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BRACKNELL FOREST COUNCIL - A329 CORRIDOR IMPROVEMENTS

BUSINESS CASE

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WSP | Parsons Brinckerhoff

Mountbatten House

Basing View

Basingstoke

Hampshire

RG21 4HJ

Tel: +44 (0) 1256 318800

Fax: +44 (0) 1256 318700

www.wsp-pb.com

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EXECUTIVE SUMMARY

INTRODUCTION

This Business Case presents the evidence base in favour of the proposed A329 Corridor Improvements. The document has been prepared in accordance with the Department for Transport guidance on the five business case model. Guidance was published in April 2013, and requires the following five cases to be considered:

- Strategic case
- Economic case
- Financial case
- Commercial case
- Management case.

SCHEME DESCRIPTION

The A329 Corridor Improvements includes the following highway changes:

- Replacement of Martins Heron roundabout with a fully signalised junction
- Modifying the highway between the junction of A329 London Road / B3017 Priory Road and A329 London Road / Fernbank Road and also the layout at the junctions themselves.

STRATEGIC CASE

The A329 Corridor Improvements will:

- Provide capacity enhancements to deal with the existing capacity whilst also accommodating an increase in future movements within the sub-region, most notably between Bracknell, Ascot, Windsor, Wokingham and beyond
- Make the arrival into Bracknell straightforward, attractive and give people a good first impression
- Improve journey times, reliability and journey quality for all road users
- Improve accessibility to Bracknell for pedestrians, cyclists and road users
- Reduce congestion and its environmental impacts.

ECONOMIC CASE

The Economic case sets out the assessment of benefits that the scheme is forecast to deliver to society as a whole. The Value for Money (VfM) statement provides a summary of these benefits, and is presented in table 0.1.

Table 0.1: Value for Money statement

	ASSESSMENT	DETAIL
Initial BCR	4.627	Calculated using TAG and TUBA version 1.9.7
Adjusted BCR	4.627	Calculated using TAG and TUBA version 1.9.7
Qualitative assessment	Largely beneficial	
Optimism Bias	Scheme costs include for 44% Optimism Bias	No variation in costs i.e. reduced level of Optimism Bias has not been assessed as the Benefit to Cost Ratio will only increase
	Very High	Benefit to Cost Ratio is in the Very High category which is supported by the qualitative assessment

The information shown in table 0.1 shows that the Benefit to Cost Ratio (BCR) of the scheme, based on standard monetised values is 4.627. Over 60 years, the scheme is expected to generate Present Value of Benefits (PVB) of £21.794m with Present Value of Costs (PVC) of £4.710m.

This represents the benefits for the core elements of the scheme, and is considered very high value for money according to Department for Transport guidance.

The information presented in the economic case indicates that the proposed A329 Corridor Improvements are considered very high value for money.

FINANCIAL CASE

The Financial case provides a detailed cost estimate and a breakdown of how the scheme will be funded with the estimated scheme cost being £3.8m. Potential funding sources have been reviewed and the sources shown in table 0.2 have been identified to fund the scheme.

Table 0.2: Funding sources

SOURCE		
Thames Valley Berkshire	£2,900,000	The subject of this Business Case
Bracknell Forest Local Contribution	£900,000	Funds are secured and allocated to this scheme
	£3,800,000	

Annual budget requirements have been reviewed against funding streams to ensure that the scheme is affordable in each year of its construction and are shown in table 0.3.

Table 0.3: Annual budget requirements

FINANCIAL YEAR	COST	TVBLEP	BFC
2016/2017	£200,000	£200,000	
2017/2018	£2,000,000	£2,000,000	
2018/2019	£1,600,000	£700,000	£900,000
Total	£3,800,000	£2,900,000	£900,000

COMMERCIAL CASE

The scheme will be delivered by Ringway Infrastructure Services (RIS) on behalf of Bracknell Forest Council to:

- Achieve cost certainty, or certainty that the scheme can be delivered within the available funding constraints
- Minimise further preparation costs with respect to scheme design by ensuring best value, and appropriate quality
- Obtain contractor experience and input to the construction programme to ensure the implementation programme is robust and achievable
- Obtain contractor input to risk management and appraisals, including mitigation measures, to capitalise at an early stage on opportunities to reduce construction risk and improve out-turn certainty thereby reducing risks to a level that is As Low as Reasonably Practicable.

MANAGEMENT CASE

The Management case sets out the proposed project management procedures to be adopted throughout the life cycle of the project. An assurance and approvals plan is in place and measures have also been set out to ensure high quality and timely delivery.

There will be shared arrangements for project management between Bracknell Forest Council and the contractor. The day to day Project Management will rest with the contractor and they will report to the Project Board. The Project Board will have political and officer representation from Bracknell Forest Council and will meet at least quarterly (more frequently at key stages). The details of the project management arrangements will be secured through the funding / delivery agreement between the Council and Thames Valley Berkshire Local Enterprise Partnership (TVBLEP). The overall Governance Group that the Project Board will report to is the Berkshire Local Transport Body (BLTB).

The performance of the scheme will be assessed against objectives for project to demonstrate the value for money for the funding of the scheme. These objectives relate to changes in traffic flows, reductions in journey times and variability of travel times.

1 INTRODUCTION

1.1 INTRODUCTION

1.1.1 The Thames Valley Berkshire Local Enterprise Partnership (TVBLEP) brings together businesses, unitary authorities, education and the community sector to drive economic growth in the Thames Valley. The Thames Valley Berkshire Growth Deal will deliver growth by enhancing urban connectivity and addressing strategic infrastructure priorities across the LEP area. This will enable the delivery of essential housing at flagship sites in Newbury, Wokingham and Bracknell and improve access and reduce journey times across the LEP area.

1.1.2 WSP | Parsons Brinckerhoff have been commissioned by Bracknell Forest Council (BFC) to produce a business case in support of the A329 Corridor Improvements between Martins Heron roundabout and the junction of A329 London Road / Fernbank Road including the A329 London Road / B3017 Priory Road / B3017 Swinley Road junction. The A329 Corridor Improvements include:

- Replacement of Martins Heron roundabout with a fully signalised junction
- Modifying the highway between the junction of A329 London Road / B3017 Priory Road and A329 London Road / Fernbank Road and also the layout at the junctions themselves.

1.2 A329 CORRIDOR IMPROVEMENT

1.2.1 This is part of a wider programme to improve access between the M3 and M4 via the A322, A329 and A329M. This route runs through the middle of Bracknell and forms part of the original inner ring road. The main capacity constraint is the junctions where radial and orbital routes intersect. This scheme focuses on the Martins Heron roundabout on the east of Bracknell and includes associated junction improvements and minor alteration to the London Road corridor to reduce congestion and improve journey times. The proposed scheme is for:

- Replacement of Martins Heron roundabout with a fully signalised junction
- Modifying the highway between the junction of A329 London Road / B3017 Priory Road and A329 London Road / Fernbank Road and also the layout at the junctions themselves.

2 CONTENT AND STRUCTURE

2.1 INTRODUCTION

2.1.1 WSP | Parsons Brinckerhoff has prepared this business case on behalf of Bracknell Forest Council (BFC) to seek funding for the A329 Corridor Improvements from the Thames Valley Berkshire Local Enterprise Partnership (TVBLEP).

2.1.2 It has been prepared using the agreed standards and format for business cases, as set out in 'The Transport Business Cases' (Department for Transport (DfT), January 2013).

2.2 CONTENT AND STRUCTURE

2.2.1 Business case development is based on the five case model approach which shows whether a scheme:

- is supported by a robust case for change that fits with wider public policy objectives – the '**strategic case**'
- demonstrates value for money – the '**economic case**'
- is financially affordable – the '**financial case**'
- is commercially viable – the '**commercial case**'
- is achievable – the '**management case**'

2.2.2 The next chapter details the assessment of different options and is followed by a chapter for each of the five cases in the five-case business case model.

- The **Strategic Case**: This gives a description of the scheme and sets out the problems and objectives of the scheme, any alternatives and why the scheme is the preferred option for meeting the stated objectives
- The **Economic Case**: This assesses the options to identify all their impacts to fulfil the treasury's requirements for appraisal and demonstrating value for money in the use of taxpayers' money
- The **Financial Case**: This sets out the outturn costs of the proposals outlining the scheme's affordability and funding arrangements over the lifespan of the project
- The **Commercial Case**: This sets out why the scheme is commercially viable, in terms of structure, content and nature of the proposed investment deal and provides details on the justification for funding, opportunities and additional or alternative forms of funding and the scheme procurement process and outcomes
- The **Management Case**: This confirms how the scheme promoter aims to deliver the proposals effectively and the quality of the authorities' project management at various stages of implementation ensuring that the proposals that can be delivered and offer the best value for money

2.2.3 This document identifies the economic benefits of the A329 Corridor Improvements which include:

- Replacement of Martins Heron roundabout with a fully signalised junction

- Modifying the highway between the junction of A329 London Road / B3017 Priory Road and A329 London Road / Fernbank Road and also the layout at the junctions themselves.

2.2.4

This **Business Case** therefore documents that the proposed A329 Corridor Improvement is the most financial advantageous and offers the best value for money.

3 OPTION ASSESSMENT

3.1 A329 CORRIDOR IMPROVEMENTS - OPTIONS CONSIDERED

- 3.1.1 Various layouts for the junction have been examined over the years including signalling the existing roundabout and widening of exits. Whilst all delivered some improvement, they did require heavy investment for what now is considered little return.
- 3.1.2 Through the use of the Early Assessment and Sifting Tool (EAST) framework, developed by the DfT, BFC has been able to test options that provided the most suitable solution.
- 3.1.3 The first of these options was to develop a signalised roundabout that would require very little physical alteration of the existing layout of the junction other than to provide stop lines and traffic signal infrastructure at each junction entry point and on the internal circulation. It was noted however that due to the size of the junction along with the level of traffic expected to pass through the junction in the future, the option was not progressed further as it would not provide sufficient capacity at the internal stop lines.
- 3.1.4 Further to the development of Concept Option 1, Concept Option 2 removed the roundabout to introduce a signalised crossroads. This option was to be constructed within the footprint of the existing roundabout however the alignment of some of the manoeuvres was not favourable and raised some safety concerns.
- 3.1.5 Concept Option 3 (figure 3.1) followed, building on the idea of a signalised crossroads, introducing a left turn filter to the junction from New Forest Ride to A329 London Road (West). This option provided very favourable capacity testing results, however there were concerns regarding the construction feasibility due to the gradients to the south of the junction and the proximity of the newly constructed carriageway on New Forest Ride to existing properties.

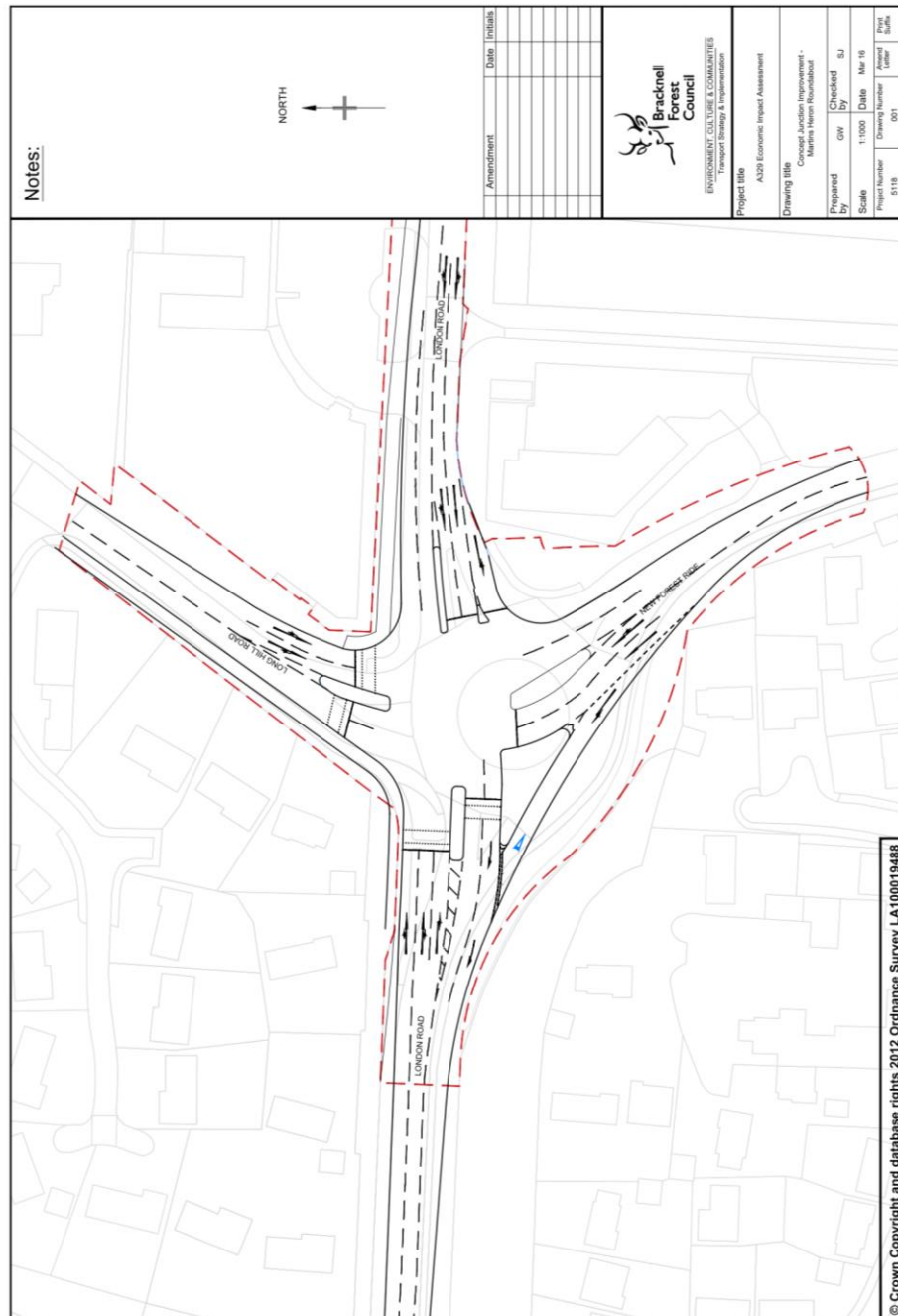


Figure 3.1: Martins Heron roundabout – Concept Option 3

- 3.1.6** The preferred option of a signalised crossroads layout concept is a refinement on the other options, but reduces the number of lanes on the A329 London Road Eastbound approach to improve the overall alignment of the junction and reduces the overall footprint of the junction. This provides a cost effective solution within the highway boundary with the majority within the existing footprint of the junction. In addition to this, the proposed junction is predicted to provide similar capacity results to the previous concept assessed (Concept Option 3) with regard to future traffic levels.
- 3.1.7** Figure 3.2 shows the Martins Heron proposed scheme and figure 3.3 shows the proposed improvements to the A329 London Road.

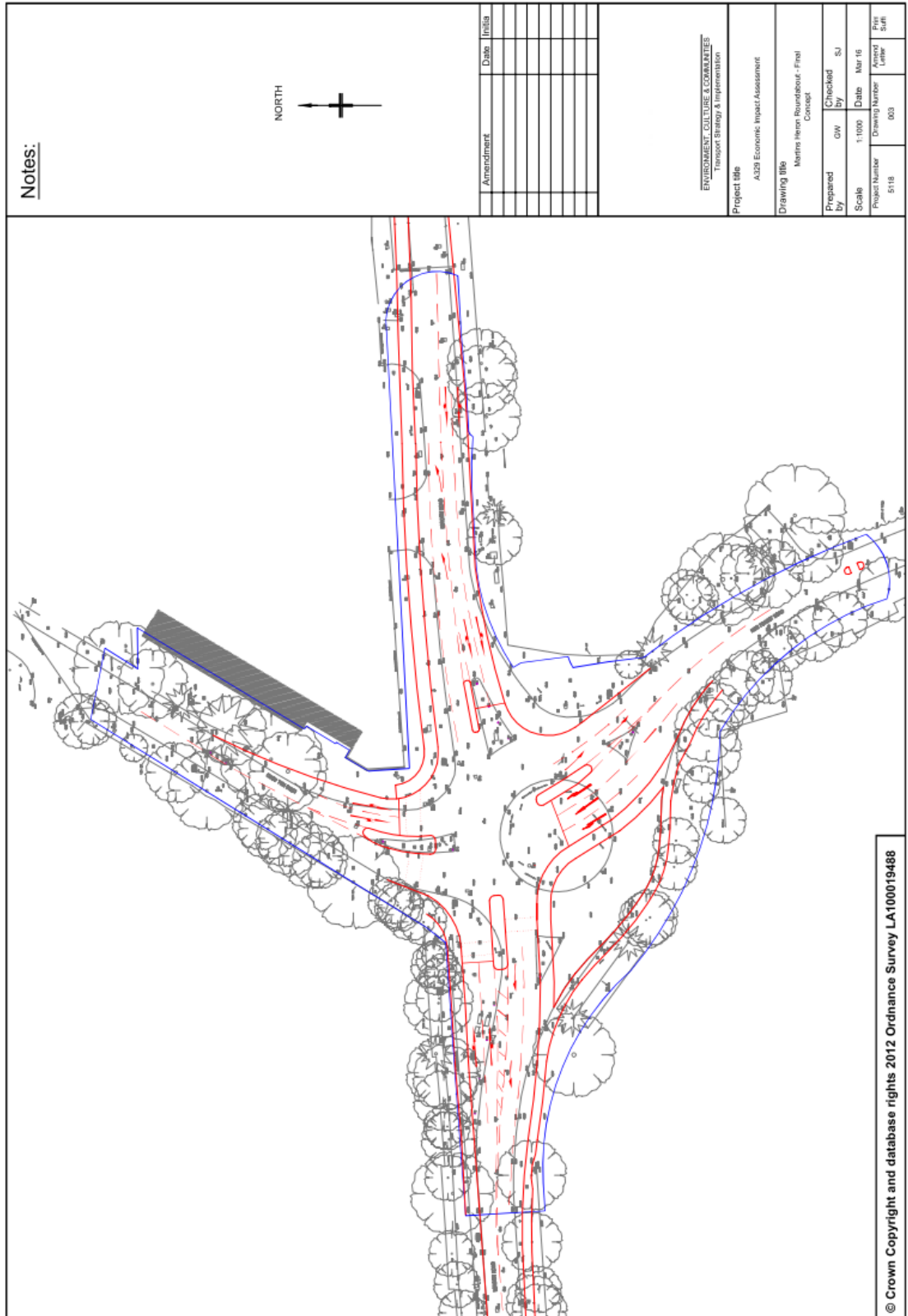


Figure 3.2: Martins Heron junction improvements

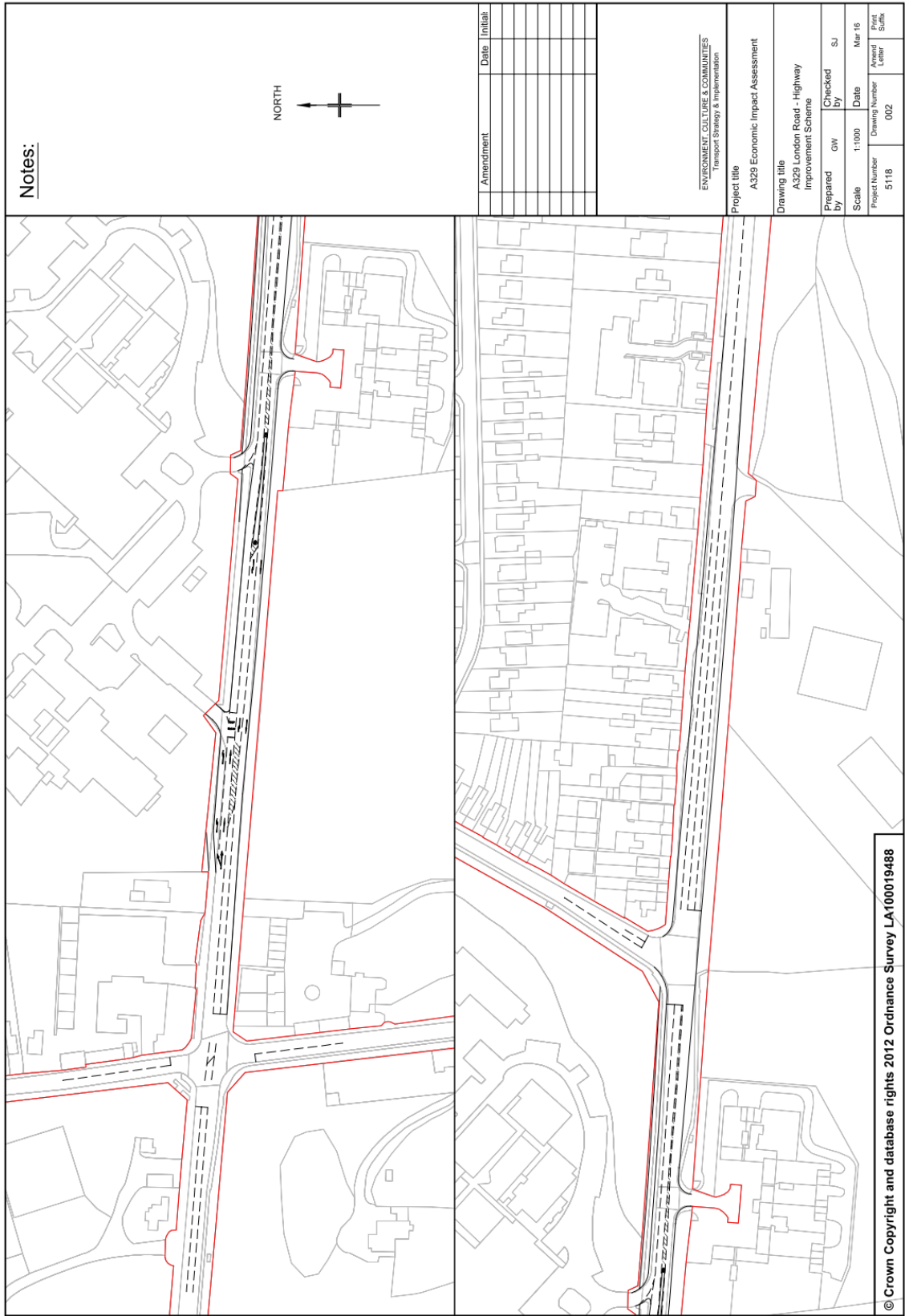


Figure 3.3: A329 London Road improvements

4 STRATEGIC CASE

4.1 INTRODUCTION

4.1.1 The Strategic Case is designed to determine whether or not an investment is needed. It demonstrates the case for change, the strategic fit, and the business need for a project (Department for Transport (2013), The Transport Business Case) .

4.1.2 The Strategic Case follows a defined structure as specified by government. Following this structure ensures all the necessary information is provided and enables efficient assessment of the proposal. Information is presented on the following elements:

- Business strategy
- Problem identified
- Impact of not changing
- Internal drivers for change - This is not assessed as part of the Outline Business Case
- External drivers for change - This is not assessed as part of the Outline Business Case
- Objectives
- Measures for success
- Scope
- Constraints
- Interdependencies
- Stakeholders
- Options

4.2 SOCIO-ECONOMIC CHARACTERISTICS OF STUDY AREA

4.2.1 Bracknell Forest Council (BFC) is a unitary authority comprising 18 political wards and six separate parish and town councils. The major urban area of Bracknell Forest is situated in the centre of the borough, with the settlements of Sandhurst and Crowthorne to the south, Binfield to the north and North Ascot to the west. A number of these settlements cross boundaries with other authorities, in particular Crowthorne and North Ascot. Sandhurst has strong connections to Camberley in the adjoining authority of Surrey Heath.

4.2.2 At the time of the 2011 Census, Bracknell Forest had:

- 113,205 people are permanent residents in the borough in 45,878 households
- 86% of households own one or more cars or vans compared to the national average (England) of 74%
- The average number of cars owned per household across Bracknell Forest area is 1.49 which is higher than the national average (England) of 1.16
- The average household size is 2.41 people
- 78.3% of the population between 16 and 74 years old is considered to be economically active.

4.3 BUSINESS STRATEGY: NATIONAL TRANSPORT PRIORITIES

- 4.3.1 The Government's 2014 National Infrastructure Plan outlines the Government's approach to identifying and delivering infrastructure that is required. The plan states that there is a strong economic case for infrastructure investment as it is shown to have a significant positive effect on output, productivity and growth rates.
- 4.3.2 The National Planning Policy Framework (NPPF) states that plans should help to build a strong and competitive economy through the creation of jobs and prosperity. The A329 Corridor Improvements would improve access into and out of Bracknell and is a major freight route as well as being a route that carries commuters through to Ascot, Windsor, Surrey and further to east.
- 4.3.3 Therefore in accordance with the National Planning Policy Framework, to help achieve economic growth and bring forward stalled developments the Local Authority is working proactively, to help meet the development needs of business and support an economy fit for the 21st century.

4.4 BUSINESS STRATEGY: REGIONAL TRANSPORT PRIORITIES

- 4.4.1 The Thames Valley Berkshire Local Enterprise Partnership submitted their Strategic Economic Plan (SEP) in March 2014, which outlines the case for necessary investment to infrastructure, enterprise and employment that is required for the Thames Valley regions economic growth.
- 4.4.2 It states that the Thames Valley Berkshire area is ranked second, behind London for Business birth rate (12.4%) and in economic output per head which is valued at £32.8k. To keep up these standards, infrastructure will need to continually improve and grow.
- 4.4.3 The growth of the Thames Valley Berkshire economy is reliant upon transport and communications infrastructure and the SEP states that currently 'it is threatening to undermine our intrinsic growth potential'. It has therefore deemed important to focus on creating new networks and encouraging local sustainable transport networks to allow people to travel easily by foot, bicycle or by bus.
- 4.4.4 The Thames Valley Berkshire SEP states that the 'biggest single risk to the future economic contribution of TVB concerns our transport and communications infrastructure'. The A329 Corridor Improvements will support and benefit existing users of the network and provide additional capacity on a key route both eastbound and westbound across the course of the whole day and not just during the peak hours. It is also major freight route as well as being a route that carries commuters through to Ascot, Windsor, Surrey and further to east.

4.5 BUSINESS STRATEGY: LOCAL TRANSPORT PRIORITIES

BRACKNELL FOREST COUNCIL: CORE STRATEGY

- 4.5.1 Bracknell Forest Council (BFC) has an adopted Core Strategy Development Plan Document (February 2008) which identifies the vision for growth to 2026 which includes around 11,000 new dwellings and which identifies three major areas for growth (Policy CS3 – Bracknell Town Centre, CS4 – land at Amen Corner and CS5 – land north of Whitegrove and Quelm Park (now known as Warfield)).
- 4.5.2 The sites in the Site Allocations Development Plan Document (SADPD) are dependant on the provision of necessary infrastructure across Bracknell Forest which includes improvements to many of the junctions along the A322/A329 corridor. This requirement was included in modelling evidence in support of the SADPD however no developments are directly dependant on the A329 Corridor Improvements.

- 4.5.3 The South East Plan (SEP) notes that “the strategic road network through the Thames Valley Berkshire area, and linking to neighbouring economies, is increasingly constrained; there is little scope for new roads, so the challenge is to maximise existing capacity and to tackle known ‘pinch-points’”. The Martins Heron roundabout is one of those pinch points. It is located on a key north to south routes through central Thames Valley Berkshire, where the greatest weaknesses in the strategic transport network lie.
- 4.5.4 This section of the A329 is one of Bracknell's busiest corridors. High levels of traffic travel both eastbound and westbound across the course of the whole day and not just during the peak hours. It is a major freight route as well as being a route that carries commuters through to Ascot, Windsor, Surrey and further to east.
- 4.5.5 With 11,000 new houses planned for in and around Bracknell over the next 15 years, traffic levels in the region are predicted to increase. Although some effects of this growth will be mitigated by developer contributions, growth in the region will struggle without further improvements to existing transport infrastructure.
- 4.5.6 Therefore in accordance with the National Planning Policy Framework, to help achieve economic growth and bring forward stalled developments the Local Authority is working proactively, to help meet the development needs of business and support an economy fit for the 21st century. This means the costs of these works are now being met, where possible, by the local authority with a mix of capital and developer contributions.
- 4.5.7 It must be stressed that no developments are directly dependant on the A329 Corridor Improvements therefore no dependant development assessment will or has been undertaken. The emphasis is on maximising existing capacity and tackling known ‘pinch-points’ to enable growth to be realised across the borough.
- 4.5.8 The A329 Corridor Improvements support a number of the policies outlined in the document, including:
- **Policy CS23** which states that the Council will use its planning and transport powers to:
 - Increase the safety of travel
 - Maintain and where possible improve the local road network
 - Provide improved access to key services and facilities
 - Secure the reliable movement of goods through the Borough
 - Enhance sub-regional connectivity to and from the Borough
 - Make representations and bids for funding major transport infrastructure to help deliver the Core Strategy and Local Transport Plan schemes.

BRACKNELL FOREST COUNCIL: LOCAL TRANSPORT PLAN (LTP3)

- 4.5.9 Bracknell Forest’s most recent Local Transport Plan (LTP3) was adopted in 2011. The A329 Corridor Improvements support a number of the policy aspirations within the LTP3:
- **TP1** Accessibility - to maintain high levels of accessibility to key services such as employment, local centres, healthcare, supermarkets, education and leisure through:
 - Implementing key road capacity improvements
 - **TP8** Walking and Cycling - the council will promote walking and cycling in the borough through:
 - Improving safety for pedestrians and cyclists

- **TP12** Traffic Management - the council will regulate traffic, where necessary, by improving the reliability of journey times
- **TP13** Congestion Management - the council will seek to reduce the impact of congestion through works and measures to improve the capacity and functionality of junctions and route corridors.

4.6 PROBLEM IDENTIFIED

4.6.1 The key transport challenges for Bracknell Forest, as identified by the Local Transport Plan, and how the A329 Corridor Improvements benefit these are identified in table 4.1.

Table 4.1: Transport Challenges in LTP3 and Benefits of A329 Corridor Improvements

TRANSPORT CHALLENGES IDENTIFIED	DO THE IMPROVEMENTS HELP RESOLVE THIS?	DESCRIPTION
To reduce delays associated with traffic congestion and improve reliability of journey times	✓	→ The A329 Corridor Improvements will reduce congestion and delay
To maintain and improve, where feasible, the local transport network	✓	→ The A329 Corridor Improvements will contribute to an overall improvement in the local transport network
To reduce greenhouse gas emissions from transport	✓	→ The A329 Corridor Improvements will reduce congestion and the level of greenhouse gas emissions
To encourage and promote accessibility by sustainable modes of transport	✓	→ Improvements to walking and cycling infrastructure will improve accessibility and encourage more people to travel sustainably
To protect and enhance the quality of natural resources including water, air quality and the natural environment	✓	→ The A329 Corridor Improvements will reduce congestion and the level of greenhouse gas emissions, resulting in improved air quality
To reduce casualties and improve safety on the local transport network	✓	→ A number of new pedestrian crossings and cycle lanes will be installed, providing improved facilities for vulnerable road users and helping to reduce road casualties
To secure necessary transport infrastructure and services to support development	✓	→ The improvements are required to provide vital vehicular access and pedestrian / cycle access into and out of the Borough

4.7 THE IMPACT OF NOT CHANGING

4.7.1 Without the implementation of the A329 Corridor Improvements proposed there would be increased strain on the already saturated local highway network.

4.7.2 Specific outcomes of a 'Do Nothing' scenario include:

- Increased congestion resulting in longer and unreliable journey times which would continue to increase with adverse impacts for productivity
- A decline in air quality on the A329 London Road

- Risk of not achieving the transport policy aspirations
- Planning Authority may refuse permission for major developments in Bracknell Forest unless they could carry the burden of larger infrastructure projects
- Restrictions to the network into the town centre could adversely impact on Bracknell's economy and businesses.

4.8 INTERNAL DRIVERS FOR CHANGE

4.8.1 This is not assessed as part of the Business Case.

4.9 EXTERNAL DRIVERS FOR CHANGE

4.9.1 This is not assessed as part of the Business Case.

4.10 OBJECTIVES

4.10.1 The objectives of the A329 Corridor Improvements are to:

- Provide capacity enhancements to deal with the existing capacity whilst also accommodating an increase in future movements within the sub-region, most notably between Bracknell, Ascot, Windsor, Wokingham and beyond
- Make the arrival into Bracknell straightforward, attractive and give people a good first impression
- Improve journey times, reliability and journey quality for all road users
- Improve accessibility to Bracknell for pedestrians, cyclists and road users
- Reduce congestion and its environmental impacts.

4.11 MEASURES OF SUCCESS

4.11.1 A programme of local travel movement monitoring will be put in place prior to evaluate the impact of the A329 Corridor Improvements. Monitoring will include:

- Traffic congestion and journey times on the A329
- Road safety (through monitoring STATS19 data which can be accessed via the DfT).

4.12 CONSTRAINTS

4.12.1 The scheme has a number of potential constraints, and these have been dealt with, or have planned mitigation, throughout scheme development, key items being:

- Statutory Utility protections, diversions and reinforcements (impacts to programme and costs)
- Environmental (noise, dust etc.) during construction (managed through planning conditions and Construction Environmental Management Plan (CEMP))
- Construction Access (managed within CEMP)
- Maintaining access to existing facilities and services which will be managed through agreed traffic management plans between the contractors and the Council Highway Officers.

4.13 INTER-DEPENDENCIES

- 4.13.1 A list of risks has been prepared as part of the Commercial Case (Chapter 7) and Management Case (Chapter 8). The delivery of the A329 Corridor Improvements is dependent on these risks either not arising or being sufficiently mitigated so that the scheme remains unaffected.
- 4.13.2 A total of 10 key risks have been identified. In most cases, the impact is so low that the scheme cannot be defined as dependent upon their negation.
- 4.13.3 The key inter-dependencies can be summarised as follows:
- Reaching agreement on the Section 278 design and adoption areas of the highway. This is highlighted in the risk register with mitigation proposals
 - Unknown or unidentified Statutory Utilities Plant in and around the junction to be altered. This is highlighted in the risk register with mitigation proposals.
- 4.13.4 Overall, the risks on the project stay with the contractor and local authority including all those listed in the risk sheet plus, construction cost inflation, variable ground conditions, weather impacts on delivery programme and contractor failure as typical examples.

4.14 STAKEHOLDERS

- 4.14.1 The stakeholders who have been or will be consulted as part of the scheme development are listed below:
- Bracknell Forest Council – conservation, environmental health, ecology, landscape, planning
 - Other local authorities (Royal Borough of Windsor and Maidenhead)
 - Royal Berkshire Fire and Rescue Services
 - Chamber of Commerce
 - South East Water
 - Thames Water
 - National Grid
 - British Telecom
 - Virgin Media.

4.15 OPTIONS APPRAISAL

- 4.15.1 Option assessment was undertaken as described in Chapter 3.

5 ECONOMIC CASE

5.1 INTRODUCTION

5.1.1 The Economic case assessment is undertaken to ensure that all the options are assessed and to fulfil the treasury's requirements for appraisal and demonstrating value for money. Information is presented on the following:

- Options appraised
- Assumptions
- Sensitivity and risk profile
- Appraisal Summary Table
- Value for Money statement

5.2 OPTIONS APPRAISED

5.2.1 Option assessment was undertaken as described in Chapter 3 with the preferred option being a signalised crossroads layout concept which is a refinement on the other options, but reduces the number of lanes on the A329 London Road Eastbound approach to improve the overall alignment of the junction and reduces the overall footprint of the junction.

5.2.2 This provides a cost effective solution within the highway boundary with the majority within the existing footprint of the junction. In addition to this, the proposed junction is predicted to provide similar capacity results to the previous concept assessed with regard to future traffic levels.

5.3 ASSUMPTIONS

5.3.1 The preferred option has been appraised under the following guidance and have made use of the most up to date modelling parameters:

- Her Majesty's Treasury document – "The Green Book"
- Department for Transport (DfT) Transport Analysis Guidance (TAG) for transport related benefits (July 2016)
- DfT Transport User Benefits Appraisal (TUBA) program which is a computer program developed by the DfT to undertake economic appraisal for transport schemes – TUBA v1.9.7 which uses TAG (December 2015) and TAG Data Book (July 2016).

BRACKNELL MULTI MODAL TRANSPORT MODEL

5.3.2 WSP produced a multi modal transport model of Bracknell and wider related area on behalf of Bracknell Forest Council (BFC). The 2007 (Bracknell Multi-Modal Transport Model (BMMTM), base year model was subsequently used to produce 2026 and 2036 forecast models to assess the Council's Core Strategy proposals.

2013 BASE YEAR MODEL

5.3.3 In January 2013 BFC instructed WSP | Parsons Brinckerhoff to carry out a 'Minimal Update' to the 2007 model, which involved:

- Updating VISUM modelling software to latest version (VISUM 13.00-09)
- Disaggregating a number of zones with potential developments in the future
- Recalibrating assignment link flows and journey times to 2013 observed data
- Recalibrating the demand model to the latest mode split and distributional data.

5.3.4 The development and validation of the 2013 base models is detailed in the 2013 Model Development and Validation Report (MDVR) (June 2015).

5.3.5 The 2013 base model has been developed in VISUM 13.00-09 and uses updated traffic assignment procedures as recommended by PTV. The zone structure has been disaggregated in a number of areas specified by BFC (e.g. Amen Corner and Bracknell Town Centre), in order to allow more detailed assessment of forecast development impacts in such areas.

5.3.6 The 2013 base year assignment models have been calibrated to observed turning flows, link flows and journey times for an AM peak (08:00-09:00) and a PM peak (17:00-18:00) hour. The demand model has been calibrated at a 24-hour level to reflect mode choice and distributional data, from NTS, then subsequently cut down to represent AM and PM peak hour trip patterns

5.3.7 A comparison of the 2013 observed turning flows against the 2013 modelled turning flows at the Martins Heron junction (A329 London Road / New Forest Road / Long Hill Road) is shown in the table 5.1

Table 5.1: Observed flow versus Modelled flow – 2013 (A329 London Road / New Forest Road / Long Hill Road) Martins Heron Roundabout

		Observed	Modelled	GEH	Observed	Modelled	GEH
Long Hill Road	A329 London Road (East)	176	294	7.7	101	141	3.6
	B3430 New Forest Ride	126	135	0.7	333	385	1.7
	A329 London Road (West)	52	32	3.2	106	10	12.7
A329 London Road (East)	Long Hill Road	69	170	9.3	83	5	11.7
	B3430 New Forest Ride	111	24	10.5	339	275	3.6
	A329 London Road (West)	694	593	4.0	468	627	6.8
B3430 New Forest Ride	Long Hill Road	220	198	1.5	194	379	10.9
	A329 London Road (East)	233	263	1.9	183	47	12.7
	A329 London Road (West)	293	376	4.6	175	157	1.4
A329 London Road (West)	Long Hill Road	21	3	5.1	56	10	8.0
	A329 London Road (East)	419	507	4.1	661	676	0.6
	B3430 New Forest Ride	63	169	9.8	330	369	2.1

5.3.8 Table 5.2 and table 5.3 shows a comparison of the 2013 observed link flows and the 2013 modelled link flows for three arms of the Martin Herons roundabout for the Car/LGV and HGV respectively. These three arms formed part of the 2013 base year model Outer Cordon screenline.

Table 5.2: Observed flow versus Modelled flow – 2013 (London Road / New Forest Road / Long Hill Road) Martins Heron Roundabout – Car/LGV link flows

		AM PEAK			PM PEAK		
		Observed	Modelled	GEH	Observed	Modelled	GEH
Long Hill Road	Inbound	346	455	5.4	536	514	1.0
	Outbound	301	364	3.5	332	393	3.2
A329 London Road (East)	Inbound	851	769	2.9	886	810	2.6
	Outbound	1013	1036	0.7	939	858	2.7
B3430 New Forest Ride	Inbound	739	826	3.1	551	582	1.3
	Outbound	295	326	1.8	996	961	1.1

Table 5.3: Observed flow versus Modelled flow – 2013 (London Road / New Forest Road / Long Hill Road) Martins Heron Roundabout: HGV link flows

		AM PEAK			PM PEAK		
		Observed	Modelled	GEH	Observed	Modelled	GEH
Long Hill Road	Inbound	8	5	1.2	4	2	1.2
	Outbound	9	6	1.1	1	1	0.0
A329 London Road (East)	Inbound	23	18	1.1	4	7	1.3
	Outbound	15	19	1.0	6	5	0.4
B3430 New Forest Ride	Inbound	7	10	1.0	1	1	0.0
	Outbound	5	2	1.6	6	4	0.9

5.3.9 The highway assignment model achieves a good level of calibration and validation against observed traffic data, and the demand model calibrates well against mode choice and trip length distribution statistics. The model also achieves elasticity results in line with TAG guidance in terms of fuel costs and public transport fares, although is slightly inelastic in terms of car journey times. The model can therefore be considered suitable for forecasting in this respect, given that if anything the model may overestimate car use, presenting a 'worst-case' scenario in terms of forecasting outputs.

5.3.10 Table 5.1, table 5.2 and table 5.3 show that there is good calibration at the Martins Heron junction and on the A329 London Road meaning that the transport model is a good basis for undertaking a highway scheme economic assessment.

5.3.11 The 2013 base model was taken forward to assess a series of forecast year scenarios, taking inputs of population, households, car availability, socio economic class, retail floor space, the number of employees and education places, which will generate new absolute trip patterns which will be applied incrementally to the observed base year models to obtain forecasts of future year travel demand and provide the ability to undertake scheme assessments.

2026 AND 2036 FORECAST YEAR MODEL

- 5.3.12 The purpose of the 2026 and 2036 forecast year models was to provide an understanding of the future situation in the study area and examine the transport implications and potential infrastructure requirements of the proposed Local Development Framework (LDF) Core Strategy and Site Allocations DPD (SADPD) plans.
- 5.3.13 2026 and 2036 forecast models have been developed from the validated 2013 base year models, applying different assumptions of population, housing and employment levels and also highway and public transport infrastructure as part of the Core Strategy and SADPD proposals.
- 5.3.14 Outputs from the forecast demand model provide future year traffic matrices which have been assigned on the future year networks, the assessment of which provides an understanding of the potential impacts of the developments on the highway network in terms of links flows, ratio of flow to capacity, and journey times.
- 5.3.15 Key outcomes of the modelling assessment include:
- General growth in flow levels within Bracknell Forest Borough in 2026 and 2036 for the AM peak and PM peak
 - Some re-routing of trips around the Town Centre following improvements at junctions such as Twin Bridges gyratory, and the new junctions on the A329(M)
 - Some substantial increases in flows where new or improved junctions are introduced e.g. Peacock Lane and Three Legged Cross junction
 - Particular locations where links approach flow capacity in 2026 e.g. A329(M), Peacock Lane
 - Specific key junctions where delays are increased, leading to increased journey times along key routes traversing the Bracknell highway network e.g. Coral Reef, Golden Retriever
 - Specific junctions that may require mitigation in order improve operation and reduce delays and improve journey times along key routes.
- 5.3.16 The assessment highlights where flows are expected to increase / decrease as a result of the Core Strategy and SADPD proposals, and also provides an indication of which junctions are likely to require improvements to reduce delays and improve journey times in the future. The model provides a tool to help formulate and manage the Local Development Framework (LDF), assess cumulative and individual development impacts and therefore inform where future mitigation measures will be needed, and to assist in the development of future transport policy and infrastructure investment decisions.

IMPACT OF SCHEME

- 5.3.17 The A329 Corridor Improvements include:
- Replacement of Martins Heron roundabout with a fully signalised junction
 - Modifying the highway between the junction of A329 London Road / B3017 Priory Road and A329 London Road / Fernbank Road and also the layout at the junctions themselves.
- 5.3.18 The A329 Corridor Improvements, shown in figure 3.1 and figure 3.2, have been included within the 2026 forecast year VISUM models with the change in traffic flows shown in table 5.4.

Table 5.4: 2026 “without scheme” against “with scheme” traffic flows

		AM PEAK			PM PEAK		
		WITHOUT SCHEME	WITH SCHEME	DIFF	WITHOUT SCHEME	WITH SCHEME	DIFF
Long Hill Road	Inbound	421	447	26	1,052	490	-562
	Outbound	311	388	77	507	308	-199
A329 London Road (East)	Inbound	764	933	169	891	806	-85
	Outbound	1,198	1,155	-43	849	860	11
B3430 New Forest Ride	Inbound	1,024	1,166	142	693	636	-57
	Outbound	476	461	-15	698	871	173
A329 London Road (West)	Inbound	870	790	-80	409	1,074	665
	Outbound	1,058	1,333	275	818	967	149

- 5.3.19 The A329 Corridor Improvements attracts additional traffic on Long Hill Road in both directions, A329 London Road (East) in the inbound direction, B3430 New Forest Ride in the inbound direction and the A329 London Road (West) in the outbound direction in the 2026 AM peak period.
- 5.3.20 In the 2026 PM peak period the A329 Corridor Improvements attract additional traffic on the A329 London Road (East) in the outbound direction, B3430 New Forest Ride in the outbound direction and the A329 London Road (West) in both directions.
- 5.3.21 There is a large reduction in traffic on Long Hill Road in the inbound direction (-562 vehicles) which is coupled with a large increase in traffic on A329 London Road (West) in the inbound direction (665 vehicles). Investigation of trip patterns shown that there is a reduction of traffic on Harvest Ride which is switching to the A329 London Road to approach the junction from the east rather than use Long Hill Road.

TRANSPORT BENEFITS

- 5.3.22 The investment in transport infrastructure will result in direct benefits for transport users. A reference case has been established to reflect the scenario without the highway improvements with the do something being the same as the reference case but including the planned highway improvements. The benefits have been assessed against the reference case with the main benefits being from journey time saving for road users
- 5.3.23 These have been assessed accordingly under the guidance of TAG with the BMMTM used to assess the transport benefits of the proposed highway improvements and provide outputs for input into the DfT Transport User Benefits Appraisal (TUBA) program. TUBA is a computer program developed by the DfT to undertake economic appraisal for transport schemes.
- 5.3.24 TUBA v1.9.7 has been used which is the current version and is consistent with parameters published in the TAG Data Book (July 2016). Scheme appraisal has been undertaken for a 60-year period, from the assumed scheme opening in 2018 to 2077.

- 5.3.25 Annualisation factors for the two modelled time periods are given in table 5.5. The aggregated scheme benefits derived therefore relate only to those two weekday peak hours. This is considered to be a conservative approach in the absence of traffic model data outside of these peak hours.

Table 5.5: Annualisation factors

PERIOD	PEAK HOUR TO PEAK PERIOD FACTOR	NUMBER PER YEAR	ANNUALISATION FACTOR
AM peak	1.000	253	253
PM peak	1.000	253	253

- 5.3.26 The calculated benefits have therefore been derived for an AM peak and PM peak hour only as there is no Inter-peak model. The weekends and the overnight period have not been considered, but these are assumed to have sufficiently low flows that the overall assessment of benefits will not be affected.
- 5.3.27 User classes have been defined as shown in table 5.6 so that the definitions used in model development have been applied to the TUBA assessment.

Table 5.6: User class definitions

USER CLASS	MODEL DEFINITION	TUBA PARAMETER		
		VEHICLE TYPE	PURPOSE	PERSON TYPE
1	Car	Car	All	All
2	HGV	HGV	Business	Driver

- 5.3.28 Table 5.7 shows the output from the TUBA scheme economic assessment.

Table 5.7: Analysis of Monetised Costs and Benefits

ITEM	VALUE (£000s)
Greenhouse gasses	£0.141m
Economic Efficiency: Consumer Users (Commuting)	£5.902m
Economic Efficiency: Consumer Users (Other)	£8.433m
Economic Efficiency: Business Users and Providers	£7.630m
Wider Public Finances (Indirect Tax Revenues)	-£0.312m
Present Value of Benefits (PVB)	£21.794m
Broad Transport Budget	£4.710m
Present Value of Costs (PVC)	£4.710m
OVERALL IMPACTS	
Net Present Value (NPV)	£17.084m
Initial Benefit to Cost Ratio (BCR)	4.627

- 5.3.29 The information shown in table 5.6 shows that the Initial Benefit to Cost Ratio (BCR) of the scheme, based on standard monetised values is 4.627 (All monetary values are in 2010 prices, discounted to 2010). This represents the benefits for the core elements of the scheme, and is considered high value for money according to Department for Transport guidance.

OTHER BENEFITS

Journey Quality

- 5.3.30 The 2026 “with scheme” models have been compared to the “without scheme” models to assess the impact of the proposed scheme on the highway network. The travel time results can be seen in table 5.8 and table 5.9.

Table 5.8: Travel time difference (seconds) – A329 Eastbound 2026 AM peak and PM peak

	AM PEAK			PM PEAK		
	WITHOUT SCHEME	WITH SCHEME	DIFF	WITHOUT SCHEME	WITH SCHEME	DIFF
Running Horse Roundabout to Martins Heron junction	60	52	8	574	57	517
Martins Heron junction to Priory Road junction	149	60	89	53	53	0
Priory Road junction to Fernbank Road junction	36	31	5	27	26	1
Fernbank Road junction to A329 London Road / A332 Windsor Road roundabout	88	87	1	77	76	1
Total	333	230	103	731	212	519

- 5.3.31 Table 5.8 shows that there are significant time savings occurring between the Running Horse roundabout and the Martins Heron junction in the 2026 PM peak scenario (reduction from 574 seconds to 57 seconds). In the 2026 AM peak scenario an improvement in the travel time is seen between the Martins Heron junction and the B3017 Priory Road junction. Over the entire route there are travel time improvements in both the AM peak and PM peak.

Table 5.9: Travel time difference (seconds) – A329 Westbound 2026 AM peak and PM peak

	AM PEAK			PM PEAK		
	WITHOUT SCHEME	WITH SCHEME	DIFF	WITHOUT SCHEME	WITH SCHEME	DIFF
A329 London Road / A332 Windsor Road roundabout to Fernbank Road junction	74	76	-2	80	75	5
Fernbank Road junction to Priory Road junction	26	26	0	26	24	2
Priory Road junction to Martins Heron junction	65	55	10	54	53	1
Martins Heron junction to Running Horse Roundabout	59	67	-8	52	55	-3
Total	224	224	0	212	207	5

- 5.3.32 Table 5.9 shows that in the westbound movement along the A329 corridor between the A329 London Road / A332 Windsor Road roundabout to the A329 London Road / Broad Lane (Running Horse roundabout) there are minimal time savings in both the AM peak and PM peak.
- 5.3.33 Journey quality is a measure of the real and perceived physical and social environment that is experienced while travelling. As can be seen from table 5.8 there are predicted to be significant delays in the 2026 PM peak forecast year in the eastbound direction along the A329 London Road corridor. These delays are significant and will have an adverse impact on travellers' stress and journey quality.
- 5.3.34 The proposed A329 Corridor Improvements show that there is predicted to be a reduction in the delay and therefore congestion along the A329 London Road which will reduce traveller stress and frustration. The proposed A329 Corridor Improvements will provide an improved environment for travellers.
- 5.3.35 The overall impact of the scheme on journey quality can be considered **Slightly Beneficial**, as it will relieve congestion on the A329 London Road during peak periods, improving travellers' environment and reducing the stress and frustration associated with driving in congestion.

Accidents

- 5.3.36 An analysis of accidents that have occurred on the local highway network in the vicinity of the A329 Corridor Improvements has been undertaken for the latest available five year period (2011 to 2015).
- 5.3.37 Table 5.10 shows a summary of the accidents and a comparison of the observed annual accidents with figure 5.1 to figure 5.5 showing the accident information for each year. Given the benefits shown from the TUBA scheme economic assessment no COBALT assessment has been undertaken given the low number and severity of the observed accidents.

Table 5.10: Observed accidents – 2011 to 2015

A329 CORRIDOR IMPROVEMENTS - ROUTE		2011	2012	2013	2014	2015
	Fatal	0	0	0	0	0
	Serious	1	1	4	3	1
	Slight	8	9	5	7	9

Note: Accident data has been extracted from STATS19 data accessed through the Department for Transport

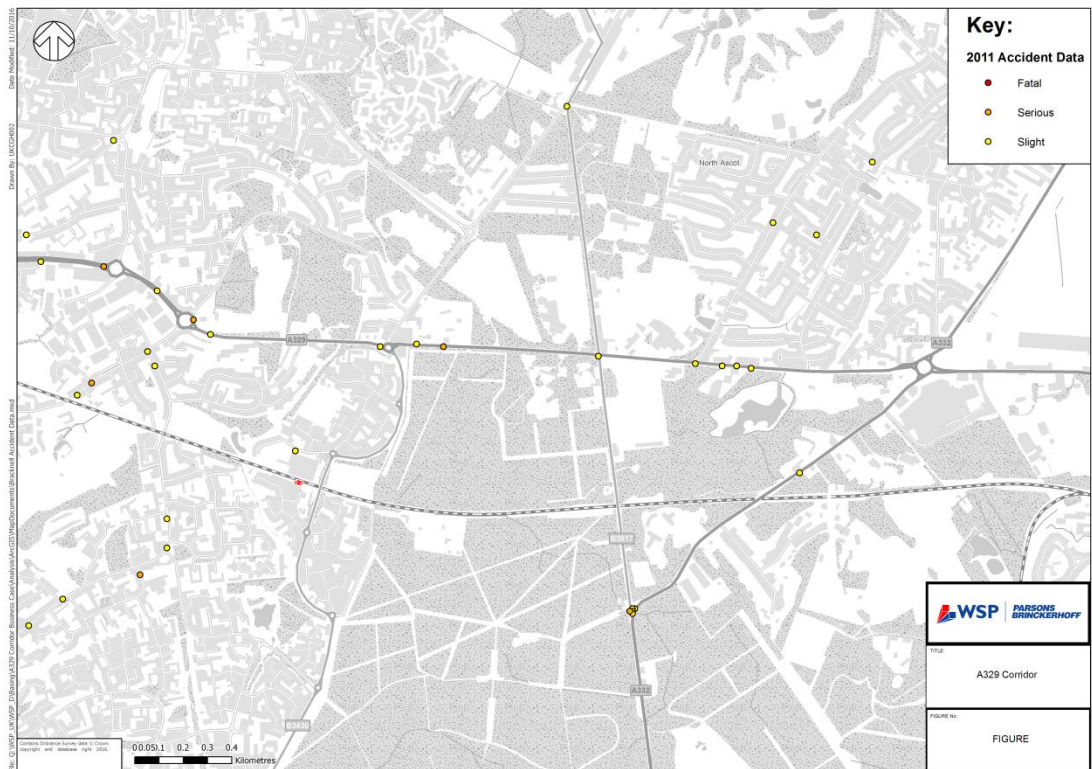


Figure 5.1: A329 Corridor Improvements – 2011 accident information

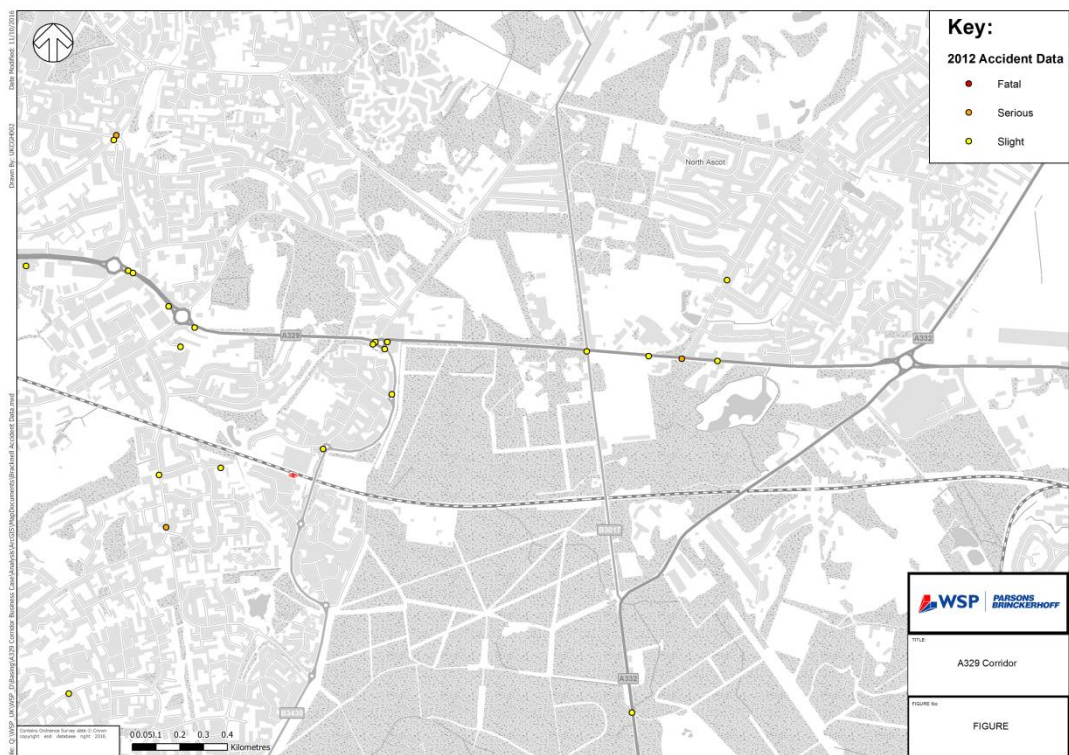


Figure 5.2: A329 Corridor Improvements – 2012 accident information



Figure 5.3: A329 Corridor Improvements – 2013 accident information



Figure 5.4: A329 Corridor Improvements – 2014 accident information

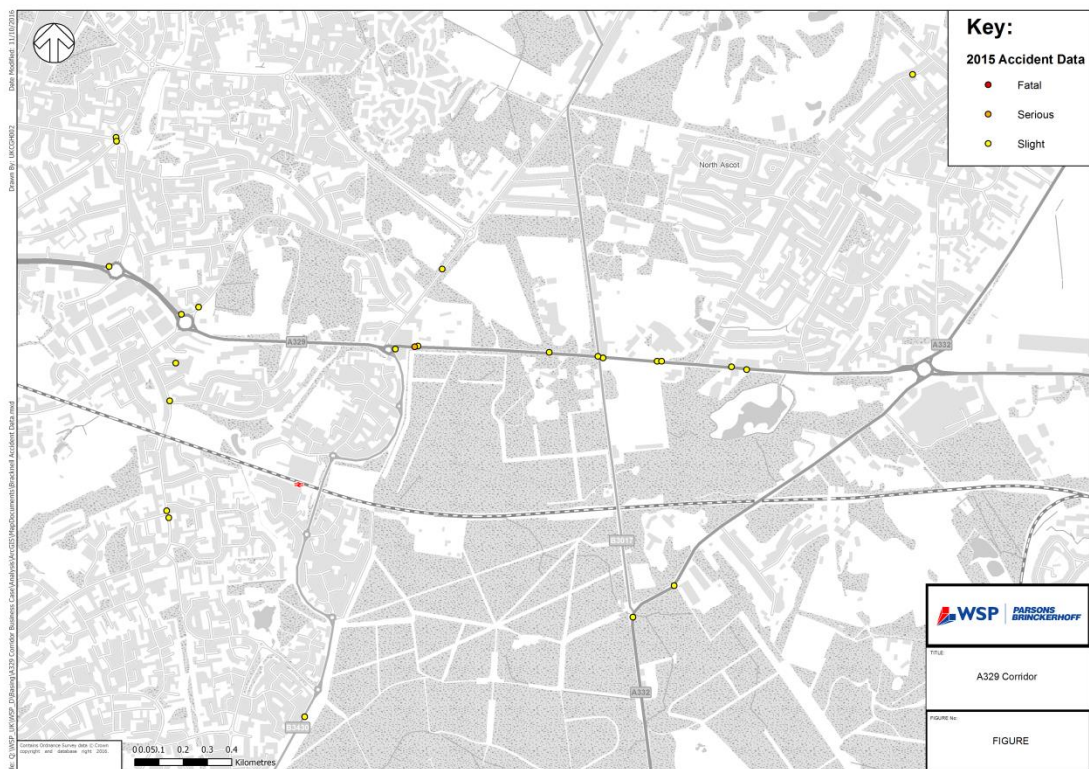


Figure 5.5: A329 Corridor Improvements – 2015 accident information

5.4 SENSITIVITY AND RISK PROFILE

5.4.1 Costs have been estimated based Bracknell Forest Council standards for the pavement construction and using a BFC price list for civil engineering works. For robustness the cost estimates have assumed whole-scale re-surfacing (plane and relay binder and surface course). The costs include 20% for traffic management, 15% for preliminaries and 20% for contingencies and risk. The complete list of cost assumptions is included in Appendix A with the construction cost estimates included in Appendix B. In summary the costs associated with each element of the A329 Corridor Improvements are:

- £2.3m: Replacement of Martins Heron roundabout with a fully signalised junction
- £1.5m: Modifying the highway between the junction of A329 London Road / B3017 Priory Road and A329 London Road / Fernbank Road and also the layout at the junctions themselves.

5.5 APPRAISAL SUMMARY TABLE

5.5.1 An Appraisal Summary Table (AST) is provided in Appendix C.

5.6 VALUE FOR MONEY STATEMENT

5.6.1 The value for money assessment has been prepared in accordance with the DfT's "Value for money assessment: advice note for local transport decision makers".

5.6.2 The monetised impacts of the scheme have been extracted from the AST and reported in the Analysis of Monetised Costs and Benefits (AMCB) table shown in table 5.7. All monetary values are in 2010 prices, discounted to 2010.

- 5.6.3 The Value for Money (VfM) statement provides a summary of these benefits and is shown in table 5.11.

Table 5.11: Value for Money statement

	ASSESSMENT	DETAIL
Initial BCR	4.627	Calculated using TAG and TUBA version 1.9.7
Adjusted BCR	4.627	Calculated using TAG and TUBA version 1.9.7
Qualitative assessment	Largely beneficial	
Optimism Bias	Scheme costs include for 44% Optimism Bias	No variation in costs i.e. reduced level of Optimism Bias has not been assessed as the Benefit to Cost Ratio will only increase
Value for Money	Very High	Benefit to Cost Ratio is in the Very High category which is supported by the qualitative assessment

- 5.6.4 The information presented in the economic case indicates that the proposed A329 Corridor Improvements are considered very high value for money.

6 FINANCIAL CASE

6.1 INTRODUCTION

6.1.1 The financial case concentrates on the affordability of the proposal, its funding arrangements and technical accounting issues (value for money is scrutinised in the economic case). It presents the financial profile of the different options and the impact of the proposed deal on the Department's budgets and accounts.

6.1.2 The financial case follows a defined structure as specified by government. Following this structure ensures all the necessary information is provided and enables efficient assessment of the proposal. Information is presented on the following:

- Costs
- Budgets / Funding Cover
- Accounting implications

6.2 COSTS

6.2.1 Cost estimates for the scheme have been calculated and are:

- £2.3m: Replacement of Martins Heron roundabout with a fully signalised junction
- £1.5m: Modifying the highway between the junction of London Road / Priory Road and London Road / Fernbank Road and also the layout at the junctions themselves.

6.2.2 These are based on BFC civil engineering works price list and have assumed whole-scale resurfacing (plane and relay binder and surface course). The costs include 20% for traffic management, 15% for preliminaries and 20% for contingencies and risk.

6.2.3 The anticipated costs of the total scheme are provided in table 6.1.

Table 6.1: Breakdown of Costs

ITEM	VALUE (£000s)
Preparation costs	£0.360m
Construction costs	£5.249m*
Land Costs	£0m
	£5.609m

*Note: included 44%optimism bias to reflect the stage of scheme development

6.3 BUDGETS / FUNDING COVER

6.3.1 As shown in table 6.1, the estimated scheme cost is £5.609m which includes for 44% optimism bias. Potential funding sources have been reviewed, and the sources shown in table 6.2 have been identified to fund the scheme.

Table 6.2: Funding sources

SOURCE	TOTAL	STATUS
Thames Valley Berkshire	£2,900,000	The subject of this Business Case
Bracknell Forest Local Contribution	£900,000	Funds are secured and allocated to this scheme
Total	£3,800,000	

- 6.3.2 Annual budget requirements have been reviewed against funding streams to ensure that the scheme is affordable in each year of its construction. The annual budget cover is shown in table 6.3.

Table 6.3: Annual budget requirements

FINANCIAL YEAR	COST	TVBLEP	BFC
2016/2017	£200,000	£200,000	
2017/2018	£2,000,000	£2,000,000	
2018/2019	£1,600,000	£700,000	£900,000
Total	£3,800,000	£2,900,000	£900,000

6.4 ACCOUNTING IMPLICATIONS

- 6.4.1 The A329 Corridor Improvements once complete will be adopted by the Council under S38 of the Highways Act 1980. Future maintenance costs will therefore be the responsibility of the Highway Authority (Bracknell Forest Council). These maintenance costs have not been included in the scheme costs as they will become part of the Authority's road network maintenance budget.
- 6.4.2 The A329 Corridor Improvements will be added to the Authority's Highway Asset Management Plan (HAMP) and assessed and included in the District's maintenance regime.

7 COMMERCIAL CASE

7.1 INTRODUCTION

- 7.1.1 This chapter of the business case considers the scheme outputs required, and the procurement strategy for delivery.
- 7.1.2 The Commercial Case is designed to provide evidence of the commercial viability of a proposal and the procurement strategy which will be used. It will clearly set out the financial implications of the proposed procurement strategy and present evidence on risk allocation and transfer (Department for Transport (2013), The Transport Business Case).
- 7.1.3 The Commercial Case follows a defined structure as specified by government. Following this structure ensures all the necessary information is provided and enables efficient assessment of the proposal.
- 7.1.4 The Commercial case provides evidence of the commercial viability of the project and the procurement strategy adopted. Information is presented on the following:
- Output based specification
 - Procurement strategy
 - Sourcing options
 - Payment mechanisms
 - Pricing framework and charging mechanisms
 - Risk allocation and transfer
 - Contract length
 - Human resource issues
 - Contract management.

7.2 OUTPUT BASED SPECIFICATION

- 7.2.1 The Commercial Case is based on strategic outcomes and outputs, against which alternative procurement options are assessed.
- 7.2.2 The outcomes which the preferred procurement strategy must deliver are to:
- Achieve cost certainty, or certainty that the scheme can be delivered within the available funding constraints
 - Minimise further preparation costs with respect to scheme design by ensuring best value, and appropriate quality
 - Obtain contractor experience and input to the construction programme to ensure the implementation programme is robust and achievable
 - Obtain contractor input to risk management and appraisals, including mitigation measures, to capitalise at an early stage on opportunities to reduce construction risk and improve out-turn certainty thereby reducing risks to a level that is As Low as Reasonably Practicable.

7.1 PROCUREMENT STRATEGY

- 7.1.1 BFC are fully aware that any works undertaken making use of public funding will be subject to public accountability and scrutiny.
- 7.1.2 Highways work will be undertaken by Ringway Infrastructure Services (RIS). The Council has a Term Maintenance Contract (TMC) with RIS which was let through an OJEU competitive tender process in 2014). Any public realm and “greening” project works will be undertaken by MACE and other supply and other supply chain partners procured through a competitive process and via direct contracts with BFC.

7.2 SOURCING OPTIONS

- 7.2.1 BFC do not anticipate further wholesale tender processes associated with the highway works which provides the advantage of shortening contractor procurement and also making use of RIS knowledge and understanding of the BFC highway and transport network.
- 7.2.2 BFC will form part of the specification works, review of tender documents and approval to quotations through the Project Board.

7.3 PAYMENT MECHANISMS, PRICING FRAMEWORK AND CHARGING MECHANISMS

- 7.3.1 Task orders based on a fixed or target price arrangement will be awarded based on the NEC 3 contract model, which allows for penalty clauses, specifically relating to over running.
- 7.3.2 Payments to the contractor will be made in arrears to the value of 60% of the project subject to an independent clerk of works agreeing with the submission made by the contractor.
- 7.3.3 Payments made to the contractor will be subject to a further cross checking against the programme to ensure that the absolute minimum over run occurs, if any and if a penalty is due to be applied work with the contractor to rectify/remedy this.
- 7.3.4 The final 40% will be paid in stages upon receiving invoices for completed elements of the work.

7.4 RISK ALLOCATION AND TRANSFER

- 7.4.1 The design team has prepared a risk assessment based on their experience and following detailed investigations on the ground. The Council has risks that it will seek to manage which include:
- Strategic/Political/Policy
 - Economic/ Financial/Management
 - Statutory processes (TRO)
 - Stakeholder Management/Consultation
 - Operation (traffic signals, VMS).

RISK MANAGEMENT PLAN

- 7.4.2 A Risk Management Plan will be developed throughout the life of the project. Following confirmation of scheme funding, ownership of the risks will be allocated to those parties best able to manage them.
- 7.4.3 The Risk Management Plan will set out the full risk management process and responsibilities for undertaking risk management to deliver the A329 Corridor Improvements. Implementation of a structured, forward looking and continuous risk and opportunity management process is intended to increase the certainty of cost-effective scheme delivery and operational success.
- 7.4.4 Further risk identification will be carried out in numerous ways such as:
- Workshops
 - Reviews
 - Meetings
 - Day to day operation.
- 7.4.5 When a risk is identified, the data will be added to the Risk Register.

RISK MANAGEMENT ORGANISATION

- 7.4.6 The risk management organisation for this scheme consists of three key parties: the Joint Project Board, the Project Manager and the Risk Manager.
- 7.4.7 The Joint Project Board has overall responsibility for ensuring sufficient resources are available to manage risks across the scheme. Risks shall be allocated and managed in a cost effective manner by the most appropriate party to do this and at the appropriate level. The Board shall be primarily concerned with managing strategic level risks relating to interfaces between the scheme and the wider project environment.
- 7.4.8 The Project Manager has overall responsibility for ensuring that the risk management process is implemented and managed in accordance with strategies.
- 7.4.9 The Risk Manager shall ensure that risks are actively managed in a consistent and appropriate manner across all work streams in accordance with this Plan. All severe risks shall be reported by the Risk Manager to the Joint Project Board through the Project Manager. In addition, all risks which relate to the overall direction, organisation and control of the scheme, e.g. loss of key project staff, shall be reported to the Joint Project Board.
- 7.4.10 The Risk Manager shall:
- ensure that an appropriate procedural framework is adopted
 - report to the Project Manager in review and management of project performance
 - agree the required level of risk management support to be provided for risk identification
 - analysis, review and reporting
 - facilitate risk workshops/meetings as appropriate supported by a risk co-ordinator if required
 - be the custodian of the risk register and the contained data.

- 7.4.11 The Risk Owner shall be responsible for the day to day management of the risk(s) that they own. The selection and appointment (by the Project Manager) of a risk owner will be on a “best person for the task” approach and, once appointed, the risk owner will monitor and update the risk register informing the risk manager of changes.

KEY PROJECT RISKS

- 7.4.12 Table 7.1 identifies the key project risks throughout the planning and implementation of the scheme.

Table 7.1: Key Project Risks

RISK	
PLANNING / APPROVAL RISKS AND MITIGATION	
Approval to S278 Detailed Designs	→ Close working between BFC Implementation (Bracknell Forest Council and Ringway Infrastructure Services) team, regular meetings
COST RISKS AND MITIGATION	
Unforeseen Statutory Utilities diversions leading to cost overruns	→ Specific Utility planning, timely surveys and trial holes, regular cross team meetings with Utilities and contractors
Unforeseen highway constraints leading to cost overruns	→ Regular design team co-ordination meetings with BFC Implementation team – ongoing review and assessment of designs verses site constraints – timely and focussed investigations
DELIVERY RISKS AND MITIGATION	
Project deadline overruns	→ Constant delivery programme and risk review (weekly meetings of Implementation team) – search for efficiencies, re-programming, acceleration opportunities
Access and highway network constraints	→ Timely planning of works, forward “look” for traffic management and street works permit requirements

7.5 CONTRACT LENGTH

- 7.5.1 The contract for construction of the A329 Corridor Improvements will run from January 2017 to October 2018.

7.6 HUMAN RESOURCE ISSUES

- 7.6.1 This is not assessed as part of the Business Case.

7.7 CONTRACT MANAGEMENT

- 7.7.1 A NEC 3 will be used, ensuring that the contractual / commercial arrangement will be well defined. This form of contract is well understood throughout the supply chain and relies on a pre-defined risk register to allocate and manage anticipated risk. During contract negotiations, risk will be allocated to the party best able to manage it the most cost effective way.

8

MANAGEMENT CASE

8.1 INTRODUCTION

- 8.1.1 This chapter forms the Management Case. It describes how the scheme will be delivered using project management best practice, confirms the project is deliverable within the timescales, and demonstrates an appropriate governance structure and assurance framework to oversee the project.
- 8.1.2 The Management Case has been prepared in line with Department for Transport (DfT) guidance for preparation of transport business cases, using the five case model and TAG.
- 8.1.3 The Management Case is designed to assess the deliverability of a proposal. It tests the project planning, governance structure, risk management, communications and stakeholder management, benefits realisation and assurance.
- 8.1.4 The Management Case follows a defined structure as specified by government. Following this structure ensures all the necessary information is provided and enables efficient assessment of the proposal. Information is presented on the following:
- Evidence of similar projects
 - Programme / project dependencies
 - Governance, organisational structure and roles
 - Programme / project plan
 - Assurance and approvals plan
 - Communications and stakeholder management
 - Programme / project reporting
 - Implementation of work streams
 - Key issues for implementation
 - Contract management
 - Risk management strategy
 - Benefits realisation plan
 - Monitoring and evaluation
 - Contingency plan
 - Options.

8.2 EVIDENCE OF SIMILAR PROJECTS

- 8.2.1 The Council has extensive experience of working with third parties to ensure timely delivery of essential significant highway improvements.
- 8.2.2 Bracknell Forest Council has a Term Maintenance Contract (TMC) with RIS which was let through an OJEU competitive tender process in 2014 for maintaining and improving the Borough's roads. For delivery of the highway and public realm works RIS is not only the council's term contractor but is vastly experienced at delivery of public street works and highways improvement schemes.

- 8.2.3 Working closely with local authorities for over thirty years, RIS deliver a range of integrated services from planned and reactive highways maintenance, through to winter planning and delivery, emergency response, gully cleansing, street lighting installation and maintenance, grass cutting and traffic management.
- 8.2.4 RIS currently operates a number of highway maintenance contracts throughout the country, including North Yorkshire, Shropshire, Bracknell Forest and Hertfordshire, as well as two Private Finance Initiative's (PFI) in the London Borough of Hounslow and Isle of Wight.
- 8.2.5 MACE is an international consultancy and construction company, offering highly integrated services across the full property and infrastructure lifecycle. Formed in 1990 it has grown to over 4,600 staff, working in 70 countries, with a turnover in 2014 of 1.49bn. Its key services are: Programme and project management, cost consultancy, construction delivery and facilities management.

8.3 PROGRAMME AND PROJECT DEPENDENCIES

- 8.3.1 The scheme programme is currently being worked on and will be provided at a later date. This will outline the key delivery stages for the A329 Corridor Improvements associated with this business case. The scheme is scheduled to last 18 months and can commence shortly after full funding approval is granted.

8.4 GOVERNANCE, ORGANISATIONAL STRUCTURE AND ROLES

- 8.4.1 The Council's Project Director in conjunction with the contractors and the Council's dedicated implementation team will oversee the detailed design, construction and monitoring stages of the scheme. The day to day delivery of the scheme will be managed by the Project Manager.
- 8.4.2 The Senior Responsible Officer for the Council will be Neil Mathews (Head of Transport Development) supported by Stuart Jefferies (Transport Strategy and Implementation Manager) and Nick Rose (Transport Engineering manager).
- 8.4.3 Delivery of the scheme will be the responsibility of Ringway Highway Services who are Bracknell Forest Council's Term Contractor.

8.5 ASSURANCE AND APPROVAL PLAN

- 8.5.1 The Council team follow a "Gateway Process" as a mechanism for assessing projects at critical stages in their lifecycle prior to commencing the next stage. The use of the Gateway process enables:
- Realistic and achievable targets to ensure successful delivery
 - Timely reporting of issues that affect timescales and / or costs
 - Deployment of relevant skills and competencies to a project
 - Compliance with best practice and relevant industry standards
 - Key stakeholder input and understanding
 - Project feedback through lessons learnt
 - A visible audit trail.
- 8.5.2 These milestones will be built into the project programme and be monitored by the Project Manager and reported to the Joint Project Board.

8.6 COMMUNICATIONS AND STAKEHOLDER MANAGEMENT

8.6.1 The key objectives of the schemes stakeholder management are to:

- Keep stakeholders aware of schemes development and progress
- Meet statutory requirements (such as TRO and Streetworks Permit approvals)
- Increase public and stakeholder awareness of the scheme through local publicity
- Provide information and support to those affected by the scheme during construction and operation.

8.6.2 Effective communications with local Members, residents and businesses will help to further underline the scheme's benefits and to manage expectations. There will also be further statutory consultations where any new traffic regulation orders are required (for instance to cover the existing highway network following the opening of the new road). The development and advertisement of these orders will be undertaken in accordance with the Council's Network Management policies and statutory procedures.

8.6.3 There is the potential for disruption to occur to neighbouring areas and to the local highway network during the construction phase of the project. Therefore it is important that the Project Board provide local Ward Members, residents, businesses and road users with the appropriate information to help raise awareness concerning the progress of the project. The Project Board will work with the BFC Communications Team to ensure that the necessary information is effectively communicated to relevant parties. This will include press releases and use of the Council's website and social media to provide advance notification of forthcoming works and updates during construction.

8.6.4 An Action Plan to guide the communications for the delivery of the scheme is set out in table 8.1.

Table 8.1: Communications Plan

A329 CORRIDOR IMPROVEMENTS – COMMUNICATIONS ACTION PLAN	
Phase	actions
Pre-Construction	<ul style="list-style-type: none"> → Regular updates from the Project Board to BFC Member Groups, and Bracknell Local Transport Body (BLTB) → Liaison with local Ward Members, residents and businesses, including statutory consultations for required traffic management orders → Press releases to local newspapers, BFC website, and social media → Advance warning signs on local highway network
Construction	<ul style="list-style-type: none"> → Regular updates from Project Board to BFC Member Groups, and BLTB → Press releases and information on BFC website and social media to provide updates on progress → Advance warning signs on the local highway network to advise of any temporary road closures and temporary diversion routes
Post Construction	<ul style="list-style-type: none"> → Project Board to inform BFC Member Groups, and BLTB of the opening of the A329 Corridor Improvements

A329 CORRIDOR IMPROVEMENTS – COMMUNICATIONS ACTION PLAN

- Press release to advertise official opening ceremony and formally invite key stakeholders, representatives from Project Board, Member Groups, Local Transport Body, and interested local parties
- Press release to outline improvements to the local area around the Martins Heron junction and on the A329 London Road following the completion of the improvements

8.7 PROGRAMME / PROJECT REPORTING

- 8.7.1 Responsibility for accurate, timely and appropriate communications within the project team rests with the Council to ensure that the Joint Project Board is kept up-to-date with programme developments.
- 8.7.2 The Project Director and Senior Responsible Officer are identified is responsible for ensuring the Joint Project Board is provided with sufficient information and that the Joint Project Board clearly understands that information in order to provide necessary guidance on programme decisions.
- 8.7.3 The Project Manager is responsible for leading on project delivery via the joint Delivery Team which comprises both contractor and Council representatives. Monitoring of project delivery and tactical direction is undertaken jointly by the Project Director and Senior Responsible Officer.
- 8.7.4 The SRO is responsible for keeping the Lead Members aware of the development of the scheme towards meeting the project objectives.
- 8.7.5 It is the responsibility of the Project Director and Senior Responsible Officer to ensure that the Joint Project Board has sufficient information and is involved in all decisions that affect performance of the project, achievement of the project objectives or deviation from agreed and delegated responsibilities.
- 8.7.6 The project team meetings are held on a weekly basis, in addition to monthly review meetings involving senior representatives. Key issues and outcomes escalated to the Joint Project Board if necessary.

Project Acceptance Criteria

- 8.7.7 The Project acceptance criteria will generally be in accordance with the requirements of the Design Manual for Roads and Bridges (DMRB) as well other guidance from the DfT.

Quality Checking Process

- 8.7.8 A quality management system will be agreed and implemented for each stage of the scheme. Generally, the quality plan for each stage will describe techniques and standards to be applied during the project, and the various responsibilities for achieving the required quality levels. This will be secured through the funding / delivery agreement.

Configuration Management

- 8.7.9 The Project Manager will be responsible for configuration management ensuring that the project's baseline outputs are clearly defined and agreed and no changes are made without authorisation from the Project Board.

Change Management

- 8.7.10 The Project Board is responsible for approving or rejecting any requests for change falling outside agreed tolerance levels. The Board may either set new tolerance levels as long as they are within the constraints of the overall project budget and timescales or refer the matter back to the BLTB / TVBLEP for a decision.

8.8 IMPLEMENTATION OF WORK STREAMS

- 8.8.1 This is not assessed as part of the Business Case.

8.9 KEY ISSUES FOR IMPLEMENTATION

- 8.9.1 The live risk register contains a full set of identified risk associated with the implementation of the scheme along with planned mitigation.
- 8.9.2 Table 7.1 in the Commercial Case identifies the key project risks throughout the planning and implementation of the scheme.
- 8.9.3 The Council still needs to manage certain risks to properly fulfil its role as Scheme Promoter.
- 8.9.4 The issues for implementation for the Council provide the risks for the high level risk register that they have been managing as Scheme Promoter (see table 8.2). The risk table will be updated and reported on a regular basis to the Project Board and the Berkshire Local Transport Body (BLTB).

Table 8.2: High level Risk Register for delivery of scheme

RISK	MANAGEMENT OF RISK
Approvals and Acquisitions	
BLTB approval not being gained due to business case not being approved	→ There has been a strong case for this scheme from the beginning and the Berkshire Local Transport Body (BLTB) has ranked it highest in its priority list. The Council has updated its transport model in order to provide more robust modelling to assess the scheme and has prepared the business case in accordance with DfT guidance
Costs and Funding	
Identified sources of funding not being forthcoming	→ The Council's contribution is included within the Capital Programme and Members are aware of the importance of this scheme. The Executive Member for Economic Development & Regeneration is the Council's member of the BLTB → The BLTB funding is subject to a satisfactory business case
Escalating costs	→ Ongoing assessment of costs as further detail of the scheme is developed. Opportunities being explored for any additional funding sources
Delivery	
Delivery of scheme being delayed and not fitting with BLTB funding timescales	→ The scheme timetable has been set in consultation and agreement with the BLTB. The Project Board (with reps from the Council) will

RISK	MANAGEMENT OF RISK
	monitor delivery timescales and implement relevant mitigation measures if appropriate to keep the project on track. The funding agreement between the BLTB and the Council will include arrangements for dealing with scheme delay
Contractor's business folding during scheme delivery	→ There are processes in place to ensure the stability of the Contractor is properly assessed prior to agreeing a contract

8.10 CONTRACT MANAGEMENT

8.10.1 RIS will be appointed the contractors for the scheme works and once appointed, RIS work will be overseen by the Council design team.

8.11 RISK MANAGEMENT STRATEGY

8.11.1 The risk register contains risks associated with the scheme including risks of potential overspend which have been identified.

8.11.2 The risk owner for the project will be Bracknell Forest Council and they will be working with their contractors to mitigate the risks identified on the risk register as outlined in the risk response.

8.11.3 As the scheme promoter, the Council will meet all cost overruns on the scheme beyond the £3.8m predicted scheme cost.

8.12 BENEFITS REALISATION PLAN

8.12.1 It is anticipated that the benefits will be delivered in line with the overall delivery programme and also as the local and wider population becomes used to the A329 Corridor Improvements.

8.12.2 Since the scheme is not expected to generate revenue, the benefits associated with the scheme will be social benefits and those associated with the improvements to the highway network, to be tracked as part of BFC's ongoing monitoring programme.

8.13 MONITORING AND EVALUATION

8.13.1 The performance of the scheme will be assessed against objectives for project to demonstrate the value for money for the funding of the scheme. These objectives relate to changes in traffic flows, reductions in journey times and variability of travel times.

8.13.2 Post scheme-opening traffic surveys will be undertaken on the A329 to establish the change in traffic movement patterns and whether improvements to journey times have occurred as anticipated in the modelling. These will help to inform the Council on future projects.

8.14 CONTINGENCY PLAN

8.14.1 Contingency planning forms part of the risk register, and are reviewed by the Council and their design team (and reviewed by the Joint Project Board).

8.15 OPTIONS

8.15.1 There are minimal options for change given the detailed design that has already occurred.

9 CONCLUSIONS

9.1 INTRODUCTION

9.1.1 This Business Case presents the evidence base in favour of the proposed A329 Corridor Improvements. The document has been prepared in accordance with the Department for Transport guidance on the five business case model. Guidance was published in April 2013, and requires the following five cases to be considered:

- Strategic case
- Economic case
- Financial case
- Commercial case
- Management case

9.2 BUSINESS CASE

9.2.1 The Strategic case outlines the need for the A329 Corridor Improvements and is one of several transport-related initiatives being proposed in order to promote economic growth. It is local in scale and focus and will provide improvements to existing transport infrastructure.

9.2.2 The Economic case sets out the assessment of benefits that the scheme is forecast to deliver to society as a whole. Over 60 years, the scheme is expected to generate Present Value of Benefits (PVB) of £21.794m with Present Value of Costs (PVC) of £4.710m.

9.2.3 The scheme generates a Benefit to Cost Ratio (BCR) of 4.627 so is considered a very high value for money scheme.

9.2.4 The Financial case provides a detailed cost estimate and a breakdown of how the scheme will be funded. The total scheme cost is expected to be £3.8m of which £2.9m is sought from the Thames Valley Berkshire Local Enterprise Partnership (TVBLEP) to complete the scheme.

9.2.5 The Commercial case considers procurement of the scheme.

9.2.6 The Management case sets out the proposed project management procedures to be adopted throughout the life cycle of the project. An assurance and approvals plan is in place and measures have also been set out to ensure high quality and timely delivery. Stakeholder management and key risks are also discussed.

9.3 CONCLUSION

9.3.1 The proposed A329 Corridor Improvements will generate substantial net benefits to the local economy, helping to fulfil Thames Valley Berkshire Local Enterprise Partnership remit.

Appendix A

COST ASSUMPTIONS

COST ESTIMATE ASSUMPTIONS

Series 200: Site Clearance

- ✎ General site clearance is the total surface area around the schemes or based on what can be seen on each drawing viewport.
- ✎ Trees and hedges are estimated. Some of the schemes contain many existing trees which are very difficult to give a precise number to.
- ✎ All existing kerbs to be removed and disposed off site.
- ✎ Gullies were calculated using the 250m² per gully rule that many drainage designers use as a high level estimate. All gullies and grating to be removed and disposed off site. Voids to be backfilled with concrete.
- ✎ Where schemes show existing pedestrian guard rail or safety barriers these are to be removed and disposed off site.
- ✎ Lamp column are calculated at 25m spacing and are to be replaced.
- ✎ Signs to be removed are estimated based on size of site and Street View data (sufficient given low associated costs).

400: Road Restraint System

- ✎ Where applicable, safety fence and pedestrian fencing has been replaced like for like.

500: Drainage and Ducting

- ✎ Service ducts are measured across each carriage where new stop lines are proposed with a draw pit each side
- ✎ For carrier drainage (the 225mm size), the assumption has been for a single carrier drain running the length of each scheme where extensive widening is being proposed.
- ✎ For gully connections (150mm pipes), the assumption has been 10m connections for each gully.
- ✎ Manhole numbers are based on the length of carrier drainage proposed.

Series 600: Earthworks

- ✎ Acceptable material is topsoil, unacceptable is exiting carriageway to be removed. All material is to be removed off site. No assumption for reusing this material.

Series 700: Pavements

- ✎ New carriageway material depths are from the price supplied by BFC. Have assumed a CBR of 2.5% with the type 1, capping and road base depths taken from the pavement design used in other major design schemes.
- ✎ Whole scale resurfacing has been calculated consisting of plane and relay binder and surface course and replacing like for like.

Series 1100: Kerbs, Footways and Blocked Paved Areas

- ✎ All kerbs are new and precast concrete type. Concrete hunching assumed part of the cost.
- ✎ Small traffic islands have been calculated as footway where large island are priced as 150mm topsoil.
- ✎ Footway depth based on previous design and very commonly used depths. New footways are priced where existing footway has to be removed as part of the widening works.

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Series 1200: Signs and Road Marks

- New signs priced as like for like replacement of the number of existing to be removed. A third of these signs assumed to be illuminated.
- The removal and replacement of markings is estimated based on the scheme size and proposed layout drawings.

Series 1300: Lighting

- New lighting is a like for like replacement of the existing to be removed.
- Service connections are based on a string of light on each side of the carriageway.
- Traffic islands are measured as two per island.
- The other lighting equipment is based on a similar sized job.

Other Assumptions

- Utility costs excluded from the estimate.
- Traffic management costs 20%, preliminaries costs 15% and contingencies and risk 20%

Appendix B

CONSTRUCTION COST ESTIMATES

ST17108 - Construction Cost Estimate - Martins Heron Roundabout
 Cost Estimate prepared - 09/05/16
 Based on JMP Series Drawings



Item no. (reference to Bracknell Rates)	Unit	Rate	Quantity	Cost	Comments
Series 200: Site Clearance					
n/a	General site clearance	m ²	9800	£3,332	
02/002	Clear trees up to 1000mm girth	nr	5	£256	
02/004	Clear hedges not exceeding 2.5m high	m	100	£1,430	
Take Up or Down and Remove to Licensed Tip Off Site					
02/051	Take Up PCC kerbing and channels up to 150 x 305mm and Remove to Tip Off Site provided by the Contractor	m	1400	£9,898	321+52+46+107+74+375+245+163 = 1383m
02/058	Take Up gully grating and frame and Remove to Store Off Site	nr	32	£991	8126/250 = 32 gullies
n/a	Void left by existing gully excavation to be backfilled with type C32/40 concrete	m ³	19	£3,551	32 gullies to be backfilled @ 0.608m ³ per gully = 19.45m ³
02/072	Take up or down and remove to licensed tip off site lighting column including bracket arm and lantern above 8m nominal	nr	19	£1,820	
02/077	Take up or take down and remove to tip illuminated traffic sign up to 900mm circular/triangle and 1sqm	nr	25	£569	
02/078	Take up or take down and remove to tip illuminated traffic sign over 900mm and up to 1500mm circular/triangle and over 1sqm and upto 2sqm	nr	10	£317	
n/a	Standard traffic sign post, any diameter	nr	45	£1,031	
SERIES TOTAL				£22,794	
Series 500: Drainage and Ducting					
Service Ducts					
n/a	Trench for cable not exceeding 300 mm wide, depth not exceeding 1.5 metres, in carriageways, footways and paved areas.	m	160	£9,472	
n/a	Trench for cable not exceeding 300 mm wide, depth not exceeding 1.5 metres, in verges and central reserves.	m	20	£313	
05/036	Orange Twin Wall UPVC Service Duct, 100mm internal diameter constructed to Drg. No. SD/500/3C (Depth to invert not exceeding 2 metres) four duct in trench in carriageway average depth to invert 0.75m	m	180	£25,938	
14/050	Traffic Signal Jointing Chamber to Drawing No. SD/1400/01	no	16	£4,974	
Drainage					
05/004	UPVC "Ribbed" Pipes to BS EN 1401-1 150mm internal diameter drain or sewer Detail Type D7 in trench depth to invert not exceeding 2 metres average depth to invert 1 metre	m	320	£20,480	32 gullies x 10m
05/008	UPVC "Ribbed" Pipes to BS EN 1401-1 225mm internal diameter drain or sewer Detail Type D1 in trench depth to invert not exceeding 2 metres average depth to invert 1 metre	m	70	£5,051	
05/048	in situ cast concrete trapped gully, including concrete bed and surround, Type 1 450mm diameter x 900mm deep with class D400 grating and frame. (SD/500/4C)	nr	32	£10,747	
n/a	Connection of 150 mm internal diameter pipe, depth to invert not exceeding 2 metres.	nr	32	£1,559	
n/a	Type A bedding	m	390	£5,768	
Manholes and Chambers					
n/a	Chamber Type 3a, depth to invert exceeding 1 metre but not exceeding 2 metres.	nr	6	£9,038	
SERIES TOTAL				£93,360	
Series 600: Earthworks					
Excavation					
06/002	Excavation of acceptable material excluding class 5A in cutting and other excavation	m ³	3150	£37,107	3000m ² x 1.05m (footway / grass to road) = 3150m ³
Excavation in Hard Material					
06/010	Extra over excavation for excavation in hard material in cutting and other excavation	m ³	1575	£68,418	Half of excavation
Disposal of Material					
06/013	Disposal of acceptable material Class 5A	m ³	3150	£64,103	
06/014	Disposal of acceptable material excluding Class 5A	m ³	1575	£36,540	
Imported Fill					
06/021	Topping 150mm thick to surfaces sloping at 10 degrees or less to the horizontal	m ²	500	£1,035	
Completion of Formation and Sub-Formation					
06/024	Completion of formation on acceptable material	m ²	3000	£1,920	Area of new carriageway
SERIES TOTAL				£209,123	
Series 700: Pavements					
Resurfacing Only					
07/014	Supply and lay by mechanical paver surface course AC10 close surf 100/150 40mm thick	m ²	6800	£76,976	
07/017	Supply and lay by mechanical paver binder course AC20 dense bin 100/150 60mm thick	m ²	6800	£93,976	
New Carriageway Only					
07/014	Supply and lay by mechanical paver surface course AC10 close surf 100/150 40mm thick	m ²	9800	£110,936	3000m ² full depth & 6800m ² for plane and relay = 9800m ²
07/017	Supply and lay by mechanical paver binder course AC20 dense bin 100/150 60mm thick	m ²	9800	£135,436	
07/020	Supply and lay by mechanical paver base course AC32 HDM base 40/80 130mm thick	m ²	9800	£268,030	
07/001	MOT Type 1 sub-base	m ²	675	£38,246	3000m ² x 225mm = 675m ³
07/003	MOT Type 3 sub-base	m ²	1800	£72,054	3000m ² x 600mm = 1800m ³
SERIES TOTAL				£795,654	
Series 1100: Kerbs and Footways					
Kerbs					
11/0010	125x255mm Type HB2 PCC kerbing laid straight or curved exceeding 12 metres radius (SD/1100/01B)	m	1600	£36,064	
Footways/Traffic Islands					
11/051	Supply and lay by hand surface course AC6 close surf 100/150 20mm thick	m ²	1300	£9,152	
11/053	Supply and lay by hand binder course AC20 dense bin 100/150 60mm thick	m ²	1300	£21,113	
SERIES TOTAL				£66,329	
Series 1200: Signs, Signals and Road Markings					
Traffic Signs					
12/005	Rectangular sign (including flag type) - Class RA2 retroreflective. Sign size between 0.25 - 0.5m ²	nr	20	£925	
12/009	Rectangular sign (including flag type) - Class RA2 retroreflective. Sign size between 2.5 - 5.0m ²	nr	6	£2,296	
n/a	Type 1 tubular steel sign post 76 mm diameter not exceeding 5.00 metres.	nr	30	£3,628	
12/039	Simmons signs LUB 2x8W (Type B) complete with PEC	no	13	£2,701	Half of the signs to be illuminated
Traffic Signals					
12/137	Signals	1	180,000.00	£180,000	
Road Markings					
12/070	Remove road markings, Width between 50-100mm.	m	500	£660	
12/070	Supply and lay by hand or machine, screeded or extruded reflectorised white thermoplastic (including surface application of additional glass beads); intermittent single line, Width 100mm.	m	4000	£2,640	
SERIES TOTAL				£192,847	
Series 1300: Lighting					
n/a	Installation only of any type of steel road lighting column	Item	19	£47,500	
n/a	Service connection	Item	19	£47,500	
n/a	Powder Coated, stainless steel feeder pillar, height 1100mm width 850mm depth 350mm nominal, single door (or similar approved system)	Item	5	£7,500	
n/a	Equipotential bonding earth pit and rod.	nr	7	£962	
n/a	Traffic bollard, internally illuminated, any type	nr	12	£2,479	
n/a	Trench for cable not exceeding 300 mm wide, depth not exceeding 1.5 metres, in carriageways, footways and paved areas.	m	60	£3,552	
n/a	6mm ² 3-core XLPE/SWA/PVC cable with copper conductors laid through duct or in any trench depth not exceeding 2m	m	120	£462	
n/a	Straight joint for any SWA 3-core cable 2.5mm ² through to 10mm ² with any other 3-core cable not exceeding 10mm ²	nr	120	£7,596	
n/a	Electrical testing of lighting unit, single luminaire, nominal mounting height not exceeding 12m	nr	19	£234	
SERIES TOTAL				£117,485	
Series 1400: Electrical Work for Road Lighting and Traffic Signs					
n/a	Permanent disconnection on 4-core SWA cable exceeding 25 mm ² but not exceeding 50 mm ² .	nr	20	£2,599	
SERIES TOTAL				£2,599	
TOTAL				£1,500,181	£1,500,181
Traffic Management					£300,036
Preliminaries					£225,027
Contingencies & Risk					£405,048
Utilities					
Cost estimates excludes utility costs					
GRAND TOTAL				£2,430,293	

Notes

ST16462 - Construction Cost Estimate - London Road
 Cost Estimate prepared - 09/05/16
 Based on JMP Series Drawings



Item no. (reference to Bracknell Rates)	Description	Unit	Rate	Quantity	Cost	Comments
Series 200: Site Clearance						
n/a	General site clearance	m ²	£0.34	6600	£2,244	
Take Up or Down and Remove to Licensed Tip Off Site						
02/061	Take Up PCC kerbing and channels up to 150 x 305mm and Remove to Tip Off Site provided by the Contractor	m	£7.07	1400	£9,898	350+650+300+100
02/068	Take Up gully grating and frame and Remove to Store Off Site	nr	£18.46	27	£498	6600/250 = 27 gullies
n/a	Void left by existing gully excavation to be backfilled with type C32/40 concrete	m ³	£182.57	16	£2,927	27 gullies to be backfilled @ 0.608m3 per gully = 16.4m3
02/068	Take Down safety barrier of any height and containment class and Remove to Tip Off Site provided by the Contractor	m	£12.18	5	£61	At LVS Ascot entrance
02/072	Take up or down and remove to licensed tip off site lighting columns including bracket arm and lantern above 8m nominal	nr	£95.81	50	£4,791	Conservative estimate, assuming all lamp columns along the corridor need replacing
02/077	Take up or take down and remove to tip illuminated traffic sign up to 900mm circular/triangle and 1sqm	nr	£22.75	15	£341	
02/078	Take up or take down and remove to tip illuminated traffic sign over 900mm and up to 1500mm circular/triangle and over 1sqm and upto 2sqm	nr	£31.73	5	£159	
n/a	Standard traffic sign post, any diameter	nr	£22.90	20	£458	
SERIES TOTAL					£21,447	
Series 400: Road Restraint Systems						
04/001	Safety Barrier, any location straight or curved, exceeding 120m radius, containment performance class N2 W2	m	£66.00	5	£330	
04/009	Connection between any Containment Performance Class of Safety Barrier and any Containment Performance Class of Vehicle Parapet	no	£2,187.96	2	£4,376	Necessary?
SERIES TOTAL					£4,706	
Series 500: Drainage and Ducting						
Service Ducts						
n/a	Trench for cable not exceeding 300 mm wide, depth not exceeding 1.5 metres, in carriageways, footways and paved areas	m	£59.20	70	£4,144	
n/a	Trench for cable not exceeding 300 mm wide, depth not exceeding 1.5 metres, in verges and central reserves	m	£15.53	20	£313	
05/036	Orange Twin Wall UPVC Service Duct, 100mm internal diameter constructed to Drg. No. SD/500/3C (Depth to invert not exceeding 2 metres) four duct in trench in carriageway average depth to invert 0.75m	m	£144.10	90	£12,969	
14/050	Traffic Signal Jointing Chamber to Drawing No. SD/1400/01	no	£310.89	8	£1,865	
Drainage						
05/004	UPVC "Ribbed" Pipes to BS EN 1401-1 150mm internal diameter drain or sewer Detail Type D7 in trench depth to invert not exceeding 2 metres average depth to invert 1 metre	m	£84.03	270	£17,288	27gullies x 10m = 270m
05/008	UPVC "Ribbed" Pipes to BS EN 1401-1 225mm internal diameter drain or sewer Detail Type D1 in trench depth to invert not exceeding 2 metres average depth to invert 1 metre	m	£72.16	100	£7,216	
05/048	in situ cast concrete trapped gully, including concrete bed and surround, Type 1 450mm diameter x 900mm deep with class D400 grating and frame (SD/500/4C)	nr	£335.84	27	£9,068	
n/a	Connection of 150 mm internal diameter pipe, depth to invert not exceeding 2 metres	nr	£48.73	27	£1,316	
n/a	Type A bedding	m	£14.79	370	£5,472	
n/a	Excavation of acceptable material excluding Class 5A, in footways, verges and other paved areas	m ³	£13.70	80	£1,096	
Disposal of Material						
n/a	Acceptable material Class 5A	m ³	£21.17	80	£1,694	
Manholes and Chambers						
n/a	Chamber Type 3a, depth to invert exceeding 1 metre but not exceeding 2 metres	nr	£1,506.41	5	£7,532	
SERIES TOTAL					£69,972	
Series 600: Earthworks						
Excavation						
06/002	Excavation of acceptable material excluding class 5A in cutting and other excavation	m ³	£11.78	2200	£25,916	2100m ² x 1.05m = 2200m ³
Excavation in Hard Material						
06/010	Extra over excavation for excavation in hard material in cutting and other excavation	m ³	£13.70	1100	£15,070	
Disposal of Material						
06/014	Disposal of acceptable material excluding Class 5A	m ³	£23.20	2200	£51,040	
Imported Fill						
06/021	Topping 150mm thick to surfaces sloping at 10 degrees or less to the horizontal	m ³	£2.07	1100	£2,277	
Completion of Formation and Sub-Formation						
06/024	Completion of formation on acceptable material	m ³	£0.64	2200	£1,408	
SERIES TOTAL					£96,711	
Series 700: Pavements						
Resurfacing Only						
07/014	Supply and lay by mechanical paver surface course AC10 close surf 100/150 40mm thick	m ²	£11.32	6600	£74,712	
07/017	Supply and lay by mechanical paver binder course AC20 dense bin 100/150 60mm thick	m ²	£13.82	6600	£91,212	
New Carriageway Only						
07/014	Supply and lay by mechanical paver surface course AC10 close surf 100/150 40mm thick	m ²	£11.32	2200	£24,904	
07/017	Supply and lay by mechanical paver binder course AC20 dense bin 100/150 60mm thick	m ²	£13.82	2200	£30,404	
07/020	Supply and lay by mechanical paver base course AC32 HDM base 40/60 130mm thick	m ²	£27.35	2200	£60,170	
07/001	MOT Type 1 sub-base	m ²	£56.86	495	£28,047	2200m ² x 225mm = 495m ³
07/003	MOT Type 3 sub-base	m ²	£40.03	1320	£52,840	2200m ² x 600mm = 1320m ³
SERIES TOTAL					£362,288	
Series 1100: Kerbs and Footways						
Kerbs						
11.0010	125x255mm Type HB2 PCC kerbing laid straight or curved exceeding 12 metres radius (SD/1100/01B)	m	£22.54	1500	£33,810	
SERIES TOTAL					£33,810	
Series 1200: Signs, Signals and Road Markings						
Traffic Signs						
12/006	Rectangular sign (including flag type) - Class RA2 retroreflective, Sign size between 0.25 - 0.5m ²	nr	£48.23	15	£893	
12/009	Rectangular sign (including flag type) - Class RA2 retroreflective, Sign size between 2.5 - 5.0m ²	nr	£362.68	5	£1,813	
n/a	Type 1 tubular steel sign post 76 mm diameter not exceeding 5.00 metres	nr	£120.95	20	£2,417	
12/039	Simmons LUB 2x8W (Type B) complete with PEC	no	£207.77	10	£2,078	
Traffic Signals						
	Signals	1	30,000.00	1	£30,000	Move forward along with stop line
Road Markings						
12/137	Remove road markings, Width between 50-100mm	m	£1.32	3000	£3,960	
12/070	Supply and lay by hand or machine, screeded or extruded reflectorised white thermoplastic (including surface application of additional glass beads): Intermittent single line, Width 100mm	m	£0.96	5000	£3,300	
SERIES TOTAL					£44,362	
Series 1300: Lighting						
n/a	Installation only of any type of steel road lighting column	item	£2,500.00	50	£125,000	
n/a	Service connection	item	£2,500.00	50	£125,000	
n/a	Powder Coated, stainless steel feeder pillar, height 1100mm width 850mm depth 350mm nominal, single door (or similar approved system)	item	£1,500.00	4	£6,000	
n/a	Equipotential bonding, earth pit and rod	nr	£34.51	8	£756	
n/a	Traffic bollard, internally illuminated, any type	nr	£206.58	6	£1,239	
n/a	Trench for cable not exceeding 300 mm wide, depth not exceeding 1.5 metres, in carriageways, footways and paved areas	m	£59.20	60	£3,552	
n/a	6mm ² 3-core XLPE/SWA/PVC cable with copper conductors laid through duct or in any trench depth not exceeding 2m	m	£3.85	60	£231	
n/a	Straight joint for any SWA 3-core cable 2.5mm ² through to 10mm ² with any other 3-core cable not exceeding 10mm ²	nr	£93.30	60	£5,598	
n/a	Electrical testing of lighting unit, single luminaire, nominal mounting height not exceeding 12m	nr	£12.34	20	£247	
SERIES TOTAL					£265,823	
Series 1400: Electrical Work for Road Lighting and Traffic Signs						
n/a	Permanent disconnection on 4-core SWA cable exceeding 25 mm ² but not exceeding 80 mm ²	nr	£128.96	50	£6,448	
SERIES TOTAL					£6,448	
TOTAL					£904,617	£904,617
Traffic Management			20.00%			£180,923
Preliminaries			15.00%			£135,693
Contingencies & Risk			20.00%			£244,247
Utilities						
Cost estimates excludes utility costs						
GRAND TOTAL					£1,465,480	

Notes

Appendix C

**A329 CORRIDOR IMPROVEMENTS – APPRAISAL SUMMARY
TABLE**

