# Heart of the South West Local Transport Board

## Scheme Prioritisation Proforma

**Option Name: M5 Junction 25**

**Date:** 25th April 2013

**Capital Cost:** £9.24m (Q1 2015)

**Funding Proposal:** £8.32m (Q1 2015 prices)

**Delivery Programme:**

| Project Stage | Status |
|---|---|
| Project Initiation | Complete |
| Feasibility | Complete |
| Option Selection | Partial / Year 1 |
| Preliminary/Outline Design | Year 1 |
| Planning Permission | N/A |
| Land Assembly | Year 1 / 2 |
| Detailed Design | Year 1 / 2 |
| Contractor Procurement | Year 2 / 3 |
| Construction | Year 3 |
| Monitoring and Evaluation | Year 4 |

**Description:**
Junction 25 of the M5 is a key part of the regional transport network, linking the M5 to the A303. Locally the junction serves as the main access point to Taunton and is key to attracting employment and delivering housing in the town.

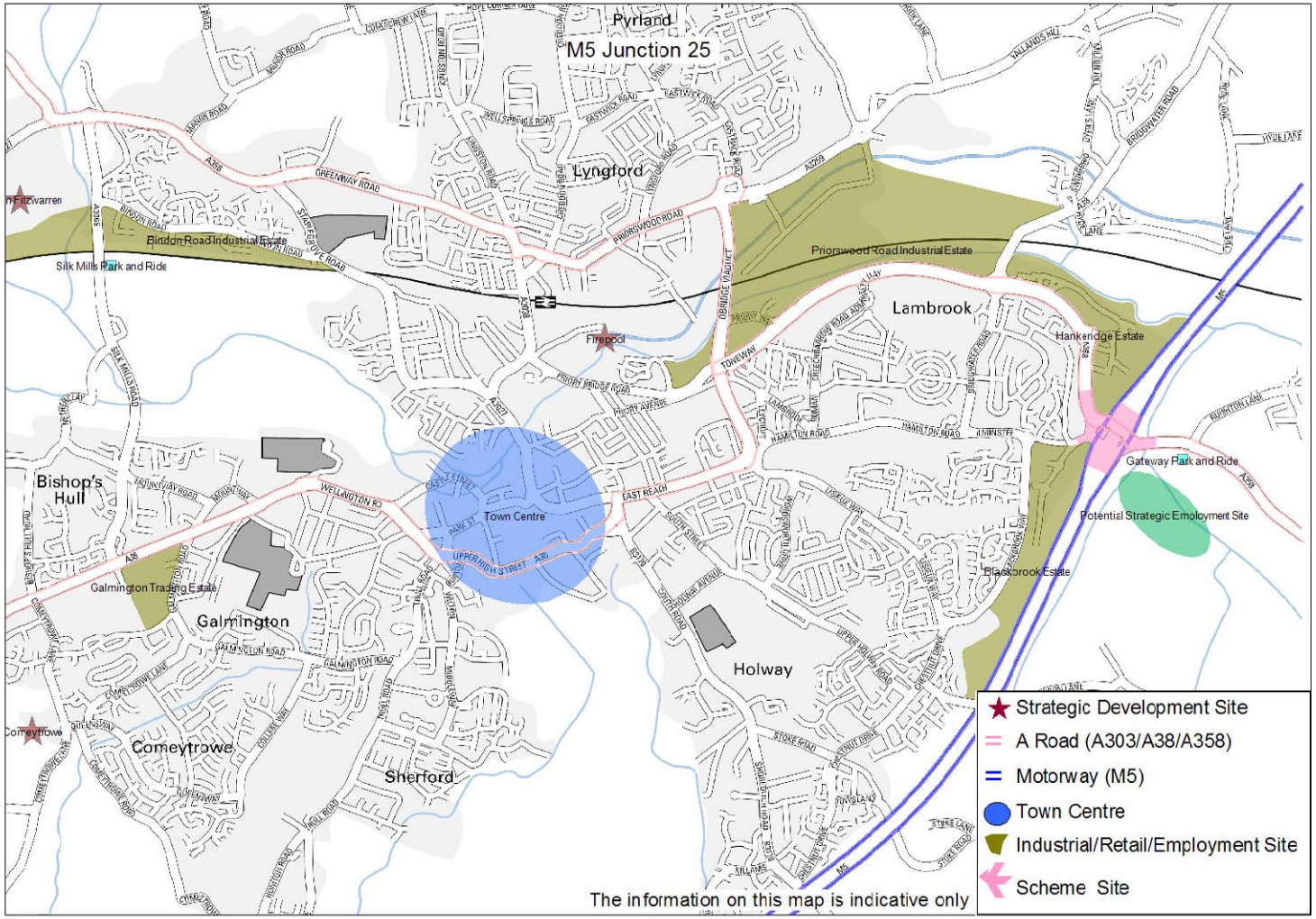
The scheme will provide more capacity at the junction, to improve journey times and reliability. It includes improvements to the junction, signalisation and signage.

**Documents:**

All references along with a larger plan can be accessed in Appendix 1 (CTRL + click)

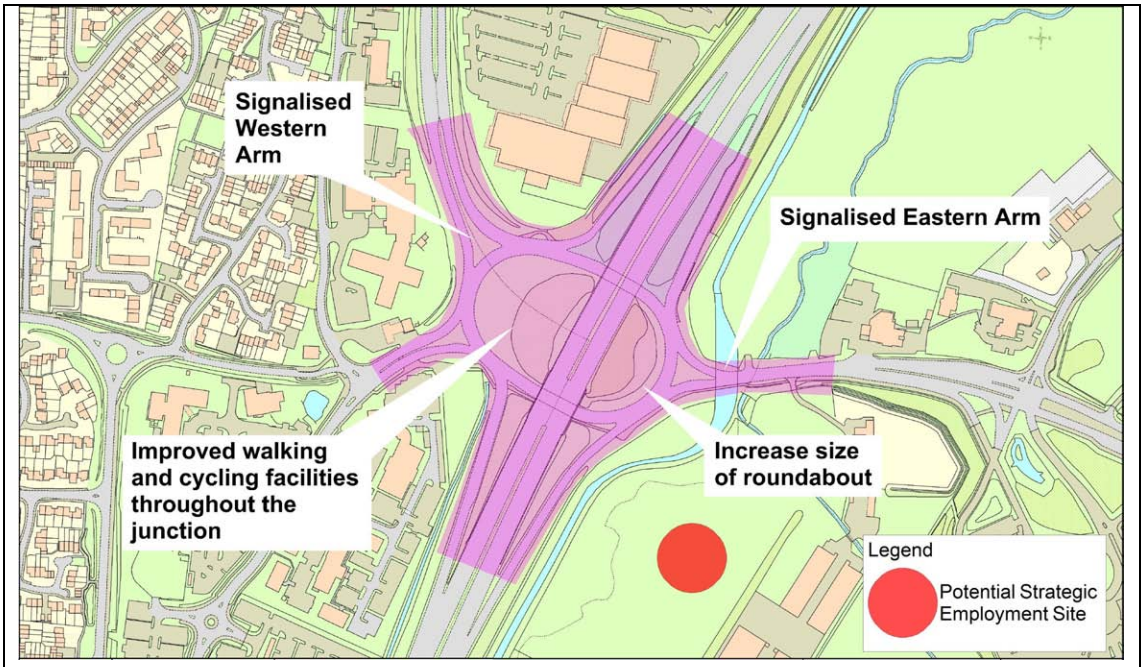
Annex A: Programme and Risk Table
Annex B: Modelling Technical Note

**Location:**


Pyrland
M5 Junction 25
Lyngford
Fitzwarren
Bindon Road Industrial Estate
Silk Mills Park and Ride
Priorswood Road Industrial Estate
Lambrook
Firepool
Hankeridge Estate
Gateway Park and Ride
Bishop's Hull
Town Centre
Potential Strategic Employment Site
Blackbrook Estate
Galmington Trading Estate
Galmington
Holway
Comeytrowe
Sherford
The information on this map is indicative only
Strategic Development Site
A Road (A303/A38/A358)
Motorway (M5)
Town Centre
Industrial/Retail/Employment Site
Scheme Site

# Strategic

| Identified problems and objectives |
| --- |
| Junction 25 of the M5 is not only a key access point to Taunton but also provides a link to the second strategic route of the A303 via the A358, making it a key access point within southwest England. The junction experiences congestion in both peak hours, with queues frequently extending along the A358 and occasionally backed up onto the mainline M5.<br><br>There are 2 employment sites (Blackbrook and Hankridge) located close to the junction and the proximity of the M5 makes them attractive to businesses to locate there. An additional development, generating up to 5000 jobs, to the east of the junction at Henlade may be identified as part of Taunton Deane Borough Council's Site Allocation Supplementary Planning Document for delivery in the next 15 years. In addition, Taunton is also forecast to deliver 13,000 dwellings as part of Taunton Deane's Core Strategy, which will also place considerable pressure on the junction.<br><br>The scheme will tie in with the delivery of the Taunton Northern Inner Distributor Road and mixed use Firepool development, including upgrades and improvements to Taunton Railway Station and an employment site to the east at Henlade.<br><br>Therefore, it is fundamental that Junction 25 is upgraded to cope with this projected increase in demand. Previous studies have considered the potential for a new junction on the M5, to the north of Junction 25, but SCC are being realistic and pragmatic by not pushing forward this option.<br><br>The scheme involves full signalisation and widening of the circulatory carriageway, improvement to signage on approach to the junction, widening of the eastern exit from the junction, improved pedestrian and cycling facilities. This scheme aims to improve journey times, reduce congestion, improve Park & Ride journey time reliability and create a more attractive access to Taunton, Yeovil and the A303 from the M5.<br><br>The map below shows an outline of the scheme elements. |




**Documents:**

| **Scale of Impact**<br>1 - Very small overall impact; 5 - Fully addresses the identified problem | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| | | | | **X** | |

The scheme will improve journey times for journeys routing through M5 Junction 25. It will also support the delivery of the planned growth in Taunton, including Monkton Heathfield and a potential further strategic employment site as set out in the Core Strategy (1).

Whilst it is forecast that there will be a significant reduction in congestion, it is considered likely that some congestion may still occur in peak periods.

**Documents:**

1 Taunton Deane Borough Council Adopted Core Strategy: http://consultldf.tauntondeane.gov.uk/portal/corestrat/adoptedcs?pointId=2248409

| **Fit with wider transport and government objectives** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| LTB Objectives (Dec 2012):<br>• Support the local economy<br>• Reduce carbon emissions<br>• Good value for money, deliverability and affordable and be financially sustainable.<br>• A high level of commitment to make a local contribution towards the overall costs<br>• Have the support of a range of community interests<br>• improve safety<br>• Help to deliver wider social and economic benefits<br>• Bring about improvements to air quality and increased compliance with air quality standards, and wider environmental benefits such as noise reduction<br>• Actively promote increased levels of physical activity and the health benefits this can be expected to deliver.<br><br>1 – Poor fit; 5 – Excellent fit | | | | | **x** |

The scheme fits well with European Policy, particularly in terms of 'Growing Transport and supporting mobility while reaching the 60% emission reduction target' (1). It supports National Policy by encouraging growth and making sure the transport network helps people get around independently. The option brings about significant gains to the government priority of growing the economy.

The scheme complements the work done through the DaSTS study 'Connect3' (2) and through a previous Pinch-Point funding bid (3). Whilst that bid was unsuccessful, recent events have increased the prominence of regional resilience and made this option even more important. This option has also been identified in the Bridgwater, Taunton and Wellington Future Transport Strategy (4) and Somerset's Future Transport Plan (5). This scheme is also supported by the Taunton Deane Infrastructure Delivery Plan, which identifies it as a priority for delivery (6).

It is anticipated that that scheme will bring about improvements for other modes of transport, as severance issues for non motorised users crossing the junction are addressed. The scheme should bring about an improvement for freight transport, by reducing the level of congestion.

The most recent available data on pedestrians and cyclists is from December 2011 and July 2012, covering a total of four weekdays and two Saturdays.

| | | Two-way Flows 0800-1800 | |
|---|---|---|---|
| | | **Mean** | **Range** |
| **Pedestrians** | **Weekday** | 42 | 35-56 |
| | **Saturday** | 39 | 35-42 |
| **Cyclists** | **Weekday** | 104 | 88-118 |
| | **Saturday** | 55 | 54-56 |

**Documents:**

1 Roadmap to a Single European Transport Area - Towards a competitive and resource efficient transport system (White Paper 2011) http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0144:FIN:en:PDF&adt=0
2 Connect 3 Study (2010) http://www.somerset.gov.uk/connect3
3 HA Press Release: http://www.highways.gov.uk/news/press-releases/15m-road-boost-for-the-south-west/
4 Bridgwater, Taunton and Wellington Future Transport Strategy (2011) http://www.somerset.gov.uk/irj/go/km/docs/CouncilDocuments/SCC/Documents/Environment/Strategic%20Planning/Bridgwater%2c%20Taunton%20and%20Wellington%20Future%20Transport%20Strategy%20Adopted%20Nov%2011.pdf
5 Somerset Future Transport Plan (2011) www.somerset.gov.uk/futuretransportplan
6 Taunton Deane Borough Council Infrastructure Delivery Plan http://www.tauntondeane.gov.uk/irj/go/km/docs/CouncilDocuments/TDBC/Documents/Forward%20Planning/Evidence%20Base/IDP.pdf

| **Fit with other objectives**<br>1 – Poor fit; 5 – Excellent fit | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| | | | | | **x** |

| Policy Document | Objective | Scheme Fit | |
|---|---|---|---|
| Somerset Future Transport Plan (FTP) (1) | Making a positive contribution | Working with partners to deliver housing and growth to the area. | 5 |
| | Living Sustainably | Allows greater sustainable movement of people along this corridor. | 4 |
| | Ensuring Economic Wellbeing | Improves journey time reliability. | 5 |
| | Enjoying and Achieving | Improves opportunities for young people being to access schools and colleges. | 4 |
| | Staying Safe | Reduces accidents and improves facilities for vulnerable users. | 5 |
| | Being Healthy | Allows walkers and cyclists to travel more safely in this area. | 4 |

| | | | |
|---|---|---|---|
| Taunton Deane Local Development Framework (LDF) (2) | Climate Change | Reduces delay, improves journey times and enhances opportunities for sustainable travel. | 4.5 |
| | Economy | Increases access to jobs, particularly in terms of journey times. | 5 |
| | Towns and Other Centres | Creates communities that are more accessible by all modes of travel. | 4 |
| | Housing | Delivers housing that can be accessed more efficiently. | 5 |
| | Inclusive Communities | Creates communities that are more accessible. | 4.5 |
| | Accessibility | Increases access to jobs, particularly for those without access to a car. | 4 |
| | Infrastructure | Delivers infrastructure identified in the Core Strategy that will make a significant difference to the local area. | 5 |

**Documents:**

1 - Somerset Future Transport Plan (2011)
http://www.somerset.gov.uk/futuretransportplan
2 - Taunton Deane Core Strategy (2012) -
http://consultldf.tauntondeane.gov.uk/portal/corestrat/adoptedcs

**Key uncertainties**

The scheme is dependent on the delivery of development identified in the Taunton Deane Core Strategy and associated Infrastructure Delivery Plan to provide an element of funding for the scheme. Should such development fail to come forward, an alternative source of third-party funding would need to be found. Other uncertainties, relating to the overarching objectives, include the overall impact on noise and air quality as a result of re-routing traffic.

**Documents:**

| **Degree of consensus over outcomes** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| | | | | **x** | |

A scheme to improve M5 Junction 25 is included in the adopted Core Strategy (1) of Taunton Deane District Council under policy SP2, and is also listed in the adopted Infrastructure Delivery Plan (IDP) (2) in Table 3.1. Both of these documents have been subject to public consultation as part of the adoption process and it is understood that no outright objections to this scheme were received.

The Future Transport Plan 2011-2026 (FTP): Schedule of Policies (3) report makes reference to the delivery of 'Improved junctions between Norton Fitzwarren / Monkton Heathfield / M5 and Taunton town centre' in Annex B. Junction 25 is one of these

junctions. The FTP was publicly consulted upon and no objections to the delivery of the scheme were raised (4).

The scheme is included in the adopted Bridgwater, Taunton & Wellington, Future Transport Strategy (BTWFTS) (5) and is referenced on page 39 as part of Intervention HW9. As part of the adoption process the content of the report was subject to public consultation which did not raise any public objections to the scheme.

A major improvement at this location was considered and consulted on by the Highways Agency as part of the second strategic route improvement. Significant concern was raised with their specific design proposals, due to the land-take and visual impact of the proposed free-flow grade separated (above ground) access onto the M5. The county council is developing a different, at-grade (ground level) design solution which will have considerably less impact and exclude the features that were of concern to the local community.

**Documents:**


1 Taunton Deane Borough Council Adopted Core Strategy: http://consultldf.tauntondeane.gov.uk/portal/corestrat/adoptedcs?pointId=2248409
2 Taunton Deane Borough Council Infrastructure Delivery Plan: http://www.tauntondeane.gov.uk/irj/go/km/docs/CouncilDocuments/TDBC/Documents/Forward%20Planning/Evidence%20Base/IDP.pdf
3 Somerset Future Transport Plan 2011 to 2026: Schedule of Policies http://www.somerset.gov.uk/irj/go/km/docs/CouncilDocuments/SCC/Documents/Environment/FTP/Policy%20Document%20-%20Schedule%20of%20Policies.pdf
4 Somerset Future Transport Plan 2011 to 2026: Consultation Report http://www.somerset.gov.uk/irj/go/km/docs/CouncilDocuments/SCC/Documents/Environment/FTP/Supporting%20Technical%20Note%20-%20Consultation%20and%20Assessment.pdf
5 Bridgwater, Taunton & Wellington, Future Transport Strategy 2011 – 2026 (November 2011): http://www.somerset.gov.uk/irj/go/km/docs/CouncilDocuments/SCC/Documents/Environment/Strategic%20Planning/Bridgwater%2c%20Taunton%20and%20Wellington%20Future%20Transport%20Strategy%20Adopted%20Nov%2011.pdf

# Economic

| Economic growth | | | | |
|---|---|---|---|---|
| ***Connectivity*** | What impact on end to end journey time? | | | x |
| | Does it impact cost of travel? | | | x |
| ***Reliability*** | Impact on journey time variability or average delay? | | | x |
| | Impact on number of incidents? | | | x |
| ***Resilience*** | Impact on the resilience of our infrastructure? | | x | |
| ***Delivery of Growth*** | Will the option facilitate new housing / employment / retail? | | | x |

Initial S-Paramics modelling has been undertaken to determine the impact of full signalisation and widening of the circulatory carriageway to four lanes.

Signalisation allows flows to be balanced, limiting excessive congestion on any given arm. Dramatic improvements are seen to journey times during the AM Peak. Signalisation has minor disbenefits during interpeak and overnight periods. The current modelling also shows minor disbenefits during the PM Peak. This is because full signalisation reduces delay on the most congested arms, particularly the A358 from the Ilminster direction, but the presence of this traffic on the circulatory reduces capacity of other arms so the process of 'balancing out' traffic is modelled to result in a net disbenefit. It is emphasised, however, that the signal timings have not been optimised and, in combination with SCOOT or MOVA on the ground, it is likely that this disbenefit would be reduced or even eliminated.

Reduced congestion will improve fuel consumption and journey time reliability.

Although not quantified here, conversion to a fully signalised roundabout is likely to reduce the number of accidents (1). It is notable that, at present, the greatest numbers of accidents are on the non-signalised approaches and in particular the A358 (Taunton) approach.

The proposal will allow growth across Taunton and, in particular, facilitate any future development east of the motorway junction (see 'Wider Economic Benefits')

**Documents:**

1 DfT, COBA 11 User Manual (2004)
https://www.gov.uk/government/publications/coba-11-user-manual

| Wider Economic Benefits | | | |
|---|---|---|---|
| | | **Yes** | **No** |
| ***WITA Assessment*** | Assessment of the move to more / less productive jobs | | **x** |
| | Agglomeration – Is the scheme located within a FUR? | | **X** |
| | Labour supply impacts | | |
| | Output supply in imperfectly competitive markets | | |
| This scheme is not within a designated Functional Urban Region (FUR). | | | |
| **Documents:** | | | |

| Carbon emissions | | | | |
|---|---|---|---|---|
| | | Yes | | No |
| ***Embedded Carbon*** | Is significant construction work required? | | | x |
| ***Carbon Content*** | Does the option involve a lower carbon fuel? | | | x |
| | | + | | - |
| ***Efficiency*** | Does fuel per vehicle-km change? | | | x |
| ***Activity*** | Does vehicle-km change? | x | | |

The proposal is for widening of the existing circulatory carriageway and signalisation only; it does not involve any significant construction.

It is unlikely that lower carbon fuels will be encouraged by the scheme.

Fuel consumed per vehicle kilometre should decrease due to reduced congestion; however, the total vehicle-km may increase if additional traffic is induced back onto the network. There will be a slight increase in off-peak emissions due to signalisation resulting in more vehicles stopping and starting. Reduced congestion through the junction will improve the journey time reliability of the Park and Ride, thereby making it a more attractive option for access into Taunton.

**Documents:**

| Socio-distributional impacts and the regions | | | |
|---|---|---|---|
| | | Yes | No |
| ***Regeneration*** | Does it impact on accessibility to key locations? | **X** | |
| | Does it impact on connectivity to central business districts? | **X** | |
| | Does it impact on a Regeneration Area(s)? | **X** | |
| | Assessment of Regeneration required?<br>(If Yes to any of the above or scheme cost > £5m) | **X** | |

**Regeneration**
Capacity constraints at this location are widely regarded as a barrier to the economic performance of the town and reduce its attractiveness as a location for new businesses.

Taunton Deane Borough Council is in the process of identifying a strategic employment site, as part of the development of its Site Allocations and Development Management Development Plan Document, as identified in its adopted Core Strategy (1) under policy SS8. One of the options is for a strategic site to be located to the east of Junction 25, with the potential to support and deliver up to 5,000 jobs. If this goes ahead capacity improvements will be required to the junction to deliver the site.

As the location map shows, the Blackbrook and Hankridge employment areas are located the west of Junction 25. The improvements at Junction 25 will result in time savings which will reduce transport costs for commuter traffic and public transport. This means that the accessibility of these employment areas will increase.

The scheme results in time savings which will reduce transport costs for businesses and freight. This will increase the economic efficiency of businesses and the

transport of their goods, allowing them to focus their time and resources where they are needed most to deliver growth.

In addition to the above, Junction 25 is on a key route for travel to and from the south west England. The junction connects the A303 and M5 via the A358. Improving the capacity of this junction would result in economic benefits across the south-west, as well as in the immediate Taunton Deane area.

**Socio-Economic**
Overall it is considered that the scheme's impacts on vulnerable groups would be generally positive. However, there may be specific locations where the scheme has a negative impact. It is important to understand these potential impacts and further analysis would be required should the scheme be taken forward.

The following examines the eight Socio-Distribution Impact (SDI) criteria as outlined in TAG Unit 3.17. At this stage the assessment is based on local knowledge and professional opinion of the likely impacts on particular social groups.

User Benefits: In terms of general traffic, the impact to the scheme will be beneficial and widespread - impacting on local as well as regional journeys. The general improvements will result in time savings and increases in journey reliability for public transport including park & ride. However, the scheme may result in re-routing of traffic within Taunton and over a wider area, so may have adverse impacts on other public transport routes. As part of the scheme the existing pedestrian and cycle crossings will be maintained. Those on low income tend to be more reliant on public transport; so the scheme will be beneficial, although due to the re-routing of traffic there could be adverse impacts on other routes. It is therefore recommended that SDI analysis Steps 0 to 3 are undertaken.
Noise: The scheme will result in re-routing of traffic across the network and it is currently unclear where noise levels would increase or decrease. The SDI Analysis Steps 0 to 3 should be undertaken to establish the level of impact and identify any mitigation measures that could be implemented.
Air Quality: The scheme will result in re-routing of traffic across the network and it is currently unclear where air quality levels would improve or deteriorate. The SDI Analysis Steps 0 to 3 should be undertaken to establish the level of impact and identify any mitigation measures that could be implemented.
Severance: The scheme will help to reduce the impact of the severance caused by the M5 by improving access for pedestrians, cyclists and public transport. This will be beneficial to children, those with disabilities, older people and those without access to a car who wish to cross the M5. However, the scheme may result in re-routing on the highway network and severance could potentially increase on other routes. Therefore, it is considered that further SDI analysis (steps 0 to 3) is required.
Accessibility: The scheme will provide improved bus access (including park & ride) across the M5 by alleviating delays. The scheme may also result in re-routing across the network which may adversely impact on accessibility to key services and facilities. Therefore, it is considered that SDI analysis is required for Steps 0 to 3 to establish the extent of the impacts.
Security: The scheme will have either a neutral or beneficial impact on the perceived personal safety across the M5. Due to the potential increase in traffic on other routes there could be deterioration in personal safety on these routes. This potential impact could be mitigated by improved pedestrian or cycle crossings. Therefore, it is considered that SDI analysis is required for Steps 0 to 3 to establish the extent of the impacts.
Accidents: By redesigning junction 25 there is the potential for a substantial reduction in the number of accidents at this location. However due to the re-routing of traffic

there is a risk of an increase in accidents elsewhere which could impact on vulnerable groups. It is recommended that SDI Analysis is undertaken for Steps 0 to 3 to establish the extent of the impact.
Personal Affordability: The scheme will improve bus punctuality and help to reduce running costs thereby improving the affordability of bus journeys across the M5. Capacity constraints at this location are also widely regarded as an barrier to the economic performance of the town and reduce its attractiveness as a location for new businesses. Maintaining or improving pedestrian and cycle crossings over the M5 will have a neutral or beneficial impact on the affordability of these modes. The impact of these interventions will be beneficial on low income households. However traffic will re-route as a result of the scheme and the impact on affordability in these areas is not full understood therefore SDI analysis (Steps 0 to 3) is recommended.

**Documents:**

1 Taunton Deane Borough Council Adopted Core Strategy: http://consultldf.tauntondeane.gov.uk/portal/corestrat/adoptedcs?pointId=2248409
2 Detailed Guidance on Social and Distributional Impacts of Transport Interventions: TAG Unit 3.17, Department for Transport, April 2011 http://www.dft.gov.uk/webtag/documents/expert/pdf/unit3.17.pdf

## Local environment

This scheme has undergone a Strategic Environmental Assessment under Somerset's Future Transport Plan and associated Strategies. Any elements that required mitigation have been highlighted for review and action.

There could be potential issues with a hazel dormouse population, a European protected species. Somerset County Council would be obliged under the Conservation of Habitats and Species Regulations 2010 (reg.9) (1) to have regard for the provisions of the Habitats Directives, which includes the maintenance of 'Favourable Conservation Status' of European protected species, populations of such species and the habitat to support them.. Some offset habitat creation may be required. However, no insurmountable issues are foreseen.

An Air Quality Management Area has been declared in the village of Henlade, which is to the east of the proposed scheme. There are no identified Noise areas. Both noise and air quality impacts will be subject to further investigation.

There is potential for works to be within the flood plain or affect the existing drainage system. Further study will be undertaken to be able to effectively address this issue.

There are no known archaeological or historical issues although a desktop study will be undertaken to establish this when the scheme progresses.

**Documents:**

1 Conservation of Habitats and Species Regulations 2010 http://www.legislation.gov.uk/uksi/2010/490/contents/made

## Well being

It is anticipated that this scheme will bring about greater levels of physical activity and has the potential to improve lifestyles. It is felt that this option will generally improve safety for all affected modes of transport.

The scheme should help to make the area appear safer, in particular by having upgraded lighting and road layout. It is not considered this option will affect our vulnerability to terrorism.

The scheme will make it easier for people to access key locations and make leisure trips more quickly and reliably.

This scheme may improve the existing severance issue for pedestrians and cyclists and increase the potential to make pedestrian movements.

**Documents:**

| Expect Value for Money Category | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| | | | | | x |

Initial Paramics modelling has been used to quantify benefits due to improved journey times. TEMPRO growth is assumed between 2026 and 2035 (still well short of the 60-year assessment period) and optimism bias has been applied at 59% as advised given the level of risk. This results in the following figures (at 2010 prices):

- Present Value of Costs: £8,097,735
- Present Value of Benefits: £160,424,857
- Benefit to Cost Ratio: 19.8

The above calculations exclude weekend benefits. The figures above are thus considered conservative. It is noted that the magnitude of the PVB is comparable to that forecast for motorway junction signalisation schemes elsewhere (ranging from £96 Million at Junction 4 of the M40 (forecast) to £120 Million at J15 of the M40 (revised down from £270 Million post-construction) (1, 2). Whilst all schemes will differ, this does indicate that the Present Value of Benefits developed here is within a reasonable range.

If, as a sensitivity test, zero growth is assumed beyond the modelled year of 2026 then the revised PVB is £145,035,995 and the BCR is 17.9.

**Documents:**


1 HA Post-Opening (POPE) One-Year After Study (2009) http://assets.highways.gov.uk/our-road-network/pope/major-schemes/M40A404%20Handy%20Cross%20Junction%20Improvement/POPE%20_%20M40%20J4%20Handy%20Cross%20_website%20part%20A.pdf

2 HA LNMS Evaluation Report (2007) http://assets.highways.gov.uk/our-road-network/pope/lnms/POPE_LNMS_M40_J15_Improvements_Report_Final.pdf

# Managerial

| **Implementation timetable** | | |
|---|---|---|
| | 1. 0-1 months | |
| | 2. 1-6 months | |
| | 3. 6-12 months | |
| | 4. 1-2 years | |
| | 5. 2-5 years | **X** |
| | 6.5-10 years | |
| | 7. 10+ years | |
| | Don't Know | |

Please see attached outline programme which makes allowance for a potential Compulsory Purchase Order (CPO). However, it is consider unlikely that a CPO will be necessary and that the land required can be acquired by agreement. This would bring forward the construction of the project by some 12 months.

**Documents:**

| **Public acceptability** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| | | | | **x** | |

A scheme to improve M5 Junction 25 is included in the adopted Core Strategy (1) of Taunton Deane District Council under policy SP2, and is also listed in the adopted Infrastructure Delivery Plan (IDP) (2) in Table 3.1. Both of these documents have been subject to public consultation as part of the adoption process and it is understood no outright objections to this scheme were received.

The Future Transport Plan 2011-2026 (FTP): Schedule of Policies (3) report makes reference to the delivery of 'Improved junctions between Norton Fitzwarren / Monkton Heathfield / M5 and Taunton town centre' in Annex B. Junction 25 is one of these junctions. The FTP was publicly consulted upon and no objections to the delivery of the scheme were raised (4).

The scheme is included in the adopted Bridgwater, Taunton & Wellington, Future Transport Strategy (BTWFTS) (5) and is referenced on page 39 under Intervention HW9. As part of the adoption process the content of the report was subject to public consultation which did not raise any public objections to the scheme.

**Documents:**

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2 Taunton Deane Borough Council Infrastructure Delivery Plan: http://www.tauntondeane.gov.uk/irj/go/km/docs/CouncilDocuments/TDBC/Documents/Forward%20Planning/Evidence%20Base/IDP.pdf
3 Somerset Future Transport Plan 2011 to 2026: Schedule of Policies http://www.somerset.gov.uk/irj/go/km/docs/CouncilDocuments/SCC/Documents/Environment/FTP/Policy%20Document%20-%20Schedule%20of%20Policies.pdf

4 Somerset Future Transport Plan 2011 to 2026: Consultation Report http://www.somerset.gov.uk/irj/go/km/docs/CouncilDocuments/SCC/Documents/Environment/FTP/Supporting%20Technical%20Note%20-%20Consultation%20and%20Assessment.pdf

5 Bridgwater, Taunton & Wellington, Future Transport Strategy 2011 – 2026 (November 2011): http://www.somerset.gov.uk/irj/go/km/docs/CouncilDocuments/SCC/Documents/Environment/Strategic%20Planning/Bridgwater%2c%20Taunton%20and%20Wellington%20Future%20Transport%20Strategy%20Adopted%20Nov%2011.pdf

| **Practical feasibility** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| | | | | | **X** |

The proposal to elongate the circulatory carriageway of M5 J25 (which forms part of the Local Highway Network) has been the subject of previous investigation in conjunction with the proposed Second Strategic Route from London to the South West. This investigation included traffic modelling and capacity assessments.

In addition, the signalisation of J25 was considered in conjunction with the East of Taunton Park & Ride. At that time the proposal was to maintain the size of the existing junction but to signalise all arms of the junction. This proposal was found not to be acceptable due to limited stacking capacity between the Stop lines on the circulatory area of the junction. The proposed elongation of the roundabout would address this lack of stacking capacity.

The proposals would form an improvement to existing highway infrastructure and as such there would not be legal issues associated with the proposals. There would need to be an agreement with the Highways Agency about alterations to the south bound on and off slip roads, and the replacement / extension of the signals at the junction.

Statutory powers relating to Compulsory Purchase and Side Roads may be required to implement this scheme. As the proposals form an improvement to an existing junction and abuts the existing highway it is considered that there would be no requirement for Planning Consent.

**Documents:**

| What is the quality of the supporting evidence | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| | | | | X | |

It is considered that the evidence used to develop this scheme is sound. It is identified in Taunton Deane Borough Council's Local Development Framework (Core Strategy (1) and Infrastructure Delivery Plan (2)) and Somerset County Council's Future Transport Plan (3), both of which have undergone public examination. The scheme has been subject to initial modelling in a micro-simulation modelling package (Paramics) to identify the likely economic benefits. Therefore, it is considered at this stage in the process that the supporting evidence for the scheme is sound, reasonable and of a high quality. Detailed junction modelling will be carried out in support of delivery.

**Documents:**

1. Taunton Deane Borough Council Adopted Core Strategy: http://consultldf.tauntondeane.gov.uk/portal/corestrat/adoptedcs?pointId=2248409
2. Taunton Deane Borough Council Infrastructure Delivery Plan: http://www.tauntondeane.gov.uk/irj/go/km/docs/CouncilDocuments/TDBC/Documents/Forward%20Planning/Evidence%20Base/IDP.pdf
3. Somerset Future Transport Plan (2011) http://www.somerset.gov.uk/futuretransportplan

**Key risks**

See attached Spreadsheet.

**Documents:**

# Financial

| **Affordability**<br>1 = low affordability 5 = high affordability | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| | | | | **X** | |

The scheme is forecast to require major scheme grant funding of £8.23 million (based on Q1 2015 prices) over the proposed funding period. Given the scale of the potential funding available this is considered to be an affordable scheme.

In terms of the affordability to the local authority there a number of sources of income that could be used to make up contribution, these funds could include the new homes bonus funds and the local transport block funding.

**Documents:**

| **Capital Cost (£m) (based on Q1 2015 prices)** | **£9.24m** |
|---|---|

Capital costs are based on an assessment of works costed against Somerset County Council's Term Maintenance Contract Rates. They have been compared with recent competitive tender prices for projects in Somerset which contain similar tasks.

An allowance of 44% has been included for optimism bias and 15% for risk.

**Documents:**

| **Revenue Costs (£m)** | |
|---|---|

Not applicable.

**Documents:**

**Development Contributions (£m)**

Improvements to M5 Junction 25 are identified in the adopted Core Strategy(1) of Taunton Deane District Council under policy SP2, it is listed in the Infrastructure Delivery Plan (IDP) (2) in Table 3.1.

Taunton Deane Borough Council is planning on introducing the Community Infrastructure Levy (CIL). As the scheme is identified in the Core Strategy and IDP it is considered that CIL monies will be available for a M5 Junction 25 improvement scheme, although currently it is not clear what level of CIL monies would be available. An agreement on the CIL charging schedule is due in 2013.

Should a strategic employment site be allocated to the east of the M5 and developed on timeline that is compatible with this major scheme, there may be potential for specific s106 contributions towards the scheme. However, this cannot be assumed at this stage.

**Documents:**

1 Taunton Deane Borough Council Adopted Core Strategy: http://consultldf.tauntondeane.gov.uk/portal/corestrat/adoptedcs?pointId=2248409
2 Taunton Deane Borough Council Infrastructure Delivery Plan: http://www.tauntondeane.gov.uk/irj/go/km/docs/CouncilDocuments/TDBC/Documents/Forward%20Planning/Evidence%20Base/IDP.pdf

**Cost Profile (based on Capital Cost Q1 2015 prices)**

**Earliest Start Date April 2015**

| Expenditure Source | Yr 1 | Yr 2 | Yr 3 | Yr 4 |
|---|---|---|---|---|
| Local Contribution | 0.12 | 0.12 | 0.68 | 0.00 |
| LTB | 0.37 | 0.80 | 6.73 | 0.42 |
| Total | 0.48 | 0.92 | 7.41 | 0.42 |

Initial design work on the project could commence in 2013 / 14. This would be subject to a funding agreement, which could potentially include joint design funding from SCC, TDBC and the Highways Agency. This would bring the start of construction forward to the earliest point possible in the new funding programme period.

**Documents:**

| Cost Risk | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| | | | X | | |

It is considered that the risk rating for the costs is medium, rates are based on Maintenance Term Contract Schedule of Rates and a comparison with recent Major Scheme tenders has been undertaken. However, the traffic management on this

| |
|---|
| project and the need to work closely with the Highways Agency create some uncertainty |
| **Documents:** |

# Commercial

| **Flexibility of option**<br>1 = low flexibility 5 = high flexibility | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| | | | **X** | | |

The scheme has already been scaled down considerably from the previous free-flow grade separation proposal. It could be scaled down slightly more, to signalise only part of the junction. However, this would impact on the ability of the scheme to support planned growth and reduce the operational flexibility of the junction.

As the scheme is a physical intervention, once in place it will be difficult to reverse its impact. If the scheme is stopped prior to its completion this could result in abortive works and associated contractual and cost issues. Therefore, it is considered that the scheme should not be stopped once construction has started.

In the future parts of the scheme could be adapted to include bus priority, however, this has not been identified at this stage and is currently not required. Therefore, the scheme is considered to have some flexibility to adapt to potential future priorities.

**Documents:**

**Where is funding coming from?**

The capital costs of the scheme will be funded from a combination of local authority funding, developer funding and grant funding through the major scheme process.

The running and maintenance costs of the scheme would enter into Somerset County Council's maintenance programme.

No income is generated from the scheme.

The beneficiaries of the scheme would be those development sites supported by the delivery of the scheme and developers are expected to make a financial contribution to the delivery of the scheme.

Pedestrians, cyclists and other traffic would also benefit from the scheme but these beneficiaries are not expected to pay directly for the improvements.

**Documents:**

| **Any income generated (£m)** | |
|---|---|

No income generated.

**Documents:**

## Appendix 1 – References used within the document and full page (A4) layout


- Bridgwater, Taunton and Wellington Future Transport Strategy (2011) http://www.somerset.gov.uk/irj/go/km/docs/CouncilDocuments/SCC/Documents/Environment/Strategic%20Planning/Bridgwater%2c%20Taunton%20and%20Wellington%20Future%20Transport%20Strategy%20Adopted%20Nov%2011.pdf
- Connect 3 Study (2010) www.somerset.gov.uk/connect3
- Conservation of Habitats and Species Regulations 2010 http://www.legislation.gov.uk/uksi/2010/490/contents/made
- DfT, COBA 11 User Manual (2004) https://www.gov.uk/government/publications/coba-11-user-manual
- Detailed Guidance on Social and Distributional Impacts of Transport Interventions: TAG Unit 3.17, Department for Transport, April 2011 http://www.dft.gov.uk/webtag/documents/expert/pdf/unit3.17.pdf
- HA Post-Opening (POPE) One-Year After Study (2009) http://assets.highways.gov.uk/our-road-network/pope/major-schemes/M40A404%20Handy%20Cross%20Junction%20Improvement/POPE%20_%20M40%20J4%20Handy%20Cross%20_website%20part%20A.pdf
- HA LNMS Evaluation Report (2007) http://assets.highways.gov.uk/our-road-network/pope/lnms/POPE_LNMS___M40_J15_Improvements_Report___Final.pdf
- HA Press Release (October 2012) http://www.highways.gov.uk/news/press-releases/15m-road-boost-for-the-south-west/
- Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system (White Paper 2011) http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0144:FIN:en:PDF&adt=0
- Somerset Future Transport Plan (2011) http://www.somerset.gov.uk/transportstrategy
- Somerset's Future Transport Plan 2011-2026 – Schedule of Policies, Annex B (2011) http://www.somerset.gov.uk/transportstrategy
- Somerset's Future Transport Plan 2011-2026 – Consultation Report (2011) http://www.somerset.gov.uk/transportstrategy
- Somerset FTP Strategic Environmental Assessment (2011) http://www.somerset.gov.uk/irj/public/services/directory/service?rid=/guid/10a792ea-dddd-2d10-0c92-f8a877a39b80
- Taunton Deane Core Strategy (2012) – http://consultldf.tauntondeane.gov.uk/portal/corestrat/adoptedcs
- Taunton Deane Infrastructure Delivery Plan – http://www.tauntondeane.gov.uk/irj/public/council/futureplans/futureplan?rid=/guid/0041d56b-6370-2c10-99a2-b7b982f298e5

# ANNEX A: PROGRAMME AND RISK TABLE

**mEAST J25 M5**
**Outline Programme**

| **Activity** | Q 1 15-16 | Q2 15-16 | Q3 15-16 | Q4 15-16 | Q1 16-17 | Q2 16-17 | Q3 16-17 | Q4 16-17 | Q1 17-18 | Q2 17-18 | Q3 17-18 | Q4 17-18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Initial Design | | | | | | | | | | | | |
| Liaison with Highways Agency | | | | | | | | | | | | |
| Adjust Initial Design | | | | | | | | | | | | |
| Land Negotiations | | | | | | | | | | | | |
| CPO Procedure | | | | | | | | | | | | |
| Detailed Design | | | | | | | | | | | | |
| Tender Documents | | | | | | | | | | | | |
| Procurement | | | | | | | | | | | | |
| Mobilisation | | | | | | | | | | | | |
| Construction | | | | | | | | | | | | |
| | | | | | | | | | | | | |

## Improvement to Junction 25

| Risk | Score (based on table below) | Examples of problems / issues | Experience in dealing with the issues, if so give scheme examples | How would the risk be managed and what countermeasures would be implemented? |
|---|---|---|---|---|
| Environmental | 1 | possible issues associated with additional noise and air pollution with the signalisationof the roundabout<br>Potential for contaminated land resulting from historic land usage | Issue of noise and air pollution has been experienced on previous Major Schemes such as Taunton Northern inner Distributor Road and Taunton Third Way | Ensure that existing air pollution and noise levels are available and undertake calculations to demonstrate predicted noise / air pollution levels and verify post scheme<br>Noise insulation to be provided at properties which qualify for such insulation<br>Undertake desk top studies and site investigations to identify and potential areas of contamination and seek to agree mitigation measures prior to works commencing on site |
| Archaeological | 1 | Potential for archaeological items of interest to be unearthed during excavation, which could cause construction works to be halted pending recovery / recording of finds | Previous schemes have included watching briefs during the construction and on one particular project a full scale archaeological excavation was undertaken to recover skeletons from a bronze age burial ground | Early consultation with SCC Heritage group and potentially undertake an initial site appraisal with an archaeological watching brief during construction |
| Flooding | 3 | Potential for works to be within flood plain or affect existing surface water drainage system | Any project which alters or creates new highway infrastructure will have an impact on existing drainage and possibly flood plain.<br>On East of Taunton Park and Ride and North West Taunton Transport Package works were partially within flood plains, and also surface water attenuation was required to ensure that surface water run off rates were not increased | Undertake desk top review of Environment Agency Flood maps, liaise with Environment Agency over scheme proposals.<br>Undertake desk top and also surveys of any existing drainage systems affected by the works, liaise with Highway Manager to identify any existing issues with drainage system.<br>Ensure that new drainage proposals address any existing issues and have appropriate capacity for predicted rainfall and surface water run off |
| Ecological | 3 | Nesting Birds, protected species (water voles, otters, reptiles badgers bats etc) identified on alignment of enlarged roundabout | North West Taunton Transport package affected protected species, Badgers and reptiles, artificial badger sett constructed and reptiles excluded from site prior to works commencing.<br>East of Taunton Park & Ride badger sett closed under licence.<br>Porlock Link Road reptiles relocated and bat mitigation measures provided<br>Issues with potential for nesting birds has arisen on a large number of schemes including East of Taunton Park & Ride Taunton northern Inner Distributor Road and Taunton Third Way | Undertake ecological surveys well in advance of works being undertaken. Identify any protected species, flora or fauna and propose appropriate mitigation in the form of either relocation, or if appropriate realignment of proposed link road to minimise / avoid impact on protected species<br>Ensure that construction programme takes into account constraints on moving / undertaking mitigation measures in respect of protected species.<br>Plan to commence construction outside of the bird nesting season, if this is not possible then clearance of vegetation / trees in advance of the main construction works should be undertaken.<br>As a last resort if clearance works are to be undertaken during the bird nesting season a qualified ecologist can undertake surveys of the vegetation to check for nesting birds prior to removal of the vegetation |

| Score | Likelihood | Impact |
|---|---|---|
| 1 | Seldom/Very Remote | Minor Delay < 1 month |
| 2 | Unlikely/Remote | 1 month >= Delay > 6 months |
| 3 | Often/Frequent | 6 months >= Delay > 1 year |
| 4 | Probable | Major delay > 1 year |
| 5 | Certain | Abandonment of scheme |

# ANNEX B: Modelling Technical Note

# Heart of the South West Local Transport Board

## Somerset County Council Technical Assumptions Report

## M5 Junction 25 Improvements

**April 2013**

| Revision | Purpose | Summary of changes | Originator | Date |
|---|---|---|---|---|
| 0.1 | Draft | | RWS | 21/02/2012 |
| 0.2 | Draft | Separated Schemes, minor changes | RWS | 07/03/2013 |
| 0.3 | Draft | Revised for 25 April submission | RWS | 24/04/2013 |
| | | | | |
| | | | | |

Traffic Modelling Team

Highways and Transport Commissioning, Somerset County Council, C7, County Hall, Taunton, TA1 4DY

# 1 Introduction

Somerset County Council (SCC) has recently submitted six Scheme Prioritisation Proformas to the Heart of the South West Local Transport Board (LTB) for consideration. Parsons Brinckerhoff, acting as advisor to the LTB, has requested additional information from each participating highway authority on the economic and modelling assumptions “in order to say that all schemes have been assessed on a relatively equal footing”.

This report seeks to provide the relevant information in answer to the specific questions asked in an email dated 24 January 2012, and has been updated to take into account changes made to the Proformas in April 2013. The Junction 25 scheme is a highway scheme, with five queries.

# 2 Response to queries

## 2.1 Form of model

*Form of model used to predict delays/travel times before and after the proposed improvement*.

Modelling was undertaken of AM and PM Peak hours using the S-Paramics microsimulation package. A validated model (2010 base) of northeast Taunton was available including Junction 25; the junction was isolated for this assessment, and forecast flows obtained from the TSTM3 SATURN model (also a 2010 base, with 2028 Forecast Year). This provided a 'Do Minimum' reference model. A 'Do Something' model was then developed incorporating additional signalisation on the two A358 approaches and an additional circulatory lane.

For the purpose of giving an indication of likely impact an Interpeak model was created by averaging the AM and PM matrices, then factoring this against observed local ATC data. A similar technique was used to create an 'overnight' matrix with an uncongested network.

## 2.2 Calibration and validation

*How accurately do the flows in the model represent the real life conditions and just as importantly how closely are travel times represented?*

The 2010 S-Paramics and SATURN models were both validated (LMVRs available on request). At Junction 25 all individual turning movements validate in the SATURN model, during both peaks.

Unfortunately journey times through the junction were not included in the original S-Paramics model validation. The junction has however been calibrated carefully, and behaviour is considered to be representative of that observed on the ground.

The overnight and interpeak models are not validated, and are intended only to give an indication of any concerns or benefits.

## 2.3 Traffic growth methodology

*What is the methodology for applying growth?*

The model matrix was cordoned from the TSTM3 2028 model. This model explicitly included committed developments with planning consent. TEMPRO growth factors were then applied, with deductions for the explicitly modelled developments.

Two PAR economic assessments have been undertaken; one assumes additional growth from the forecast year to 2035 (the final year in which TEMPRO data is

available). A sensitivity test has also been undertaken assuming zero additional growth (see 'Economic Benefits', below).

## 2.4 Journey time benefits

*What is the change in journey times for key movements with and without the Scheme?*

The main benefit in journey times across the network is seen in the AM Peak, with a saving of nearly six minutes per vehicle. This is due to severe congestion in the 'Do Minimum', particularly on the A358 approach from Henlade which is unsignalised in that scenario. There is a slight disbenefit on average in the PM Peak (36 seconds), but signalisation reduces the level of congestion on the worst arms. Signal optimisation should reduce this disbenefit.

There are disbenefits of a few seconds per vehicle overnight and in the interpeak; this is unsurprising where signals are implemented on a priority approach to a roundabout, but the impact would be less in practice where vehicle actuation (MOVA or SCOOT) is implemented.

## 2.5 Economic benefits

*Methodology for calculating economic benefits (PAR, TUBA, PEARS)*

The PAR 6.2 spreadsheet (as provided to the Independent Transport Assessor) has been used to estimate economic benefits assessing journey time savings only, with the assumptions on traffic growth outlined above. The PAR spreadsheet was updated with new WebTAG data to allow discounting to 2010 rather than 2002. Optimism bias has been assumed at 44% with an additional 15% risk allowance due to the scheme being only at the conception stage.

If zero growth is assumed beyond the modelled year of 2026 then:

- Present Value of Costs: £8,097,735
- Present Value of Benefits: £160,424,857
- Benefit to Cost Ratio: 19.8

A sensitivity test including TEMPRO growth between 2026 and 2035 (still well short of the 60-year assessment period) results in a revised PVB of £145 Million and BCR of 17.9.

The 'headline' funding proposal is calculated from the cost profile (given in 2012 Q3 prices) multiplied by forecast inflation. This is assumed to be 2.7% per year, based on the Highway's Agency Inflation Forecast Profile (0.67% per quarter). Additional increases in construction costs are assumed to be zero, considered reasonable until at least 2014 (see WebTAG 3.5.9, paragraph 2.12).