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

NDR Economic Appraisal based on WebTAG October 2014

Planning Act 2008

Infrastructure Planning

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1. NDR economic appraisal based on WebTAG 2014

1.1.1 The Department for Transport has published updates to the WebTAG guidance in October 2014 that are due to become definite in November 2014. The main changes that will have an impact on NDR are updates to WebTAG data book. These changes are listed below.

- Updates to fuel prices and fuel consumption equation parameters,
- Greenhouse gas emission factors and carbon values,
- Annual parameters update (e.g. value of time growth) and
- Updates to accident and casualty values

1.1.2 The Transport modelling and appraisal undertaken for the DCO submission was developed in accordance with the ten definitive WebTAG guidance dated August 2012. However there have been a number of revisions to the guidance and parameter values since submission:

- January 2014: revised WebTAG guidance became definitive at the end of January 2014 after the Scheme DCO submission. This included a number of changes that were published in Draft Units in October 2013. The new WebTAG guidance was reorganised and released on a new website. It described the new guidance as being 'retrenched' which it is understood means it is simplified. Sometimes the new guidance is referred to as WebTAG2.
- May 2014 revised values including to fuel prices, greenhouse gas emission factors and carbon values and value of time growth.
- November 2014 (draft published October 2014): changes to guidance and data book values.

1.1.3 An analysis of the Impact of WebTAG January 2014 on the base model validation and forecasts was presented in Section 5.1 of Document Ref

5.11. It was concluded that changes overall did not change base model validation and thus similar forecast traffic flows would be produced.

1.1.4 The revised May 2014 values were used in a revised economic appraisal that was reported in NCC/EX/5.

1.1.5 The revised values published in October 2014 and to be finalised in November 2014 will be incorporated in a new version of DfT’s economic assessment programme TUBA. To assess the implications of these new values a further sensitivity test has been undertaken, which is reported below. The purpose of this sensitivity test is to evaluate the impact of the latest November 2014 values on the NDR DCO submission economic appraisal results (as reported in Section 5 of Document Ref 5.7) in advance of the new version of TUBA being released. Given the timetable for the completion of the DCO Examination, it is not considered necessary to await the new version of TUBA before undertaking this sensitivity test. Table 1 below summarises the appraisal required.

Table 1: Summary of Requirements – WebTAG November 2014

Scenario	Modelling required	Appraisal carried out
Existing DCO scheme with WebTAG May/November 2014 revised parameters for economic appraisal.	No	Economic and safety appraisal with revised parameters.

1.1.6 Accident benefits were calculated using the same approach reported in Document Ref 5.7. The latest November 2014 WebTAG update contains changes to default accident rates, accident proportions and casualty rates. Changes to accident proportions and casualty rates require an updated version of COBA (i.e. these can’t be changed within inputs). Therefore for the purpose of this sensitivity test only parameters related to default accident rates were changes. Table 2 below summarises accident benefits using local accident rates using COBA 11 that corresponds to January 2014 WebTAG.

Table 2: Accident Benefits of WebTAG November 2014 Sensitivity Test

Item		Scenario		
		DCO	WebTAG Jan/May 2014*	WebTAG Nov 2014
Do Minimum				
Number of PIAs		70,984	70,984	70,653
Casualties	Fatal	1,890	1,890	1,887
	Serious	12,597	12,597	12,559
	Slight	91,490	91,490	91,070
Accident Costs		5,999,332	4,833,201	4,740,512
Do Something				
Number of PIAs		69,944	69,944	69,483
Casualties	Fatal	1,898	1,898	1,893
	Serious	12,488	12,488	12,433
	Slight	90,226	90,226	89,601
Accident Costs		5,958,113	4,806,333	4,707,774
Accident Benefits				
Number of PIA savings		1,041	1,041	1,169
Casualties	Fatal	-7	-7	-6
	Serious	109	109	126
	Slight	1,263	1,263	1,469
Accident Savings		41,219	26,868	32,738

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

* There are no differences in accident parameters in January and May 2014 WebTAG updates

1.1.7 Section 5.2 of Document Ref 5.11 showed a reduction in accident benefits compared to the DCO submission due to the reductions in accident casualty costs in WebTAG January/May 2014. There are no changes to accident casualty costs in WebTAG November 2014. However default accident rates are much lower in the latest WebTAG. Therefore the number of PIAs and casualties are lower than January/May 2014 WebTAG, but it should be noted that the numbers of accident saved with the scheme increases due to the lower rates on the new road whilst existing links would rely on rates derived from local accident data.

1.1.8 The economic appraisal has been reworked using the revised data book values to be made definitive in November 2014. Table 3 below compares monetised costs and benefits including accident benefits for this sensitivity test against the DCO and also with January and May 2014 WebTAG sensitivity tests.

Table 3: Analysis of Monetised Costs and Benefits – WebTAG November 2014

Item	Accidents Included (£000)			
	DCO	WebTAG Jan 2014	WebTAG May 2014	WebTAG Nov 2014
Accidents (not assessed by TUBA)	41,219	26,868	26,868	32,738
Greenhouse Gases*	-22,756	-23,153	-22,910	-25,436
Economic Efficiency: Consumer Users (Commuting)	51,164	63,007	65,403	65,578
Economic Efficiency: Consumer Users (Other)	380,623	438,270	450,993	449,178
Economic Efficiency: Business Users and Providers	267,797	220,621	232,857	231,003
Wider Public Finances (Indirect Taxation Revenues)	55,270	65,187	61,476	68,177
Present Value of Benefits (PVB)	773,317	790,800	814,687	821,238
Broad Transport Budget Present Value of Costs (PVC)**	185,542	185,542	192,606	192,606
OVERALL IMPACTS				
Net Present Value (NPV)	587,775	605,258	622,081	628,632
Benefit to Cost Ratio (BCR)	4.168	4.262	4.230	4.264

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

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

**The change in PVC is due to the use of GDP deflator in latest TUBA instead of RPI

1.1.9 The results show that the Present Value of Benefits (PVB) of this sensitivity test is estimated to be £821m (inclusive of accident benefits). Set against these PVB results is the £193m Present Value Costs (PVC) to public accounts.

1.1.10 The Benefits Cost Ratio (BCR) of this scenario is 4.26 including accidents which represent a Very High Value for money.

1.1.11 Table 4 below compares summary economic appraisal results including wider impacts and journey time reliability for this sensitivity test against the DCO scheme and also with Jan/ May 2014 WebTAG sensitivity test.

Table 4: Summary of Economic Appraisal including Wider Benefits – WebTAG October 2014

Item	Scenario also including WEBs and JTR (£000)			
	DCO	WebTAG Jan 2014	WebTAG May 2014	WebTAG Oct 2014
Present Value of Benefits (PVB)	989,063	1,004,921	1,029,480	1,036,570
Present Value of Costs (PVC)	185,542	185,542	192,606	192,606
Net Present Value (NPV)	803,521	819,379	836,874	843,964
Benefit to Cost Ratio (BCR)	5.331	5.416	5.345	5.382

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

1.1.12 The BCR for this sensitivity test is improved further to 5.38 once journey time reliability benefits (£25m) and wider economic benefits (£191m) are included in the appraisal. These additional benefits amount to £215m (2010 prices discounted to 2010). The inclusion of these benefits increases the BCR to a higher level within the Very High value for money category.

Conclusion

1.1.13 The Department for Transport have published updates to the WebTAG guidance and data book values for release in January, May and November 2014. The impact of these updates on the NDR DCO submission economic appraisal results were appraised. The results indicate that DCO BCR including accident benefits changed from 4.17 when the submission was made to 4.26 with the latest guidance and values. With journey time benefits and wider economic benefits the BCR changed from 5.33 at submissions to 5.38 with the latest guidance and values. The latest changes to the guidance and values do therefore do not significantly change the economic appraisal results, and they produce slightly higher BCRs which still represent Very High value for money.