	125506	58,842	-752,968	0.4688
14	-	71,427	196933	125506	55,512	-697,456	0.4423
15	-	71,427	196933	125506	52,369	-645,087	0.4173
16	-	71,427	196933	125506	49,405	-595,682	0.3936
17	-	71,427	196933	125506	46,609	-549,073	0.3714
18	-	71,427	196933	125506	43,970	-505,103	0.3503
19	-	71,427	196933	125506	41,481	-463,621	0.3305
20	-	71,427	196933	125506	39,133	-424,488	0.3118
21	-	71,427	196933	125506	36,918	-387,570	0.2942
22	-	71,427	196933	125506	34,829	-352,741	0.2775
23	-	71,427	196933	125506	32,857	-319,884	0.2618
24	-	71,427	196933	125506	30,997	-288,887	0.2470
25	-1068000.00	71,427	196933	1193506	278,085	-10,801	0.2330
Totals	695,600	1,714,248	4,617,931	2208083	10,801	21,603	0.2198
NPV	-	10,801					

Client: **N.I.R Co LTD**
 Project: **PROPOSED REFURBISHMENT OF CENTRAL STATION BELFAST**
 Title: **PROPOSED LAYOUT PUBLIC CAR PARK**
 Date: Mar 02 Scale: NTS Drawn by: Checked by:
 Project no: 01-503 Drawing no: FI-10 Rev. no:

