

## **Appendix Three**

### **Buckinghamshire Modified Permit Scheme Cost Benefit Analysis Summary**

**November 2019**

#### **Costs**

The costs associated with the scheme include the following capital, operating and revenue expenditure in 2010 prices in accordance with the Department for Transport's WebTAG.

- Total Capital Expenditure **£320,000**
- Year 1 Operating Expenditure **£1,099,438**
- Annual Operating Expenditure (After Year 1) **£1,084,313**
- Year 1 Revenue Expenditure **£1,254,556**
- Annual Revenue Expenditure (After Year 1) **£1,251,881**

Buckinghamshire Council will incur the capital and operating expenditure with the capital cost for the first year only. Revenue is derived from the Permit fees charged to Utility companies.

#### **Business Case**

The development of a detailed Cost Benefit Analysis (CBA) is a requirement for making a Permit Scheme Local Order.

The analysis assesses the impact of Permits over the full range of required social and economic variables that have been specifically agreed in consultation with the UK Department for Transport (DfT).

An effective CBA is a mechanism to assess the benefits and costs of an investment both in terms of its overall viability and in relation to other options.

The legislative guidance used for the study is contained within:

- Statutory Guidance for Highway Authority Permit Schemes October 2015
- The Traffic Management Permit Scheme (England) (Amendment) Regulations 2015
- WebTAG user and provider impacts (TAG Unit A1-3 May 2019).
- Department of Transport's (DfT) Halcrow study "Assessing the Extent of Streetworks and Monitoring Effectiveness of Section 74 in Reducing Disruption Volume 3 – Estimation of Cost of the Delay from Utilities' Street Works, June 2004"
- Chapter 8 of the Traffic Signs Manual DfT 2009
- Quadro User Manual October 2018
- DfT Advice Note for Local Highway Authorities Developing New or Varying Existing Permit Schemes June 2016

QUADRO software is able to appraise individual works that are planned in the future on different types of road by modelling the delay experienced by road users, quantify the delay and estimate the cost of the delay.

The software is able to calculate and convert delays in to monetary figures as detailed in WebTAG Unit A1-3. with assumptions in regard to valuation of time, operating costs and accidents.

Users are required to input base link specific details including network classification, traffic flows, road type characteristics and any diversion routes. Street work details including site length, works type such as lane closures and shuttle working. The latest version released in 18<sup>th</sup> October 2018 Version 4 release 16 was used for the CBA. The QUADRO Manual was included in the Design Manual for Roads and Bridges Volume 14 Economic Assessment of Road Maintenance DfT 2002.

The central assumption of the analysis is that the introduction of the Permit Scheme will cause a 5% fall in Permit applications, and have a commensurate effect on roadwork activity and all associated aspects of the analysis. This 5% reduction is known as the Permit Scheme reduction factor.

The key general economic assumptions included with the CBA are as follows:

- The scheme is anticipated to open in Early 2020
- A **25** year appraisal length is assumed in accordance with DfT guidance
- A Discount Rate of **3.5%**, Combined Risk and Optimism Bias Factor **38%** in accordance with DfT guidance

### Summary of Appraisal

The CBA determined the following key impacts of the Buckinghamshire Permit Scheme:

- The total number of Noticed works impacted by the scheme amounted to **18,459** of various length and duration.
- The annual delay cost for Utility works undertaken in Buckinghamshire was **£1.065b** including a **20%** uplift in time reliability costs for urban roads.
- The number of Permits including an allowance of **20%** for phased works and reduction factor of **5%** amounted to **20,561**.
- The Permit scheme benefit at 5% is **£1.332b** with costs of **£22.2m** and a Net Present Value (NPV) of **£1.309b** giving a Benefit:Cost Ratio of **59.98:1**. A breakdown of benefits is shown on Table 1 below.
- A summary of the CBA consistent with WebTAG is shown on Table 2 below.

**Table 1 Benefits Summary Values and Percentage 5% reduction in works impact 25 Years**

Benefits	Value	Percentage of Total Benefit
Consumer Travel Time	£723,653,306	54%
Consumer Vehicle Operating Costs	£105,017,401	8%
Business Travel Time	£481,884,780	36%
Business Vehicle Operating Costs	£71,775,863	5%
Private Sector Provider Operating Costs	£9,495,585	1%
Reduction in Fuel Revenue	£59,865,469	4%
Greenhouse Gases	-£468,723	0%
Accidents	£89,940	0%
<b>Net Present Value of Benefits</b>	<b>£1,331,582,682</b>	

**Table 2: Summary of CBA**

**Analysis of Monetised Costs and Benefits (5% Work Saving) 25 Years**

Noise	-	-12
Local Air Quality	-	-13
Greenhouse Gases	-468,723	-14
Journey Quality	-	-15
Physical Activity	-	-16
Accidents	89,940	-17
Economic Efficiency: Consumer Users (Commuting)	828,670,707	(1a)
Economic Efficiency: Consumer Users (Other)	-	(1b)
Economic Efficiency: Business Users and Providers	563,156,227	-5
Wider Public Finances (Indirect Taxation Revenues)	59,865,469	- (11) - sign changed from PA table, as PA table represents costs, not benefits
Present Value of Benefits (see notes) (PVB)	1,331,582,682	(PVB) = (12) + (13) + (14) + (15) + (16) + (17) + (1a) + (1b) + (5) - (11)
Broad Transport Budget	22,200,636	-10
Present Value of Costs (see notes) (PVC)	22,200,636	(PVC) = (10)
<b>OVERALL IMPACTS</b>		
<b>Net Present Value (NPV)</b>	1,309,382,046	NPV=PVB-PVC
<b>Benefit to Cost Ratio (BCR)</b>	59.98	BCR=PVB/PVC

Note : This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions. All values in £s.