

# Technical note

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<b>Subject:</b>	A332 Accident Assessment	<b>From:</b>	Zaved Hasan
<b>Date:</b>	Nov 4, 2014	<b>cc:</b>	

## 1. Introduction

Slough Borough Council (SBC) has developed A332 Route Enhancement Package as part of its Major Scheme Business Case Submission to secure funding. This scheme aims to improve traffic flow on the north-south A332 route between the M4 and the M40 and to improve access to Slough town centre.

The scheme essentially involves widening junction approaches and improving pedestrian crossing facilities on A332 in between A4 and A332/B3022 Junction.

Accidents are classified into two categories:

- Personal injury accidents
- Damage only accidents

Costs involved in damage only accidents include administration, damage to property and police costs, while personal injury accidents also include the direct social cost of the injury or injuries, any resulting loss of productivity and healthcare costs.

## 2. Methodology

### 2.1. Personal Injury Accidents

The impact of the scheme on road safety has been assessed using the Department for Transport (DfT)'s COBALT 2013.2 software, with the 2014.2 version of the parameters file. This software package makes use of traffic flows and speeds, along with network infrastructure specifications and recorded accident data to determine the frequency and severity of personal injury accidents (PIAs) on links and at junctions. In this case combined link and junction accident rates have been applied, rather than making separate assessments by type.

#### 2.1.1. Local Accident Data

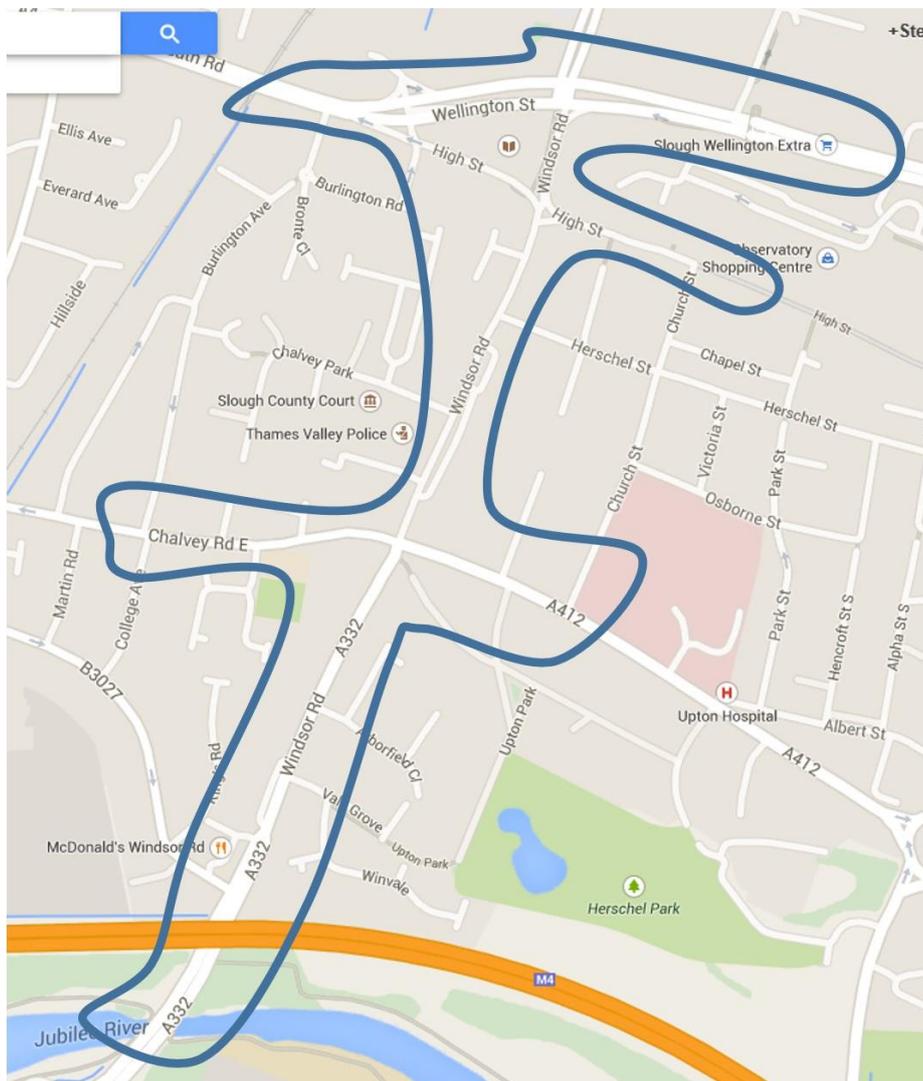
Accident records across the Slough area between 2009 and 2014 were examined, considering all fatal, serious and slight injuries and allocating each to its relevant link and junction in the highway model. This data showed a total of 95 slight injuries, 18 serious injuries and no fatality in the five year period.

#### 2.1.2. Accident Modelling

This COBALT assessment has been based on details extracted from the SATURN highway model over the extent of the agreed area as shown below.

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Figure 1. Accident Assessment Area



SATURN link specifications relate closely to those used by COBALT, while junction definitions are less compatible. This is the reason for the use of combined link and junction accident rates. These assessments have been carried out for the Do-Minimum and Do-Something scenarios to evaluate the level of safety improvements.

A final adjustment was made to the COBALT output results to incorporate the effect of a change to model made after the completion of COBALT analysis. Only a small number of links were affected, so the accident analysis was updated by recalculating the accident numbers on these links, based on a revision to the level of flow.

The figures indicate the numbers and values of accidents over the 60 year appraisal period, based on modelled years of 2017 and 2027 with interpolation and extrapolation used to determine values in the remaining years.

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## 3. Results

The results are given for injury accidents, damage only accidents and then combined to give an overall monetary benefit for accidents.

### 3.1. Injury accidents

#### Economic Summary – Injury accidents

Total Without-Scheme Accident Costs = £63,654,200

Total With-Scheme Accident Costs = £64,337,840

Total Accident Benefits Saved by Scheme = -£683

*Costs and benefits discounted to 2010*

The accident numbers which make up these costs are as follows:

- Total without-scheme injury accidents = 1,287
- Total with-scheme injury accidents = 1,293
- Total reduction in injury accidents from the scheme = -6

These accidents result in the injuries as shown in Table 1.

**Table 1. Casualty Summary**

	Fatal	Serious	Slight
Total Without-Scheme Casualties	7.4	119.1	1,678.4
Total With-Scheme Casualties	7.5	120.5	1,697.7
Total Casualties Saved by Scheme	-0.1	-1.4	-19.3

### 3.2. Damage only accidents

#### Economic Summary – Damage only accident

Total without-scheme damage only accident costs = £35,975,670

Total with-scheme damage only accident costs = £36,159,770

Total damage only accident benefits from the scheme = -£184,100

*Costs and benefits discounted to 2010*

### 3.3. Total economic impact

The injury and damage only accident costs combined give the total accident benefits in monetary terms.

#### Economic Summary – All accidents

Total without-scheme accident costs = £99,629,870

Total with-scheme accident costs = £100,114,610

Total accident benefits from the scheme = **-£484,740**

*Costs and benefits discounted to 2010*