

A350 Yarnbrook and West Ashton Relief Road

Outline Business Case

Wiltshire Council

24 March 2015

ATKINS



Notice

This document and its contents have been prepared and are intended solely for Wiltshire Council's use in relation to the A350 Yarnbrook and West Ashton Relief Road Outline Business Case submission to the Swindon & Wiltshire Local Transport Body.

Atkins Limited assumes no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

Document history

Job number:5132933			Document ref:			
Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
1	Working draft for Wiltshire Council including structure	TH/TP	AP	-	-	10/09/14
2	Draft OBC for Client Comment	TP	PB	PC/JFC	JFC	21/1/15
2.1	Updated version for PFA comment	TP	PB	PC/JFC	JFC	17/2/15
3	For SWLTB ITA Review	TP	PB	PC/JFC	JFC	27/2/15
4	For SWLTB Website	TP	PB	PC/JFC	JFC	24/3/15

Table of contents

Section	Pages
Executive Summary	6
Introduction	10
1. Introduction	11
1.1. Context	11
1.2. Background	11
1.3. The Scheme	14
1.4. Document Purpose and Status	17
1.5. Document Structure	17
Strategic Case	18
2. Strategic Case	19
2.1. Overview	19
2.2. Business Strategy	19
2.3. Problems Identified and Impact of Not Changing	22
2.4. Objectives	25
2.5. Measures for Success	25
2.6. Scope	26
2.7. Current Opportunities and Constraints	27
2.8. Interdependencies	28
2.9. Stakeholders	28
2.10. Options	29
Economic Case	31
3. Economic Case	32
3.1. Overview	32
3.2. Value for Money Statement	35
3.3. Value for Money Sensitivity	36
3.4. Appraisal Summary Table	37
3.5. Economic Impacts	37
3.6. Environmental Impacts	38
3.7. Social Impacts	40
3.8. Distributional Impacts	42
3.9. Impacts to Public Accounts	42
3.10. Summary of Economic Case	43
Financial Case	44
4. Financial Case	45
4.1. Overview	45
4.2. Scheme Costs	45
4.3. Funding Assumptions	47
4.4. Accounting Implications: Cash Flow Statement	47
Commercial Case	49
5. Commercial Case	50
5.1. Overview	50

5.2.	Required Outputs	50
5.3.	Procurement Strategy – Options	50
5.4.	Preferred Procurement Approach	53

Management Case **56**

6.	Management Case	57
6.1.	Overview	57
6.2.	Overall Assessment of Scheme Deliverability	57
6.3.	Evidence of Similar Schemes	58
6.4.	Programme and Project Dependencies	58
6.5.	Project Governance and Reporting	58
6.6.	Scheme Implementation Programme	59
6.7.	Assurance and Approvals Plan	60
6.8.	Communications and Stakeholder Management	61
6.9.	Risk Management Strategy	61
6.10.	Benefits Realisation Plan	62
6.11.	Monitoring and Evaluation	62
6.12.	Project Management Summary	62

Appendices

Part 1:

Appendix A.	Scheme Drawing
Appendix B.	Options Assessment Report
Appendix C.	Appraisal Specification Report

Part 2:

Appendix D.	Forecasting & Economic Appraisal Report
Appendix E.	Environmental Appraisal
Appendix F.	Distributional Impact Appraisal Report
Appendix G.	Appraisal Summary Table
Appendix H.	Cost Estimate
Appendix I.	Communications Plan
Appendix J.	Risk Register
Appendix K.	Benefits Realisation, Monitoring & Evaluation Plan
Appendix L.	Scheme Implementation Programme

Tables

Table 1	Core Strategy Housing and Employment Proposals within the A350 Corridor	21
Table 2	A350 Trowbridge – the Need for Intervention.....	23
Table 3	Forecast Impact on the A350 Yarnbrook and West Ashton Junctions	25
Table 4	Success Indicators (Desired Outcomes)	26
Table 5	Development Assumptions for Without Scheme and With Scheme Scenarios	34
Table 6	Network Assumptions for Without Scheme and With Scheme Scenarios	34
Table 7	Value for Money	36
Table 8	Sensitivity Test Results.....	36
Table 9	Land Value Impacts	38
Table 10	Assessment of Distributional Impacts.....	42
Table 11	Implementation Costs	45
Table 12	Estimated Outturn Spend Profile by Financial Year (£ million)	48
Table 13	Estimated Outturn Funding Profile by Financial Year (£ million)	48
Table 14	Procurement Assessment.....	53
Table 15	Preferred Procurement Approach.....	55
Table 16	Project Milestones	60

Figures

Figure 1	Scheme Location and Scheme Elements.....	12
Figure 2	A350 Yarnbrook and West Ashton Relief Road	15
Figure 3	Ashton Park Masterplan	16
Figure 4	Geographical Area of Impact	27
Figure 5	Scheme Options	30

Executive Summary

Background

This report presents the Outline Business Case (OBC) for the A350 Yarnbrook and West Ashton Relief Road, located to the south east of Trowbridge. The Scheme comprises:

- Construction of 2.5km of new carriageway, including a link to the Yarnbrook Roundabout (overall the A350 Yarnbrook and West Ashton Relief Road is 2.1km from end-to-end);
- Conversion of West Ashton signals to a three-arm priority junction;
- Existing A350 to be stopped up and landscaped at both ends;
- Stopping up of the 'old' A350, whilst maintaining access to properties via the West Ashton junction; and
- Three new roundabouts:
 - R1 – connecting with the existing A363 Westbury Road east of the railway bridge by means of an at-grade roundabout junction;
 - R2 – providing a link to the south into the existing A350 between Yarnbrook and West Ashton, and into Ashton Park to the north;
 - R3 – intersecting the existing West Ashton Road with an at-grade roundabout junction.

The Scheme is located on the A350 strategic transport corridor, which links five major towns in the west of Wiltshire including the principal settlements of Chippenham and Trowbridge. The corridor is made up of the A350 national primary route between the A303, A36 and M4 (with links to London, Swindon and the South West), and the rail line between Warminster and Chippenham.

The corridor forms a key connection for Trowbridge to the wider strategic network, including the M4 (Junction 17) to the north and the A36(T) to the south. However, high traffic volumes, particularly in the peak periods, result in congestion, delays and unpredictable journey times. Long queues commonly form on the A350 corridor to the south east of Trowbridge during the morning and evening peak periods. With planned development (even without Ashton Park) this is forecast to worsen. Without investment in suitable interventions, there would be an increasingly detrimental impact on the safe, efficient and reliable movement of people and goods on the strategic A350 north-south route in Wiltshire. Furthermore, opportunities for providing adequate access to the Ashton Park development site (2,600 homes and 15ha of employment) would be limited and present a constraint to delivering new housing and jobs in Trowbridge at a key strategic site allocation in the Wiltshire Core Strategy.

The Scheme is a strategic priority for Wiltshire Council, SWLTB, and the Swindon & Wiltshire Local Enterprise Partnership (SWLEP), and was awarded funding as part of the second round of Growth Deals (announced on the 29th January 2015).

The full cost of implementing the proposed scheme is estimated to be **£17.094 million** (outturn price). The **Benefit-Cost Ratio (BCR) is 3.47** demonstrating that the scheme offers **High Value for Money**.

Strategic Case

The A350 Yarnbrook and West Ashton Relief Road has a direct and strong relationship with the planned Ashton Park Urban Extension (2,600 homes and 15ha employment land) which is included in the Wiltshire Core Strategy. Ashton Park Trowbridge Ltd and Persimmon Homes are planning to submit an outline planning application for the site, including proposals for the A350 Yarnbrook and West Ashton Relief Road, to Wiltshire Council in early 2015. It has been agreed between Wiltshire Council and the developers that the A350 Yarnbrook and West Ashton Relief Road will be included in the Ashton Park planning application on the basis of a 'shared approach'. This shared approach was established in the Statement of Common Ground for Ashton Park, developed for the Core Strategy Examination in Public (EiP) held in 2013.

As the only road improvement specifically referred to in Core Policy 66 'Strategic Transport Network' of the Wiltshire Core Strategy (adopted 20th January 2015), the strategic importance of this Scheme is self-evident.

The problems relating to the A350 corridor to the south east of Trowbridge present a barrier to delivering key policy objectives, including those relating to housing and employment growth in the Wiltshire Core Strategy and economic objectives of the SWLEP (and the SEP):

- Problem 1 – Congestion and poor journey time reliability on the A350 to the south east of Trowbridge:
 - The section of the A350 to the south east of Trowbridge suffers queuing and delays that are manifested as a journey time reliability problem, particularly in the peak periods. This is due to the level of demand (both in terms of general traffic and goods vehicles) and a lack of capacity at the Yarnbrook and West Ashton junctions.
 - Traffic flows exceed the reasonable capacity of a road of this type with a poor vertical alignment and frontage access.
 - Accommodating planned growth is forecast to cause further strain on the network, as illustrated by the results of development modelling for Trowbridge.
 - The opportunities to improve the A350 corridor would help to mitigate the impact of background traffic growth and future development traffic.
 - The traffic congestion also results in localised environmental impacts which affect residents within the vicinity of the Yarnbrook and West Ashton junctions.

- Problem 2 – Poor north-south connectivity threatens the strategic role of the A350:
 - The A350 provides a vital link to the A303, A36, M4 and the wider trunk road network. Maximum traffic flow along the most heavily trafficked section is 27,000 vehicles per day.
 - Poor journey time reliability negatively impacts on north-south connectivity across the county, affecting both inter-urban traffic within Wiltshire/Swindon, and longer distance strategic traffic (i.e. between Dorset and the M4, and beyond). Journey time reliability is worst during the morning and evening peak periods.
 - The SEP identifies the A350 corridor as a growth zone, where there are currently large agglomerations of economic activity and where there is the greatest capacity for supporting sustainable growth in the future. The SEP's vision for 2026 includes highway improvements, such as the A350 Yarnbrook and West Ashton Relief Road, to improve the north-south links along the A350.
 - Without intervention, journey time reliability is expected to worsen and poor connectivity will continue to reduce the viability of new development sites and negatively impact on the economic competitiveness of the area.

- Problem 3 – Planned Housing and employment growth:
 - The Ashton Park Urban Extension is a key strategic site allocation with 2,600 dwellings and 15ha employment land proposed. This represents over 36% of the housing allocation for Trowbridge (and 6% of the total for Wiltshire) to 2026 identified in the Core Strategy.
 - Site access (and connection to the strategic road network) is a primary consideration in the viability of the development.
 - Traffic modelling indicates that, without intervention, the operation of the network, including the Yarnbrook Roundabout and West Ashton Crossroad junctions, would be significantly compromised.
 - There are opportunities to unlock the development potential of the Ashton Park, providing for direct access into the proposed new employment areas and thus supporting economic growth.
 - Improved access to the A350 would also support a Principal Employment Area at West Ashton Road as well as the White Horse Business Park.

- Problem 4 – Accidents:
 - There is an historic road safety problem at the West Ashton crossroads which represents an accident cluster. Note that the junction has been recently upgraded, and that accident data will need to be reviewed when data becomes available.
 - The A350 Yarnbrook and West Ashton Relief Road will divert A350 traffic away from the crossroads.
 - The accident benefits of the A350 Yarnbrook and West Ashton Relief Road are assessed in the Economic Case of this OBC.
 - Furthermore, forecast increases in traffic are likely to compromise the safe, efficient and reliable movement of people and goods on the A350 corridor.

Four objectives for the A350 Yarnbrook and West Ashton Relief Road have been identified. Strong progress against all objectives is expected by 2026 (5 years after scheme opening).

1. Reduce traffic queues and delays on the A350 corridor at West Ashton and approaching Yarnbrook Roundabout by 2026;
2. Improve journey time reliability on the A350 corridor;
3. Facilitate housing and employment growth in the Ashton Park Urban Extension through addressing known and forecast congestion pinch-points at West Ashton and Yarnbrook by 2026; and
4. Reduce the number of road accidents in the Yarnbrook and West Ashton areas by 2026.

Economic Case

A dependent development approach has been developed (reported in the Appraisal Specification Report), which is reflected in the modelling and economic appraisal. The Economic Case demonstrates that the Scheme will unlock the Ashton Park development of 2,600 homes and 15ha of employment, whilst achieving **High VfM** (based on the Initial BCR of 3.47) and an NPV of £16.93 million. This reflects the development dependency approach. If a less realistic but 'conventional' appraisal approach had been followed (which assumes that this level of housing and employment development would simply take place elsewhere in Trowbridge should the transport scheme not be progressed), the Initial BCR would be 11.20 (Very High VfM).

It is clear that the economic benefits of the proposed A350 Yarnbrook and West Ashton Relief Road outweigh its costs and any negative impacts. Taking into account the core set of monetised benefits, the Scheme offers **High VfM** with a BCR of 3.47 and NPV of £16.93 million.

Financial Case

The Financial Case presents evidence of the scheme's affordability, for the construction phase and for ongoing liabilities (whole life costs). The full cost of implementing the A350 Yarnbrook and West Ashton Relief Road is estimated to be **£17.094 million** (outturn price). Scheme costs for have been estimated in both 2014 prices and outturn prices (including inflation), based on preliminary design drawings and bills of quantities. A summary of scheme implementation costs is shown in the table below.

Cost Category	£
Preparatory	£1.700 million
Construction (including Preliminaries)	£11.430 million
Site Supervision	£0.423 million
Land	£0.565 million
Quantified Risk Budget ¹	£1.135 million
Total – 2014 prices	£15.253 million
Inflation	£1.841 million
Total – Outturn prices	£17.094 million

The Scheme is expected to have the following implications on public accounts:

- The SWLEP secured a further LGF allocation of £11.5 million in January 2015. For the purposes of this OBC, a contribution of £5.0 million has been assumed from this LGF allocation, with the developers paying the balance of the scheme cost. It should be noted, however, that negotiations with the developer regarding contributions are at a very early stage – the scheme opening is almost six years away;
- The following allowances will need to be made by Wiltshire Council, once the road is adopted:
 - £2.6 million (2014 prices) for resurfacing / renewal of the additional highway infrastructure over a 60-year period. It is anticipated that surface treatment will be required every 5-10 years, surface course every 10-25 years, and structural repairs every 10 years; and

¹ Note that an additional 'contractors risk allowance' is included within the construction cost. The Quantified Risk Assessment should be updated if design and build is not pursued.

- £47k, or £785 per year (2014 prices) for the net increase in additional drainage clearance, road sweeping and litter picking.

Commercial Case

The preferred procurement option identified is based on an initial assessment only and may be subject to change as a result of forthcoming negotiations between the Council and developers through the planning process. At this stage it is anticipated that the Scheme construction will be procured by the developers of Ashton Park. To avoid State Aid issues, the developers will be required to undertake a competitive tendering process for the Scheme. These requirements will be formalised as part of a legal agreement between Wiltshire Council and the developers, with conditions associated with the use of the LGF funding.

This initial assessment has identified a **design and build contract** as the preferred procurement approach, in conjunction with a lump sum contract (NEC ECC3 Option A), due to greater cost certainty (although a higher tender sum would be expected to reflect the transfer of risk).

Management Case

Overall, a 'shared approach' for delivery of this scheme has been agreed between the developers and Wiltshire Council in 2013, in the Statement of Common Ground for Ashton Park. Since then, the developers, Ashton Park Trowbridge Ltd & Persimmon Homes Ltd, have been preparing an outline planning application for Ashton Park (including the relief road), and Wiltshire Council commissioned this OBC for submission to the SWLTB in early 2015. The governance arrangement reflect the shared approach, and will be further developed as part of the planning process:

- Wiltshire Council is the Promoting Body, as per the SWLTB, and is seeking to secure LGF funding, which has been provisionally awarded through the Growth Deal process. This OBC represents Stage 2 of the SWLTB's agreed 'Scheme Assessment and Approval' process. The SWLTB will use the contents of this OBC to decide whether the Scheme should be approved and progressed to the third and final approval stage (FBC);
- The developers will also be contributing towards the Scheme, and at this stage, it is anticipated that the developers will also deliver it; and
- A Joint Project Board will be established, comprising senior Wiltshire Council and developer representatives, to oversee delivery of the A350 Yarnbrook and West Ashton Relief Road. An SRO and Project Manager will be appointed, with the Project Manager reporting to the Project Board.

Key project milestones are listed in the table below. The programme reflects design and built procurement (see Commercial Case) – if the procurement route changes, then the programme will need to be revised.

	Estimated Dates ²
Outline Business Case:	
OBC approval (LTB meeting)	21 April 2015
Planning:	
Planning Application Submission by Developer	May 2015*
Outline planning determination	May 2015 through to January 2016 inclusive
S106 agreements	February 2016 to May 2016 inclusive
Outline planning consent	February 2016 to May 2016* inclusive
Procurement/Tendering:	September 2016 – February 2017* inclusive
Full Business Case (FBC):	
Develop Full Business Case (FBC)	October 2016 – May 2017 inclusive
FBC submission to the SWLTB	May 2017
FBC approval (SWLTB meeting)	July 2017*
Detailed Design³:	March 2017 – March 2018* inclusive
Construction:	April 2018* - March 2021
Opening of Road:	April 2021*

² The critical path activities for scheme delivery are identified in Table 16, with key milestones highlighted (*).

³ This programme is based on design and build, hence FBC submission would take place after procurement, but before detailed design. If a decision was made at a later date to change to a traditional contract, then FBC submission would take place after detailed design and subsequent procurement.

Introduction



1. Introduction

1.1. Context

This report presents the Outline Business Case (OBC) for the A350 Yarnbrook and West Ashton Relief Road, located to the south east of Trowbridge. The A350 Yarnbrook and West Ashton Relief Road has a direct and strong relationship with the planned Ashton Park Urban Extension (2,600 homes and 15ha employment land) which is included in the Wiltshire Core Strategy (adopted 20th January 2015) . Ashton Park Trowbridge Ltd and Persimmon Homes are planning to submit an outline planning application for the site, including proposals for the A350 Yarnbrook and West Ashton Relief Road, to Wiltshire Council in early 2015. As the only road improvement specifically referred to in Core Policy 66 'Strategic Transport Network' of the Wiltshire Core Strategy the strategic importance of this Scheme is self-evident.

The Strategic Outline Business Case for this Scheme was approved in July 2013, as part of the Swindon & Wiltshire Local Transport Body's (SWLTB) prioritisation process. Work to develop the OBC commenced in June 2014, and this OBC will be submitted to the SWLTB (or equivalent) for approval in April 2015. The Full Business Case (FBC) is planned to be completed in 2017 when tender prices will be available.

1.2. Background

Need for the Scheme

The A350 Yarnbrook and West Ashton Relief Road is a strategic priority for Wiltshire Council, SWLTB, and the Swindon & Wiltshire Local Enterprise Partnership (SWLEP).

The A350 Yarnbrook and West Ashton Relief Road is a priority in the SWLEP's SEP and Growth Deal negotiations.

This scheme will provide journey time and reliability benefits to both the A350 corridor, as well facilitate delivery of a strategic housing and employment site.

It is the only road improvement specifically referred to in Core Policy 66 'Strategic Transport Network' of the adopted Wiltshire Core Strategy.

The Scheme will directly unlock delivery of 2,600 homes and 15ha employment land adjacent to the A350 corridor (Ashton Park). Without the A350 Yarnbrook and West Ashton Relief Road, Ashton Park cannot take place.

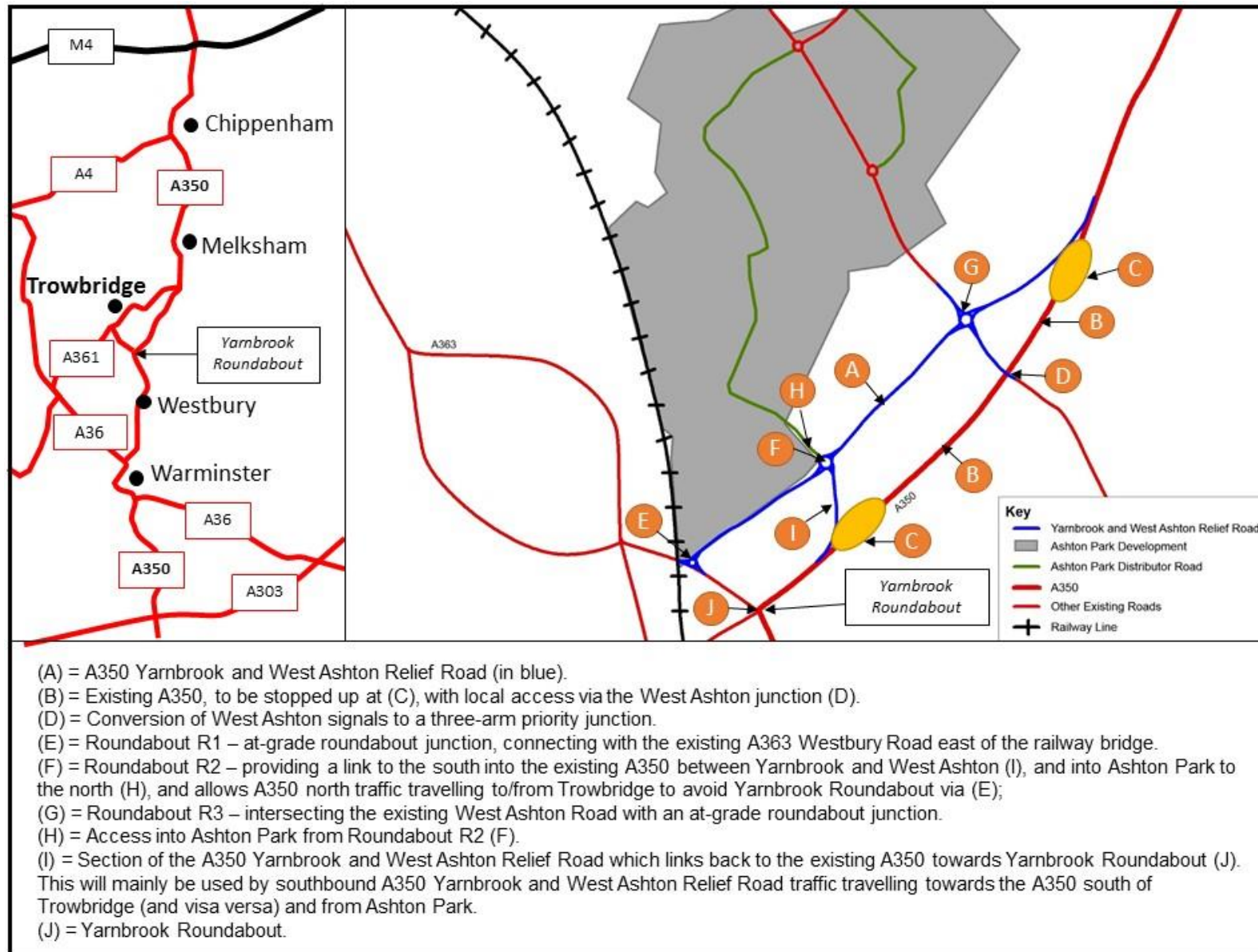
Non-delivery of Ashton Park would directly impact on the Council's ability to meet the levels required by the Inspector for the Core Strategy Examination in Public (EIP).

The funding package is made up of developer contributions and LGF. A positive Growth Deal announcement was received on the 29th January 2015, this will enable the Ashton Park planning application (including the Scheme) to be submitted.

Finally, without the A350 Yarnbrook and West Ashton Relief Road there would be an increasingly detrimental impact on the safe, efficient and reliable movement of people and goods on the strategic A350 north-south route in Wiltshire.

Further information about the need for the Scheme is provided in the Strategic Case chapter.

Figure 1 Scheme Location and Scheme Elements



LTB Funding Context

A new approach to funding local major transport schemes to be constructed in England (outside London) during the 2015-19 period was announced by the Department for Transport (DfT) in Autumn 2012. The new approach devolved major scheme funding decisions to 38 Local Transport Bodies (LTBs), with each LTB provided with an indicative funding allocation against which they could prioritise the Schemes being considered in their areas. In guidance⁴ issued to the LTBs, the DfT set out its requirement for each LTB to produce an Assurance Framework detailing the LTB's composition, governance, stakeholder engagement methods, scheme prioritisation and approval mechanisms, and approach to financial management. LTBs were asked to advise DfT of their spending priorities, in the form of a prioritised scheme list, by the end of July 2013. The overarching aim of the new approach is to move towards a more transparent and local decision-making process for major transport schemes.

Swindon & Wiltshire Local Transport Body

The Swindon & Wiltshire Local Transport Body (SWLTB) was established in 2012 to cover the areas administered by Swindon Borough Council and Wiltshire Council. It comprises Cabinet Members from both authorities as well as business representation from the Swindon and Wiltshire Local Enterprise Partnership (SWLEP). Overall, Swindon Borough Council is the accountable body for the SWLTB; the primary role of the accountable body is to hold the devolved major scheme funding and make payments to scheme promoters. The SWLTB's decision making processes are scrutinised by an Independent Technical Advisor (ITA). The SWLTB agreed that transport schemes in Swindon or Wiltshire that are expected to cost between £1 million and £25 million would be eligible for up to 90% funding from the LTB. With a confirmed funding budget for the SWLTB area of only £11.3 million to cover the 2015-19 period, scheme assessment and prioritisation has had to form a critical element of the SWLTB's initial work.

In line with the method set out in the Assurance Framework, long-lists of schemes were assessed by the Scheme promoters (Swindon Borough Council or Wiltshire Council) during April 2013 and submitted with supporting information to the SWLTB's Technical Officers Group for prioritisation. On 8th July 2013 the SWLTB approved a provisional prioritised and contingency scheme programme for the 2015-19 funding period⁵, with a prioritised scheme list submitted to the DfT in advance of the 31st July 2013 deadline. The SWLTB also approved the A350 Yarnbrook and West Ashton Relief Road as a 'contingency scheme' based on an assessment broadly equivalent to a Strategic Outline Business Case. Scheme promoters were then instructed to produce Option Assessment Reports⁶ and Appraisal Specification Reports for each 'prioritised' and 'contingency' scheme before approval could be given by the SWLTB to prepare OBCs. The ASR for this Scheme is in **Appendix C**.

At its meeting on the 8th January 2014, the SWLTB approved the proposed appraisal approaches to be adopted in the OBCs for the three top priority LTB schemes. The covering report also states that "*A similar proportionate approach is being taken with regard to the development of OBCs for the contingency schemes*" (paragraph 3.5). As a result an OBC would need to be developed for the A350 Yarnbrook and West Ashton Relief Road – a scheme also referenced in the Swindon & Wiltshire Strategic Economic Plan (SEP) (March 2014) as a key component of the A350 Corridor Growth Zone. The SEP formed a central element in negotiations between SWLEP and Government regarding Local Growth Fund (LGF) funding as part of the Growth Deal process.

The Scheme has been awarded provisional funding in the second round of Growth Deals, announced on the 29th January 2015. By the Council commissioning the OBC work in advance of this announcement, it has enabled the Scheme to be well advanced; therefore this OBC will be submitted to the LTB for approval at its April 2015 meeting.

1.2.1. Core Strategy and Ashton Park Development

The A350 Yarnbrook and West Ashton Relief Road will form part of the South East Trowbridge development, known as Ashton Park. It has been agreed between Wiltshire Council and the developers that the A350 Yarnbrook and West Ashton Relief Road will be included in the Ashton Park planning application on the

⁴ Local Frameworks for Funding Major Transport Schemes: Guidance for Local Transport Bodies, DfT, November 2012.

⁵ Swindon and Wiltshire Local Transport Body – Minutes of the meeting held on Monday, 8 July 2013. Section 6, resolution 1.

⁶ Option Assessment Reports encourage scheme promoters to articulate clearly the key transport problems, transport needs, objectives and options for a particular scheme. The Appraisal Specification Report clarifies the methodology and scope of further scheme appraisal, setting out what will be assessed in the Outline Business Case and how each element will be assessed.

basis of a 'shared approach'. This shared approach was established in the Statement of Common Ground for Ashton Park, developed for the Core Strategy Examination in Public (EiP) held in 2013.

Ashton Park Trowbridge Ltd & Persimmon Homes Ltd are currently preparing a planning application in support of the Ashton Park development, which includes this Scheme – this planning application will be in outline with all matters reserved for subsequent approval, except vehicular access to the site, including the A350 Yarnbrook and West Ashton Relief Road.

1.3. The Scheme

Wiltshire Council is promoting the construction of the A350 Yarnbrook and West Ashton Relief Road, which is designed to alleviate current and future network capacity issues southeast of Trowbridge. The A350 is a strategic transport corridor that links five major towns in the west of Wiltshire including the principal settlements of Chippenham and Trowbridge. The corridor is made up of the A350 national primary route between the A303, A36 and M4, and the rail line between Warminster and Chippenham. The corridor forms a key connection for Trowbridge to the wider strategic network, including the M4 (Junction 17) to the north and the A36(T) to the south (see Figure 1).

The preliminary design of the A350 Yarnbrook and West Ashton Relief Road is shown in Figure 2 and Appendix A. Figure 3 also shows the distributor roads within the Ashton Park development.

The A350 Yarnbrook and West Ashton Relief Road comprises (see Figure 2 and Figure 3):

- Construction of 2.5km of new carriageway, including a link to the Yarnbrook Roundabout (overall the A350 Yarnbrook and West Ashton Relief Road is 2.1km from end-to-end);
- Conversion of West Ashton signals to a three-arm priority junction;
- Existing A350 to be stopped up and landscaped at both ends;
- Stopping up of the 'old' A350, whilst maintaining access to properties via the West Ashton junction; and
- Three new roundabouts:
 - R1 – connecting with the existing A363 Westbury Road east of the railway bridge by means of an at-grade roundabout junction;
 - R2 – providing a link to the south into the existing A350 between Yarnbrook and West Ashton, and into Ashton Park to the north;
 - R3 – intersecting the existing West Ashton Road with an at-grade roundabout junction.

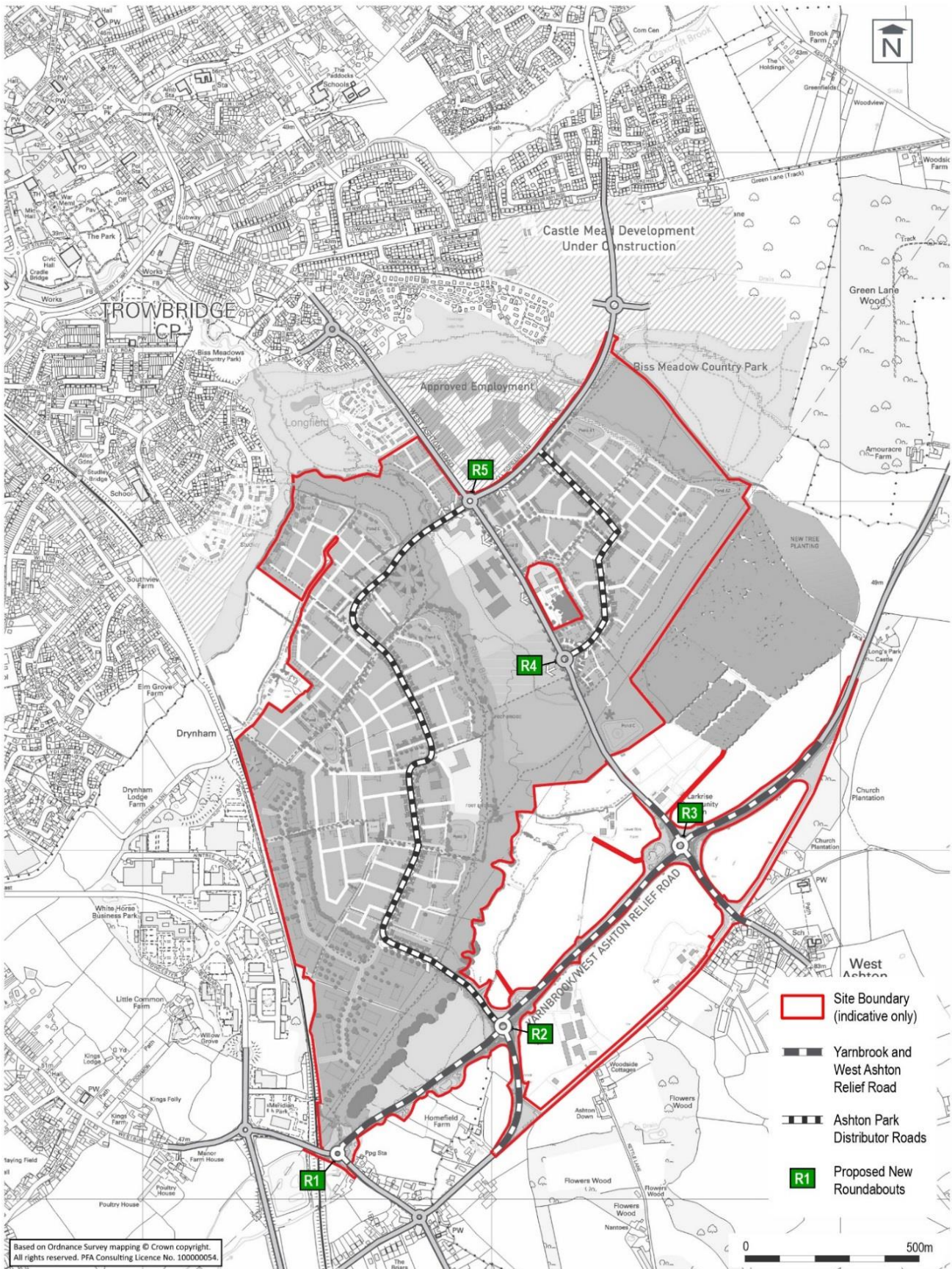
For each of the roundabout junctions on the A350 Yarnbrook and West Ashton Relief Road capacity assessments have been undertaken by PFA Consulting (traffic and infrastructure consultants to the developers) to demonstrate that they would operate with sufficient spare capacity to accommodate predicted traffic flows including the Proposed Development traffic from Ashton Park. Details of the junction capacity assessment are included in the Ashton Park Transport Assessment (June 2014).

Figure 3 shows the A350 Yarnbrook and West Ashton Relief Road in the context of the Masterplan for Ashton Park. The Scheme has been developed as part of a shared approach between Wiltshire Council and the developers, and takes into account more detailed issues in this highly constrained corridor which are covered in the Strategic Case (Chapter 2).

Figure 2 A350 Yarnbrook and West Ashton Relief Road⁷



Figure 3 Ashton Park Masterplan⁸



⁸ Ashton Park, Trowbridge Transport Assessment (June 2014). Note that the Ashton Park distributor roads do not form part of the major scheme and will be funded and built by the developers.

1.4. Document Purpose and Status

This document and its appendices form the OBC for the abovementioned **A350 Yarnbrook and West Ashton Relief Road**, which Wiltshire Council is promoting to the SWLTB regarding securing LGF funding. The developers will contribute towards the Scheme, and at this stage, it is anticipated that the developers will deliver the Scheme, which is reflected in the initial governance arrangements in this OBC. The detail regarding the delivery of the A350 Yarnbrook and West Ashton Relief Road will be developed as part of the planning agreement for Ashton Park (to be drawn up in 2015).

The OBC represents Stage 2 of the SWLTBs agreed 'Scheme Assessment and Approval' process. The SWLTB will use the contents of this OBC to decide whether the Scheme should be approved and progressed to the third and final approval stage (FBC). Approval of this OBC will allow the procurement processes to commence for the A350 Yarnbrook and West Ashton Relief Road (once planning approval has been secured).

This document is also intended to **support the principle of wider transport infrastructure investment along the A350**, building upon the improvements around Chippenham. As a strategic corridor and core growth area, investment along the A350 forms a central element of the Swindon & Wiltshire SEP, prepared by the SWLEP⁹.

1.5. Document Structure

This OBC has been prepared to the level of detail approved by the SWLTB at its meeting on the 17th July 2014 and is structured around the DfT's recommended five cases model for a Transport Business Case:

- **Strategic Case** (Chapter 2), setting out a clear rationale for the A350 Yarnbrook and West Ashton Relief Road and the need for investment in this location;
- **Economic Case** (Chapter 3), identifying the key economic, environmental and social impacts of the Scheme and its overall value for money;
- **Financial Case** (Chapter 4), presenting evidence of the Scheme's affordability both now (for the construction phase) and in terms of ongoing revenue liabilities. This section includes scheme outturn cost details;
- **Commercial Case** (Chapter 5), summarising the preferred approach to scheme procurement and justifying the commercial and legal viability of such an approach; and
- **Management Case** (Chapter 6), setting out how Wiltshire Council will ensure that the Scheme is delivered successfully – on time and to budget, with suitable governance and risk management processes in place. This reflects the shared approach between Wiltshire Council and the developers.

⁹ Aligning Local Innovation with Government Ambition: Strategic Economic Plan, Swindon and Wiltshire Local Enterprise Partnership, March 2014

Strategic Case



2. Strategic Case

2.1. Overview

This section sets out the ‘case for change’, by explaining the rationale for making investment and presenting evidence on the strategic policy fit of the proposed scheme.

The Strategic Case establishes the:

- Context for the business case; outlining the strategic aims and responsibilities of Wiltshire Council;
- Transport-related problems that have been identified, using evidence to justify intervention;
- Specific, Measurable, Achievable, Realistic and Time-bound (SMART) objectives that solve the problem, identified through alignment with Wiltshire Council’s strategic aims and responsibilities;
- Measures for determining successful delivery of the objectives;
- Scheme scope; determining what the project will and will not deliver;
- Analysis of constraints and opportunities for investment;
- Breakdown of interdependencies on which the successful delivery of the Scheme depends;
- Details of main stakeholder(s); and
- Evaluation of the options considered.

Full details of the transport problems, transport needs, objectives and options for the A350 Yarnbrook and West Ashton Relief Road are presented in the Options Assessment Report (OAR) for the Scheme, in **Appendix B**. Overall, the Strategic Case concludes that the proposed A350 Yarnbrook and West Ashton Relief Road fits with Wiltshire Council’s aims and responsibilities and that a strong case for change exists.

2.2. Business Strategy

Wiltshire Council, as promoting authority, has key local policies for spatial planning and transport that guide decisions on transport infrastructure investment; including any proposals for the A350 Yarnbrook and West Ashton Relief Road. These local policies are the Wiltshire Local Transport Plan 2011-2026 (LTP3)¹⁰ and the Wiltshire Core Strategy¹¹ (adopted 20th January 2015) which includes the Trowbridge Area Strategy and the Trowbridge Transport Strategy. Any scheme that addresses the identified problems on the A350 between Yarnbrook and West Ashton must align with these policies, the relevant aspects of which are presented in this section.

Crucially, schemes promoted by Wiltshire Council also need to support the economic growth aspirations of the SEP, prepared by the SWLEP. The A350 Yarnbrook and West Ashton Relief Road is a priority in the SWLEP’s SEP and Growth Deal negotiations and is part of the SEP.

Strategic Economic Plan

Schemes promoted by Wiltshire Council also need to support the economic growth aspirations of the SEP¹², prepared by the SWLEP. The SEP sets out the vision and charts out the measures that will need to be taken to secure economic growth and accelerate employment and housing delivery (as set out in the Core Strategies) across Swindon and Wiltshire. The SEP focuses, in particular, on enabling economic growth in three core geographic areas: Swindon; A350 Corridor; and South Wiltshire. To support SEP development, work was undertaken to set out how Wiltshire’s transport system should be developed through to 2026.

The SEP was submitted to Government on the 31st March 2014 and contains a strong emphasis on growth along the A350 corridor, with supporting transport infrastructure investment. In the SEP, the A350 Yarnbrook and West Ashton Relief Road is seen as an enabler to:

- Reduce queues and delays on the A350 corridor thus enhancing north-south connections; and

¹⁰ Wiltshire Local Transport Plan 2011-2026: Strategy, Wiltshire Council, March 2011

¹¹ At the time of OBC preparation, the most recent Core Strategy version was ‘Wiltshire Core Strategy Pre-Submission Document: Hearing Session Tracked Changes Version’ (EXAM/34), Wiltshire Council, updated 05 September 2013. The adopted version, dated January 2015 can be found at: <http://www.wiltshire.gov.uk/core-strategy-adoption.pdf>

¹² *Aligning Local Innovation with Government Ambition: Strategic Economic Plan*, Swindon & Wiltshire Local Enterprise Partnership, March 2014 <http://www.swlep.biz/resources/document635349836561033846.pdf>

- Enable housing and employment growth in the Ashton Park (Trowbridge) urban expansion, and the longer term growth of Trowbridge as a Principal Settlement.

The Scheme has been awarded provisional funding in the second round of Growth Deals, announced on the 29th January 2015, and this OBC will be submitted to the SWLTB for approval at its April 2015 meeting.

Wiltshire Local Transport Plan 2011-2026

The LTP vision is “to develop a transport system which helps support economic growth across Wiltshire’s communities, giving choice and opportunity for people to access essential services”. It sets out a long term transport strategy developed around five goals. The most important goals for Wiltshire’s transport system are to support economic growth and to reduce carbon emissions. In terms of supporting the economy, maintaining / enhancing the role of the strategic transport network in facilitating the efficient movement of people and goods is considered to be central to achieving this.

The LTP also sets out specific strategic transport objectives that have not only been developed to reflect local circumstances, but also align with central Government’s national transport goals. A number of these are relevant to the proposed A350 Yarnbrook and West Ashton Relief Road, including:

- SO1 – to support and help improve the vitality, viability and resilience of Wiltshire’s economy and market towns;
- SO4 – to minimise traffic delays and disruption and improve journey time reliability on key routes;
- SO10 – to encourage the efficient and sustainable distribution of freight in Wiltshire; and
- SO12 – to support planned growth in Wiltshire.

The plan recognises the strong links with supporting the Core Strategy - “A sustainable, effective and reliable transport network is essential to the delivery of planned housing and employment growth in Wiltshire”. The preferred strategic transport options include measures to “ease congestion at significant ‘hot spots’ and maintain journey time reliability on key routes” - the A350 Yarnbrook and West Ashton Relief Road is this type of measure.

The LTP also highlights that there is scope to encourage modal shift or reduce demand for travel in Wiltshire. Other investment priorities include: buses, sustainable transport packages, walking networks, congestion management, cycle networks, freight management, local safety schemes and smarter choices. The A350 Yarnbrook and West Ashton Relief Road will be complemented by other measures in the Trowbridge Transport Strategy¹³, which contains walking and cycling schemes, public transport improvements, smarter choices, demand management, and traffic capacity and pedestrian enhancements.

The proposed A350 Yarnbrook and West Ashton Relief Road also aligns strongly with the economic growth aspect of the LTP3 overarching vision, supports four specific LTP3. In addition, the A350 Yarnbrook and West Ashton Relief Road will not negatively affect objectives relating to safety, security and health, equality of opportunity, and quality of life, such as promoting sustainable transport packages. In Trowbridge, these sustainability objectives are expected to be met through complementary measures from the Trowbridge Transport Strategy, for example walking and cycling schemes and smarter choices. Whilst the Council is looking to fund the Trowbridge Transport Strategy from the LGF and other potential sources, a number of complementary schemes are already being delivered in Trowbridge as part of the Council’s LSTF programme, including: delivery of Personalised Travel Planning in 2013/14 and 2014/15, Trowbridge rail station improvements (planned for early 2015), and starting to deliver the Trowbridge wayfinding strategy (first phase also planned for early 2015). It is expected that travel planning will be carried out at Ashton Park, which will be agreed formally via the planning process.

Wiltshire Core Strategy

Overall, the Scheme aligns well with the Core Strategy policies. The aim of the Core Strategy is to “strengthen communities, wherever possible, by maintaining and increasing the supply of jobs to ensure that Wiltshire remains strong and prosperous”. Job growth and meeting the needs of business are central to the Core Strategy, in part to prevent any further increase in out-commuting from the County. Furthermore, inward investment is to be encouraged by ensuring that potential barriers to investment, such as inadequate infrastructure, are overcome. Any proposals to deal with congestion issues on the A350 should support the principle of job growth.

¹³ Trowbridge Transport Strategy Development Report on Emerging Strategy (October 2012).

The Core Strategy identifies the important role of the strategic transport network in supporting its vision and objectives and catering for the efficient movement of inter-urban and long-distance trips:

- The Core Strategy identifies the need to enhance the A350 primary route due to its strategic importance and the delivery of significant housing and employment land focused within the A350 corridor over the plan period – “*the strategic transport network along the A350 corridor will be maintained, managed and selectively improved to support development growth at Chippenham, Melksham, Trowbridge, Westbury and Warminster*” (Core Policy 66);
- The policy further details specific identified improvements – “The A350 national primary route at Yarnbrook/West Ashton will be improved. The improvement works necessary will be identified through further study work...”; and
- In addition to supporting development growth in Wiltshire in general, this improvement is a key element of the Spatial Strategy for the Trowbridge Community Area (Core Policy 29) and the delivery strategy for the Ashton Park Urban Extension.

Traffic growth on this section of the A350 is forecast to increase with planned development (in addition to expected background traffic growth). The emerging Core Strategy made provision for 178ha of employment land and at least 37,000 homes to 2026. Through the course of the Wiltshire Core Strategy Examination, the overall level of housing to be delivered over the period 2006 to 2026 was increased from 37,000 to 42,000. The Core Strategy was adopted on the 20th January 2015, however to ensure certainty of supply through the Plan period, the Council has committed to prepare a ‘Housing Site Allocations DPD’ to address the issue of meeting these additional housing requirements. The overall purpose of the Housing Site Allocations DPD is to identify sustainable locations for housing, to ensure that supply can be provided throughout the plan period. The DPD is likely to include additional housing at Trowbridge.

A significant proportion of this growth is focused within the A350 corridor, as detailed in Table 1.

Table 1 Core Strategy Housing and Employment Proposals within the A350 Corridor

Location	Dwellings	Jobs (Employment Land)
Chippenham	4,510	26.5 ha
Melksham	2,240	6 ha
Trowbridge	5,860 (+950 once secondary school provision is in place)	25 ha
Westbury	1,500	18.5 ha
Warminster	1,920	6 ha

Trowbridge is identified as one of three Principal Settlements within the Core Strategy (Core Policy 1) and is therefore a primary focus for employment and housing growth. The Ashton Park Urban Extension, South East of Trowbridge, has been allocated to deliver 2,600 homes (including affordable housing) and 15ha employment land (providing approximately 1,500 jobs), with associated social infrastructure. This site is located to the north west of the A350 (Figure 1). The site is approximately 165ha and lies east of the main railway line, generally west of Biss Wood and/or the River Biss and south of the Castle Mead development and its associated country park. Access to the site, particularly to/from the A350, is a key consideration, which is what this Scheme will provide.

The Core Strategy recognises that the delivery of this growth requires necessary supporting infrastructure improvements, including on the transport network (Core Policy 3). This level of growth is to be supported by area based sustainable transport strategies comprising packages of integrated transport measures (Core Policy 63). The Core Strategy recognises that the existing junction arrangements at Yarnbrook and West Ashton are over capacity and are a source of traffic congestion, and that the Scheme will have a significant benefit to the town.

Trowbridge Transport Strategy

The Trowbridge Transport Strategy considered current and forecast transport issues and assessed a number of different transport options. The report on the emerging strategy¹⁴ proposes a package of measures, including road improvements. An improvement on the A350 at Yarnbrook / West Ashton is specifically identified as being a necessary component of the strategy for the Trowbridge area, to relieve the existing Yarnbrook Roundabout and to provide access to the Ashton Park housing and employment developments.

While the LTP and the transport-related policies contained within the Core Strategy both emphasise the importance of developing and promoting sustainable transport options other than the private car, it is clear that the Core Strategy housing and employment allocations will place considerable pressure on the A350 corridor. Furthermore, improvements to the A350 will be complemented by other measures in the Trowbridge Transport Strategy, for example: improvements to pedestrian routes and cycle routes on key corridors, cycle parking, improved bus services, bus priority measures, improvements to Trowbridge railway station, travel plans, traffic demand management and traffic calming, and selected road improvements.

Overall, the Trowbridge Transport Strategy Report on the Emerging Strategy (October 2012) concludes: *“traffic modelling has shown that the Emerging Strategy is successful in reducing traffic congestion, with average journey times in 2026 similar to those experienced in 2009 and with delays on the A350 minimised”*.

2.3. Problems Identified and Impact of Not Changing

The OAR (**Appendix B**) provides a thorough description of both the problems identified and the impact of not investing in highway improvements in this location. The information in this section is intended to be a concise summary of the issues identified.

Problems Identified

The A350 is a strategic transport corridor that links five major towns in the west of Wiltshire including the principal settlements of Chippenham and Trowbridge. The corridor is made up of the A350 national primary route between the A303, A36 and M4 (with links to London, Swindon and the South West), and the rail line between Warminster and Chippenham.

The corridor forms a key connection for Trowbridge to the wider strategic network, including the M4 (Junction 17) to the north and the A36(T) to the south. However, high traffic volumes, particularly in the peak periods, result in congestion, delays and unpredictable journey times. Long queues commonly form on the A350 corridor to the south east of Trowbridge during the morning and evening peak periods. With planned development (even without Ashton Park) this is forecast to worsen (see Table 3). Without investment in suitable interventions, there would be an increasingly detrimental impact on the safe, efficient and reliable movement of people and goods on the strategic A350 north-south route in Wiltshire. Furthermore, opportunities for providing adequate access to the Ashton Park development site would be limited and present a constraint to delivering new housing and jobs in Trowbridge at a key strategic site allocation in the Core Strategy.

The problems relating to the A350 corridor to the south east of Trowbridge present a barrier to delivering key policy objectives, including those relating to housing and employment growth in the Wiltshire Core Strategy and economic objectives of the SWLEP (and the SEP).

The main problems that any intervention should seek to overcome, and the underlying basis for the intervention, are outlined in Table 2.

¹⁴ Trowbridge Transport Strategy Development – Report on Emerging Strategy, Mott MacDonald, 2012

Table 2 A350 Trowbridge – the Need for Intervention

Problem 1 – Congestion and poor journey time reliability on the A350 to the south east of Trowbridge:

- The section of the A350 to the south east of Trowbridge suffers queuing and delays that are manifested as a journey time reliability problem, particularly in the peak periods. This is due to the level of demand (both in terms of general traffic and goods vehicles) and a lack of capacity at the Yarnbrook and West Ashton junctions.
- Traffic flows exceed the reasonable capacity of a road of this type with a poor vertical alignment and frontage access.
- Accommodating planned growth is forecast to cause further strain on the network, as illustrated by the results of development modelling for Trowbridge.
- The opportunities to improve the A350 corridor would help to mitigate the impact of background traffic growth and future development traffic.
- The traffic congestion also results in localised environmental impacts which affect residents within the vicinity of the Yarnbrook and West Ashton junctions.

Problem 2 – Poor north-south connectivity threatens the strategic role of the A350:

- The A350 provides a vital link to the A303, A36, M4 and the wider trunk road network. Maximum traffic flow along the most heavily trafficked section is 27,000 vehicles per day.
- Poor journey time reliability negatively impacts on north-south connectivity across the county, affecting both inter-urban traffic within Wiltshire/Swindon, and longer distance strategic traffic (i.e. between Dorset and the M4, and beyond). Journey time reliability is worst during the morning and evening peak periods.
- The SEP identifies the A350 corridor as a growth zone, where there are currently large agglomerations of economic activity and where there is the greatest capacity for supporting sustainable growth in the future. The SEP's vision for 2026 includes highway improvements, such as the A350 Yarnbrook and West Ashton Relief Road, to improve the north-south links along the A350.
- Without intervention, journey time reliability is expected to worsen and poor connectivity will continue to reduce the viability of new development sites and negatively impact on the economic competitiveness of the area.

Problem 3 – Planned Housing and employment growth:

- The Ashton Park Urban Extension is a key strategic site allocation with 2,600 dwellings and 15ha employment land proposed. This represents over 36% of the housing allocation for Trowbridge (and 6% of the total for Wiltshire) to 2026 identified in the Core Strategy.
- Site access (and connection to the strategic road network) is a primary consideration in the viability of the development.
- Traffic modelling indicates that, without intervention, the operation of the network, including the Yarnbrook Roundabout and West Ashton Crossroad junctions, would be significantly compromised.
- There are opportunities to unlock the development potential of the Ashton Park, providing for direct access into the proposed new employment areas and thus supporting economic growth.
- Improved access to the A350 would also support a Principal Employment Area at West Ashton Road as well as the White Horse Business Park.

Problem 4 – Accidents:

- There is an historic road safety problem at the West Ashton crossroads which represents an accident cluster. Note that the junction has been recently upgraded, and that accident data will need to be reviewed when data becomes available.
- The A350 Yarnbrook and West Ashton Relief Road will divert A350 traffic away from the crossroads.
- The accident benefits of the A350 Yarnbrook and West Ashton Relief Road are assessed in the Economic Case of this OBC.
- Furthermore, forecast increases in traffic are likely to compromise the safe, efficient and reliable movement of people and goods on the A350 corridor.

Impact of Not Changing

The problems relating to the A350 corridor to the south east of Trowbridge present a barrier to delivering key policy objectives, including those relating to housing and employment growth in the Wiltshire Core Strategy and economic objectives of the SWLEP (and the SEP).

The emerging Trowbridge Transport Strategy⁸ confirms the need for off-line improvements to the A350 route as part of a comprehensive multi-modal transport strategy. Without investment in suitable intervention, there would be an increasingly detrimental impact on the safe, efficient and reliable movement of people and goods on the strategic A350 north-south route in Wiltshire. Furthermore, opportunities for providing adequate access to the Ashton Park Urban Extension would be limited and present a constraint to delivering new housing and jobs in Trowbridge.

In addition to the Ashton Park development, there are a number of future housing and employment developments currently proposed in the Core Strategy for the Trowbridge area which would exacerbate the identified problems. These include:

- East of Trowbridge, Castle Mead site (under construction) – 650 dwellings;
- Southview Residential Development – 300 dwellings; and
- Biss Farm Business Park – 12ha commercial development.

Furthermore, additional housing for Trowbridge is currently being considered as part of the Housing Site Allocations DPD. This is linked to the Wiltshire Core Strategy Examination, which has required that the overall level of housing to be delivered over the period 2006 to 2026 was increased from 37,000 to 42,000. The Core Strategy was adopted on the 20th January 2015, however to ensure certainty of supply through the Plan period, the Council has committed to prepare a 'Housing Site Allocations DPD' to address the issue of meeting these additional housing requirements. The transport impact of these additional homes on the Scheme and the town will be considered as part of the DPD study.

As well as future changes in land use, it is also important to understand how the transport network and demand are expected to change in the future within the area of concern. Some of these changes to the transport network may be directly associated with proposed developments.

The Trowbridge Transport Strategy Report on Forecasting Problems & Issues¹⁵ presents the impact of development without any off-site highway improvements, other than for the purpose of providing access to Ashton Park. Therefore a new site access roundabout on the A350 to the east of Yarnbrook Roundabout was modelled with a new link connecting the roundabout to the proposed roundabout on West Ashton Road at the southern end of the proposed Eastern Distributor Road. Both the Hilperton Relief Road and the East Trowbridge Distributor Road, as committed schemes, are included in the 2026 scenarios; both schemes will result in changing traffic patterns in Trowbridge.

The traffic modelling¹⁶ has demonstrated that the performance of the highway network would suffer from increased levels of congestion with the planned future developments in Trowbridge. Table 3 shows the forecast impact of planned development specifically on the Yarnbrook and West Ashton Junctions (2026 with Strategic Site is shaded in yellow). Other selected model outputs are presented in the OAR (**Appendix B**).

Recent Transport Schemes

The A350 West Ashton crossroads have recently been the subject of a scheme intended to increase capacity through the provision of an additional dedicated left turn lane on the northbound A350 arm. This scheme was delivered as part of the Castle Mead development. The following significant transport schemes have also been identified as having a high degree of certainty for delivery in the future:

- **A350 dualling north of Chippenham** (between the Badger roundabout and Jacksom's Lane) – this scheme received funding via the Local Pinch Point Fund in 2013 and is intended to address a key pinch point on the A350 which causes congestion and increased journey times. The Scheme will also improve the viability of employment sites. Construction completed in March 2015;
- **TransWilts rail corridor** – the rail service between Westbury and Swindon (via Melksham/Chippenham) has been enhanced since December 2013 as part of the LSTF project to encourage increased rail use and modal shift from the car – the rail service increased from two trains per day each way to eight trains per day each way;

¹⁵ Source: Trowbridge Traffic Model Forecasting Problems & Issues Report, PFA, 2011

¹⁶ Source: Trowbridge Traffic Model Forecasting Problems & Issues Report, PFA, 2011

- **Hilperton Relief Road** – connecting A361 Trowbridge Road with Canal Road/Wyke Road/Horse Road, secured by East Trowbridge residential development; and
- **East Trowbridge Distributor Road** – connecting A361 Hilperton Drive with West Ashton Road, secured by East Trowbridge residential development and West Ashton Business Park. Construction of this road is now complete although the road is not yet open.

The A350 Yarnbrook and West Ashton Relief Road complements these schemes, firstly supporting the principle of improvements to the A350 corridor. In the Trowbridge area, the Hilperton Relief Road and East Trowbridge Distributor Road are part of the reference case in the Trowbridge Transport Strategy, and are part of the emerging Transport Strategy.

Table 3 Forecast Impact on the A350 Yarnbrook and West Ashton Junctions¹⁷

Junction	Scenario	Overall Junction Capacity		Arms with capacity > 85%
		AM Peak	PM Peak	
A350 / West Ashton Road	2009 Base	75%	72%	<ul style="list-style-type: none"> • A350(N) in AM peak. • A350(S) in AM & PM peaks. • West Ashton Road PM peak.
	2026 Reference Case	85%	78%	<ul style="list-style-type: none"> • A350(N) in AM & PM peaks. • A350(S) in AM & PM peaks. • West Ashton Road AM & PM peak.
	2026 with Strategic Site	86%	78%	<ul style="list-style-type: none"> • A350(N) in AM & PM peaks. • A350(S) in AM & PM peaks. • West Ashton Road AM & PM peak.
A350 / A363 Yarnbrook Roundabout	2009 Base	56%	55%	<ul style="list-style-type: none"> • A350(S) in AM peak.
	2026 Reference Case	72%	69%	<ul style="list-style-type: none"> • A350(S) in AM peak. • A350(N) in AM & PM peaks.
	2026 with Strategic Site	98%	88%	<ul style="list-style-type: none"> • A350(S) in AM & PM peaks. • A350(N) in AM & PM peaks. • A363 Westbury Road in AM & PM peaks.

2.4. Objectives

In order to solve the problems outlined, four SMART objectives for the A350 Yarnbrook and West Ashton Relief Road have been identified. Strong progress against all objectives is expected by 2026 (5 years after scheme opening).

- Reduce traffic queues and delays on the A350 corridor at West Ashton and approaching Yarnbrook Roundabout by 2026;
- Improve journey time reliability on the A350 corridor;
- Facilitate housing and employment growth in the Ashton Park Urban Extension through addressing known and forecast congestion pinch-points at West Ashton and Yarnbrook by 2026; and
- Reduce the number of road accidents in the Yarnbrook and West Ashton areas by 2026.

2.5. Measures for Success

For each objective set out in section 2.4 at least one 'indicator of success' has been established to determine what constitutes successful delivery of any transport-related improvements. Indicators and related targets for outcome indicators are outlined in Table 4. Further details, including output and scheme delivery monitoring, are presented in the Benefits Realisation, Monitoring and Evaluation Plan (**Appendix K**).

¹⁷ Source: Trowbridge Traffic Model Forecasting Problems & Issues Report, PFA, 2011

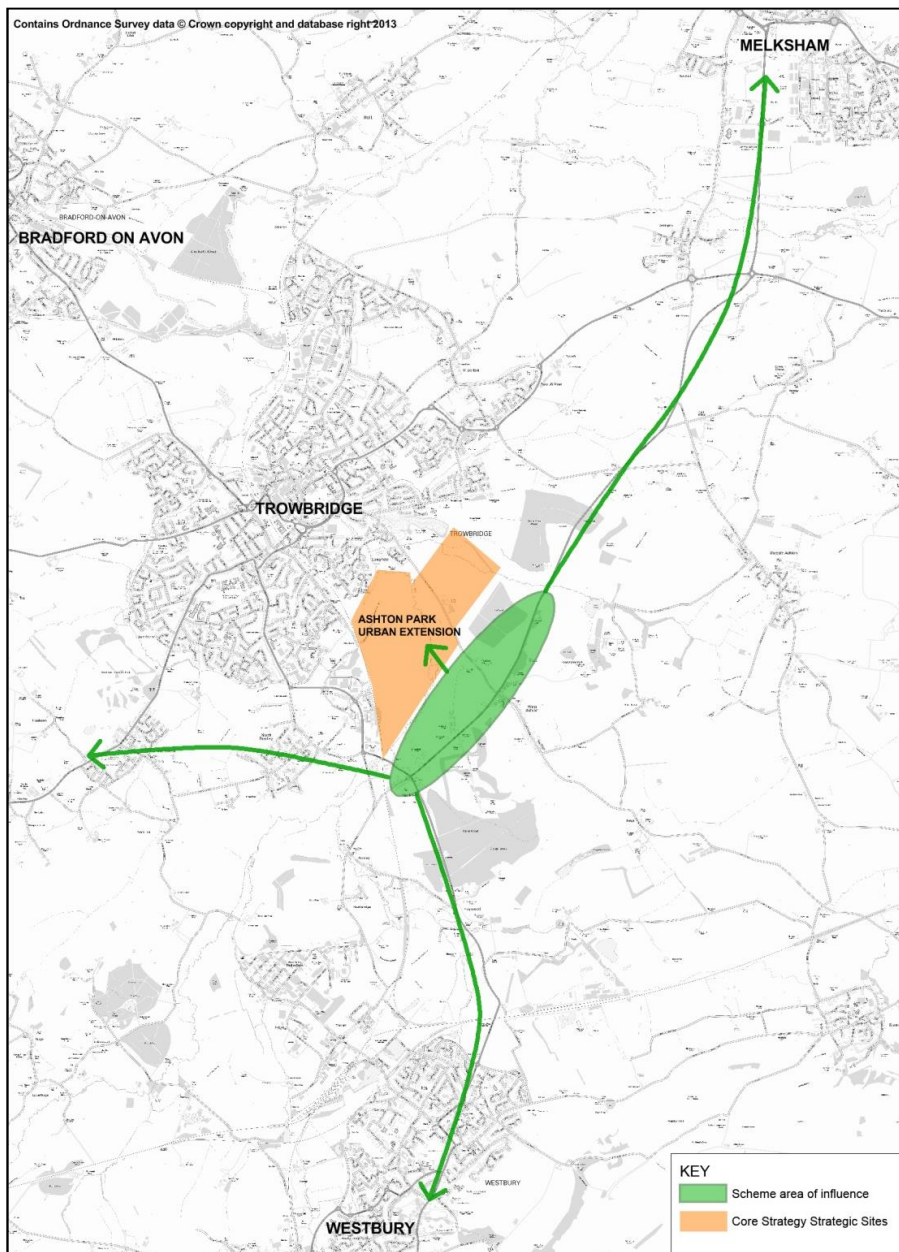
Table 4 Success Indicators (Desired Outcomes)

Benefit Indicator	Targets	Relating to Objective
Reduction in average peak period (AM & PM) journey times, along the A350 in south east Trowbridge corridor, between Yarnbrook and West Ashton, in both directions.	Average peak period journey times along this length of road should have reduced by X% one year after scheme opening (% to be derived once level of housing in place upon opening has been formally agreed).	1
Reduced time spent in queued traffic during peaks (AM & PM) at the Yarnbrook Roundabout and West Ashton junctions.	The extent of peak period queues approaching the Scheme's junctions should have reduced one year after Scheme opening.	1
A350 to provide high service level traffic conditions as well as reliable travel times.	Maintain and further increase the viability of new development sites and impact positively on the area's economic growth, with increases in: <ul style="list-style-type: none"> • Housing units completed. • Commercial floorspace occupied. • Commercial rental values. 	2
Delivery of housing and employment at Ashton Park, whilst providing appropriate access to and from the A350.	The 2,600 dwellings and the 15ha of employment land to be developed as well as Wiltshire Council's Core Strategy policy regarding housing and jobs in Trowbridge area to be achieved.	3
Accidents on the A350 (taking into account increased trip generation due to Ashton Park).	Reduction in accidents on the A350 (adjusted for the increased trips due to Ashton Park).	4

2.6. Scope

Given the problems identified in Section 2.3, and the objectives identified in Section 2.4, the immediate area of impact to be addressed by any intervention is concerned with the general A350 corridor to the south east of Trowbridge and access to the Ashton Park site. However, due to the strategic nature of this corridor, the area of impact also extends along the A350 corridor to the north (towards Melksham/Chippenham) and to the south (towards Westbury). The area of impact is illustrated in Figure 4.

Figure 4 Geographical Area of Impact



2.7. Current Opportunities and Constraints

Transport and Development Opportunities

With significant housing and employment development planned for Trowbridge and surrounding areas in the coming years, a good opportunity exists to deliver transport improvements and to maximise the potential for economic growth in the area. The developments should act as a catalyst to address existing transport issues before capacity is further exceeded. It is also notable that network improvements are being implemented elsewhere on the A350 - most notably around Chippenham.

Furthermore, the Ashton Park Urban Extension, identified in the Core Strategy, is located near to the A350. The development of the site presents opportunities to improve the A350 corridor whilst also facilitating access to the site (and hence generate additional non-transport benefits – for example land value uplifts, and S106/CIL developer contributions).

However, there are a number of existing environmental and physical constraints which limit the potential transport options available.

Environmental Constraints

The Environmental Constraints that have been identified relating to the Scheme are:

- Green Belt constraints to the north and west of Trowbridge;
- River Biss flows through the town - flood risk in vicinity of scheme shown in the OAR in **Appendix B**;
- Significant areas of woodland situated to east of town covered by Tree Preservation Orders (TPO) and Biss Woods which is owned by the Wiltshire Wildlife Trust; and
- Picket and Clanger wood designated as a Site of Special Scientific Interest (SSSI).

Physical Constraints

The Physical Constraints that have been identified relating to the Scheme include:

- The villages of Yarnbrook and West Ashton are located on the A350 route, together with some roadside residential properties;
- The southbound A350 approaches the West Ashton signalised junction on a rising grade after a substandard crest;
- Yarnbrook roundabout is very small and tight, and is hemmed in by existing frontage development;
- Poor alignment (including vertical alignment);
- Community severance; and
- Railway embankment serving the Portsmouth to Cardiff railway line separates the business park from open fields.

2.8. Interdependencies

The main interdependency, and overall driver for the Scheme, is the Ashton Park development. The most likely avenue of funding for the A350 Yarnbrook and West Ashton Relief Road includes a significant proportion of funding from the developers (see Financial Case chapter). In addition, the successful completion of the development relies on increased network capacity and access/exit points onto the A350 – it cannot go ahead without the Scheme. Thus, 2,600 houses and 1,500 jobs are dependent on the Scheme's successful completion. Furthermore, the Council is currently preparing a 'Housing Site Allocations DPD' to address the issue of meeting the Core Strategy Inspector's additional housing requirements.

The timing for the delivery of the Scheme is dependent on negotiations between Wiltshire Council and the developers, anticipated to take place in 2015. This will be formalised in a planning agreement in 2016, whereby the amount of development at Ashton Park is capped until the road is operational. It is also dependant on securing an allocation from the LGF, or an alternative funding source. Wiltshire Council and the developers are working together towards a scheme opening date of early 2021.

2.9. Stakeholders

The A350 Yarnbrook and West Ashton Relief Road has been consulted on as part of the Core Strategy, and also as part of the Ashton Park Urban Extension. A Communications Plan is presented in **Appendix I**.

Core Strategy Consultation

Wiltshire Council has undertaken six consultation stages for the Wiltshire Core Strategy, in which it has engaged the communities of Wiltshire. Letters were sent to people on its database, adverts were placed in nine different papers across Wiltshire) and documents were provided to be viewed at various locations including the four Council hubs, all Wiltshire libraries and online. Drop in sessions were provided for two rounds of the consultation, in which members of the public could come in to a venue located near them to view plans and ask questions if necessary. Throughout the consultations the Ashton Park Strategic Site has been included within the emerging plan and open for comment.

Ashton Park Consultation

Scheme specific consultation to-date regarding the A350 Yarnbrook and West Ashton Relief Road has been undertaken as part of the Ashton Park Urban Extension¹⁸. In early discussions between the developers and Wiltshire Council Officers, the need was identified to bring forward the strategic allocation through a master planning process agreed between the community, Local Planning Authority and the Applicants

¹⁸ This section is based on a Planning Application Summary provided by Pegasus in June 2014. A Statement of Community Involvement will accompany the Ashton Park Planning Application once submitted.

Consequently, Wiltshire Council's Spatial Planning team took a proactive role in organising stakeholder groups, to consider the appropriate wider community consultation and the emerging master plan.

A Reference Group of local community representatives, including local Councillors, was set up to discuss key issues and the emerging master plan. The content of the wider public consultation was also discussed and influenced by members' comments. Meetings were held in November 2013 before the main consultation events were held in December 2013. A further Reference Group meeting was held in January 2014 following feedback from the wider consultation and consultees. A meeting was also held to explain the proposals and listen to the views of all Councillors from North Bradley and West Ashton Parish Councils.

An Inception Group was also organised by Wiltshire Council's Spatial Planning Team, including the principal consultees within Wiltshire Council, to discuss the objectives and aspirations of the different disciplines. A further Inception Group meeting, following the community consultation, focused on the master plan and resulted in some changes. However, the master plan did not fundamentally change as a result of consultation having been led by the natural constraints and opportunities of the site and its surroundings, as well as the requirements of the Wiltshire Core Strategy development template.

Due to the scale of the proposed Ashton Park development, two public consultation events were held where the local community was invited as this was deemed the most appropriate method of informing local residents and other stakeholders about the emerging development proposals. In order to advertise the pre-application community consultation events, leaflets providing the details of the events were prepared and delivered to approximately 5,750 households in the local area of the proposed application including North Bradley, parts of Trowbridge, West Ashton and Yarnbrook in November 2013. This leaflet provided local residents with information about the details of the draft masterplan and the public consultation events. Details of the public consultation events were also sent to relevant local councillors for Trowbridge Town Council, North Bradley Parish Council and West Ashton Parish Council.

The public events were advertised within the local newspaper, the Wiltshire Times, to ensure maximum coverage of the events within the local area. The consultation events were held on Thursday 5th December 2013 between 3.00 pm and 8.00 pm and Tuesday 10th December 2013 between 3.00 pm and 8.00 pm at Trowbridge Civic Centre in Trowbridge. The consultation events were generally well attended, with an estimated 150 people passing through the doors to view the proposals.

The emerging draft masterplan for the Ashton Park development proposals was presented on display boards at the consultation events. Representatives of Pegasus Group and PFA Consulting (Transport and Infrastructure Consultants) were in attendance to explain the draft masterplan in greater detail and answer any questions raised.

Consultation leaflets and comments forms/stamped addressed envelopes were available at the events to enable attendees to take home information to consider the draft proposals and respond at their leisure. The consultation leaflet provided the opportunity to comment on the proposals via a freepost feedback slip and details of the email address ashtonpark@pegasuspg.co.uk. Comments were requested by 3rd January 2014. However, where possible, comments that were submitted late were taken into account by the developers and its consultant PFA.

Future Consultation – Planning Process

Further consultation will be carried out as part of the statutory planning process – the Ashton Park planning application will be uploaded to the Wiltshire Council website where the public and stakeholders will be able to comment. Finally, an information sharing consultation event will be carried out once the detailed design is finalised, which will also be used to explain the plans for the construction period.

2.10. Options

A number of potential solutions to the problems identified on the A350 at Yarnbrook and West Ashton were considered in the OAR, presented in **Appendix B**. These options are presented in **Figure 5**.

Firstly a long list of eight Scheme Options was sifted, the remaining five options performed reasonably against the criteria within the DfT's five cases model. The following five options¹⁹ went through to detailed assessment against the DfT's Five Cases Model:

- Option 2 - Yarnbrook North Relief Road;
- Option 3 - West Ashton Relief Road;
- *Option 4 - Combined Yarnbrook Northern Relief Road and West Ashton Relief Road;
- *Option 4a – A350 Yarnbrook and West Ashton Relief Road; and
- Option 8 - TransWilts Service Enhancements.

Figure 5 Scheme Options



The results of the options scoring assessment indicate that the best performing option is Option 4, which has two variants, but was treated as one scheme for scoring purposes. Option 4 scored highest in the Strategic and Economic Cases, and joint highest in the Commercial and Financial Cases. The Strategic Case score demonstrates a strong fit to local and national policies, alignment with scheme objectives, and the likelihood of achieving the intended outcomes. The assessment of the Economic Case considered economic impacts (in terms of unlocking jobs and housing), environmental impacts, social impacts and overall value for money. The Scheme scored well through facilitating the Ashton Park Urban Extension, and the benefits to the A350 corridor.

Option 4 has two variants (Option 4 and 4a) – Option 4a is based on the Scheme being progressed as one scheme, as opposed to two separate elements. This has been developed as part of a shared approach between Wiltshire Council and the developers, and takes into account more detailed issues in this highly constrained corridor. This is the same option which is being promoted by the developers of the Ashton Park development, which will be submitted to Wiltshire Council as part of the planning application for the urban extension. Refinement to the Scheme's alignment has been undertaken by the developers' consultant, taking into account environmental constraints identified whilst developing the Environmental Statement (ES)²⁰ for the Ashton Park development.

¹⁹ Note that Options 4 and 4a were treated as one scheme for the purposes of Sifting and the Detailed Option Assessment scoring due to their broad similarities.

²⁰ Ashton Park draft Environmental Statement chapters provided by PFA on CD, dated June 2014.

Economic Case



3. Economic Case

3.1. Overview

This chapter identifies the key economic, environmental and social impacts of the proposed scheme and presents the overall value for money. This shows the extent to which the Scheme's benefits outweigh its costs, whether monetised or not. The economic, environmental, social, public accounts and distributional impacts of the Scheme have all been appraised following the principles contained within the DfT's transport appraisal guidance (WebTAG), in a manner which is proportionate to the total scheme cost. The scheme impacts are summarised in an Appraisal Summary Table (AST), providing a brief and consistent summary of expected qualitative, quantitative and monetised impacts.

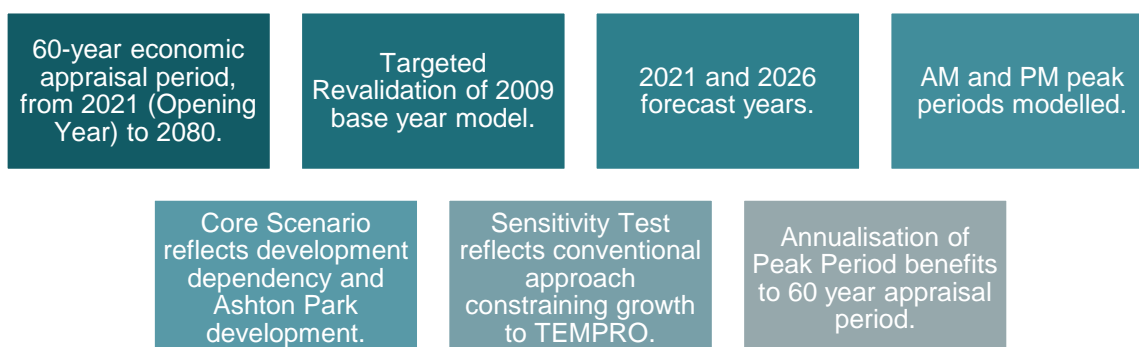
This chapter contains the following elements:

- A description of how the Scheme's value for money has been established and the options and scenarios that have been modelled;
- Details of the key assumptions that have been made, regarding the assumed delivery of other nearby schemes or developments;
- A Value for Money Statement, in line with the DfT's latest Value for Money Assessment guidance²¹;
- Details of how different variables will affect the value for money assessment, including the findings of growth-related sensitivity tests;
- Commentary on the Scheme's expected economic, environmental, social and public accounts impact; and
- A completed Appraisal Summary Table (see **Appendix G**).

An important aspect of the Economic Case is the Value for Money Statement. This is based on summing the monetised impacts to establish an Initial BCR, which implies an initial value for money band (poor, low, medium, high, or very high). This band is then adjusted to account for impacts where qualitative or quantitative, but not monetised, information is available.

3.1.1. Approach to Appraisal

Scheme economic appraisal has been undertaken using the existing Trowbridge Traffic Model, which has been subject to a targeted base year revalidation. The following key principles apply:



The remainder of this section focuses on the targeted revalidation and development dependency.

²¹ Value for Money Assessment: Advice Note for Local Transport Decision Makers, DfT, December 2013

Base Year Model – Targeted Revalidation

As a 2009 base year is relatively old, a targeted revalidation of the base year model was undertaken.

The 2009 Trowbridge Traffic Model was updated and revalidated to 2014 to represent the existing traffic conditions, representing a typical weekday (Monday – Friday) in June 2014. The targeted revalidation utilised data from a number of sources comprising new traffic count data, and journey time data from Traffic Master. The modelling framework was developed to represent a 2014 base year to which the model was calibrated and validated. In order to remain consistent with the modelling approach used for the Ashton Park Transport Assessment (June 2014), the matrices were then factored back to a 2009 base year.

Forecasting – Development Dependency

This is a key aspect of the appraisal approach, reflected in the ASR (**Appendix C**).

The development at Ashton Park consists of both transport and development elements, neither of which will proceed without the other and hence the appraisal follows TAG Unit A2-3 (Transport Appraisal in Context of Dependent Development). The WebTAG approach to testing for dependency requires not only a test of whether the entire development is dependent upon transport improvements, but also to establish how much of the development is dependent, by considering how much of it could go ahead without improving the network, such that a reasonable level of service is still provided.

The value of this is to define a Without Scheme (DM) scenario in which the maximum level of development which the network can support is included, with the remaining development forming the With Scheme (DS) scenario. The proportion of land value gains attributable to the dependent portion of the development should then be calculated as a part of the Scheme value, rather than assuming that the impact of the whole development is enabled by the transport improvements.

A dependent development approach has been developed. This reflects that a Without Scheme scenario, with only part of the Ashton Park development included, is not a realistic scenario to model. This is because the developer has made it clear that should the whole development not be enabled, there will be no interest in implementing fractions of that development which can be supported by the existing infrastructure.

As part of this dependent development approach, two scenarios were modelled:

- **Without Scheme:** *without* the proposed Ashton Park development and *without* the A350 Yarnbrook and West Ashton Relief Road (DM);
- **With Scheme:** *with* the proposed Ashton Park development and *with* the A350 Yarnbrook and West Ashton Relief Road (DS).

Note that the additional housing being considered for the Housing Site Allocations DPD is not included in the OBC modelling due to the lower level of certainty and because this work has not been finalised.

The benefits that would be expected to accrue to road users over the appraisal period were evaluated using a spreadsheet based method for dependent development. This is reflected in the Core Scenario (the Sensitivity Test constrains to TEMPRO in both the Without Scheme and With Scheme scenarios). This spreadsheet based tool has been used to monetise the journey time, vehicle operating costs, indirect tax and reliability benefits of the Scheme and the inputs required for this are in line with TUBA software.

Note that following a 'standard' approach, as reflected in the Sensitivity Test, would have produced a higher BCR. The 'standard' approach for a scheme such as this, which involves increased trip growth, would have been to constrain both the Without Scheme and With Scheme scenarios to TEMPRO growth levels, resulting in the same increase in trips occurring across both the scenarios. However, it is unlikely that such development (and therefore trip growth) could be accommodated anywhere in Trowbridge other than at Ashton Park, which is dependent on the Scheme. Due to this dependency, trips to and from the Ashton Park developments are not included within the Without Scheme scenario, resulting in much higher trip numbers in the With Scheme scenario. The 'standard' approach is reflected in the Sensitivity Test for comparison.

Full details of this approach are documented separately in the Proportionate Appraisal – Housing Dependency note, which is part of the ASR (**Appendix C**).

3.1.2. Key Modelling and Appraisal Assumptions – Core Scenario

Development Assumptions

To reflect the future situation as accurately as possible, the assumptions in Table 5 have been made in the modelled With Scheme and Without Scheme scenarios. The With Scheme scenario includes all of the Without Scheme development. Further information is provided in **Appendix D**.

Table 5 Development Assumptions for Without Scheme and With Scheme Scenarios

Without Scheme Development Assumptions	With Scheme Development Assumptions
<ul style="list-style-type: none"> • East of Trowbridge, Castle Mead Development (under construction). • Bradford Road - 4.4 Hectares of Employment; • West Ashton/Biss Farm – 12.1 Hectares of Employment. • The Gateway (former Wincanton site) - 7,000 sq.m Retail /1,200 sq.m Office. • Brewery Gate - Former Ushers Bottling Plant - 44,000 sq.ft Foodstore. • Pork Farms, Former Bowyer Site - 60,000 sq.ft Foodstore. • East Wing County Hall - 8,000 sq.m Leisure facility. • Information on completed housing units between 2009 and 2014 from Wiltshire Council. • Information from the Trowbridge Traffic Model 2026 Model Forecasting Problems & Issues Report, and clarifications/updates from Wiltshire Council. • No A350 Yarnbrook and West Ashton Relief Road. 	<ul style="list-style-type: none"> • Without Scheme assumptions plus Ashton Park development comprising: • Up to 2,600 dwellings. • 15 hectares of employment land to support a mix of B1, B2 & B8 use classes. • Two mixed use local centres. • Two primary schools – Total 840 pupils. • A site for a secondary school – Total 1200 pupils. • Areas of public open space including extensions to the Biss Meadows Country Park. • The provision of the A350 Yarnbrook and West Ashton Relief Road and distributor roads.

Network Assumptions

With regard to the future year Without Scheme network scenario, the probability of committed schemes to be implemented has been established in consultation with Wiltshire Council and, from this, the Without Scheme network was prepared. Table 6 presents both the Without and With Scheme network assumptions.

Table 6 Network Assumptions for Without Scheme and With Scheme Scenarios

Without Scheme Network Assumptions	With Scheme Network Assumptions
<ul style="list-style-type: none"> • East Trowbridge Distributor Road (under construction) - connecting the A361 Hilperton Drive with West Ashton Road, secured by the Castle Mead development. • Hilperton Relief Road - connecting A361 Trowbridge Road with Canal Road/Wyke Road/Horse Road, secured by the Castle Mead development. • West Ashton Road Improvements (complete) - secured by the Castle Mead development. • Yarnbrook Roundabout Improvements - secured by the Biss Farm development. • A361/West Ashton Road Roundabout Improvements - secured by the Biss Farm development. • West Ashton Crossroads improvement (complete) - secured by the Biss Farm development/ Castle Mead development. 	<ul style="list-style-type: none"> • The With Scheme network includes all the schemes listed in the Without Scheme network, plus: • The proposed A350 Yarnbrook and West Ashton Relief Road. • Ashton Park distributor roads. • Removal of A350 between West Ashton Cross Roads and Yarnbrook Roundabout.

Economic Appraisal Assumptions

The following assumptions have been made in undertaking the economic appraisal and establishing the Scheme's value for money:

- Optimism Bias of 15% has been added to the base year scheme costs. This level of Optimism Bias has been selected to reflect the fact that scheme costing has been undertaken to a reasonable level of detail, based on preliminary design drawings and bills of quantities²²;
- Standard HM Treasury discounting procedures have been applied to the costs over the full appraisal period:
 - 3.5% for the first 30 years of the full appraisal period (2014 to 2043 inclusive); and
 - 3.0% for the remainder of the appraisal period (2044 to 2080 inclusive).

The Forecasting and Economic Appraisal Report at **Appendix D** provides further details on the appraisal approach.

3.2. Value for Money Statement

The Value for Money Statement summarises the impact of the transport intervention under consideration. It uses the HM Treasury Green Book method of cost-benefit analysis, by weighing the benefits against the costs to indicate whether the Scheme offers 'value for money'. Qualitative, quantitative and monetised information can be used in preparing the statement. This section contains the Value for Money Statement in line with the DfT's Value for Money Assessment guidance²³.

The Value for Money Statement in this section should be read in conjunction with the Appraisal Summary Tables (AST) in **Appendix E**. The AST identifies the full set of scheme impacts across the economic, environmental, social and public accounts impact categories.

3.2.1. Value for Money

When determining the Benefit Cost Ratio (BCR) for a scheme, an 'Initial BCR' is calculated, followed by an 'Adjusted BCR'²⁴. A BCR estimates the value of benefit generated for every £1 of public expenditure on a scheme. The Initial BCR, Net Present Value (NPV) and Adjusted BCR for the A350 Yarnbrook and West Ashton Relief Road scheme is shown in Table 7.

The appraisal of the A350 Yarnbrook and West Ashton Relief Road demonstrates that the Scheme can unlock 2,600 homes and 15ha of employment, whilst also delivering **High VfM** based on the Initial BCR (3.47). The BCR in the Core Scenario reflects the development dependency approach. If a less realistic but 'conventional' appraisal approach had been followed (which assumes that this level of housing and employment development would simply take place elsewhere in Trowbridge should the transport scheme not be progressed), the Initial BCR would achieve Very High VfM - this is reflected in the Sensitivity Test in Table 8 for comparison purposes.

The results from the Trowbridge Traffic Model (**Appendix D**), demonstrate that the Scheme can facilitate the Ashton Park development without the development trips adversely affecting journey times along the major corridors in the study area, which is reflected in the overall modelled network wide speeds. The 2026 With Scheme scenario shows a marginal improvement in A350 corridor journey times in comparison to the Without Scheme along the A350 corridor, in both AM and PM peak hours, in both directions. The Scheme will benefit the town, with traffic flow reductions forecast on the A361, Ashton Road connecting the A361 and A350, A363 and a number of local roads within the town centre.

The findings of the qualitative assessments are not considered to be significant enough to warrant any increase or decrease in the value for money categories. Taking into account the planned mitigation, based on the Ashton Park ES, no moderate or major adverse environmental impacts have been identified (see **Appendix E**). Furthermore no significant distributional impacts have been identified in the distributional impact assessment process (see **Appendix F**).

²² This level of Optimism Bias is consistent with Table 8 in TAG Unit A1.2 (Scheme Costs), for a road scheme at Outline Business Case stage.

²³ Value for Money Assessment: Advice Note for Local Transport Decision Makers, DfT, December 2013

²⁴ The adjusted BCR also includes reliability, Wider Impacts and land uplift values.

Table 7 Value for Money

Assessment Type	Scheme Assessment	Detail
Initial BCR	3.47	Includes monetised benefits as shown in the AMCB table in Appendix D : economic efficiency (journey time and operating cost savings), accident savings, and greenhouse gas emission reductions.
Net Present Value (NPV)	£16.93 million	The NPV indicates by how much the benefits of a scheme exceed the costs.
Adjusted BCR	20.04	Includes additional monetised benefits beyond those shown in the AMCB table in Appendix D : reliability, wider impacts, and land uplift values
Qualitative Assessment	Neutral	There are some slight beneficial and slight adverse environmental and social impacts: <ul style="list-style-type: none"> • Slight beneficial: noise, physical activity and journey quality; and • Slight adverse: air quality, landscape, personal affordability.
Key Risks	Quantified risk budget applied to scheme costs	Costs have been estimated based on bills of quantities, therefore a 15% Optimism Bias adjustment has been applied in the economic appraisal. Benefits are based on the assumption that the forecast developments will be completed by 2026. Key risks identified are highlighted in the Management Case chapter.
VfM Category	High	Monetised assessments for the Initial BCR suggest that the VfM category is High.

3.3. Value for Money Sensitivity

Recognising that the OBC has not adopted the conventional user benefits appraisal approach, a Sensitivity Test has been carried out in which overall growth is constrained to TEMPRO in both the Without Scheme and With Scheme. Trip growth is constrained to TEMPRO after applying income and fuel adjustment factors, without any alternate planning assumptions for the internal zones, in line with WebTAG guidance. The matrix totals for Without Scheme and With Scheme scenarios is therefore be the same for the Sensitivity Test. A comparison of the principal economic indicators (2010 prices, discounted to 2010) for the Core Scenario and Sensitivity Test are shown in Table 8.

Table 8 Sensitivity Test Results

Scenario	Initial BCR
Core Scenario	3.47
Sensitivity Test	11.20

There is a large difference in PVB between the Core Scenario (PVB=£23.79 million) and Sensitivity Test (PVB=£76.78 million). This is because the Core Scenario acknowledges that the Scheme will itself specifically unlock development land at Ashton Park, which gives rise to increased trips around Trowbridge only in the With Scheme scenario, tempering the overall benefits of the road. The Sensitivity Test assumes that if growth does not take place at Ashton Park then it would take place elsewhere in Trowbridge – this is very unlikely, hence the approach undertaken for the Core Scenario. However, the Sensitivity Test demonstrates that if the traditional approach was followed, assuming equal numbers of trips in the Without Scheme and With Scheme scenarios, then the Scheme would have a very high Initial BCR.

Note that the outputs from the Sensitivity Test have been utilised to inform greenhouse gases, accidents and indirect tax revenue results in the Core Scenario. For Accidents in particular, the COBALT results for the Core Scenario showed that there is a large disbenefit resulting from the increased accidents due to

increased traffic in the With Scheme scenario. As this disbenefit can be attributed purely to the increase in the number of trips generated by the Ashton Park development, the accident benefits for the central case economic appraisal have been based on the Sensitivity Test results where the traffic in both Without Scheme and With Scheme is constrained to TEMPRO. Therefore the Sensitivity Test results have been used for accidents, and also greenhouse gases and indirect tax revenues for consistency.

3.4. Appraisal Summary Table

The Appraisal Summary Table (AST) provides decision-makers with a concise overview of a scheme across the full range of potential scheme impacts. This includes all of the economic, environmental, social, and public accounts impacts. The AST, assessed to the level of detail approved by the SWLTB in January 2014, can be found in **Appendix G**.

3.5. Economic Impacts

3.5.1. Business Users and Transport Providers

Calculation of user benefits was based on the spreadsheet approach to deal with development dependency²⁵.

Business users and transport providers are forecast to benefit from reduced journey times (compared to the Without Scheme scenario). Estimations of monetised benefits linked to journey time savings during the morning and evening peak periods and over the 60-year appraisal period have been made. Economic benefits of **£14.488 million** (2010 prices), from journey time and vehicle operating cost savings, are forecast.

3.5.2. Reliability

Improvements in journey time reliability were computed using the WebTAG based method of assessing reliability on Urban Roads.

Overall, **£4,012 million** (2010 prices) worth of Reliability benefits are expected to arise across all road users²⁶. Decreases in journey time variability (measured through forecast changes in journey time standard deviation) can aid business users and transport providers in increasing profit through increased certainty of journey times.

Note that in line with TAG guidance, the reliability benefits are excluded from the Initial BCR calculations for the Core Scenario but are shown separately in the AST. Reliability benefits are included in the 'Adjusted BCR' estimate.

3.5.3. Wider Impacts

Wider impacts represent the additional economic benefits that are not captured by journey time or vehicle operating cost savings, such as agglomeration, increased output in imperfectly competitive markets, and changes in tax revenues arising from labour market impacts²⁷.

The estimate of increased output in imperfect markets has been calculated as a proxy of 10% of business user benefits, as calculated for the business user sub-impact. The total wider impact benefits are **£1.449 million** over a 60 year period.

Note that in line with TAG guidance, the wider impacts benefits are excluded from the Initial BCR calculations for the Core Scenario but are shown separately in the AST. Wider impacts benefits are included in the 'Adjusted BCR' estimate.

3.5.4. Land Value Benefits

At present the area is all in agricultural use and will be converted to new purposes as part of the developments. The existing transport infrastructure is not sufficient to support large scale development on this site and so the land could reasonably be expected to remain in agricultural use if the A350 Yarnbrook and West Ashton Relief Road is not implemented, therefore retaining its existing value.

²⁵ Note that TUBA Version 1.9.4 was used for validation of this spreadsheet based method

²⁶ The monetised reliability benefit covers all journey purposes: commuting; other non-work; and business.

²⁷ TAG Unit A2.1, Wider Impacts

The proposed Ashton Park development comprises of 58.57ha of residential, 1.47ha of local centres, 11.27ha of schools and 15ha of employment land. These area splits were used to arrive at the present value of the land for future use. Land values were adopted from Valuation Office Agency for 2010 and Savills for growth rate to 2014. The land value estimate in its present and future use is presented in Table 9 (in 2014 prices). The land value uplift benefit at 2010 prices and values is estimated to be **£108.2 million**.

Table 9 Land Value Impacts

	Land Use	Land Value (£ / Hectare)	Total Area (Hectares)	Total Land Value (£)	Total Land Value (£ Million)	Difference (£ Million)
Total Land Value in 2014 - Present Use	Agricultural	24,799	86.31	2,140,418	2.14	
Total Land Value in 2014 - Future Use	Residential	1,617,569	58.57	94,740,989	136.38	134.24
	Local Centres	1,617,569	1.47	2,377,826		
	Schools	1,617,569	11.27	18,229,997		
	Employment	1,401,893	15	21,028,391		

Source: The Valuation Office Agency for 2010 values and Savills for growth rates to 2014.

The proposed development will result in an increase in land value, but enabling the development will depend on a range of factors such as transport, infrastructure for power, water, etc. Hence the benefit of land value uplift cannot be fully attributed to the transport scheme, although transport is expected to be the main factor enabling the development. As this benefit is not fully attributable to the transport scheme it cannot be included in the Initial BCR, but is considered for the Adjusted BCR estimate.

3.6. Environmental Impacts

3.6.1. Introduction

An Environmental Statement²⁸ (ES) has been prepared for the proposed Ashton Park development which, in agreement with Wiltshire Council, also encompasses the proposed A350 Yarnbrook and West Ashton Relief Road. This was prepared in 2014 by Pegasus Planning Group on behalf of the developers Ashton Park Ltd and Persimmon Homes Ltd.

The Ashton Park ES covers a number of environmental topics, including Noise & Vibration, Air Quality, Landscape and Visual Impacts, Ecology, Cultural Heritage, Hydrology, Drainage & Flood Risk, Ground Conditions, Soils and Agriculture and Transport and Access. Those required for this OBC are: Noise, Air Quality, Greenhouse Gases, Landscape, Townscape, Biodiversity, Historic Environment and Water Environment.

As part of the preparation of the OBC for the A350 Yarnbrook and West Ashton Relief Road, Atkins was instructed by the Client, Wiltshire Council, to use where possible, the data collected in the preparation of the Ashton Park ES. It was agreed that this would necessitate a review of the data in the ES to determine its suitability for assessing the potential impacts of the A350 Yarnbrook and West Ashton Relief Road only.

A review of this ES was carried out by Atkins environmental specialists in October - November 2014. This review highlighted areas which were suitable for the purpose of informing the OBC, and identified areas where further study would be required to determine the potential impacts of the proposed A350 Yarnbrook and West Ashton Relief Road in isolation from the Ashton Park development. . In most cases, some level of additional environmental data has been obtained through desk studies, specific to the Relief Road, in order to more closely align the data with the requirements of the guidance in 'TAG Unit A3: Environmental Impact Appraisal'.

²⁸ Ashton Park draft Environmental Statement chapters provided by PFA on CD, dated June 2014.

More detail on the assessment methodologies, baseline data and individual topic findings is available in the Ashton Park ES.

3.6.2. Noise

A qualitative assessment of noise impacts has been undertaken based on the findings reported in the Ashton Park ES. More detailed information is available in **Appendix E**. It is anticipated that the operation of the Scheme would have an overall positive impact in terms of noise. Some long term increases in noise level are predicted but are considered negligible.

Overall **Slight Beneficial** effects.

3.6.3. Air Quality

A qualitative assessment of air quality impacts has been undertaken based primarily on the findings reported in the Ashton Park ES. More detailed information is available in **Appendix E**.

The study area for local air quality in the ES focuses on potential problem areas, and finds no receptors where air quality objectives are exceeded and no significant issues. However, the OBC, in line with WebTAG principles, considers all impacts whether adverse or beneficial. Furthermore, the OBC considers the impact of the Relief Road only, rather than the impact of the entire Ashton Park development.

The affected road network assessment (**Appendix E**) illustrates that there are likely to be both adverse and beneficial impacts from the Relief Road. However, it can be concluded that if there are locations where air quality worsens, then this will be largely offset by locations showing forecast improvements.

Overall **Slight Beneficial** to **Slight Adverse** effects.

3.6.4. Greenhouse Gases

The adjusted carbon benefits are £0.699 million (2010 prices, discounted to 2010) over the 60-year appraisal period.

Note that, in order to assess the isolated impact of the Scheme, the same approach is adopted as with accidents and indirect tax revenues (using the Sensitivity Test benefits) – see Section 3.3. The costs of greenhouse gas emissions have been calculated from the main TUBA output file.

3.6.5. Landscape

Overall the Landscape and Visual Impacts can be summarised as follows:

- Impacts on Designated Sites and other features assessed as neutral;
- Impact on Landscape Character assessed as slight adverse;
- Impact on Landscape Features assessed as slight – moderate adverse;
- Impact on Visual Amenity assessed as slight – moderate adverse; and
- Cumulative effects assessed as slight – moderate adverse.

Overall impacts are assessed as **Slight Adverse**. More detailed information is available in **Appendix E**.

3.6.6. Townscape

The Scheme is located on the outskirts of the urban / suburban developments, on the eastern / southeastern edge of Trowbridge. Views from the town centre are screened by the intervening residential and retail developments along the A361, A363, West Ashton Road, and by the mainline railway.

There may be limited views of the proposed relief road from the top of some taller buildings in the Town Centre, but distance and the urban foreground and suburban middle ground will blend the road with the existing suburban fringe and eventually with the proposed Ashton Park development.

Due to the location and restricted visibility of the Scheme from the urban areas, the coherence and distinctiveness of the urban environment will not be affected by the proposals. The impacts are assessed as **Neutral**. More detailed information is available in **Appendix E**.

3.6.7. Historic Environment

The Ashton Park ES evaluated the likely direct and indirect impacts to designated heritage assets and found that the proposed development and Relief Road would have a negligible effect on the settings of listed buildings. There would also be no direct physical impacts to the listed buildings. Cumulative effects were also assessed in the ES, which found negligible effects to the Grade II listed South View Farmhouse.

Overall residual effects upon non-designated, below-ground archaeological remains will be **Slight Adverse**. The overall residual effects upon designated heritage assets in the study area will be **Neutral**, as development will not lead to any adverse effects to the important elements of the setting of designated heritage assets. More detailed information is available in **Appendix E**.

3.6.8. Biodiversity

A qualitative assessment of biodiversity impacts has been undertaken based primarily on the findings and mitigation proposals reported in the Ashton Park ES. More detailed information is available in **Appendix E**.

Due to the fact that the Environmental Impact Assessment was carried out on both the Scheme (Yarnbrook and West Ashton Relief Road) and the proposed Ashton Park development, it was not possible to assess the Scheme in isolation. Therefore the conclusions with regards to impacts are considered to be the same for the Scheme as well as the entire Ashton Park development.

Given effective implementation of mitigation proposals, residual effects on the population of Bechstein's bats linked to the Bath and Bradford on Avon Bats SAC are considered to be **non-significant, to Slight Beneficial**.

3.6.9. Water Environment

A qualitative assessment of noise impacts has been undertaken based on the findings reported in the Ashton Park ES. More detailed information is available in **Appendix E**.

Water Quality

The residual effect of the Scheme on the local water quality is not deemed to be significant with the appropriate mitigation measures in place. The overall impact is assessed as **Neutral**.

Hydrology, Drainage and Flood Risk

The results of the analysis at this stage are summarised as:

- Flood risk without mitigation – large adverse impact; and
- Flood risk with planned mitigation – **slight adverse/negligible impact**.

The ES concludes that the residual effect of the A350 Yarnbrook and West Ashton Relief Road Scheme on the Assessment Site's surface water drainage regime, flood risk and local water quality is **not deemed significant with the appropriate mitigation measures in place**.

3.7. Social Impacts

3.7.1. Commuting and Other Road Users

The Scheme provides benefits in the form of time and vehicle operating cost savings for commuting and other road users of £15.9 million over the 60 year appraisal period. Positive benefits are derived entirely from journey time savings with a small negative benefit (disbenefit) attributable to vehicle operating costs for commuting and other users. The small disbenefit for operating costs is caused by traffic re-routing to take advantage of the A350 Yarnbrook and West Ashton Relief Road, leading to a slight increase in distance travelled. Commuting and other users are forecast to receive economic benefits of **£5.244 million** and **£10.667 million** respectively.

3.7.2. Physical Activity – Walking and Cycling

Increasingly, there is recognition of the interrelation between transport, the environment and health. Transport interventions can affect levels of physical activity, for example by encouraging walking and cycling and the integration of exercise with everyday tasks. Physical inactivity can contribute to a broad range of

chronic diseases such as coronary heart disease, stroke, diabetes and some cancers. Physical activity also has an important role to play in preventing weight gain and obesity and improving mental health.

A qualitative assessment of all people likely to be affected by impacts on physical activity has been undertaken for the proposed scheme, with a textual summary of these impacts. This assessment takes into account the impact of the A350 Yarnbrook and West Ashton Relief Road on levels of walking and cycling in the scheme area.

The Yarnbrook and West Ashton Relief Road will remove through motor traffic from sections of the existing A350, making them more suitable for walking and cycling, which may encourage levels of physical activity in the area. As part of the new road, a new cycleway has been included, providing a safer traffic free cycle route across one of the roundabouts (R2) and along the A350 north east for approximately 600m. The A350 Yarnbrook and West Ashton Relief Road facilitates access to Ashton Park, which is designed to be accessible by cycling and walking, and will provide onward connections to the centre of Trowbridge on mostly traffic free routes.

Overall the Scheme will not have a large impact on physical activity as it is a highway improvement, but the improved connections through to Trowbridge town centre through the proposed footway/cycleway and Ashton Park mean that the Scheme may help to facilitate extra walking/cycling journeys. Consequently, the overall appraisal of physical fitness has been assessed as **Slight Beneficial**.

3.7.3. Severance to Non-Motorised Users

The scheme will have a **Neutral** effect on severance overall. Whilst there are areas where there is a predicted increase in traffic flow within the area, and hence likely to be an increase in severance issues, the provision of improved connections to the town centre (via Ashton Park) and the diversion of traffic away from Yarnbrook and West Ashton, this means it is likely that there will be some improvement to the existing situation.

3.7.4. Journey Quality

Journey quality is a measure of both the real and perceived physical and social environment experienced while travelling. This includes factors such as public information provision, perceptions of safety (e.g. street lighting, CCTV cameras, the possibility of pedestrians stepping into the road), provisions for accessibility, ability to make progress along routes, physical crowding on public transport services, and so on.

A qualitative assessment of all people likely to be affected by impacts on journey quality has been undertaken for the proposed scheme, with a textual summary of these impacts. This assessment takes into account the impact of the A350 Yarnbrook and West Ashton Relief Road on all road users.

The Yarnbrook and West Ashton Relief Road is unlikely to have any impact on traveller care, as there is no public transport element of the Scheme. The impact on traveller views is also expected to be minimal – there will be planting all along the new road in a similar style to that on the A350, and the road is through similar landscape. Traveller stress is likely to be reduced for drivers, both for those using the relief road to continue on the A350 (who are expected to face less delays) and those trying to access Yarnbrook and West Ashton (who will only have to contend with local traffic whilst accessing the villages). The removal of through motor traffic from the existing A350 will also create a more pleasant environment for walkers and cyclists on this route, reducing traveller stress through reducing the fear of potential accidents.

Overall the Scheme will improve the journey quality (mostly for motorists, but potentially also for some walkers and cyclists) by reducing the congestion and delays on the A350 at Yarnbrook and West Ashton, thus reducing traveller stress. Consequently, the overall impact on journey quality has been assessed as **Slight Beneficial**.

3.7.5. Accidents

Benefits associated with accident savings were calculated using the spreadsheet-based COBALT program, based on the Sensitivity Test (as with greenhouse gases and Indirect Tax Revenues) - see Section 3.3. COBALT uses existing accident rates on individual links in combination with traffic flow forecasts from the traffic model.

The A350 Yarnbrook and West Ashton Relief Road will result in an estimated Personal Injury Accidents (PIA) saving of 138.7 accidents over the 60-year assessment period. The predicted decrease in fatal, serious and

slight casualties over the appraisal period is 1.7, 16.2 and 178.1 respectively, recognising that PIAs may involve more than one casualty.

The cost of accidents, including both PIAs and damage only accidents, in the Without Scheme scenario is £315.8 million, and in the With Scheme scenario is £304.5 million, from which it has been assessed that the benefits over the 60 year appraisal period amounts to a net present value of £7.6m (at 2010 prices and values).

3.7.6. Personal Security

Security has not been appraised, as the Scheme does not include any public transport improvement (see **Appendix F**).

3.7.7. Access to Services

Access to Services has not been appraised, as no public transport services operate along the route (see **Appendix F**).

3.7.8. Personal Affordability

The WebTAG unit on Social Impact Appraisal (Unit A4.1) states that Personal Affordability is a key distributional impact that needs to be considered in scheme appraisals, and refers to the Distributional Impact Appraisal unit (Unit A4.2) for its appraisal. Any intervention that changes transport costs may give rise to an impact on personal affordability.

As there are net disbenefits for all income groups (quintile groups), the overall impact on affordability is **adverse**. However, it should be noted that the majority of impacts from the Scheme (both benefits and disbenefits) are experienced by residents of the least deprived income quintile (quintile 5). The most deprived quintiles (1 and 2), who are considered to be the most vulnerable in terms of any affordability impacts, receive disbenefits either in line with or below that expected proportionally. Further information is provided in the Distributional Impact Appraisal Report in **Appendix F**.

3.8. Distributional Impacts

Distributional Impacts have been appraised in accordance with WebTAG guidance, published by the DfT in January 2014, which replaced Unit 3.17 (Guidance on Social and Distributional Impacts) with two separate units, Unit A4.1 (Social Impact Appraisal) and A4.2 (Distributional Impact Appraisal). Unit A4.2 is the guidance now used to undertake DIs appraisals.

A summary of Distributional Impacts is presented in Table 10 - further information is in the Distributional Impact Appraisal Report in **Appendix F**.

Table 10 Assessment of Distributional Impacts

Assessed Indicator	Seven Point Scale Assessment
User Benefits	Slight Beneficial
Accidents	Slight Beneficial
Severance	Neutral
Affordability	Slight Adverse

3.9. Impacts to Public Accounts

3.9.1. Cost to Broad Transport Budget

The 'cost to broad transport budget' covers the Scheme costs, including the full stream of maintenance and operating costs anticipated over the 60-year appraisal period, that will be borne by the public sector, whether by local or central government. It is the same as the Present Value of Costs (PVC), which includes Optimism

Bias and is estimated in 2010 prices, also discounted to 2010 using the HM Treasury discount rates, in accordance with DfT guidance²⁹.

It should be noted that the PVC does not represent the actual investment cost and should therefore not be used in any request for funding. **The PVC is for economic appraisal purposes only.** Information on scheme costs is presented in the Financial Case (Section 4).

The PVC for the A350 Yarnbrook and West Ashton Relief Road is estimated at £6.856 million (2010 prices, discounted to 2010). The private sector contribution to the Scheme is not included in the PVC and instead appears as a disbenefit within the PVB calculation. This is in accordance with DfT guidance.

3.9.2. Indirect Tax Revenues

In order to assess the isolated impact of the Scheme, the same approach is adopted as with accidents and greenhouse gases (using the Sensitivity Test benefits) for indirect tax revenues for the Core Scenario.

An additional cost to the government and ultimately wider society can result from a reduction in indirect tax revenues, primarily from reduced fuel purchase. A slight rise in traffic speeds and reduced journey times will mean that driving is taking place at a more fuel efficient speed. The anticipated reduction in indirect tax revenues in the case of A350 Yarnbrook and West Ashton Relief Road is **£1.855 million**.

3.10. Summary of Economic Case

The Economic Case has been prepared in line with the approved ASR, using the revalidated Trowbridge Traffic Model and DfT guidance to estimate the monetised benefits.

This Economic Case demonstrates that the Scheme will unlock the Ashton Park development of 2,600 homes and 15ha of employment, whilst achieving **High VfM** (based on the Initial BCR of 3.47) and an NPV of £16.93 million. This reflects the development dependency approach. If a less realistic but 'conventional' appraisal approach had been followed (which assumes that this level of housing and employment development would simply take place elsewhere in Trowbridge should the transport scheme not be progressed), the Initial BCR would be 11.20 (Very High VfM).

It is clear that the economic benefits of the proposed A350 Yarnbrook and West Ashton Relief Road outweigh its costs and any negative impacts. Taking into account the core set of monetised benefits, the Scheme offers **High VfM** with a BCR of **3.47** and NPV of £16.93 million.

²⁹ TAG Unit A1.2, Scheme Costs.

Financial Case



4. Financial Case

4.1. Overview

This chapter presents evidence of the Scheme's affordability both now (for the implementation / construction phase) and in terms of ongoing revenue liabilities (whole life costs). It also includes information on the estimated scheme outturn cost. The Scheme implementation costs presented in this section (rather than those in the Economic Case) should be used for any funding applications.

4.2. Scheme Costs

4.2.1. Implementation Cost Summary

Scheme costs for the A350 Yarnbrook and West Ashton Relief Road have been estimated in both 2014 prices and outturn prices (including inflation), based on design drawings in **Appendix A**, and bills of quantities (summarised in **Appendix G**). A summary of scheme implementation costs is shown in Table 11.

Table 11 Implementation Costs

Cost Category	£
Preparatory	£1.700 million
Construction (including Preliminaries)	£11.430 million
Site Supervision	£0.423 million
Land	£0.565 million
Quantified Risk Budget ³⁰	£1.135 million
Total – 2014 prices	£15.253 million
Inflation	£1.841 million
Total – Outturn prices	£17.094 million

Note that this cost is higher than previously reported. The SEP reports a scheme cost of £13.8 million – this cost was originally derived on a cost per kilometre basis, before the preliminary design was available. The previous cost is unlikely to have included preparatory costs or inflation – when these costs are removed the overall cost is broadly similar with the previously reported cost.

4.2.2. Implementation Costs – Base Year Prices

Overview

Preparatory, construction (including preliminaries) and site supervision costs are all included within the cost estimates presented in section 4.2.1.

Preparatory Costs

Preparatory costs include allowances for the following:

- 'Sunk' scheme costs that have been incurred throughout the business case development stage during the 2014-15 financial year;
- Detailed design;
- FBC completion;
- Procurement process costs; and
- Allowances for impact monitoring and evaluation.

³⁰ Note that an additional 'contractors risk allowance' is included within the construction cost. The Quantified Risk Assessment should be updated if design and build is not pursued.

The cost of securing planning permission and any further preliminary design work will be covered by the developer (to be formally agreed as part of the planning process). Note that the preparatory costs do not include other costs incurred by the developer in relation to the Scheme.

Construction

The Scheme has been costed based on a preliminary design and a bill of quantities has been developed, as required at OBC stage. The construction (including preliminaries) costs are summarised by engineering series numbers in **Appendix G**, covering the following:

- Traffic management and site mobilisation (preliminaries);
- Site clearance and earthworks;
- Fencing;
- Road restraint systems;
- Drainage and service ducts;
- Pavements (road surface) and kerbs;
- Traffic signs and road markings;
- Road lighting and electrical works;
- Landscaping and ecological mitigation works;
- Structural concrete (bat and mammal underpasses); and
- Provisional sums for utility diversions³¹.

The construction costs also include a 'contractor's risk allowance' reflecting the design and build procurement route selected in the Commercial Case (Chapter 6), with percentage allowances applied to each of the engineering series numbers. This is separate from the Quantified Risk Budget. The design and build option would provide greater cost certainty than some of the other procurement routes, as a greater amount of risk would be passed onto the successful Contractor. A key consideration is that a higher tender sum would be expected to allow for this greater transfer of risk. Should a different procurement route be selected through the planning negotiations, this contractor's risk allowance will be revised or removed altogether. **Appendix G** includes the 'contractor's risk allowance'.

Site Supervision

An allowance has been made to cover site supervision costs, in order that the requirements of the Construction Design and Management (CDM) Regulations can be fulfilled. This has been made on a percentage allowance basis.

Land

Land for the road is to be purchased by the developers – this will form part of the developer's financial contribution to Ashton Park. This will then be gifted to Wiltshire Council who will adopt the road as highway. The developer already has options in place to purchase the land, and the need for Compulsory Purchase is also avoided. Land costs at this stage are based on typical agricultural values in the area.

Quantified Risk Budget

The purpose of the risk budget is to cover any increased costs that may result from the full set of identified scheme risks, whether direct cost increases or indirectly as a result of scheme delays. An initial Risk Register for the A350 Yarnbrook and West Ashton Relief Road is provided in **Appendix I**.

The risk budget has been calculated using @Risk, based on a risk register that reflects design and build procurement (with certain risks transferred to the contractor and not featured in the Risk Register). As a result an additional 'contractors risk allowance' is included within the construction cost. The Quantified Risk Assessment should be updated if design and build is not pursued. Further information on the key risks and how these risks will be managed throughout scheme development and implementation is provided in the Management Case (Chapter 6).

Note on Optimism Bias

Optimism Bias adjustments are designed to deal with the 'systematic tendency of project appraisers to be overly optimistic' with regard to a project's 'costs, benefits and duration'³². To reflect the current status of scheme designs and costs, an Optimism Bias uplift of 15% has been applied to scheme costs as part of the

³¹ Allowances have been included for diverting statutory undertakers equipment and will be updated as the Scheme progresses through detailed design. These allowances are 'high level' as C3 requests are normally not carried out until the detailed design stage.

³² HM Treasury Green Book, Supplementary Guidance: Optimism Bias, April 2013.

Economic Case, therefore ensuring that the economic appraisal is robust. Optimism Bias adjustments are not intended for use in estimating actual scheme outturn costs for funding requests and are **therefore not included in the Financial Case costs presented in Table 11.**

4.2.3. Implementation Costs – Outturn Prices

In estimating scheme outturn prices, allowances of £1.841 million for the Scheme have been made for future inflation, based on the following general assumptions:

- Construction industry costs will increase by 3% per annum throughout the construction period; and
- Preparatory and site supervision costs, which are largely wage based, will increase by just under 2% per annum up to 2017, broadly in line with general background inflation, then increasing by just over 2% per annum throughout the construction period.

4.2.4. Implementation Spend Profile

An estimated outturn spend profile for the Scheme is shown in Table 12 split by financial year. The inflation allowance of £1.841 million is included across the cost categories, rather than being shown separately.

4.2.5. Whole Life Costs

The A350 Yarnbrook and West Ashton Relief Road will give rise to marginal additional revenue liabilities for capital renewals and maintenance, when compared to a future situation without the highway improvements having been made. This has been partially offset against the cost of maintaining the old A350. The following allowances will need to be made by Wiltshire Council, once the road is adopted:

- £2.6 million (2014 prices) for resurfacing / renewal of the additional highway infrastructure over a 60-year period. It is anticipated that surface treatment will be required every 5-10 years, surface course every 10-25 years, and structural repairs every 10 years; and
- £47k, or £785 per year (2014 prices) for the net increase in additional drainage clearance, road sweeping and litter picking.

The above whole life costs are included in the economic appraisal and therefore impact on the BCR and NPV indicated in Table 7 in the Economic Case. In financial assessment terms, these costs would be covered by Wiltshire Council's general maintenance budgets.

4.3. Funding Assumptions

An estimated funding profile for the Scheme is shown in Table 13, split by financial year. Two key assumptions have been made relating to funding:

- All preparatory costs will be paid for by the developers, apart from business case work (OBC and FBC) which will be paid for by Wiltshire Council;
- The SWLEP secured a further LGF allocation of £11.5 million in January 2015. For the purposes of this OBC, a contribution of £5.0 million has been assumed from this LGF allocation, with the developers paying the balance of the scheme cost. It should be noted, however, that negotiations with the developer regarding contributions are at a very early stage – the scheme opening is almost six years away.

4.4. Accounting Implications: Cash Flow Statement

The A350 Yarnbrook and West Ashton Relief Road scheme is expected to have the following implications on public accounts, see the Estimated Funding Profile by Financial Quarter in Table 13:

- LGF funding to cover £5.0 million of the Scheme implementation costs (as per the assumptions in section 4.3), with broadly similar amounts required for the 2018-19 and 2020-21 financial years;
- Maintenance costs are expected to total £47k, or £785 per annum (2014 prices), funded from local highways maintenance budgets; and
- Capital renewal costs over 60 years are expected to total £2.6 million (2014 prices) funded from local highways maintenance budgets. The frequency of maintenance varies, for example surface treatments every 5-10 years, surface course every 10-25 years, reconstruction every 40 years, and structure repairs every 10 years.

While the initial assumption is that Wiltshire Council would need to fund the future maintenance/capital renewal costs, additional sources of third party funding will continue to be investigated.

Table 12 Estimated Outturn Spend Profile by Financial Year (£ million)

	Pre 2015/16	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	Total
Preparatory	£0.115	-	£0.465	£1.157	£0.013	-	-	£0.014	-	-	£0.015	£1.779
Construction (incl. prelims)	-	-	-	-	£4.240	£4.368	£4.498	-	-	-	-	£13.106
Land	-	-	-	£0.611	-	-	-	-	-	-	-	£0.611
Site Supervision	-	-	-	-	£0.151	£0.154	£0.158	-	-	-	-	£0.463
Risk Budget	-	-	-	-	£0.378	£0.378	£0.378	-	-	-	-	£1.135
Total	£0.115	-	£0.465	£1.768	£4.782	£4.901	£5.034	£0.014	-	-	£0.015	£17.094

Table 13 Estimated Outturn Funding Profile by Financial Year (£ million)

	Pre 2015/16	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	Total
Devolved funding	-	-	-	-	£1.617	£1.667	£1.716	-	-	-	-	£5.000
Local Contribution	£0.115	-	£0.465	£1.768	£3.165	£3.234	£3.318	£0.014	-	-	£0.015	£12.094
Total	£0.115	-	£0.465	£1.768	£4.782	£4.901	£5.034	£0.014	-	-	£0.015	£17.094

Commercial Case



5. Commercial Case

5.1. Overview

This chapter sets out the key requirements and assumptions for procuring the A350 Yarnbrook and West Ashton Relief Road. The detailed design and construction of this Scheme is considered to be a significant project requiring a robust procurement strategy to deliver the constituent parts in a timely, efficient, safe and cost effective manner.

At this stage it is anticipated that the Scheme construction will be procured by the developers of Ashton Park. To avoid State Aid issues, the developers will be required to undertake a competitive tendering process for the Scheme. These requirements will be formalised as part of a legal agreement between Wiltshire Council and the developers, with conditions associated with the use of the LGF funding.

The preferred procurement options identified in this section are based on an initial assessment only and may be subject to change as a result of forthcoming negotiations between the Council and developers through the planning process.

5.2. Required Outputs

5.2.1. Scheme

Details of the Scheme description are provided in section 1.3 in the Introduction chapter. Overall, the Scheme comprises new highway construction and associated drainage, street lighting, signs and road marking, landscaping, flood compensation, bat crossings/hop overs, and ecological management.

5.2.2. Common Issues and Risks

The Management Case details specific construction risks for the A350 Yarnbrook and West Ashton Relief Road. The following risks are particularly relevant to the procurement considerations:

- Errors in Works Information/design; and
- Uncertainty of existing ground conditions in the area.

5.3. Procurement Strategy – Options

The level of risk that the developer may be willing to accept will influence the choice of procurement. The key criteria for risk are interdependent and often in tension:

- Time (speed or certainty of completion date);
- Cost (price level or cost certainty); and
- Quality (functionality and performance).

Time and cost will directly influence the procurement strategy chosen, whether traditional, design and build, early contractor involvement or management contracting. Quality will be partly addressed through the tendering process.

Select lists of pre-qualified contractors or a bespoke pre-qualification process, based on the assessment of references and evidence of competence, will ensure that appropriate companies are selected that demonstrate the necessary skills and experience to undertake the work.

5.3.1. Option 1: Traditional Contract

Traditional contracts are the most commonly used method of procurement and are suitable for complex projects and projects where functionality is a prime objective. This method provides time predictability and cost certainty, although it is not always suitable for fast track projects where time is a key consideration.

A successful traditional contract requires certainty of buildable design information and that adequate time is made available to prepare the detailed design and provide the contractor with sufficient construction information. Consequently, for this method to be truly effective, full documentation needs to be in place before the contractor can be invited to tender.

Advantages

Some of the advantages of the 'traditional' procurement approach are:

- Familiarity among contractors and consultants - the roles and responsibilities are well understood;
- The client retains responsibility for and control of the design team;
- There is direct reporting by the design team to the client to ensure that quality control is maintained;
- The client has an independent professional in the role of contract administrator monitoring the project;
- There is certainty of price (if the work is fully designed in advance);
- Priced bills of quantities provide a basis for variations to be priced at tendered rates;
- There is no need for a contractor to build in a risk premium;
- It is easier to analyse the prices;
- The lowest price is usually the best value for money; and
- Where elements of the project are not fully designed, provisional sums may be used to allow for the later design of those elements.

Disadvantages

Some of the disadvantages of the 'traditional' procurement approach are:

- To be effective, it requires the Scheme to be more or less fully designed before tenders are sought - this may result in an extended pre-tender period;
- The fragmented design and construction process and responsibility can lead to disputes, for example in respect of whether construction defects are really design defects or whether they are construction defects;
- There is the potential for over-design and/or over-engineering;
- The contractor is not involved in the design process and therefore is not required to 'buy in' to the design;
- The client retains responsibility for the design team performance;
- A fixed lump sum price is rarely actually achievable;
- A contractor may price the work to win the job rather than providing a price that properly reflects the work to be carried out. This can encourage a claims culture if the submitted price was too low because of market forces; and
- The use of provisional sums and the power of the engineer (or project manager, if appointed) to issue instructions for additional or varied works can lead to price escalation.

5.3.2. Option 2: Design and Build

This method of procurement involves the contractor being responsible for the design as well as construction. It can be suitable for cost certainty and fast track construction. This approach is not suitable where the client brief is developing or for very complex projects. The main contractor takes responsibility for both design and construction and will use either in-house designers or employ consultants to carry out the design. The main contractor has a direct influence over the design process and as such takes on the associated risks.

To ensure that the client obtains what they are seeking in respect of a finished project it is essential that the client specifies exactly what is required and checks that this is matched by what the contractor offers to provide. Therefore, although it is not necessary for full documentation (including the design) to be in place before the contractor can be invited to tender, for carrying out the work it is important that the client's brief and requirements are clearly set out.

Under the design and build approach, the contract price (normally a lump sum price, subject to adjustment only as a result of variations) is usually the price for the works provided by a contractor and this is most often based on a set of drawings and a specification of the works to be provided.

The design and build procurement approach is popular as the liability for both the design and the build is with the contractor, and there is less chance of a liability of a defect 'falling between the two stools' of design and construction.

Advantages

Some of the advantages of the 'design and build' procurement approach are:

- Speed of delivery from concept to completed project. In its simplest form, design and build allows work on site to begin earlier (that is before the design is fully complete) than under traditional forms of contract;

- Single point responsibility. The contractor is responsible for the design and the construction. Therefore the client should have a single point of responsibility and liability against the contractor;
- Acceptance of design. Because the contractor is responsible for the design and the construction, the contractor and the supply chain are involved in the production of the design to be used, and hence 'buy in' to that design;
- Cost certainty, as the contractor can use their experience and expertise in providing a design that allows them to buy goods and services at the best buying margins; and
- Unless a contract states otherwise, the law implies a duty of fitness for purposes on a design and build contractor. This is more onerous than the normal duty of 'reasonable skill and care' imposed on a design consultant.

Disadvantages

Some of the disadvantages of the 'design and build' procurement approach are as follows:

- The initial price may be higher as the contractor may build a 'risk premium' into their price;
- Post-contract variations can be more expensive, and it is often more difficult to monitor the additional charges raised (particularly where works are priced on the basis of a specification and drawings);
- The client has less control and influence over design matters;
- Inflexibility. There is only limited scope for the client to make changes to their requirements once the client's requirements and contractor's proposals have been agreed;
- Design quality. Because it is often perceived that the contractor is driven by price rather than by design standards, the design and build procurement route is not always the appropriate route to use where a high quality design is required, unless a robust specification is included within the client's requirements; and
- The question of the quality achieved can be an issue because of the lack of control that the client has over the designer. The designer acts for the contractor not for the client.

5.3.3. Option 3: Early Contractor Involvement

Early contractor involvement (ECI) is a derivative of design and build but is used when engaging the contractor at an earlier time is seen to be advantageous to the client. ECI is suited to projects that are not fully defined and where the contractor's knowledge and specialism is required to develop the design.

This form of contract allows supplier engagement at an early stage of a project in order to draw in industry experience at the design and preparation stages. ECI contracts remain an option for major highways schemes where there is significant scope for input from the supply chain. Suppliers' engagement will be on a partnering basis. Their knowledge and abilities to influence project decisions will have maximum impact in terms of project timing, quality and cost.

In adopting this approach careful consideration of the choice of contractual conditions is required to ensure that appropriate clauses are in place at key milestones in the development of the design. The timing of the appointment of the contractor in the project development is important; the design should be sufficiently developed to enable estimates and assumptions to be prepared and the client brief sufficiently developed.

ECI is not suitable where the brief and scope of the works is fully defined or for repetitive or maintenance related work.

Advantages

The advantages are similar to those of design and build, but can also provide the following;

- Benefits in assisting clients where there are complex design and buildability issues to be overcome at the preparatory stage of the Scheme;
- Bringing the contractor's experience to the project at key stages to influence the design. There is an increase in the scope for innovation as contractors can contribute to the development of the project;
- High quality when all parties are able to contribute to the design at an early stage and health and safety risks are effectively managed; and
- Creation of an early design and development team, adopting a partnering approach, with increased transparency and therefore reduced risks and increased shared responsibility limiting the reasons for litigation.

Disadvantages

The disadvantages are similar to those of design and build, but also can include the following;

- Less cost certainty at tender stage and variations and changes to the scope of work made by the client at a late stage can be expensive;
- Increased cost in contract management resources to administer the contract process; and
- Each party has different interests at the design stage which can lead to conflict or delay.

5.3.4. Option 4: Management Contracting

This method of procurement is suitable for fast track, complex and/or projects that have a developing brief. It is less suitable where cost certainty before starting construction is required and where the client wishes to transfer risk to the contractor.

It is not considered that this method is suitable for further consideration for the A350 Yarnbrook and West Ashton Relief Road.

5.3.5. Procurement Option Assessment

To compare the five procurement options, levels of cost, time and quality certainty have been considered and rated as high, medium or low certainty levels for the Scheme (see Table 14). Based in an initial assessment design and build has been selected, which will be subject to further review.

Table 14 Procurement Assessment

Procurement Option	Level of Certainty		
	Cost	Time	Quality
1. Traditional Contract	Medium / High	Medium / High	High
2. Design and Build	High	High	Medium / High
3. Early Contractor Involvement	Medium	Medium	High
4. Management Contracting	Low	High	Medium / High

The key factor for Wiltshire Council and its delivery partners when deciding on the most appropriate procurement option is achieving cost certainty. This could be achieved using a traditional contract (dependent on which form of contract is selected) or a design and build contract. The design and build option would provide even greater cost certainty, as a greater amount of risk would be passed onto the successful Contractor. However, a higher tender sum would be expected to allow for this greater transfer of risk.

5.4. Preferred Procurement Approach

5.4.1. Preferred Form of Contract

A published form of contract will most likely be used to procure the works. These forms are based on an allocation of risk generally accepted in the industry. The published forms can be amended to suit the Scheme and the needs of the developers and Wiltshire Council. For the traditional contract approach, any contractual changes would be kept to a minimum in order to attract the most competitively priced tenders.

For civil engineering works in the UK, there are two main forms of contract: the traditional Institution of Civil Engineers Conditions of Contract (ICE); or the Engineering and Construction Contract (NEC ECC3). NEC ECC3 has advantages over ICE in that it:

- Promotes a partnering culture by encouraging co-operation rather than confrontation;
- Encourages proactive rather than reactive behaviours;
- Provides clarity, flexibility and simplicity;
- Has a more rigorous approach to the evaluation of claims;
- Has incentives available to complete on time and below budget by the use of Options;
- Is the first contract of choice of many UK promoters, especially in the public sector, and so contractors are experienced in its use; and

- Is the only UK contract which the Office of Government Commerce endorses for use on public sector construction projects.

The preference is therefore to procure the works using NEC ECC3.

5.4.2. Payment Mechanisms

The main payment options available under NEC ECC3 are:

- a. Priced contract with activity schedule – a lump sum contract, where the contractor splits the scope of work into activities and provides prices for each activity;**
- b. Priced contract with bill of quantities – a re-measurement contract where the contractor inserts rates and prices against items in the bill of quantities;
- c. Target contract with activity schedule – similar to (a) except that the total of the prices in the activity schedule is the target cost. The contractor aims to complete the work at or below the target cost and the target cost will only change if there is a compensation event;
- d. Target contract with bill of quantities;
- e. Cost reimbursable contract – it is not considered that this will offer value for money or cost certainty for the A350 Yarnbrook and West Ashton Relief Road; and
- f. Management contract – this is not suitable for use with the proposed contractual arrangements.

Based on an initial assessment, the preferred payment option is a priced contract with activity schedule (a) – this approach would provide the greatest cost certainty.

5.4.3. Preferred Tendering Approach

The details of the tendering approach will be discussed and agreed with the developers as part of the planning negotiation process in 2015. A tendering process is required to ensure that State Aid issues are avoided with transferring funds to the developers. The tendering process will be used to provide assurance of quality by including a price and quality evaluation. The split between quality and price is determined by a number of factors such as the type of project, level of scheme development, the complexity of the project and price certainty required. Time and cost certainty is likely to be a priority, as LGF contributions are capped, as per the Swindon & Wiltshire LTB assurance framework.

5.4.4. Scheme Preferred Procurement Approach: Summary

The proposed procurement approach for the A350 Yarnbrook and West Ashton Relief Road in Table 15. This initial assessment has identified a **design and build contract** as the preferred procurement approach, in conjunction with a lump sum contract (NEC ECC3 Option A), due to greater cost certainty (although a higher tender sum would be expected to reflect the transfer of risk). Note that this is an initial assessment, which is to be discussed and agreed with the developers as part of the planning process.

Table 15 Preferred Procurement Approach

Facts

- Scope of work is known and the design is sufficiently developed.
- Planning approval is required.
- Land is available – developers have options to purchase the land required for the Scheme.
- The LGF contribution is capped, hence the need for cost certainty.

Procurement Approach

- Design and build.

Form of Contract

- NEC ECC3.

Payment Mechanism

- NEC ECC3 Option A - Priced contract with activity schedule.

Tender Process

- Pre-qualification (quality evaluation).
- Select tender price/quality ratio 80/20.
- Appropriately written Works Information and the introduction of KPIs would ensure the quality required is achieved.

Notes

- This approach would provide the greatest cost certainty. Note that a higher tender sum would be expected to reflect the transfer of risk.
- The successful Contractor would appoint Consultant to undertake detailed design.

Management Case



6. Management Case

6.1. Overview

This chapter sets out how the A350 Yarnbrook and West Ashton Relief Road will be delivered. Overall, a 'shared approach' for delivery of this scheme has been agreed between the developers and Wiltshire Council in 2013, in the Statement of Common Ground for Ashton Park. Since then, the developers, Ashton Park Trowbridge Ltd & Persimmon Homes Ltd, have been preparing an outline planning application for Ashton Park (including the relief road), and Wiltshire Council commissioned this OBC for submission to the SWLTB in early 2015.

The governance arrangement in this Management Case reflects the shared approach; Wiltshire Council is the Promoting Body, as per the SWLTB, and is seeking to secure LGF funding. The developers will also be contributing towards the Scheme, and at this stage, it is anticipated that the developers will also deliver it. These governance arrangements will be further developed in 2015, as part of the planning negotiations and will be formalised in the planning agreement for Ashton Park in 2016. Any significant changes to this chapter will be submitted to the LTB as an addendum to this OBC.

This chapter demonstrates that:

- The delivery timescales and phasing presented are realistic;
- An appropriate governance structure is in place to oversee delivery;
- Risks have been identified and suitable risk management processes developed;
- There are robust plans for communications and stakeholder management; and
- Measures will be in place to ensure that the benefits set out in the Economic Case are captured and realised.

The remainder of this chapter contains the following elements:

- Assessment of scheme delivery and evidence of similar schemes;
- Governance, organisational structure and proposed roles;
- Programme and project dependencies;
- A project plan for scheme development and implementation;
- Information on proposed communication and stakeholder management;
- Risk identification and a risk management strategy, setting out how the risks have been identified, their likely impact, appropriate mitigation, and how the risks will be managed;
- A Benefits Realisation, Monitoring and Evaluation Plan, which sets out:
 - The approach to ensuring that the stated benefits (in the Economic Case) are delivered; and
 - The methods to be used in monitoring progress against the Scheme's objectives and indicators of success (as reported in the Strategic Case).

6.2. Overall Assessment of Scheme Deliverability

Subject to funding approvals, the A350 Yarnbrook and West Ashton Relief Road could be delivered within a six year period from OBC completion (opening in early 2021). This takes into account securing planning approval, procurement, detailed design, addressing any planning application reserved matters, and a three year construction period. Overall a realistic programme has been drawn up, and the timescales are consistent with the SEP.

A key constraint was that the developers required a positive Growth Deal announcement before they would submit the Ashton Park planning application, which includes this Scheme. Ashton Park cannot be delivered without the Scheme, although it is likely that the developer could deliver a small quantum of housing before scheme opening (to be agreed as part of the planning negotiations). Following the Growth Deal announcement on the 29th January 2015, it is expected that the Ashton Park planning application will be submitted. The developers are committed to the timely delivery of the Ashton Park development in accordance with the agreed trajectory, which was demonstrated at the hearing for the Core Strategy EiP on the 30th September 2014, to reassure the Inspector of this commitment.

The timescales for each delivery stage are detailed in the Scheme Implementation Programme (**Appendix L**). The programme will be refined as part of negotiating the planning agreement, and will also be dependent on the availability of LGF funding.

6.3. Evidence of Similar Schemes

Wiltshire Council is progressing several schemes through the LTB's business case process; the most advanced is the A350 Chippenham Bypass Improvements. Wiltshire Council secured approval of the A350 Chippenham Bypass Improvements OBC in July 2014, and is due to submit the FBC to the SWLTB in March 2015.

At this stage it is anticipated that the developers, Persimmon Homes Ltd and Ashton Park Ltd, will deliver this Scheme. The East Trowbridge Distributor Road and Hilperton Relief Road are examples of two road schemes in Trowbridge, which are being delivered by Persimmon Homes in connection with residential development at Castle Meads to the east of Trowbridge. Both road schemes have been secured by the Castle Meads development with their construction linked to housing completions. The East Trowbridge Distributor Road comprises 1.13km of single carriageway road connecting Leap Gate with West Ashton Road. The Hilperton Relief Road comprises 1.17km of single carriageway connecting the A361 Trowbridge Road with Canal Road/Wyke Road/Horse Road. Both road schemes are currently under construction and are due to be completed towards the end of 2015.

6.4. Programme and Project Dependencies

Submission of the Ashton Park Planning application is a key milestone, and is anticipated in early 2015. The developers will progress the Scheme through the planning process in 2015, as part of the Ashton Park development. The developers will also progress any refinement to the Scheme's design required as part of the planning process.

6.5. Project Governance and Reporting

6.5.1. Governance Overview

The governance arrangements for the Scheme will be in accordance with the 'Growth Deal Programme and Project Management – PPM Guide³³'. These governance arrangements will be further developed in 2015, as part of the planning agreement discussions. The key roles, reflecting the shared approach, are:

Senior Responsible Owner (SRO)	• Parvis Khansari, Associate Director, Highways and Transport, Wiltshire Council.
Lead UA Officer	• Peter Binley, Head of Highways Asset Management and Commissioning, Wiltshire Council.
Programme Manager	• Helen Powdrill, Structures and Highways Improvements Manager, Wiltshire Council.
Project Manager	• To be appointed once delivery arrangements have been formally agreed.
Senior Supplier, to be appointed from:	• Atkins (Business Case). • PFA (Design). • Pegasus (Planning). • Construction firm (once appointed).
Senior Users:	• Rob Murphy and Helen Powdrill, Wiltshire Council. • Senior representatives from the developers: Ashton Park Trowbridge Ltd and Persimmon Homes Ltd.

³³ Growth Deal Programme and Project Management – PPM Guide, Wiltshire Council Strategic Economic Programmes Manager.

6.5.2. Joint Project Board

Wiltshire Council will establish a Joint Project Board with the developers for delivering the A350 Yarnbrook and West Ashton Relief Road. This reflects that the developer will deliver the Scheme. The Project Board will take overall responsibility for its delivery; it will be formed by Council and developer representatives of sufficiently senior level who have the authority to act on behalf of their respective organisations. Meetings of the Project Board would take place at least monthly, but would also be linked to key milestones, where they would consider progress through Highlight and Exception Reports, changes to the risk register, and changes to the Scheme Implementation Programme.

Wiltshire Council's role on the board will be in relation to assurance to the LTB/LEP and as Highway Authority, and the Developer's role will relate to its delivery of the Scheme. Any potential conflicts in joint working with the developer have been addressed as part of agreeing the shared approach.

6.5.3. Senior Responsible Owner

The Project Board will confirm the Senior Responsible Owner (SRO), who would be responsible for chairing meetings and providing guidance and direction to the Project Manager. The SRO would ensure that the project team is progressing the Scheme in line with the Scheme Implementation Programme and that outputs and milestones agreed by the Project Board are achieved. The SRO will be from Wiltshire Council to provide assurance to the LTB/LEP regarding the expenditure of LGF funds.

6.5.4. Project Manager

The Project Manager will be responsible for delivering the Scheme in line with the agreed controls and procedures set out in the Project Plan. The Project Manager will report to, and be accountable to, the SRO and the Project Board. The primary focus of the Project Manager will be to ensure that the Scheme is delivered on time, within budget and to specification. The Project Manager will also be responsible for preparing Highlight and Exception Reports. The Project Manager would be appointed by the developer; however the Wiltshire Council Programme Manager would provide oversight for the Council.

6.6. Scheme Implementation Programme

A detailed Scheme Implementation Programme is attached in **Appendix L**. This is an initial programme based on the best available information to date and will be subject to regular review throughout scheme development.

To date, the Strategic Outline Business Case for this Scheme was approved in July 2013, as part of SWLTB's prioritisation process. Work to develop this OBC commenced in June 2014 which will be submitted to the SWLTB (or equivalent) in April 2015. The FBC is planned to be completed in 2017 when tender prices will be available. The Ashton Park planning application will be submitted in 2015 - an ES and Transport Assessment have already been prepared as part of this.

The timing for the delivery of the Scheme is dependent on negotiations between Wiltshire Council and the developers, anticipated to take place in 2015. This will be formalised in a planning agreement in 2016, whereby the amount of development at Ashton Park is capped until the road is operational. Wiltshire Council and the developers are working together towards a scheme opening date of early 2021.

The programme will be updated as part of negotiating the planning agreement for Ashton Park, reflecting the interdependencies with the phasing of the development. Overall a scheme opening date of April 2021 is considered to be realistic, with construction taking place over a three year period.

The programme reflects design and built procurement (see Chapter 5) – should the procurement route change, for example to a traditional contract, then the programme will need to be revised.

The critical path activities for scheme delivery are identified in Table 16, with key milestones highlighted (*).

Table 16 Project Milestones

	Estimated Dates
Outline Business Case:	
Outline Business Case (OBC) complete	23 January 2015
OBC approval (LTB meeting)	21 April 2015
Planning:	
Planning Application Submission by Developer	May 2015*
Outline planning determination	May 2015 through to January 2016 inclusive
S106 agreements	February 2016 to May 2016 inclusive
Outline planning consent	February 2016 to May 2016* inclusive
Procurement/Tendering:	September 2016 – February 2017* inclusive
Full Business Case (FBC):	
Develop Full Business Case (FBC)	October 2016 – May 2017 inclusive
FBC submission to the SWLTB	May 2017
FBC approval (SWLTB meeting)	July 2017*
Detailed Design³⁴:	March 2017 – March 2018* inclusive
Construction:	April 2018* - March 2021
Opening of Road:	April 2021*

6.7. Assurance and Approvals Plan

The A350 Yarnbrook and West Ashton Relief Road is being progressed in line with the SWLTB Assurance Framework³⁵. This OBC represents Stage 2 of the SWLTB's agreed 'Scheme Assessment and Approval' process. The SWLTB will use the contents of this OBC to decide whether the Scheme should be approved and progressed to the third and final approval stage (FBC). OBC approval allows procurement of SWLTB LGF schemes to commence. Note that new governance arrangement and Assurance Framework are currently being developed by the SWLEP.

FBC approval is programmed for 2017. In accordance with the Assurance Framework, at this stage a formal agreement will be made between the owner of the devolved funding (currently SWLTB³⁶) and Wiltshire Council setting out the terms and conditions under which the devolved funding is to be spent. Funding will then be released to Wiltshire Council in line with those terms and conditions. This agreement will reflect that this funding is in turn to be transferred to the developers, and stipulate any requirements on this.

Quality Assurance will be undertaken in line with PPM requirements. Project Tolerances will be agreed with Wiltshire Council's Principal Accountant. The Change Management and Reporting (including Highlight Reports) are standard processes which will be complied with as per Wiltshire Council's 'Growth Deal Programme and Project Management – PPM Guide'.

³⁴ This programme is based on design and build, hence FBC submission would take place after procurement, but before detailed design. If a decision was made at a later date to change to a traditional contract, then FBC submission would take place after detailed design and subsequent procurement.

³⁵ SWLTB Assurance Framework, originally published February 2013 and updated March 2014.

³⁶ As per SWLTB's Assurance Framework (February 2013) - Swindon Borough Council is the accountable body for the SWLTB. "The primary role of the accountable body is to hold the devolved major scheme funding and make payments to scheme promoters. The accountable body will hold the SWLTB funds in separately identifiable accounts and provide the SWLTB with financial statements as required".

6.8. Communications and Stakeholder Management

A framework Communications Plan (**Appendix I**) has been prepared. This plan will enable Wiltshire Council and the developers to:

- Inform the public and key stakeholders of scheme progress and to allow for feedback from stakeholders during the detailed design process;
- Communicate the benefits of the Scheme; and
- Manage stakeholder expectations.

The Communications Plan is a framework and is anticipated to be further developed between Wiltshire Council and the developers in 2015.

Communication with all parties and individuals outside the Project Board, Task Managers and Project Team, during all but the construction phase, will only be undertaken with the express consent of the Project Manager, who will liaise to Wiltshire Council Communications if necessary.

During the construction period, day to day contact with the public will be undertaken by the Contractor. Details of the tenderers' proposals for Public Liaison will form part of the Quality Submission and will be assessed as part of the overall Quality Submission Assessment.

Opportunities will be taken wherever possible to act upon any lessons learnt from the communications aspect of preceding schemes.

6.9. Risk Management Strategy

Risk management is a structured approach to identifying, assessing, managing, and responding to risks that occur during a project. It is important to identify key risks at an early stage in scheme development.

As the developer will be procuring the scheme, to provide assurance to the SWLTB, the planning process and associated planning agreement will be used to ensure that the Scheme is built to the standards required by Wiltshire Council. A legal agreement will be used regarding the use of LGF funds and any associated conditions. Section 6.3 provides evidence of highway scheme delivery by Persimmon Homes, which is part of the consortium of developers of Ashton Park. Furthermore, Wiltshire Council will establish a Joint Project Board with the developers for delivering the A350 Yarnbrook and West Ashton Relief Road, as set out in the Management Case.

An initial Risk Register (**Appendix J**) has been prepared for the A350 Yarnbrook and West Ashton Relief Road, comprising 28 pre-construction and 14 construction risks. A risk budget has been calculated based on a combination of the estimated cost of each risk being realised and the probability of each risk becoming reality. The risk budget of £474k has been calculated using @Risk, based on a risk register that reflects design and build procurement (with certain risks transferred to the contractor and not featured in the Risk Register). As a result an additional 'contractors risk allowance' is included within the construction cost. The Quantified Risk Assessment should be updated if design and build is not pursued. The risk budget has been included in both the Scheme cost estimate and the economic appraisal. As the Scheme progresses, risks will be reviewed regularly and will be managed and passed to new owners as appropriate.

The most significant pre-construction risks and the mitigation measures that are being adopted, by time and/or cost impact are as follows:

- *Returned tenders exceeds budget* - Develop a plan identifying the maximum limit of construction tender cost and applicable split between parties (part of the planning agreement to be developed). Ensure that pre-tender cost estimates are as robust as possible at this stage and take into construction market activity;
- *Resurgence in construction market in the South West* - increased tender prices - Include an allowance in the risk budget to cover this risk;
- *Environmental challenge* - Objections from environmental bodies against the Scheme - Development of acceptable EIA as part of planning submission; and
- *Land required to construct the Scheme that is not currently in developer's ownership* - Developer has land purchase options. Details of the agreements to be provided to Council.

The most significant construction risks and the mitigation measures proposed, by time and/or cost impact are currently:

- *Uncertainty of existing ground conditions in the area* - This is a standard Clause in the NEC ECC3 form of contract and could be removed. However, due to the current growth in the market, removal of this Clause may lead to certain Contractors not tendering for the works. If the Clause is to be retained, undertake as much Site Investigation as possible to minimise uncertainty about ground conditions;
- *Compensation Event as a result of adverse weather* - This is a standard Clause in the NEC ECC3 form of contract and could be removed. However, due to the current growth in the market, removal of this Clause may lead to certain Contractors not tendering for the works. This Clause is deemed to be a fair share of risk between Employer and Contractor;
- *Errors in Works Information/design* - Ensure that the Works Information is aligned with the requirements of the Employer/Wiltshire Council. Structured processes for the exchange of information and design data will be adopted;
- *Environmental considerations – are advanced site clearance works required to ‘manage’ any potential impacts?* - Ascertain whether advanced site clearance works could be undertaken prior to the main contract. If this is not possible ensure that all the relevant information is included in the Works Information; and
- *Working adjacent to Network Rail land - Stringent conditions and restriction would be placed on the Contractor* - Ensure that suitable communication takes place with Network Rail prior to tender in order to identify any restrictions and include within the Works Information.

6.10. Benefits Realisation Plan

The objectives and success indicators for the A350 Yarnbrook and West Ashton Relief Road are set out in the Strategic Case (sections 2.4 and 2.5). The key benefits of the Scheme are improved journey times and delivery of Ashton Park. Ensuring that these benefits are realised will be central to the success of the overall scheme.

A Benefits Realisation Plan has been established at the outset (**Appendix K**) to confirm the principal benefits of the Scheme, the specific data requirements for measuring the benefits, and to allocate responsibility for evaluating performance against each of the benefits. The Benefits Realisation Plan will be monitored by the SRO.

6.11. Monitoring and Evaluation

A Monitoring and Evaluation Plan has also been prepared (within **Appendix K**). This has a wider remit than the Benefits Realisation Plan, with the purpose of identifying how actual scheme delivery, including wider scheme impacts, construction and budget management, are to be evaluated. As the scheme promoter, the Monitoring and Evaluation Plan will be owned by Wiltshire Council. Monitoring data will be reviewed at Project Board meetings.

6.12. Project Management Summary

The joint management approach proposed for the A350 Yarnbrook and West Ashton Relief Road scheme is proportionate to the overall scheme cost, its deliverability and the relatively low level of risk. The key points to note are:

- A Joint Project Board will be established, comprising senior Wiltshire Council and developer representatives, to oversee delivery of the A350 Yarnbrook and West Ashton Relief Road. An SRO and Project Manager will be appointed, with the Project Manager reporting to the Project Board;
- A framework Communications Plan (**Appendix I**) has been prepared to ensure that the public and key stakeholders are kept informed of project progress and to allow for feedback during the detailed design process;
- The Risk Register (**Appendix J**) will be reviewed and updated on a regular basis, with risk owners appointed as appropriate to the type of risk and the stage of scheme delivery at which the risk could be realised; and
- The Benefits Realisation, Monitoring and Evaluation Plan (**Appendix K**) will ensure that data collection and reporting is focused tightly on the objectives and success indicators that have been set out in the Strategic Case.

Overall, the A350 Yarnbrook and West Ashton Relief Road scheme is considered by Wiltshire Council to be a deliverable scheme, which will ensure that the A350 continues to function as a strategic link and that delivery of 2,600 dwellings and 15ha of employment land is unlocked by this targeted investment in transport infrastructure.

Atkins
The Hub
500 Park Avenue
Aztec West
Bristol
BS32 4RZ



© Atkins Ltd except where stated otherwise.

The Atkins logo, 'Carbon Critical Design' and the strapline 'Plan Design Enable' are trademarks of Atkins Ltd.