

The Norfolk County Council (Norwich Northern Distributor Road (A1067 to A47(T))) Order

Revised PT Option economic appraisal and breakdown of benefits

Planning Act 2008

Infrastructure Planning

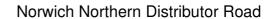
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1. Revised PT economic appraisal

1.1 Revisions to the appraisal

1.1.1 Problems were identified with the economic appraisal of the Public Transport Option reported in Appendix B of the Traffic and Economic Appraisal of NDR Alternatives (Document Ref. 5.12). These affect the public transport benefits reported. These problems were due to incorrect units used in transferring the bus journey times from the model to the appraisal and some public transport fares on links not being captured in the extraction for the appraisal. The economic appraisal has been rerun and the consequential amendments to Option B (Chapter 10) are shown below.

1.2 Appendix B – Public Transport (PT) Option

Methodology

No change

Description of the PT Option

No change

PT Option Costs

No change

Traffic Analysis Results

No change

Junction Analyses

No change

Safety Analysis Results

No change

Economic Analysis Results

1.2.1 Table 1 on the next page compares monetised costs and benefits including accident benefits for PT Option against the DCO scheme.



Table 1: Analysis of Monetised Costs and Benefits – PT Option

Item	Accidents Ir	Accidents Included (£000)	
	DCO	PT Option	
Accidents (not assessed by TUBA)*	41,219	-11,718	
Greenhouse Gases**	-22,756	-5,431	
Economic Efficiency: Consumer Users (Commuting)	51,164	24,729	
Economic Efficiency: Consumer Users (Other)	380,623	558,804	
Economic Efficiency: Business Users and Providers	267,797	-700,988	
Wider Public Finances (Indirect Taxation Revenues)	55,270	43,478	
Present Value of Benefits (PVB)	773,317	-91,126	
Broad Transport Budget Present Value of Costs (PVC)	185,542	26,611	
OVERALL IMPACTS			
Net Present Value (NPV)	587,775	-117,737	
Benefit to Cost Ratio (BCR)	4.168	-3.424	

Notes: All monetary values are expressed in 2010 prices discounted to 2010

- 1.2.2 The results show that the Present Value of Benefits (PVB) of the PT Option is estimated to be £-91m (inclusive of accident benefits). A major factor in this is the private sector costs which TUBA allocates as negative benefits rather than costs to public accounts as they are private sector funded. This includes the costs of the developer link roads and the additional bus services which amount to -£502m. The transport economic efficiency benefits comprise benefits of the extended link roads and the bus services with the effects of introducing city centre traffic management measures. Set against these PVB results is the £27m Present Value of Costs (PVC) to public accounts.
- 1.2.3 The Benefit Cost Ratio (BCR) of PT Option is -3.42 including accidents which does not represent good value for money.

^{*}Detailed summary results can be found in Section 6. The lower conservative accident benefit is included based upon the use of local accident data, as explained in section 7 of Reference Document 5.7

^{**}Greenhouse gas impacts were calculated using TUBA1.9.2 since there was a bug in TUBA 1.9.1



1.2.4 Table 2 below compares summary economic appraisal results including wider impacts and journey time reliability for PT Option against the DCO scheme.

Table 2: Summary of Economic Appraisal including Wider Benefits – PT Option

Item	Scenario also including WEBs and JTR (£000)		
	DCO	PT Option	
Present Value of Benefits (PVB)	989,063	-405,235	
Present Value of Costs (PVC)	185,542	26,611	
Net Present Value (NPV)	803,521	-431,846	
Benefit to Cost Ratio (BCR)	5.331	-15.23	

Notes: All monetary values are in £000's and expressed in 2010 prices discounted to 2010

- 1.2.5 The BCR of the PT Option deteriorates even further to -15.23 once journey time reliability benefits (£-30m) and wider economic benefits (£-284m) are included in the appraisal. These additional dis-benefits have been derived from the highway model and amount to £-314m (2010 prices discounted to 2010) and thus account for the impacts of the changes to the highway network, especially the city centre measures. The inclusion of these disbenefits result in a more negative BCR although it should be noted that the BCR is not a meaningful term when the benefits are negative.
- 1.2.6 The economic appraisal results highlight that the performance of the PT Option is especially poor and does not offer good value for money. It should be noted however that the appraisal has not attempted to assess any development benefits that may arise with the link roads.

Conclusion

1.2.7 PT Option (PT improvements and developer link roads) fails to reduce traffic on inappropriate routes and relieve the existing network. Whilst it includes the improvements to PT services and city centre traffic management measures the reductions of cross city centre traffic are much smaller compared with the DCO Scheme, especially for trips crossing the Outer Ring Road Cordon. The junction analyses show that the junctions between the developer link roads and North Walsham Road and Wroxham Road would operate substantially over their theoretical capacity with long queues and delays, with delays of over 9 minutes in the 2032 AM peak and 4 minutes in the 2032 PM peak. On these grounds the developer link roads would not operate satisfactorily and they would cause particularly severe difficulties in implementing the proposed shared use high street-type design envisaged in the development proposals. The delays would also mean that the PT Option would fail to meet the improved transport connectivity objective for the Scheme. The economic



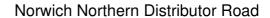
appraisal results highlight that the performance of the PT Option is especially poor and does not offer good value for money. The calculated BCR is -3.42 with accidents included and even worse with JTR and WEBs giving -15.23, although the BCR is not a meaningful term when the benefits are negative.

2. Further breakdown of PT Option benefits

2.1.1 The breakdown of benefits are extracted from the Transport Economic Efficiency (TEE) table of TUBA and reported below in Table 3. This shows the benefits split between road and bus modes and also shows the private sector provider impacts separately from the business (user) impacts which are combined under Economic Efficiency: Business Users and Providers in the TUBA table Analysis of Monetised Costs and Benefits (Table 1).

Table 3: Transport Economic Efficiency (TEE)

Item	Benefit (£000s)				
	All Modes		Road		Bus
Consumer - Commuting user benefits	1				
Travel Time	38,170		-20,293		58,463
Vehicle operating costs	-11,863		-11,863		0
User charges	-1,579		-626		-953
During Construction & Maintenance	0		0		0
NET CONSUMER - COMMUTING BENEFITS	24,729		-32,782		57,510
Consumer - Other user benefits	All Modes		Road		Bus
Travel Time	429,468		-93,104		522,572
Vehicle operating costs	-20,270		-20,270		0
User charges	149,606		164,731		-15,126
During Construction & Maintenance	0		0		0
NET CONSUMER - OTHER BENEFITS	558,804		51,357		507,446
Business Impacts	All Modes	Road Personal		Bus Personal	Bus Freight
Travel Time	116,010	-102,121	-48,435	266,567	0
Vehicle operating costs	-17,001	-6,197	-10,804	0	0
User charges	2,392	2,733	0	-341	0
During Construction & Maintenance	0	0	0	0	0
Sub Total	101,401	-105,585	-59,240	266,225	0
Private Sector Provider Impacts					
Revenue	-300,357		-94,915	-205,442	
Operating costs	0		0	0	
Investment costs	-502,032		-20,355	-481,677	





Item	Benefit (£000s)			
	All Modes	Road		Bus
Grant/subsidy	0	0	0	
Sub Total	-802,389	-115,270	-687,119	
Other business Impacts				
Developer contributions	0	0		0
NET BUSINESS IMPACT	-700,988			
TOTAL				
Present Value of Transport Economic Efficiency Benefits (TEE)	-117,455			

Notes: All monetary values are in £000's and expressed in 2010 prices discounted to 2010



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