

MEETING OF THE BERKSHIRE LOCAL TRANSPORT BODY (BLTB) – THURSDAY 12 NOVEMBER 2020

CONTACT OFFICER: TIM WHEADON, CHIEF EXECUTIVE, BRACKNELL FOREST COUNCIL

ITEM 8: FINANCIAL APPROVAL SCHEME GBF1 SLOUGH: LANGLEY HIGH STREET WIDENING PHASE 3

Purpose of Report

1. To consider giving financial approval to scheme GBF1 Slough Langley High Widening – Phase 3.
2. This scheme is an extension to the junction and rail station accessibility improvement scheme delivered at Station Road/ Waterside Drive in 2018, and the junction improvement scheme delivered at High Street/ Station Road/ Langley Road in March 2020. It is also an extension to the adjoining proposed junction improvements at Meadfield Road/ High Street (referred to throughout this report as ‘Section 2’) and High Street widening between Elmhurst Road and Langley Road (referred to throughout this report as ‘Section 1’) which have conditional LEP funding approval.
3. Phase 1 of the scheme 2.45 Langley High Street Improvements was given financial approval at the [June 2020](#) BLTB meeting and Phase 2 was given financial approval at the [July 2020](#) BLTB meeting.
4. As a combined package of measures, Sections 1, 2 and 3 are promoted by Slough Borough Council to deliver a step-change in provision along the Langley High Street / Station Road corridor, supporting the planned closure of the parallel Hollow Hill Lane as part of the Western Rail Link to Heathrow (WRLtH), as well as enabling development growth across the corridor.

Recommendation

5. You are recommended to give scheme GBF1 Slough Langley High Widening Phase 3 conditional financial approval in the sum of £1,643,000 in 2021/22 from the getting Building Fund on the terms of the funding agreement set out at paragraph 14 step 5 below, subject to meeting the following conditions:
 - 1) SBC to demonstrate positive discussions with the landowners that result in documented outline agreement for the acquisition of the land required to develop the scheme;
 - 2) Production of a revised, and more robust, assessment of scheme costs, post-preliminary scheme design;
 - 3) Formal confirmation (e.g. S151 Officer letter) to cover SBC funding allocation, along with confirmation that SBC will cover any potential cost overruns; and
 - 4) The scheme retains an initial Benefit Cost Ratio of at least 1.5 to 1.

These conditions should be met at the earliest feasible date, but no later than 1st March 2021.

Other Implications

Financial

6. A call for bids process was undertaken in January 2020 and a list of prioritised projects were agreed at the BLTB meeting March 2020. Scheme GBF1 Slough Langley High Street Widening phase 3 is funded from this reallocation. See Appendix 1.
7. This report recommends that Slough Borough Council be authorised to draw down the capital sum £1,643,000 from the recent Ministry of Housing, Communities and Local Government (MHCLG)/ [Getting Building Fund](#) (GBF) monies for this scheme.
8. The funding agreement set out at paragraph 14 step 5 sets out the roles and responsibilities, reporting and auditing arrangements, timing and triggers for payments, contributions from other funders, consequences of delay, consequences of failure, claw back, and evaluation requirements at one and five years on.

Risk Management

9. The risk management arrangements already put in place by the Local Transport Body are as follows:
 - The [Assurance Framework](#) has been drafted following DfT guidance and has been approved by the DfT for use in allocating capital funds for transport schemes
 - Hatch Regeneris have been appointed as Independent Assessors and have provided a full written report (see [Appendix 2](#)) on the full business case for the scheme
 - The funding agreement set out at paragraph 14, step 5 makes clear that the financial risk associated with implementation of the scheme rests with the scheme promoter.

Human Rights Act and Other Legal Implications

10. The scheme promoter is a local authority and they have to act within the law. Slough Borough Council will provide legal support for the BLTB, should any questions arise.

Supporting Information

11. The scheme will be carried out by Slough Borough Council.
12. In October 2020 Hatch Regeneris completed their assessment with a recommendation for conditional approval, which is attached at Appendix 2.
13. The full details of the scheme are available from the [Slough Borough Council website](#)ⁱⁱ. A summary of the key points is given below:

Task	Timescale
Financial approval	November 2020
Detailed designs	Q2 2021
Construction starts	Q3/Q4 2021
Completion	Q1 2022

Activity	Funder	Cost (approx)
Major scheme funding	Berkshire Local Transport Body	£1.643m
Council contribution	Slough Borough Council capital programme	£0.410m
Total		£2.053m

14. The table below sets out the details of this scheme's compliance with steps 1-5 of paragraph 14 of the full [Assurance Framework](#)ⁱⁱⁱ.

Assurance Framework Check list	Scheme GBF1 Slough Langley High Street Widening - Phase 3																																			
Step 1: Unapproved or Long List of schemes.	<p>This business case submission sets out the case for investment in the widening of the Langley High Street / Station Road corridor between Langley Road and Langley Station rail bridge.</p> <p>This scheme is an extension to the junction and rail station accessibility improvement scheme delivered at Station Road/ Waterside Drive in 2018, and the junction improvement scheme delivered at High Street/ Station Road/ Langley Road in March 2020. It is also an extension to the adjoining proposed junction improvements at Meadfield Road/ High Street (referred to throughout this report as 'Section 2') and High Street widening between Elmhurst Road and Langley Road (referred to throughout this report as 'Section 1') which have conditional LEP funding approval.</p> <p>The scheme was submitted as part of a wider scheme for Langley High Street, for inclusion in January 2020 LEP Call for Bids. The updated prioritisation methodology assessment process was used and the overall scheme was given 18 points and ranked 6th of 6 schemes submitted. The scheme has since been split into three elements, with this being phase 3.</p> <table border="1"> <thead> <tr> <th>Factor</th> <th>Raw score</th> <th>Weighting</th> <th>Weighted score</th> </tr> </thead> <tbody> <tr> <td>Strategy</td> <td>3</td> <td>1.5</td> <td>4.5</td> </tr> <tr> <td>Deliverability</td> <td>1</td> <td>2</td> <td>2</td> </tr> <tr> <td>Economic Impact</td> <td>2</td> <td>4</td> <td>8</td> </tr> <tr> <td>TVB area coverage</td> <td>2</td> <td>1</td> <td>2</td> </tr> <tr> <td>Environment</td> <td>1</td> <td>1</td> <td>1</td> </tr> <tr> <td>Social</td> <td>1</td> <td>0.5</td> <td>0.5</td> </tr> <tr> <td>Total</td> <td></td> <td></td> <td>18</td> </tr> </tbody> </table>				Factor	Raw score	Weighting	Weighted score	Strategy	3	1.5	4.5	Deliverability	1	2	2	Economic Impact	2	4	8	TVB area coverage	2	1	2	Environment	1	1	1	Social	1	0.5	0.5	Total			18
Factor	Raw score	Weighting	Weighted score																																	
Strategy	3	1.5	4.5																																	
Deliverability	1	2	2																																	
Economic Impact	2	4	8																																	
TVB area coverage	2	1	2																																	
Environment	1	1	1																																	
Social	1	0.5	0.5																																	
Total			18																																	
Step 2: Programme Entry: evolution of the scheme from outline proposal to full business case, external view on the	<p>The scheme became part of the approved forward pipeline by the BLTB on 12 March 2020^{iv} (minute 33 refers).</p> <p>The Slough Borough Council website^v holds the latest details of the full business case, including the VfM statement certified by the senior responsible officer.</p>																																			

Assurance Framework Check list	Scheme GBF1 Slough Langley High Street Widening - Phase 3
business case, and independent assessment (See paragraphs 15 and 16)	<p>Any comments or observations on the scheme received by either TVB LEP or Slough Borough Council have been fully considered during the development of the scheme.</p> <p>The report of the Independent Assessor is attached at Appendix 2. The Independent Assessor was asked to report as follows:</p> <ul style="list-style-type: none"> • Completeness – has the promoter prepared a complete Full Business Case submission, when judged against the prevailing advice from the DfT • Accuracy – has the promoter performed the relevant calculations and assessments accurately and without error • Relevance – has the Full Business Case considered all relevant matters, including use of appropriate forecasting models and planning assumptions, and has it included any irrelevant considerations such unduly-optimistic assumptions or out of date modelling data • Value for Money – does the scheme promoter’s Value for Money assessment comply with the prevailing DfT guidance • Evaluation arrangements – has the scheme promoter made provision for appropriate post-implementation evaluation of the scheme. • Remedies – where the independent assessment reveals a gap between the FBC supplied and the standard anticipated by the DfT guidance, then the advice for the LTB should include recommendations for remedial actions required – e.g., collection of further data, sensitivity tests on particular assumptions etc.
Step 3: Conditional Approval	<p>The Independent Assessor has recommended the scheme for approval but with the following conditions:</p> <ol style="list-style-type: none"> 1) SBC to demonstration positive discussions with the landowners that result in documented outline agreement for the acquisition of the land required to develop the scheme; 2) Production of a revised, and more robust, assessment of scheme costs, post-preliminary scheme design; 3) Formal confirmation (e.g. S151 Officer letter) to cover SBC funding allocation, along with confirmation that SBC will cover any potential cost overruns; and 4) The scheme retains an initial Benefit Cost Ratio of at least 1.5 to 1. <p>These conditions should be met at the earliest feasible date, but no later than 1st March 2021.</p>
Step 4: Recommendation of Financial Approval - High Value for Money	<p>The analysis contained within the Full Business Case suggests that the scheme will generate “Very High” Value for Money.</p> <p>Benefit to Cost Ratio (BCR) of <i>1.5-1.9 to 1</i>, indicating this scheme should deliver at least ‘medium’ value for money from investments.</p>

Assurance Framework Check list	Scheme GBF1 Slough Langley High Street Widening - Phase 3
- Support of the Independent assessor	Overall, all three phases of the project will deliver a BCR in excess of 2 to 1 (“high value”). The recommendation is that you give the scheme Conditional Approval.
<p>Step 5: Formal Agreement</p> <ul style="list-style-type: none"> - roles - responsibilities - reporting - auditing - timing and triggers for payments, - contributions from other funders, - consequences of delay, - consequences of failure, - claw back, - evaluation one and five years on 	<ol style="list-style-type: none"> 1. <u>Roles:</u> Thames Valley Berkshire LEP is a part funder of the scheme. Slough Borough Council is the scheme promoter, and is the relevant highway and planning authority. 2. <u>Responsibilities:</u> Thames Valley Berkshire LEP is responsible for allocating the capital finance in accordance with its Assurance Framework. Slough Borough Council is responsible for all aspects of the design, risk management, insurance, procurement, construction and implementation of the scheme, including its responsibilities as highway and planning authority, any other statutory duties, and any financial or other liabilities arising from the scheme. 3. <u>Implementation:</u> In addition to any reporting requirements within Slough Borough Council, the scheme promoter will use the proforma supplied by Thames Valley Berkshire LEP to make reports on progress of the implementation of the capital scheme to each meeting of the BLTB until the build is complete. In particular, Slough Borough Council will report on any change in the size, scope or specification of the scheme; and on any substantial savings against the scheme budget whether achieved by such changes to the size, scope or specification of the scheme, or through procurement, or through the efficient implementation of the scheme. 4. <u>Reporting:</u> The scheme promoter must provide accurate, timely, verified and quality assured quarterly monitoring and forecast data, which relate to defined output and outcome indicators agreed between Thames Valley Berkshire LEP and government as a condition of the Getting Building Fund programme. 5. <u>Auditing:</u> Slough Borough Council will keep financial records such that the expenditure on the scheme is readily identifiable, and if and when BEIS, DfT or other government department or the Accountable Body for Thames Valley Berkshire LEP requests access to financial or other records for the purposes of an audit of the accounts, Slough Borough Council will co-operate fully. 6. Timing and Triggers for payments: See the Claim Proforma (available on request). 7. <u>Contributions from Other Funders:</u> Slough Borough Council capital

Assurance Framework Check list	Scheme GBF1 Slough Langley High Street Widening - Phase 3
	<p>programme will contribute £410,000 in 2021/22. In the event that the scheme experiences or it is anticipated that the scheme will experience a shortfall in these contributions, Slough Borough Council will be required to notify Thames Valley Berkshire LEP of these developments. The provisions of clauses 8, Consequences of Delay; 9, Consequences of Change to the Design or Specification of the Scheme; or 10, Consequences of Failure will then be applied.</p> <p>8. <u>Consequences of Delay</u>: In the event that the scheme experiences minor delays to its overall Business Case programme (no more than 10 weeks), Slough Borough Council will report these delays and the reasons for them, and the proposed remedial action to the next available meeting of the BLTB. In the event that the scheme experiences major delays to its overall Business Case programme (11 weeks or longer) Slough Borough Council will be required to seek permission from Thames Valley Berkshire LEP to reschedule any payments that are due, or may be delayed in falling due because of the delay to the overall Business Case programme.</p> <p>9. <u>Consequences of Change to the Design or Specification of the Scheme</u>: In the event that Slough Borough Council wishes to change the design or specification of the scheme such the scheme delivered will vary in any material aspect from the description given in the overall business case, Slough Borough Council will be required to seek prior written consent from Thames Valley Berkshire LEP. Failing this permission, no further monies will be paid to Slough Borough Council after the change becomes apparent to Thames Valley Berkshire LEP. In addition, consideration will be given to recovering any monies paid to Slough Borough Council in respect of this scheme.</p> <p>10. <u>Consequences of Failure</u>: As soon as it becomes apparent to Slough Borough Council that it will not be possible to deliver the scheme within the current GBF programme, i.e. by the end of March 2022, written notice shall be given to the Accountable Body for Thames Valley Berkshire LEP. No further monies will be paid to Slough Borough Council after this point. In addition, consideration will be given to recovering any monies paid to Slough Borough Council in respect of this scheme.</p> <p>11. <u>Claw back</u>: If the overall scheme achieves savings against budget, these savings will be shared by Thames Valley Berkshire LEP and the other funders noted above in proportion to the amounts set out in the Financial Profile. The Accountable Body for Thames Valley Berkshire LEP reserves the right to claw back any amounts of grant that have been spent on purposes</p>

Assurance Framework Check list	Scheme GBF1 Slough Langley High Street Widening - Phase 3
	<p>other than the scheme as approved and any repayments due as a consequence of changes to the design or specification of the scheme or scheme failure.</p> <p>12. <u>Evaluation One and Five Years On:</u> Slough Borough Council will produce scheme evaluations One and Five years after practical completion that comply with DfT guidance.</p> <p>13. <u>Other Conditions of the Getting Building Fund:</u> Slough Borough Council will acknowledge the financial contribution made to this scheme through the Getting Building Fund process and will follow any required marketing, and branding guidelines. It will also give due regard to the Equality Act 2010 - Public Sector and with the Public Services (Social Value Act) 2012, particularly through the employment of apprentices across the scheme supply chain.</p>

Conclusion

- 14. It is the conclusion of the Independent Assessor that on the basis of the strength of the strategic and economic cases, the scheme can be recommended for conditional approval as outlined.

Background Papers

- 15. The LTB and SEP scoring exercise papers are available on request

Appendix 1 - Local Growth Deal list of prioritised schemes agreed March 2020

Weighting	1.5	2	4	1	1	0.5				
Factor	SEP	Deliverable	Economic Impact	TVB area	Natural Capital	Social Value	Total Weighted score	Rank	Contribution Sought	Cumulative spend
LGF Eligible Projects										
Reading Buses: Completing the Connection	4.5	6	8	2	3	1.0	24.5	1	1,541,243	1,541,243
Superfast Broadband – Extension	4.5	6	8	2	1	0.5	22	2	46,920	1,588,163
2.29 Wokingham: Winnersh Triangle Park and Ride - Extension	4.5	4	8	1	2	0.5	20.0	3	1,411,142	2,999,305
2.24 Newbury: Railway Station improvements - Extension	4.5	4	8	1	1	1.0	19.5	4	640,000	3,639,305
2.30 TVB Smart City Cluster Extension	4.5	6	4	2	2	0.5	19	5	283,620	3,922,925
Slough Langley High Street (phases 1, 2 & 3)	4.5	2	8	2	1	0.5	18.0	6	4,000,000	7,922,925



Thames Valley Berkshire Local Enterprise Partnership

**Independent Assessment Summary Report: Langley High
Street Widening**

**Thames Valley Berkshire Local
Enterprise Partnership**

Independent Assessment Summary Report - Langley High Street Widening (Section 3)

October 2020

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Executive Summary

- i. This technical note provides an independent assessment of the Langley High Street Widening (Section 3) Business Case submission to the Thames Valley Berkshire Local Enterprise Partnership (TVB LEP). The scheme is promoted by Slough Borough Council (SBC).

Scheme Summary

The business case submission sets out the case for investment in the widening of the Langley High Street / Station Road corridor between Langley Road and Langley Station rail bridge.

This scheme is an extension to the junction and rail station accessibility improvement scheme delivered at Station Road/ Waterside Drive in 2018, and the junction improvement scheme delivered at High Street/ Station Road/ Langley Road in March 2020. It is also an extension to the adjoining proposed junction improvements at Meadfield Road/ High Street (referred to throughout this report as 'Section 2') and High Street widening between Elmhurst Road and Langley Road (referred to throughout this report as 'Section 1') which have conditional LEP funding approval.

- ii. As a combined package of measures, Sections 1, 2 and 3 are promoted by SBC to deliver a step-change in provision along the Langley High Street / Station Road corridor, supporting the planned closure of the parallel Hollow Hill Lane as part of the Western Rail Link to Heathrow (WRLtH), as well as enabling development growth across the corridor.
- iii. The total scheme cost for the High Street Widening (Section 3) scheme is estimated to be £2.053 million, with £1.643 million sought from the Local Growth Fund (LGF).

Review Findings

Summary

- iv. The overall scheme is considered to align well with strategic priorities and there is an established need for the intervention in the future context of the predicted Hollow Hill Lane closure. The **Strategic Case** shows how the scheme will help off-set the impact of traffic diverting along the Langley High Street Corridor and, in particular, through the Station Road / Langley Road / High Street junction. In the absence of the Hollow Hill Lane closure, the strategic benefits of the scheme would be significantly reduced, albeit some local benefits will remain in terms of supporting local development.
- v. The preferred scheme option is demonstrated, at least in part, to meet three of the four scheme objectives (*to relieve congestion, improve connectivity, and improve journey times and quality for road users*). The evidence is less definitive on whether it will meet the fourth objective to mitigation air pollution impacts.
- vi. The benefits of the scheme are strongly articulated for the southern end of the scheme around the Langley Road junction but there remains some uncertainty around the scale of potential impacts of widening the carriageway to two lanes through the middle and northern ends of the scheme. This is primarily due to the need for traffic to filter into single lanes to pass under the Langley Station rail bridge, creating a pinch-point for traffic movements. Whilst a long-term aspiration for the corridor would be to resolve this pinch-point, it would be a very expensive scheme and is unlikely to happen unless it is part of a wider strategy for large-scale housing development to the north.

- vii. The benefits of the scheme for pedestrians and cyclists is also uncertain, with limited dedicated provision (other than replacement of existing crossing facilities) and potential issues of road safety and severance unless specifically addressed within the detailed design process.
- viii. The overall **Economic Case**, whilst subject to limitations within the quantification process, presents a reasonable case for investment when considered within the context of the wider corridor improvements. The underlying assessment of benefits and costs indicates that the scheme should deliver 'medium' value for money as a standalone scheme. Taking into account a range of potential non-quantified direct, and wider indirect, economic benefits, the scheme could feasibly achieve a rating that is reasonably close to a 'high' value for money categorisation.
- ix. Most of the environmental and social impacts are relatively neutral, but there are some uncertainties around the impact upon air quality, noise, townscape and severance.
- x. As with the Strategic Case, the economic benefits from the scheme will be substantially reduced without the closure of Hollow Hill Lane and there are also uncertainties around the scale of benefits that will be generated by widening Station Road to two-lanes throughout its full length from the Langley Road Junction up to Langley Station rail bridge.
- xi. If considered within the wider context of the previously approved Section 1 and 2 schemes in the same corridor, then there is sufficient evidence to demonstrate that the overall Langley High Street Corridor Improvements package should deliver 'high' value for money.
- xii. There are some concerns over the robustness of the **Financial Case** presented. Whilst underlying construction costs are presented, with allowances for utilities, preliminaries, and professional fees, there remains a risk/contingency allowance of £1.043 million that represents over 50% of the total scheme costs. This indicates that the scheme costs are not well developed at this stage.
- xiii. The **Commercial and Management Cases** are considered to be relatively succinct, but broadly compliant with requirements. They provide sufficient evidence to demonstrate that the procurement approach offers value for money within the context in which the scheme must be delivered, and that there are, generally, robust measures in place to manage the delivery of the project. Since there is significant scheme development work still to completed, the programme will need to be closely monitored and there remain a number of critical milestones, including land agreements, public and stakeholder consultation, and detailed scheme costings.

Conclusions

- xiv. It is our conclusion that there is sufficient evidence presented to support the overall strategic case for investment in the scheme, but only in the context of it being part of a wider corridor programme of improvements and in the event that Hollow Hill Lane being closed. The overall economic case demonstrates that, as a standalone scheme, it may only deliver 'medium' value for money, but that the wider package of measures should deliver 'high' value for money.
- xv. There are clear limitations in the detail of the scheme costs, as currently presented, and more information is required to verify that a sound financial case exists. In addition, more certainty is required around the necessary acquisition of land to accommodate the proposed scheme design.

Recommendations

- xvi. On the basis of the strength of the strategic case we recommend the scheme for approval but with the following conditions:
- 1) SBC to demonstrate positive discussions with the landowners that result in documented outline agreement for the acquisition of the land required to develop the scheme;
 - 2) Production of a revised, and more robust, assessment of scheme costs, post-preliminary scheme design;
 - 3) Formal confirmation (e.g. S151 Officer letter) to cover SBC funding allocation, along with confirmation that SBC will cover any potential cost overruns; and
 - 4) The scheme retains an initial Benefit Cost Ratio of at least 1.5 to 1.
- xvii. These conditions should be met at the earliest feasible date, but no later than 1st March 2021.

• Introduction **HATCH**

This report provides an independent assessment of the Full Business Case (FBC) submitted by Slough Borough Council (SBC) for the widening of Langley High Street / Station Road Corridor along the section of Station Road between Langley Road and Langley Rail Station bridge.

This scheme is an extension to the junction and rail station accessibility improvement scheme delivered at Station Road/ Waterside Drive in 2018, and the junction improvement scheme delivered at High Street/ Station Road/ Langley Road in March 2020. It is also an extension to the adjoining proposed junction improvements at Meadfield Road/ High Street (referred to throughout this report as '*Section 2*') and High Street widening between Elmhurst Road and Langley Road (referred to throughout this report as '*Section 1*'), which have conditional LEP funding approval.

The report considers the evidence presented and whether it represents a robust case for the investment of Thames Valley Berkshire Local Enterprise Partnership (TVB LEP) growth deal funds.

The independent assessment has applied criteria from TVB LEP assurance framework and the requirements for transport scheme business cases set out within the Department for Transport (DfT) Transport Appraisal Guidance (TAG).

Submitted Information

- The independent assessment process for the Langley High Street (Section 3) Carriage Widening submission has been conducted on the following set of documentation submitted by SBC and their consultant team (Atkins):

Full Business Case Submission (30th October 2020)

In addition to these formal documents, Hatch Regeneris have engaged with SBC and their consultants between September and October 2020 to discuss the requirements of the business case submission and comment upon the acceptability of the proposed appraisal approach and input assumptions and parameters.

- Whilst no formal Appraisal Specification Report or Option Appraisal Report was submitted for this project, the specification was been discussed and agreed between SBC and TVB LEP, and reference to scheme optioneering is incorporated within the main pro-forma submission.

Report Structure

- This Independent Assessors Report responds to the formal submission of documentation, as well as the informal engagement process with SBC and their consultants, to provide a review of information provided, assess its suitability and robustness against TVB LEPs assurance requirements, and provide recommendations in relation to the approval of LEP funding for the proposed scheme.

- The report is structure as follows:

Business Case Submission – presents a summary of the scheme elements included within the pro-forma submission, alongside the:

Rationale for the Scheme and Strategic Fit (Strategic Case),

Value for Money (Economic and Financial Cases); and

Deliver and Risk (Commercial and Management Cases).

- It also sets out the recommendations to the LEP Local Transport Body relating to the suitability of the scheme for funding.

Business Case Submission

Overview

- The full business case submission sets out the case for investment in widening Langley High Street / Station Road Corridor between Langley Road and Langley Station rail bridge. The core scheme deliverables are:

Widening of Station Road from one lane in each direction to two lanes in each direction between Langley Road and Langley rail station bridge. The widening will primarily be undertaken on the western side of Station Road between Langley Road and Scholars Walk and then the eastern side of Station Road between Scholars Walk and Alderbury Road. This is to minimise the impact, as far as possible, upon Third Party Land.

At the southern extent, the scheme will introduce a two-lane approach and exit to the Station Road arm of the Station Road/ Langley Road/ High Street junction.

At the northern extent, the scheme will taper back down to one lane in each direction prior to the Langley rail station bridge. To avoid causing potential issues with turning movements into and out of the Alderbury Road side-road, to the west of Station Road, it is currently proposed that the four lanes will taper back to two lanes by this junction.

Adding a right turn filter lane at the Alderbury Road junction, to allow traffic turning right from Station Road onto Alderbury Road to do so safely and without holding up traffic on Station Road continuing southbound.

New footways will be provided on the western side of Station Road where the carriageway widening is proposed, to retain existing provision for pedestrians.

- Achieving these revisions will require land-take from the entry frontage of East Berkshire College on the western side of Station Road, however it is stated that this land is included within SBCs development control remit. It will also require a portion of the vehicular entrance to Langley Business Park on the eastern side of Station Road and a portion of the grassed frontage to the residential block just north of Scholars Walk on the western side of Station Road.
- The overall package of High Street Widening Schemes aims to help reduce north-south delays to traffic moving along the corridor. Sections 1 and 2 have both recently been approved, primarily in anticipation of significant volumes of traffic being re-routed through Langley as a result of the closure of Hollow Hill Lane. This closure is proposed to support the construction of the Western Rail Link to Heathrow (WRLtH) currently being promoted by Network Rail.
- SBC believe that the combined effect of Sections 1, 2 and 3 will result in improved operational efficiency and flow vehicle movement along Station Road/ High Street, helping to alleviate current traffic congestion and accommodate future demand as a result of the Hollow Hill Lane closure. As such, SBC consider the package of schemes provides significant support the delivery of WRLtH, as well as providing additional transport capacity along the Langley High Street Corridor to assist in the delivery of future growth aspirations.
- It should also be noted that SBC have aspirations to use the additional carriageway lanes as passive provision for alternative transport to promote active travel and public transport in the future, if deemed appropriate and if there is demand. There is potential convert one of the Station Road traffic lanes, in each direction, at a future date to a cycle lane, or for conversion of one of the lanes into a bus lane.

Key Input Assumptions and Parameters

Summary of Content

- The overarching business case is considered particularly reliant upon the following key assumptions:

Outputs from LINSIG local junction models of a 'Reference Case' scenario and 'With Scheme' scenario, as follows:

'Reference Case' scenario includes the approved Langley High Street (Section 1 and 2) Schemes to signalise the junction between High Street and Meadfield Road and widen the High Street to the south of the junction

'With Scheme' scenario includes the additional Langley High Street (Section 3) Scheme with widening of the Station Road between Langley Road and the Langley Rail Station bridge.

2028 forecast traffic flows (with background growth) and with Hollow Hill Lane closed taken from strategic traffic model

Annualisation factors:

253 days per year

Scheme opening year = 2021

60-year benefits appraisal period

Costs and benefits discounted to 2010 prices

Values of time:

Business trips = £17.689

Commuting trips = £9.953

Leisure trips = £4.543

0% Optimism Bias

Independent Assessor Comment

- The use of the LINSIG model is considered appropriate for assessing the highway user impact at the southern end of the Section 3 scheme; however, the details of the model are not provided and so we are not able to verify how these models have been constructed. It is recognised that there are some limitations to the modelling tools, and that these will have some impacts upon the overall robustness of the outcomes of the assessment, that will need to be taken into account.
- There are no modelling tools available to assess the impact of the scheme at the northern end of Station Road. It is accepted that the scheme is likely to have positive impacts; however, the lack of modelling tools means this scale of this impact cannot be quantified. This is likely to mean that the overall quantified impact of the scheme is unreported, albeit it is unclear by what magnitude.
- The use of outputs from the strategic model to inform the 2028 future year scenario within the local junction modelling is considered an acceptable approach. It is, however, recognised that it does not permit a dynamic assessment of traffic re-routing on the basis of delays experienced at the junctions on the High Street. This has implications upon the ability for the local junction models to accurately assess the extent of future year delays at the model.
- It is understood that the baseline 2018 junction model has been utilised to profile the impact of the scheme. Whilst it would be standard practice to have a model that represents the opening scheme year (in this case 2021), the use of the 2018 model is considered acceptable.

The annualisation factors, the appraisal period and the discount period are all acceptable.

- The submission does not make it explicitly clear when it has been assumed that Hollow Hill Lane will close. Whilst we acknowledge that a formal date remains unknown, any assumption on the date will affect the Economic Case, as the profile of benefits will be significantly greater after it is closed, in comparison to before. This is considered further within the section on the Economic Case.
- The absence of any optimism bias within the assessment is considered non-standard practice. For a scheme at FBC stage, even when the costs and risks are fully understood and mitigation, DfT Transport Appraisal Guidance recommends 3% optimism bias to be applied. In this instance, the scheme costs are considered to remain relatively undeveloped and so we would normally expect a higher optimism bias to be applied (e.g. 15%). SBC have, however, presented some mitigating circumstances in that they have included a very significant proportion of risk and contingency within financial assessment (see '*Value for Money*' section below). This provides some justification for applying 0% optimism bias but, at the same time, increases the uncertainty around the level of value for money that the scheme will achieve.

Rationale for the Scheme and Strategic Fit (Strategic Case)

Summary of Content

- The Pro-forma document sets out the background to the scheme and an overview of the wider issues of the area. This includes the strategic importance of the WRLtH project, that this scheme will support, as well the current COVID-19 context and how the scheme can contribute to short and longer-term objectives, including passive provision for future cycle lanes and public transport provision along the corridor.
- The key **policy context** is highlighted in relation to TVB Strategic Economic Plan (SEP), the Berkshire Local Industrial Strategy (BLIS), as well as local Slough Borough Council strategies and policies. The alignment of the core scheme objectives against these strategic policy documents is also set out.
- The **rationale for the scheme** is established, based upon the context of Langley Village and surrounding areas. It is set out how the scheme represents an extension of the 'original' improvement scheme developed for Langley consisting of junction improvements at Station Road/Waterside Drive, High Street/Station Road/Langley Road, and High Street/Meadfield Road (recently approved), as well as widening of the High Street between Elmhurst Road and Langley Road.
- It sets out that the scheme will provide short-term improvements to traffic conditions but also support the longer-term impact of the closure of Hollow Hill Lane. The impact of the proposed closures of Hollow Hill Lane (to enable the strategically important WRLtH) is set out, with traffic forecast to re-distribution to the High Street, creating additional congestion and delay through Langley. As well as addressing congestion, the scheme is also needed to alleviate safety concerns.
- Evidence to support the need is presented from an experimental closure of Hollow Hill Lane in 2016. Strategic transport model outputs also demonstrates the impact of diverted traffic from the closure upon potential traffic volumes along Langley High Street.
- Specific network performance issues along the High Street / Station Road are considered utilising a local junction model. Reference is made to the analysis work using LINSIG software for the combined Station Road / Langley Road / High Street / Meadfield Road junction. This demonstrates the worsening of the underlying performance of the two junctions with the closure of Hollow Hill Lane. Whilst the delivery of Sections 1 and 2 of the corridor improvement scheme provides significant benefits, some delays remain as a result of northbound traffic having to reduce from two lane to one as the exit the Langley Road junction onto Station Road. The benefits delivered by the Section 3 scheme are presented.

- The **scheme details** are set out describing how it complements the on-going programme of work along the corridor. The widening between Langley Road and Langley rail station bridge will be from one lane to two lanes in each direction. The widening will primarily be undertaken on the western side of Station Road between Langley Road and Scholars Walk and then the eastern side of Station Road between Scholars Walk and Alderbury Road. This is to minimise the impact, as far as possible, upon Third Party Land. This requires land-take from a portion of East Berkshire College entry frontage, a portion of the vehicular entrance to Langley Business Park and a portion of the grassed frontage to the residential block just north of Scholars Walk. The scheme will also create passive provision to turn one lane in each direction into a cycleway or bus lane in the future. A draft feasibility design drawing is provided.
- The extent to which the scheme will overcome **barriers to growth** is set out. This highlights the strategic importance of the Langley High Street corridor and how congestion will inhibit growth. It outlines a range of development opportunities along the corridor, as well as considering the Covid-19 recovery.
- The **alternative scheme options** are described initially in terms of alternative routings to address the closure of Hollow Hill Lane, shifting demand to public transport, as well as other capacity enhancements for the High Street. The Langley High Street / Station Road route option is concluded to be the most feasible option to accommodate the additional traffic anticipated as a result of the Hollow Hill Lane closure.
- A range of sub-options for Section 3 of the route along Station Road are also discussed, with the option to expand to two lanes for general traffic across the full route concluded as the preferred option.
- The consequences of a **'do-nothing' option** are presented highlighting the increased levels of congestion and the negative impact this will have upon economic and environmental outcomes.
- Slough Borough Council is identified as the sole **partner for the scheme**, but a range of other organisations are identified as key **stakeholders**. East Berkshire College, Langley Business Park and the landowner of the small parcel of land outside the residential block just north of Scholars Walk are key stakeholders as they have responsibility for the land which the scheme requires land-take. SBC have already made initial discussions with landowners/ developers to safeguard the land required for the scheme and will continue to work closely with them to ensure the scheme can be successfully delivered.

Independent Assessor Comment

The Strategic Case is considered to presents a reasonably robust overview of the issues and preferred solution for enhancing highway provision to alleviate current issues of congestion, as well as the negative impacts associated with the future closure of Hollow Hill Lane, even with the committed improvements to Sections 1 and 2 of the corridor scheme.

The **policy context** is well-established, with reference to key local policy documents (SEP and BLIS) and how the scheme outcomes will align. It is shown how the scheme supports policies to enhance access to education and improve local air quality around educational facilities, as well as help enhance strategic transport provision and unlock housing development and encourage vibrant town centres

The section on **rational for the scheme** does not specifically present evidence to document the current issues of congestion but does go on to demonstrate that, even with the Section 1 and 2 Improvements the closure of Hollow Hill Lane by 2028 will continue to cause significant traffic queues a the High Street / Langley Road / Station Road Junction. The impact of the Hollow Hill Lane closure is sufficiently evidenced through the discussion of the impact of a trial closure, plots of traffic delays, and the outputs of the local junction modelling.

The strategic importance of the Langley High Street corridor is sufficiently evidenced within the **barriers for growth** section, including the development opportunities within the local surrounds, such as the Langley Business Park (located along Section 3).

The **options assessment** process demonstrates that alternative mitigation solutions to the closure of Hollow Hill Lane have been considered at both a strategic and local level and there is sufficient rationale for the identification of the preferred route option. The sub-options consider reducing the length of the two-lane carriageway or allocating some of the additional road capacity to bus and cycle provision. The rationale for not providing bus lanes at this stage is considered sound due to the limited flow of buses along this route.

The submission acknowledges that all the identified benefits at the High Street / Langley Road / Station Road junction would be achieved by extending two lanes northbound by between 50 to 100m north of the junction. The inclusion of two-lanes along the full extent of the route up to the Langley Rail Station bridge is therefore justified on the basis of improved flow of traffic along this section before it is required to filter back down to a single lane to flow under the rail bridge. There is sufficient evidence to demonstrate that some additional benefits will be derived; however, the scale of these benefits is not evidenced. This makes it challenging to determine the full extent of benefits delivered against the additional costs incurred.

The **impact of not changing** reiterates the congestion and delays that will occur and the type of impact upon local social and economic activity.

A set of four scheme **objectives** are presented, albeit there is no specific section explaining how these objectives have been developed. They are focused on relieving congestion; mitigating future impacts of air quality; improving connectivity (including to Langley Rail Station); and improving journey times and quality for road users. Whilst there are clear overlaps between three of the four objectives, each aspect is referenced throughout the rationale for the scheme and they are considered to be a reasonable set of objectives for the scheme.

Whilst there is sufficient evidence presented that the preferred scheme option will relieve congestion, improve access and reduce journey times, it is less certain that the scheme will have a positive impact upon air quality. Whilst reducing levels of standing traffic and improving the flow of vehicles could reduce noise and emissions, there is also the potential for the increased capacity to encourage more private vehicle trips along the corridor. The level of detailed modelling presented is insufficient to draw any firm conclusions on whether the 2nd objective is likely to be met.

Whilst there are no specific **measures of success** presented within this section there is sufficient evidence to demonstrate that reducing delays and improving journey times through the Langley Road Junction and along Station Road will be key outcomes. This is confirmed in Table 5 where the expected benefits are stated as:

journey time savings; increased network capacity; journey quality; physical activity; air quality and noise impacts; and accidents. Clearly the closure of Hollow Hill Lane is a major driver of the predicted benefits, but has yet to occur, so it will be challenging to establish a clear reference case baseline against which to assess success.

Whilst no specific **constraints** or **interdependencies** have been identified it is clear that the overall need for the scheme is highly dependent upon the closure of Hollow Hill Lane as part of the WRLtH project. If the WRLtH were not to progress, the strategic case for this scheme will be significantly reduced. Significant land acquisition is also required for the scheme and it is understood that only initial discussion have taken place and no agreements are in place.

The list of key **stakeholders** appears reasonably comprehensive, albeit the full extent to which engagement has been undertaken, and the level of support, is less clear. The level of wider support amongst local businesses and residents is also not discussed.

Value for Money (Economic and Financial Cases)

Summary of Content

The Value for Money section describes the direct and wide outputs the scheme will deliver and presents the funding requirements.

The **economic case** is set out into terms of the anticipated **direct benefits** of the scheme in relation to journey time savings; increased network capacity, journey quality; physical activity; air quality and noise impacts; and accidents.

The scheme is also anticipated to facilitate **wider impacts** by unlocking future housing development, enhancing urban connectivity and supporting the creation of jobs and businesses. Potential outcomes are detailed in Table 6 in terms of new housing dwellings, employment space, and jobs the scheme could help facilitate.

The approach to assessing the potential **journey time savings** is set out. This describes the use of outputs from local junction traffic models and a bespoke Spreadsheet Model Tool to calculate the economic benefits generated. This includes the parameters applied.

Outputs from the **local junction modelling** are presented within an appendix showing flows and delays at the junction in 2028, AM and PM Peaks.

The approach to identifying the **housing and employment** indirectly attributable to the scheme is discussed, including the interdependencies with the other capacity enhancements already approved along the Langley High Street corridor (Sections 1 and 2).

Further wider outcomes are set out in terms of **journey quality** (moderate positive impact), physical benefits (slight to moderate positive), accidents (neutral impact), air quality and noise (neutral impact), and network capacity (moderate positive).

The **financial case** is set out, with the overall **capital cost** requirements (£2.053m) presented and the level of LGF sought (£1.643m). The remaining £410,000 will be contributed by SBC.

The **scheme costs** have been developed based upon Slough's schedule of rates and based upon the judgement of Quantity Surveying technical experts and benchmarking of other recent schemes. The requirement for a high number of utilities diversions is recognised and an allowance (35% of base construction costs) is included as Main Contractor Preliminaries, accordingly.

Cost estimates are stated to include a risk allowance of 20%. A detailed schedule of costs that this contingency will cover is presented, which includes:

Additional design costs for the refinement of the design through Preliminary and Detailed Design;
Additional base construction costs;
Third Party Land cost;
Additional time required for stakeholder engagement;
Additional utility costs; and
Provision for more general, unknown and unquantifiable cost uplifts (including COVID-19 impacts).

A breakdown of the scheme costs is provided in tabular format. This indicates a **risk / contingency allowance** of £1,043,400.

SBC has provided commitment to funding **cost overruns**.

The **profile of funding** package is presented, with all expenditure in 2020/21.

- The overall **present value of benefits**, in terms of direct **transport user benefits**, are presented. These have been calculated using the direct outputs from the junction models and a bespoke spreadsheet tool. Overall, these benefits are estimated as just over £2.182 million, in 2010 prices.
- The overall **present value of costs** are estimated at around £1.457 million, in 2010 prices but with no optimism bias, giving an overall core scenario **Net Present Value** (NPV) for the scheme of just under £0.725 million. The accompanying **Benefit to Cost Ratio** (BCR) of 1.5 to 1, indicates that the scheme should deliver 'medium' value for money from investments.
- SBC also forecast that the scheme will additionally generate £0.06 million value of benefits from imperfect market competition and £0.519 as reliability benefits. These are applied by SBC to generate an estimated 'adjusted NPV' of £1.305 million and 'adjusted BCR' of 1.9 to 1.
- There are no **sensitivity tests** presented on the quantitative economic analysis.
- It is stated that a detailed appraisal of **environmental impacts** has not been undertaken at this stage but qualitative assessments of the impact on air quality and noise (neutral), townscape (neutral), biodiversity and water environment (neutral) are considered.
- In addition to the main assessment of journey quality and accidents, additional assessment of the **social impacts** of the scheme are considered, in terms of security (neutral), access to services (moderate positive), affordability (slight positive), severance (neutral), option/non-use values (neutral), and apprenticeships (neutral).

Independent Assessor Comment

The **Economic Case** for the scheme is presented in terms of the direct transport users benefits that will be delivered, the wider development growth it will support, as well as the potential magnitude of environmental and social impact.

- Some high-level information is presented in relation to the **traffic modelling**. The principle of using of the **strategic highway model** to determine the diversionary impact of the closure of Hollow Hill Lane is considered appropriate, albeit we are not able to verify the precise process that has been undertaken.
- The principle of utilising the outputs from the strategic model to inform change of flows within **local junction modelling** is also considered an acceptable approach to assessing both the baseline need for the scheme, as well as the potential impacts upon congestion and delay.

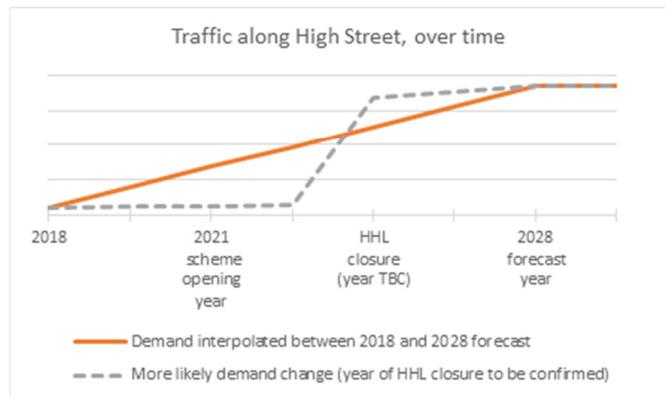
The local junction modelling data presented in Table 4 indicates that in 2028, with Hollow Hill Lane closed and with Sections 1 and 2 of the Langley High Street Improvements delivered, a notable amount of delay is forecast to occur across the Station Road / Langley Road / High Street junction in both the AM Peak (39 hours) and PM Peak (28 hours). These delays are, generally, spread across all arms of the junction.

- The introduction of the Section 3 widening scheme reduces delay in the AM Peak to 21 hours , whilst delay in the PM Peak they fall to 22 hours. This demonstrates that the majority of benefits for the scheme will be derived within the AM Peak, with all arms of the junction seeing some reduction in queues and delays. For the PM Peak, the impacts are less significant and do not appear to substantially improve the operation of the junction.
- It is understood that two model years (2018 and 2028) have been utilised for the economic analysis with the two scenarios:

Reference Case: includes the approved Langley High Street Sections 1 and 2 Scheme

'With Scheme' scenario: includes the additional Section 3 Scheme with widening of the Station Road exit from the junction

- The 2018 model utilises base model demand passing through the junction, whereas the 2028 model incorporates forecast underlying traffic growth and the impact of the closure of Hollow Hill Lane.
- A linear profile has been assumed in terms of traffic growth between the two years (see orange line in diagram). In reality the increase in traffic flow will more closely correlate with the closure of Hollow Hill Lane (see dotted line).



- Given an actual date when Hollow Hill Lane will close is currently unknown, the linear profile applied is considered acceptable and should not unduly impact the analysis.

The assessment of **wider impacts** provides a useful overview of the aspirational development growth that is planned within the Langley High Street corridor and the need for transport capacity to support this development. The forecast housing, jobs, employment floorspace presented within Table 6 appear to relate to the Langley Business Park development, located adjacent to the Section 3 Station Road alignment. Whilst the extent to which the scheme will unlock the development is not set out, , since this is not claimed as a direct outcome of the scheme it does not affect the overall assessment of value for money.

- The stated positive impact of the scheme upon **journey quality** appears logical in the context of the delays forecast in the reference case scenario. With limited quantitative analysis is difficult to judge whether the impacts will be moderate (as stated within the submission) or slight. In particular, because traffic is still required to filter down into a single lane to pass under the Langley Rail Station bridge, some of the benefits of the two-lane carriageway is lost.
- The stated slight to moderate positive impact of the scheme upon **physical benefit** is based upon a perception that the widening of the carriageway will provide additional space for cyclists and encourage greater use. A counter argument would be that the scheme may also increase traffic speeds and potentially create a more threatening environment for cycling. In addition, there could be greater severance for pedestrians wishing to cross Station Road. Overall, there would appear to be inconclusive evidence around whether the scheme will encourage or discourage walking and cycling usage.
- Seven **accidents** (including 1 serious) are reported along Station Road over the last five years and so there is some potential for accident benefits to be improved. The increase in lane capacity may be a disadvantage to non-motorised users (cyclists and pedestrians) unless specific provision is made for these users. The conclusion that the scheme will have a neutral impact could be considered optimistic; however, it will depend upon the final detailed design of the scheme.
- As SBC acknowledge, a full environmental assessment has not been undertaken and so no definite conclusions can be drawn about the impact of the scheme upon **air quality and noise**. The current conclusion that impacts will be neutral appears reasonable, albeit actual impacts could be slightly negative if the scheme encourages additional traffic to use the route.

The evidence is clear that the scheme will deliver significant additional **network capacity** along the corridor, with the potential to benefits all road users, depending upon how this capacity is utilised over time.

A detailed breakdown of the schemes **base construction costs** is not presented, albeit it is acknowledged that these have been developed through standard industry practices and with SBC's schedule of rates and inputs from Quantity Surveyors. The inclusion of preliminaries, overheads and profit, and professional fees demonstrates that the development requirements for the scheme have been taken into account. Further detailed development of base construction costs still needs to occur.

It is recognised that there is a known, and substantial, risk of **utilities** works being required. It is unclear precisely what basis has been used to estimate the allowance of 35% of base construction cost for utilities works and so there may remain some risk that this value could be higher. It is not stated whether C3 utilities enquiries have been undertaken.

- The £1.043 million **risk/contingency budget** is considered to represent a substantial proportion of the budget. Whilst this would typically provide confidence that the budget is unlikely to be exceeded, it is not considered standard practice for a scheme at Full Business Case stage of development to have scheme costs with such a significant proportion allocated to contingency (around 50% of the total budget is unallocated to any specific costs). This indicates there is relatively poor understanding of scheme costs at this stage. The scale of design change indicated should not, typically, take place post submission of the full business case.

It will be important for TVB LEP to have a full understanding of how the scheme is developed going forward.

- It should be recognised that there is no reference to additional **maintenance costs** associated with the delivery of the widening scheme, but it is assumed that these would be absorbed within the SBC's annual maintenance budget.
- The **profile of the funding** package is straightforward and commits SBC to deliver the scheme within 2020/2021. A specific commitment is given from SBC to cover any **cost overruns** in the event that they occur, albeit this is not officially evidenced through a S151 Officer statement.

- The business case submission does not include standard **Transport Economic Efficiency, Public Accounts, or Analysis of Monetised Costs and Benefits** tables and so it is not feasible to comment upon the details of the monetised value for money assessment. The initial assessment, which does not include any allowance for optimism bias on capital costs, indicates that the scheme may only just deliver 'medium' value for money. It is, however, recognised that quantified benefits have only been assessed at the southern end of the scheme at the junction with Station Road and Langley Road. Any potential benefits associated with the scheme towards the northern end of the link are not captured. The extent to which these will increase the value for money for the scheme is unclear, not least as much of the benefit of providing two-lane carriageway is lost due to the requirement to filter down to a single lane to pass under Langley Station rail bridge.
- The calculation of an 'adjusted BCR' considers the potential for additional benefits relating to negating 'imperfect market conditions' and improving journey time reliability. The approaches adopted to assess these benefits have applied techniques outlined within DfT TAG; however, there is little contextual information, or baseline data, presented to support the case for their inclusion. Whilst these benefits could potentially be derived, as Independent Assessor we are unable to verify the scale of the forecast benefits. Even with the inclusion of these benefits, the scheme continues to remain 'medium' value for money.
- It should be also be reiterated that the 'medium' value for money from investment is only likely to occur in circumstances where Hollow Hill Lane is closed. If, for any reason, this closure were not to occur, then we could have no certainty what outturn BCR for the scheme would be generated.

It is recognised that the scale of the scheme does not, in general terms, warrant a full **environmental assessment** and so the approach adopted by SBC is considered acceptable. In addition to air quality and noise (discussed above in Section 2.70), the evidence to support the position that there is no requirement to assess the impact upon **historic environment** is limited but there is no specific understanding of any heritage assets that will be affected by the scheme. There is also no discussion of the potential impact upon **townscape** of expanding the carriageway width, and it is considered there is a risk of potential negative impacts.

- For a scheme of this type, that will reconfigure the highway and require some land take, we would anticipate the need to consider potential impacts upon **biodiversity and water environment**. Whilst no details are presented within the business case submission, SBC's reference to an initial assessment provides some justification to their conclusion that the impact will be neutral; however, we would expect this to be assessed further as part of the detail design process.
- The qualitative approach to assessing **social impacts** is considered acceptable. It is agreed that the scheme is unlikely to have any notable impact upon **security**. On the basis of the core scenario traffic modelling, the scheme should have a positive impact upon **access to services** by motorised vehicles (including bus), but the impact upon pedestrian and cyclist accessibility is less clear. SBC have forecast a moderate positive forecast but in reality, a slight positive rating may be more appropriate. It is accepted that the scheme could have a slight positive impact upon **affordability**.
- The stated neutral impact upon **community severance** is also unclear due to the potential impacts the widening of the carriageway could have upon pedestrians and cyclists, with a risk of negative impacts for these user groups if the final scheme design is not carefully developed. It is agreed that there will be neutral impact upon **option / non-use values** and **apprenticeships**.

Deliverability and Risks (Commercial and Management Cases)

Summary of Content

- The section on deliverability and risk provides an overview of the project programme, project management arrangements, and risk.
- The business case document reiterates that 20% **local contribution** will comprise of Slough Borough Council Capital Funds.
- A high-level overview of the proposed **programme** is presented highlighting phases of preliminary design, Stakeholder and public engagement/consultation (Q1 2021), detailed design and refinement of scheme costs (Q2 2021), mobilisation and statutory consents (Q3 2021), commencement of site works (Q3/Q4 2021), and completion of site works (Q1 2022).
- Reference is made to the SBC's wealth of **experience** in managing capital infrastructure improvements, including High Street/Langley Road junction adjacent to this proposed scheme.
- Reference is made to the potential impacts of COVID-19 upon delivery and how this will be managed throughout the process, including ensuring safe on-site working.
- It is indicated that the construction works will be directly assigned to SBC's Direct Service Organisation (DSO) (Contractors), as an extension to both the High Street / Langley Road junction scheme and the original Langley Station and Access Improvements scheme. **Contracts** are also likely to mirror the structure previously used. The Council is likely to utilise the same contractor for this scheme and Sections 1 and 2 (widening of the carriageway between Langley Road and Elmhurst Road and the Meadfield Road junction improvement scheme) to maximise cost and time efficiency. This **procurement process** is stated to provide a high quality and efficient service, with resources readily available to be mobilised at short notice. SBC deems it appropriate not to engage in any new, competitive procurement process.
- The **project management arrangements** are described, including **reporting protocols**, and are stated to reflect the previous **governance** for the Langley High Street schemes that have worked effectively.
- A summary of the **key strategic risks** identified for the scheme are presented, with mitigating actions set out. As well as issues relating to COVID-19, key scheme risks relate to: utilities costs, land acquisition, any environmental issues within the land north of Scholars Walk, road safety, impact on residential properties, planning/consultation objections, cost increases, delays/cancellation to WRLtH and failure to coordinate with previous parts of the scheme.

Independent Assessor Comment

- The section on deliverability and risk, whilst relatively succinct, provides some useful confirmation of the measures in place to successfully deliver the project by the end of March 2022.
- Whilst it is generally accepted that SBC will be a reliable source of **match-funding**, no commitment from the S151 Officer is formally made with the submission.
- The **programme** provided is very high-level in nature but appears reasonable, in terms of general time periods permitted. There are clearly some potential external project risks, in terms of public and stakeholder engagement, land agreements, and utilities works, all of which could significantly affect the programme and over which the project team may have limited ability to control.
- The recent works along Langley High Street provide strong examples of SBC's **experience** in successfully delivering highway infrastructure schemes.

- It is recognised that the direct award of the contract through the SBC's DCO is the most efficient way of taking the project forward quickly and has enabled previous projects to be successfully delivered. Based upon the information presented it is challenging to conclude whether it represents the best value for money **procurement approach** but, given the timescales for delivery, it would appear to represent a prudent solution.
- The **project management arrangements**, whilst not presented in any detail, appear sensible and have successfully delivered previous projects within the same corridor.
- The **risk register** is considered to provide a sufficient amount of detail around both specific risks, as well as mitigating measures. It is recognised that this is a relatively standard highway engineering project, albeit it requires a significant element of land acquisition for which negotiations are not very developed. There is also understood to be the potential for substantial utilities works and there will be disruption to local residential properties during construction. Internal project risks include the detailed design process and development of final scheme costs. All of these elements have the potential to significantly affect the programme for delivery, as well as the cost, but these risks appear to be well understood by SBC and will be managed accordingly.
- There is limited discussion of **programme and project dependencies**.
- The details of the **communication and/or stakeholder management** processes are not described in any detail.
- There is no discussion of **benefits realisation planning or monitoring and evaluation**.

Summary and Conclusions

Summary

- The overall scheme is considered to align well with strategic priorities and there is an established need for the intervention in the future context of the predicted Hollow Hill Lane closure. The **Strategic Case** shows how the scheme will help off-set the impact of traffic diverting along the Langley High Street Corridor and, in particular, through the Station Road / Langley Road / High Street junction. In the absence of the Hollow Hill Lane closure, the strategic benefits of the scheme would be significantly reduced, albeit some local benefits will remain in terms of supporting local development.
- The preferred scheme option is demonstrated, at least in part, to meet three of the four scheme objectives (*to relieve congestion, improve connectivity, and improve journey times and quality for road users*). The evidence is less definitive on whether it will meet the fourth objective to mitigation air pollution impacts.
- The benefits of the scheme are strongly articulated for the southern end of the scheme around the Langley Road junction but there remains some uncertainty around the scale of potential impacts of widening the carriageway to two lanes through the middle and northern ends of the scheme. This is primarily due to the need for traffic to filter into single lanes to pass under the Langley Station rail bridge, creating a pinch-point for traffic movements. Whilst a long-term aspiration for the corridor would be to resolve this pinch-point, it would be a very expensive scheme and is unlikely to happen unless it is part of a wider strategy for large-scale housing development to the north.
- The benefits of the scheme for pedestrians and cyclists is also uncertain, with limited dedicated provision (other than replacement of existing crossing facilities) and potential issues of road safety and severance unless specifically addressed within the detailed design process.
- The overall **Economic Case**, whilst subject to limitations within the quantification process, presents a reasonable case for investment when considered within the context of the wider corridor improvements. The underlying assessment of benefits and costs indicates that the scheme should deliver 'medium' value for money as a standalone scheme. Taking into account a range of potential non-quantified direct, and wider indirect, economic benefits, the scheme could feasibly achieve a rating that is reasonably close to a 'high' value for money categorisation.
- Most of the environmental and social impacts are relatively neutral, but there are some uncertainties around the impact upon air quality, noise, townscape and severance.
- As with the Strategic Case, the economic benefits from the scheme will be substantially reduced without the closure of Hollow Hill Lane and there are also uncertainties around the scale of benefits that will be generated by widening Station Road to two-lanes throughout its full length from the Langley Road Junction up to Langley Station rail bridge.
- If considered within the wider context of the previously approved Section 1 and 2 schemes in the same corridor, then there is sufficient evidence to demonstrate that the overall Langley High Street Corridor Improvements package should deliver 'high' value for money.

There are some concerns over the robustness of the **Financial Case** presented. Whilst underlying construction costs are presented, with allowances for utilities, preliminaries, and professional fees, there remains a risk/contingency allowance of £1.043 million that represents over 50% of the total scheme costs. This indicates that the scheme costs are not well developed at this stage.

The **Commercial and Management Cases** are considered to be relatively succinct, but broadly compliant with requirements. They provide sufficient evidence to demonstrate that the procurement approach offers value for money within the context in which the scheme must be delivered, and that there are, generally,

robust measures in place to manage the delivery of the project. Since there is significant scheme development work still to be completed, the programme will need to be closely monitored and there remain a number of critical milestones, including land agreements, public and stakeholder consultation, and detailed scheme costings.

Conclusion

- It is our conclusion that there is sufficient evidence presented to support the overall strategic case for investment in the scheme, but only in the context of it being part of a wider corridor programme of improvements and in the event that Hollow Hill Lane being closed. The overall economic case demonstrates that, as a standalone scheme, it may only deliver 'medium' value for money, but that the wider package of measures should deliver 'high' value for money.

There are clear limitations in the detail of the scheme costs, as currently presented, and more information is required to verify that a sound financial case exists. In addition, more certainty is required around the necessary acquisition of land to accommodate the proposed scheme design.

Recommendations

- On the basis of the strength of the strategic case we recommend the scheme for approval but with the following conditions:
 - SBC to demonstrate positive discussions with the landowners that result in documented outline agreement for the acquisition of the land required to develop the scheme;
 - Production of a revised, and more robust, assessment of scheme costs, post-preliminary scheme design;
 - Formal confirmation (e.g. S151 Officer letter) to cover SBC funding allocation, along with confirmation that SBC will cover any potential cost overruns; and
 - The scheme retains an initial Benefit Cost Ratio of at least 1.5 to 1.

These conditions should be met at the earliest feasible date, but no later than 1st March 2021.

ⁱ <http://thamesvalleyberkshire.co.uk/Portals/0/FileStore/StrategicInfrastructure/StrategicInfrastructure/BLTB/Assurance%20Framework%20for%20Berkshire%20Local%20Transport%20Body%2014%20November%202013.pdf>

ⁱⁱ <http://www.slough.gov.uk/parking-travel-and-roads/plans-for-the-future.aspx>

ⁱⁱⁱ <http://thamesvalleyberkshire.co.uk/Portals/0/FileStore/StrategicInfrastructure/StrategicInfrastructure/BLTB/Assurance%20Framework%20for%20Berkshire%20Local%20Transport%20Body%2014%20November%202013.pdf>

^{iv} <http://www.slough.gov.uk/moderngov/ieListDocuments.aspx?Cid=601&Mid=5473&Ver=4>

Appendix 3

Langley High Street (Section 3) Carriageway Widening between Langley Road and Langley Rail station bridge
Full Business Case
Slough Borough Council
23 October 2020

Extension to original Langley rail station access and Harrow Market junction improvement scheme
– LEP Ref 2.21

Notice

This document and its contents have been prepared and are intended solely as information for Slough Borough Council and use in relation to Langley High Street (Section3) carriageway widening between Langley Road and Langley Rail station bridge Business Case.

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Introduction

The B470 Station Road / High Street (hereafter referred to as Station Road) runs through the centre of Langley village and is a key strategic link for businesses and residents, providing access to residential properties, jobs, education and amenities. Station Road runs from Langley rail station in the north to the A4 and M4 in the south and is currently a single carriageway in each direction. The scheme deliverable is the widening of the Station Road carriageway between Langley Road and a point just south of the Langley rail station bridge, from a single-lane carriageway in each direction to a two-lane carriageway in each direction. The main objective of the scheme in the short term is to reduce delay to traffic along Station Road, which currently experiences congestion particularly during the AM and PM peaks. Current traffic congestion negatively impacts journey quality for both private vehicles and bus service passengers and reduces the vibrancy of High Street and Langley village. In the longer-term, the widening of the carriageway will primarily support the anticipation of significant volumes of traffic being re-routed through Langley as a result of the closure of Hollow Hill Lane. The closure will sever a key north-south route linking South Buckinghamshire with Slough/Langley, to accommodate a new rail network line to Heathrow, the Western Rail Link to Heathrow (WRLtH). The rail link will significantly reduce the rail journey time to Heathrow and Slough Borough Council are acutely aware that this could negatively impact traffic flows along Station Road/ Langley High Street if not addressed.

In January 2020, a proforma application was submitted to the Thames Valley Berkshire Local Economic Partnership (TVB LEP) for funding of a package of interventions to ensure Station Road/ Langley High Street has sufficient capacity to accommodate an increase in traffic as a result of the Hollow Hill Lane closure, and the impact this will have on already congested roads. The package of interventions was split into three sub sections, as shown in Figure 1. A supplementary full business case was submitted to the TVB LEP to secure the funding for Section 2 and Section 1, in May and June 2020 respectively. The TVB LEP has since granted conditional approval for funding of these two Sections.

The TVB LEP have subsequently provisionally agreed to the funding of Section 3 subject to a more thorough business case application. This Full Business Case has been produced to present the case for the proposed widening of Station Road between Langley Road and Langley rail station bridge and the appraisal that has been undertaken.

Figure 1 - Proposed widening of High Street from Langley rail station bridge to the A4 from one lane in each direction to two lanes in each direction (Note: Section 3 is the focus on this business case). It should be noted that the benefits and impacts associated with the proposed scheme mirror those proposed in the January 2020 submission, which supported a package of interventions. However, the scale of the benefits should be considered as a proportion of those proposed in the original proforma. This document contains the economic appraisal for Section 3 only, to justify and support the Value for Money statement as per TVB LEP requirements.

1. **Rationale for the scheme and strategic fit**

How will the scheme contribute to the delivery of Thames Valley Berkshire's Strategic Economic Plan (SEP)?

Scheme alignment with the Thames Valley Berkshire's SEP

The TVB LEP proudly promotes itself as the most productive sub-region in the UK and the key to supporting, nurturing and growing this economic powerhouse is a robust and sustainable transport infrastructure. Providing smooth and efficient movement of people and goods will not only drive growth from within Langley, Slough and the wider TVB area but will also bring outside investors into the region, thus improving economic prosperity and productivity.

The TVB LEP Strategic Economic Plan (SEP) 2015/2016 – 2022/2021 rightly states that the close proximity of Heathrow airport provides a locational advantage for the region, particularly for Slough and Langley, by ensuring residents have access to highly-skilled and high wage jobs. It also supports businesses having access to national and international markets. Although in recent months Heathrow has been hit heavily through a combination of social and economic impacts of COVID-19 and slowing progress on the designs of the Heathrow expansion, Slough Borough Council (the Council) remain optimistic that the levels of passenger demand will return to their pre-COVID levels, high levels of employment will continue, and the strategic need for the expansion will remain.

Independent of the Heathrow Expansion and its anticipated growth, the Western Rail Link to Heathrow (WRLtH) will provide a step change in supporting the existing employment and organic growth within Slough and Langley by providing quick and reliable access to Heathrow. The WRLtH project will implement in a 6.5km rail link between the Great Western Main Line, where existing rail services run through Slough and Langley, and London Heathrow Airport Terminal 5.

The TVB LEP's support for the WRLtH scheme is clearly articulated throughout the strategic planning documents including the SEP, the SEP Implementation Plan and the Evidence Base. This strategic support is continued through the creation of WRLtH project team and Stakeholder Steering Group, showing the TVB LEP's continued and dedicated support to the implementation of the WRLtH scheme.

Slough Borough Council appreciates the importance of this opportunity, although it is understood that improvements to the rail network should not be detrimental to other modes of transport. The WRLtH will ease congestion on the strategic road network, including the M4, M3 and M25, as road users could be more inclined to use the new rail link. However, to deliver the WRLtH alongside the existing Great Western rail network, the road tunnel (Chequers Bridge) on Hollow Hill Lane will have to be permanently closed. As a popular local commuter route, this will force traffic to use alternative routes, potentially adding a significant amount of pressure on local roads. The current level of congestion experienced along High Street is already cause for concern, but with the additional traffic anticipated as a result of the closure of Hollow Hill Lane, Station Road and Langley

High Street could face significant operational issues and be unable to cope with the natural economic growth expected in the region in addition to the step change from closing Hollow Hill Lane. The scheme aims to support the WRLtH scheme and economic prosperity in the TVB region whilst mitigating the impact that will result from the closure of Hollow Hill Lane.

As we enter a period of recession as a result of the COVID-19 pandemic, the robustness of both local businesses and corporate firms, and the support received from the LEP will be critical to helping businesses and employees through this unprecedented and difficult time. As businesses adapt to a new environment emerging from the pandemic, the SEP principles are important as businesses and the economy rebuild themselves. Therefore, the TVB LEP must be confident that the scheme will contribute to the delivery of the SEP in both the short and long-term. The SEP indicates that the growth of the economy is fundamentally shaped by the maturity of the transport infrastructure which will continue to encourage sustainable local transport networks that promote active travel. Slough Borough Council is confident that the scheme will help to develop the transport infrastructure assets within Langley, including the potential to use the additional carriageway lanes proposed on Station Road as passive provision for cycle lanes to promote active travel in the future if deemed appropriate by the Council and based upon demand. The potential to convert one of the Station Road traffic lanes, in each direction, at a future date to a cycle lane provides adaptability for the Council as it allows an understanding of the long-term shift towards active travel, or whether an increase in cycle space is a temporary consequence of the COVID-19 restrictions. Similarly, with the proposed carriageway widening, this allows for the conversion of one of the lanes to bus lane too, should the demand and desire for this exist in the future, to support shift from private to public travel.

Figure 2 below highlights the key transport infrastructure surrounding the scheme, including the Slough Mass Rapid Transit (SMaRT) Phases 1 and 2 along the A4 and the M4 Highways England Smart motorway scheme to the south, Heathrow Airport, Langley Station improvements, Crossrail and the proposed WRLtH.

Figure 2 - Wider geographical area showing the key transport infrastructure.

The proposed scheme, which is an extension to the original rail station accessibility and Station Road/ High Street/ Langley Road junction improvement scheme in Langley, both of which have now been delivered on site, will complement the SEP's overall vision by ensuring that: "The ambition and creativity of our established businesses will be energised through strong, knowledge-rich, networks [and] our infrastructure will match the scale of our ambition and potential"

Slough Borough Council recognises that TVB is in the final stages of the current SEP delivery period, and whilst the scheme is due for completion in early 2022, there is confidence that the proposal will align with the subsequent SEP by delivering improved transport infrastructure, indirectly supporting economic growth in Langley, Slough and the wider TVB district.

In addition, this scheme extension will contribute to the delivery of the following packages within the TVB SEP:

(N.B. The text below shows how the proposed extension to the original Langley highway improvement scheme will support the delivery of the SEP in chronological order, despite the Packages not being in numerical order.)

SEP Package 2: Enhancing urban connectivity

Station Road/ High Street is the central north-south aligned road that links businesses and residents to Langley rail station and the strategic road network (A4, M4 and M25), and is a popular through route for commuters and public services. Currently, Station Road/ High Street suffers from congestion during the AM and PM peaks as it is the key link between residential areas and the wider road network as shown in Figure 2 above.

In the short-term, the scheme aims to reduce congestion along Station Road between Langley Road and Langley rail station bridge and reduce the externalities such as the negative environmental impacts that are associated with the slow-moving nature of congested traffic, notably noise and air quality. Both High Street/ Langley Road and High Street/ Meadfield Road junction are heavily used and of strategic importance to the operation of traffic movements within Langley village, as they support east-west movements. Both schemes have received TVB LEP funding to improve the operational performance of the junctions (Langley Road junction improvements were completed in March 2020 and Langley Road junction improvements has conditional funding from the TVB LEP). As the proposed scheme will deliver increased capacity on both the north and south Station Road approaches to the Langley Road junction, the widening of the Station Road carriageway will compliment and supplement the existing connectivity improvements along High Street. Although the proposed scheme will increase the capacity of Station Road as an individual scheme, the combined effect of Sections 1, 2, and 3, and the Langley Road/ High Street/ Station Road scheme will result in enhanced benefits to the operational performance of the road over and above the individual schemes.

High Street/Station Road is also the primary route to access Langley rail station, linking residents and businesses to the Great Western Main Line, Crossrail and the WRLtH when built. Passengers can use Langley rail station to travel into London, the south west or connect to the wider rail network. In 2017, Langley rail station received TVB LEP funding to improve access to the station for pedestrians, cyclists and passengers with reduced mobility including step free access to the station. The proposed scheme, which is an extension of the original Langley rail station and Accessibility improvement scheme (LEP reference 2.21), will enhance the works previously undertaken at Langley rail station to improve access to the station and rail network for passengers travelling by private vehicle or bus. By increasing capacity of Station Road and reducing congestion, the scheme will also support cyclists travelling to Langley rail station, supporting residents using active travel. The widening of Station Road will help to ensure that connectivity benefits and local growth potential resulting from the rail network can be fully realised.

In the long-term, this route will become increasingly important after the proposed closure of Hollow Hill Lane. Strategic traffic modelling has shown that the closure of Hollow Hill Lane will result in a re-routing of traffic onto Station Road/ High Street in Langley and this increased number of vehicles will make Station Road even more congested. The downstream effects of this congestion

threaten to impact labour supply to local businesses, access to high-wage and high-skilled jobs and will inhibit future economic prosperity.

It is also key to consider the importance of Station Road as an access route to education facilities. Figure 3 shows the location of key education sites including Marish Primary School, Langley Hall Primary Academy and Langley College, and their close proximity to Station Road/ High Street and the proposed Section 3 scheme.

Figure 3 - Education sites located in close proximity to the proposed widening of High Street. It is vital that Station Road/ High Street continues to provide safe and efficient access to the above education facilities, supporting both Slough Borough Council's and the TVB Local Economic Partnership's investment in future generations. Inspiring the next generation and securing access to talented people is a key priority within the TVB LEP SEP document. In addition, solving traffic congestion is expected to reduce noise and air pollutant levels which particularly ameliorate the risk for children. According to TAG guidance, the locations of schools, nurseries, playgrounds, community centres, parks, open spaces and other facilities used by children, should be considered as sensitive receptors in an air quality impact analysis.

Local junction modelling has forecast that the increase in traffic on Meadfield Road, which currently uses Hollow Hill Lane, will adversely affect the flow of traffic along High Street/ Station Road, resulting in long delays for vehicles and other negative environmental impacts associated with slow moving traffic. The previously submitted business cases (May 2020) for Section 2, being the signalisation of High Street/ Meadfield Road junction, will begin to address the impact of Hollow Hill Lane in addition to Section 1 (June 2020) for the widening of the High Street carriageway between Elmhurst Road and Langley Road. Previous LEP investment was used to signalise High Street/ Station Road/ Langley Road junction to add capacity and improve operational efficiency. The proposed scheme will add a two-lane southbound approach and two-lane northbound exit to the High Street/ Langley Road junction, therefore providing additional benefit to the operation of the junction and supplementing previous LEP investment.

The combined effect of Sections 1, 2 and 3 will result in improved operational efficiency and flow vehicle movement along Station Road/ High Street, helping to accommodate future demand as a result of the Hollow Hill Lane closure. The scheme will also enhance urban connectivity by improving access to Langley rail station and the wider road network.

Although the scheme does not include any direct improvements to bus services or Non-Motorised Users (NMU) infrastructure, it is important to note that introducing a two-lane in each direction carriageway will provide passive provision, to allow Slough Borough Council to turn one lane in each direction to either a bus lane or cycleway in the future should there be a requirement or strategic desire to do so. As evidence suggests, this will reduce risks for cyclists, and therefore have an impact on net safety as a result. This would also support the long-term capacity and strategic need for the road, encouraging active and sustainable travel modes.

SEP Package 6: Enhancing the strategic transport network

The SEP Implementation Plan recognises that the strategic road network is becoming increasingly constrained combined with minimal opportunities to create new roads. Therefore, the challenge is the maximise existing capacity and tackle pinch points across the network. The previously funded High Street/ Station Road/ Langley Road junction and the proposed High Street/ Meadfield Road junction improvements will deliver enhanced operational performance at two key pinch points along the High Street. The proposed Section 3 scheme will also support the LEP funded Section 1 carriageway widening between Elmhurst Road and Langley Road by continuing the two-lane in each direction carriageway to the north, between Langley Road and Langley rail station bridge. This will support the LEP ambition of improving existing infrastructure rather than investing in new roads. As a result of completing the Slough Mass Rapid Transit (SMaRT) Phase 1 and 2 programmes , the east-west corridor through Slough has been well developed in recent years and is beginning to transform Slough, Langley and the wider TVB district. However, north-south connections through both town centres remains both a challenge and a priority to Slough Borough Council. High Street/ Station Road also provides a link for businesses to Buckinghamshire through Langley Park Road. The road is also frequently used by commuters who travel across county boundaries for employment. This key route could also see an increase in traffic if the Northern Extension housing development, which will see the creation of up to 10,000 new houses, is built in partnership with Buckinghamshire County Councilvi. The scheme aims to improve the flow of traffic along Station Road/ High Street between Langley Road and Langley rail station, supporting north-south connectivity and helping to deliver SEP Package 6.

Although the proposed scheme aims to deliver carriageway widening along Station Road, and combined with Sections 1 and 2 the northern most section of High Street, Slough Borough Council are committed to exploring additional sources of funding to develop the scheme along the entire length of High Street to the south, between Elmhurst Road and the A4. As such, the benefits of increased capacity on the road and reduced congestion will be enhanced from those described within this business case and will support the development of the wider strategic transport network. The southern half of High Street will directly link to the A4 and SMaRT network and be in close proximity to M4 junction 5. The widening of Station Road carriageway is the final link of the northern section. Combined with the southern section, they form the ‘missing link’ in upgrading the transport network within Langley, as demonstrated in the Figure 2. The investment in the scheme will help to deliver an inclusive and integrated transport network for Langley and Slough residents and businesses, as well as improved access to the strategic rail network to Heathrow and London. To some extent, the improved connectivity and traffic flow along Station Road will also benefit Bus Services 3 and 459 that currently uses Station Road as part of their route. Bus passengers are likely to see an improvement in their journey quality as bus services will be less likely to experience congestion along Station Road. As a result, a number of potential benefits associated with improving bus users journey time may potentially arise (e.g. reduction in bus travel times in the urban network, and operational speed benefits including savings on fleet size requirements, fuel and labour cost, among others). This could also result in increased bus patronage in the long-term. Within Package 6, the TVB LEP also indicates the importance of the WRLtH, and the need to provide certainty with regards to its early implementation. The strategic need for the WRLtH is a clear narrative throughout the Strategic Economic Plan, enhancing and supporting the growth of the strategic transport network, of which the scheme aims to support, particularly as the scheme is located adjacent to Langley rail station.

SEP Package 5: Foundations for future growth for housing, transport and utilities

Widening the carriageway from one lane in each direction to two lanes in each direction will increase the capacity of Station Road between Langley Road and Langley rail station bridge. In addition to supporting the increase in demand as a result of the Hollow Hill Lane closure, the increased road capacity will support future growth in housing, businesses and retail through providing a fit-for-purpose, resilient transport network which is a key factor for potential development investors.

By ensuring that Station Road and the Langley Road/ High Street and Meadfield Road/ High Street junctions operate more efficiently, the scheme will support the future growth in housing, businesses and retail in a sustainable manner. Although the scheme does not directly support or unlock a significant growth in housing, transport and utilities, the efficiency and robustness of a transport network, of which this scheme supports, underpins the foundations needed for effective and sustainable growth. The scheme will indirectly support the planned housing provision outlined in the Strategic Economic Plan (planned housing in Slough between 2006-2026 is 6,300 dwellings)ⁱ, including those which require up-front investments in infrastructure to achieve successful delivery. The combined effect of interventions proposed along High Street/ Station Road (Sections 1, 2 and the proposed Section 3) will future proof the carriageway for growth in housing, transport and utilities.

The efficiency of Station Road, particularly through the proposed scheme will support access for SMEs and residents to local and national infrastructure projects including Langley Business Centre, Crossrail, the Heathrow Airport Expansion and the wider strategic road network. As aforementioned, the scheme will support the improved access to Langley rail station and encourage intermodal travel. In addition, the scheme will directly support access to Langley Business Centre and its vision of building a new data centre to support a thriving technology industry within the area. The latest data centre plans include retail, leisure and residential prospects with other light industrial opportunities with a minimum of 582 jobs created ^{xvi}. Any future works at Langley Business Centre will benefit from increased carriageway capacity along Station Road, not only to cater for the additional trips generated from the development, but also Heavy Goods Vehicles required for construction.

The scheme's main priority of reducing current and future congestion along the High Street, will improve access to the local labour supply supporting businesses and the wider Thames Valley district. The scheme will also support and further improve the operational performance of the Langley Road/ High Street and Meadfield Road/High Street junctions by introducing a two-lane southbound approach and two-lane northbound exit to the Langley Road/ High Street junction. The construction works to upgrade the Langley Road/ High Street junction to a signalised junction was completed in March 2020. Slough Borough Council are committed to ensuring that the works completed for the proposed Section 3 scheme will be complementary to the Langley Road signalisation scheme.

SEP Package 1: Unlocking housing developments

The scheme will complement the ongoing transport infrastructure improvements in Langley, the combined effects of which will help to unlock new housing developments and support the TVB SEP Implementation Plan of delivering 21,060 jobs and 10,702 houses by 2021 across the wider TVB area . This includes the collaboration between the Borough of Slough and South Buckinghamshire District Council to develop proposals for the Northern Extension . The permanent closure of Hollow Hill Lane could prove detrimental to the Northern Extension business case if local roads prove unable to cope with additional vehicles.

If the Northern Extension be deemed unfeasible, the Council will seek to continue to deliver additional housing in the coming years. Thus, Slough Borough Council is taking a proactive approach to ensure that the roads remain efficient, for both short term benefits of closing Hollow Hill Lane and future developments such as the Northern Extension. The proposed widening of High Street from one lane in each direction to two lanes in each direction, between Langley Road and Langley rail station bridge, will prove valuable to the efficient movement of vehicles and wider housing developments.

SEP Package 3: Encouraging vibrant town centres

High Streets across the UK are undergoing a radical change, primarily driven through a large shift towards online shopping. In addition, the ongoing COVID-19 pandemic is adding further strain on High Streets as retailers struggle to cope with the rapidly changing demands of social distancing and consumer confidence in shopping in store rather than online. As a result, the customer experience and public perception and ambience of High Street shopping and services, now more than ever, is vital to ensure their success in the future.

It is unlikely that a heavily congested High Street will attract and retain both businesses and consumers, thus the scheme will play an important role in ensuring the ambience of Langley remains inviting. The widened carriageway will retain the current speed limit to ensure the safety of pedestrians and cyclists along Station Road, including pedestrian crossing points. Consideration will be taken to incorporate streetscape improvements as the design progresses, if feasible, to improve the 'sense of place' along Station Road.

The current feasibility design for the proposed scheme can be found in Appendix B.
Alignment with other local and regional policies

Berkshire Local Industrial Strategy (BLIS) March 2019 (Framework document for consultation)
Local Enterprise Partnerships had been tasked with producing Local Industrial Strategies to seek to boost economic competitiveness. Thames Valley Berkshire LEP had framed the BLIS around three locally defined imperatives, as set out in section 2 of the document. The BLIS sets out an agenda for action under five distinct Priorities. Within this framework, the proposed scheme will contribute to the delivery of the following priorities:

Priority 1: Enhancing productivity within Berkshire's enterprises

The BLIS document suggests that levels of investment within Berkshire have stalled over recent years and could continue to plateau as the UK enters a period of recession as a result of COVID-19. The importance of ensuring businesses are as productive as possible will be vital to ensuring long

term success. Labour workers stuck in congested traffic, particularly in the AM and PM peaks as witnessed along High Street/ Station Road, will hinder productivity for both Langley and the wider Slough borough. Similarly, if the movement of goods is negatively affected by congestion on the local roads, businesses could lose their competitiveness and present additional costs to transport goods. By reducing congestion along Station Road, and consequently adding capacity, the scheme will support Priority 1, helping to sustain and improve productivity.

Priority 3: International trade, connections, collaborations and investment

International trade, connections, collaborations and investment recognises the importance of Berkshire's location in relation to Heathrow Airport and national transport infrastructure (particularly the M4 and Great Western Railway) in maintaining its economic prosperity. However, it also cites congestion and maintaining attractive places as barriers to attracting investors and innovation-focussed industries that would ensure long-term growth. The BLIS therefore supports the TVB LEP's view for the strategic need for the WRLtH – giving improved access to Heathrow– but highlights the need for congestion mitigation and placemaking measures to ensure the potential benefits are fully realised. The proposed widening of Station Road from one lane in each direction to two lanes in each direction will support the economic prosperity of the local economy by alleviating congestion and reducing average delay which facilitates connectivity and investments. This is particularly pertinent for the proposed Section 3, between Langley Road and Langley rail station bridge as Station Road runs adjacent to the station and thus important for accessing the rail network. The widening of Station Road will also support cross county connections between South Buckinghamshire and Berkshire.

Priority 4: Vibrant places and a supportive infrastructure

Vibrant places and a supportive infrastructure highlight the importance of sites close to railway stations and motorway junctions, and in strategic transport corridors to achieve these aims. It is anticipated that, as a result of the Hollow Hill Lane closure, Station Road will become overly congested with the redirected traffic. As the location of Station Road is within such close proximity to the M25 and M4, large volumes of commuter traffic could use the Station Road/ High Street as a shortcut, particularly if long queues are witnessed on the SRN. In addition, Station Road, is the primary access route to Langley rail station for residents and businesses, including access to Crossrail. This scheme will support the BLIS framework by improving the flow of traffic along Station Road. Streetscape improvements will be considered to be incorporated within the scheme, if feasible, to enhance the liveability of the surrounding environment.

Slough's Five Year Plan (2020 – 2025)

The Five Year Plan document outlines the Council's vision for Slough, the priority outcomes and the milestones towards delivering it. The Plan focuses on five priority outcomes, of which the scheme will help to deliver the following:

Outcome 2: Our people will be healthier and manage their own care needs

The Five Year plan describes poor levels of physical activity as a key issue leading to particular challenges around preventable diseases such as cardiovascular health and diabetes which put pressure on the health and social care services. Whilst there are no pedestrian or cycle improvements specifically related to Section 3, the road widening is expected to provide passive

provision for the introduction of segregated cycle infrastructure along Station Road in the future, should there be the demand and strategic direction to do so. The scheme will also maintain existing levels of pedestrian crossings to ensure the safety of students using High Street/ Station Road to access education facilities nearby, and supporting residents wishing to pursue an active and healthy lifestyle.

Outcome 3: Slough will be an attractive place where people choose to live, work and stay

This priority highlights the need to invest in infrastructure to enhance the visual appeal of the public realm, improve air pollution and promote community events to achieve the regeneration of Slough and the associated positive impacts for the community. By reducing congestion along the High Street, it will become a more attractive place to live, work and shop. As a result, opportunities exist to increase physical activity and improve air quality through the scheme development. It will also reduce congestion associated with large-scale events including Slough Canal Festival and the Horticultural Show in Bloom and Lascelland Parks nearby. As the design of the scheme progresses, consideration will be given to including streetscape/ public realm enhancements as part of the package of works, to ensure Station Road provides an attractive environment to its users.

Outcome 4: Our residents will live in good quality homes

As recognised in the plan, the opportunity for new housing developments in Slough is severely limited in terms of space and the capacity of the network. Increasing the capacity of the road network in Langley would enable future housing developments to be realised, including attracting new investors into the area. The combined effect of the Station Road/ High Street widening schemes and junction improvement schemes (Sections 1, 2, and 3) will support this strategic outcome however, due to the size of the scheme, it is unlikely to unlock major housing development by itself.

Outcome 5: Slough will attract, retain and grow businesses and investment to provide opportunities for our residents

As part of this priority, the Council aims to make the most of the benefits of the Heathrow expansion and WRLtH to maximise the growth potential of Slough and Langley. The proposed scheme supports the WRLtH by implementing measures to ensure the smooth operation of traffic through Langley as a result of the closure of Hollow Hill Lane and impact of redistributed traffic through Langley.

Slough Local Development Framework Core Strategy 2006 – 2026 (Adopted December 2008)

The Core Strategy is the central strategic policy document in the Local Development Framework. It highlights the key issues Slough will encounter over the next 20 years, and the Council's plan to proactively address for development across the Borough. The primary themes are to enhance the transport network and encourage the use of sustainable modes of transport within the community.

In order to deliver the policies, a number of Strategic Objectives have been proposed in the strategy, of which the scheme will help to deliver the following:

Strategic Objective A: To focus development in the most accessible locations such as the town centre, district and neighbourhood centres and public transport hubs and make the best use of existing buildings, previously developed land and existing and proposed infrastructure. The Framework recognises that focusing on improving the town centre and existing infrastructure will be essential for regeneration of Slough. The proposed widening of High Street from one lane to two lanes in each direction will support this objective of improving the Langley town centre and existing road infrastructure.

Strategic Objective E: To encourage investment and regeneration of employment areas and existing town, district and neighbourhood shopping centres to increase their viability, vitality, variety and distinctiveness. The strategy identifies congestion as a key issue that needs to be addressed because it limits development and erodes the character of town centres and residential areas. Improving congestion issues on Station Road will help to ease pressure on the wider road network to help to deliver this objective.

Strategic Objective I: To reduce the need to travel and create a transport system that encourages sustainable modes of travel such as walking, cycling and public transport. The Framework recognises the importance of local bus services for tackling congestion. With reduced congestion along the High Street and Station Road, passengers using Bus Services 7 (Heathrow – Slough Town Centre), 459 (Poyle/ Iver – Heathrow), and 583 (Hedgerley – Slough) will benefit from shorter, more reliable journey times that will increase the attractiveness of the bus service.

Slough's Third Local Transport plan 2011 – 2026

The Local Transport Plan (LTP) for Slough outlines the fifteen-year plan for the local transport network, describing how Slough Borough Council will maintain and improve transport in the borough, to align with both national and local objectives. The proposed scheme will support the following objectives outlined in the Slough LTP:

Table 1 - Alignment of the High Street widening with objectives of Slough's Third Local Transport Plan.

Local Transport Plan Objective	Alignment with the proposed scheme
To minimise the noise generated by the transport network, and its impacts.	Noise exposure leads to annoyance and impairment of quality of life. By reducing localised congestion, noise levels on High Street and Station Road are expected to be reduced. However, by increasing the capacity of the road, there may also be some increase in noise exposure to surrounding receptors.
To achieve better links between neighbourhoods and access to the natural environment.	Connectivity for public transport users will be enhanced as bus services will operate with improved journey time reliability and customer experience. Likewise, supporting the WRLtH will improve connectivity across the wider TVB area.
To improve the journey experience of transport users across Slough's transport networks.	Private vehicles and bus services will experience lower travel times as a result of reduced congestion. This will improve journey experience of transport users.
To reduce transport CO2 emissions and make the transport network resilient to the effects of climate change.	Reducing the start-stop nature of congested traffic will support the reduction in transport CO2 emissions and other pollutants.
To ensure that the transport system helps Slough sustain its economic competitiveness and retain its position as an economic hub of the South East.	Proposed widening of Station Road from one lane to two lanes in each direction will ease the current levels of congestion while enabling more reliable journey times.
To facilitate the development of new housing in accordance with the LDF. New commercial and housing development will generate new demands for travel.	The scheme will increase the capacity of the road network, enabling it to better support future development.

Emerging Local Plan for Slough

The emerging Local Plan for Slough aims to address key challenges Slough and Langley will encounter during the 2016-2036 delivery period, and importantly how to tackle congestion on the road network. The new Local Plan will update the existing core strategy, site allocations, and local plan saved policies. The Planning Policy Team are currently working on the Emerging Local Plan and the preferred Spatial Strategy and its publication and adoption is still to be confirmed due to the uncertainty surrounding the proposed third runway at Heathrow Airport. In any case, the road widening, which is the focus of this funding application, aligns with both the current and emerging Local Plan to help address the issue of future congestion on Slough's roads.

Overview of Strategic Alignment

Table 2 below presents an overview of how the widening of Langley High Street, from a single to two-lane carriageway between Langley Road and Langley rail station, aligns with the policies and plans detailed in the preceding sections.

Table 2 - Alignment of the scheme with local and regional policies.

Main Scheme Objectives

Strategic policy	Relieve localised congestion and provide potential additional capacity within the network	Mitigate future impact of air pollution on Station Road including links to the rail network and wider highway network.	Improve connectivity, Improved journey time and quality for road users
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Berkshire Local Industrial Strategy (BLIS)	?		?
Slough's Five Year Plan	?	?	?
Slough Local Development Framework Core Strategy		?	?
Slough's Local Transport Plan	?	?	?
Emerging Local Plan for Slough	?	?	

What is the rationale for the scheme?

Scheme extension location

Langley is a large village within The Borough of Slough, approximately two miles east of central Slough. Whilst primarily residential, Langley also includes light industrial, commercial, retail and leisure use. Key sites within Langley include the Langley Hall Primary Academy & Langley College, Langley Park Memorial Recreation Ground, Langley Business Centre & Waterside Drive Business Park, Harrow Market and Langley rail station (which is on the Great Western Main Line to London Paddington and which will soon be on Crossrail, providing connectivity into London)

Langley High Street/ Station Road (B470) is currently single carriageway, with one lane in each direction. It is north-south aligned, running from the A4 Junction 5 in the south to Langley rail station in the north, and through the heart of Langley in the centre. The B470 Station Road continues northbound as Langley Park Road towards Iver and South Buckinghamshire. It is subject to 20mph and 30mph speed limits along its extent.

To the immediate east of and running parallel to High Street is Mansion Lane / Hollow Hill Lane / Market Lane. This connects traffic from Iver in the north to Sutton Lane / M4 Junction 5 in the south and is a route used by thousands of commuters each day. Traffic surveys undertaken by Network Rail in 2015 recorded an average weekday (24 hours) flow of 7,767 vehicles (two-way). The high volume of vehicles using Hollow Hill Lane, of which a large proportion is expected to divert onto High Street and, in particular, Station Road, as a result of the WRLtH proposal, is a key driving factor for the rationale for the proposed widening of Station Road from one lane in each direction

to two lanes in each direction. Figure 4 below shows the location of the scheme, alongside key geographical landmarks reported above.

This scheme is an extension to the 'original' improvement scheme developed for Langley (LEP Ref 2.21), consisting of:

1. Junction upgrade at Station Road/ Waterside Drive and accessibility improvements to Langley rail station (scheme delivered in 2018) shown in Figure 4.
2. In addition to the above original scheme, junction improvements (conversion of a mini roundabout to signalised junction with pedestrian crossings) at High Street/ Station Road/ Langley Road (completed on site in March 2020), shown in Figure 4.
3. In May 2020, Slough Borough Council submitted a business case application to the TVB LEP to signalise the High Street/ Meadfield Road junction as the junction was considered high priority in mitigating the impacts of the closure of Hollow Hill Lane. The TVB LEP have confirmed conditional funding for the implementation of the High Street/ Meadfield Road junction.
4. Subsequently in June 2020, Slough Borough Council submitted a business case application to the TVB LEP for widening of the High Street from one lane in each direction to two lanes in each direction between Elmhurst Road and Langley Road, and introduce a central median between the northbound and southbound lanes to include small trees (subject to feasibility and safety considerations to be established during the next phase of design) to improve streetscape along proposed stretch of widened carriageway. The TVB LEP have confirmed conditional funding for the implementation of the High Street widening direction between Elmhurst Road and Langley Road.

Figure 4 – Location of the proposed scheme, Langley Village and surrounding landmarks.

Scheme rationale

As aforementioned, this scheme is an extension to the original improvement scheme in Langley (LEP Ref 2.21) and is primarily in response to the expected re-distribution of traffic from Hollow Hill Lane to High Street, as a result of Hollow Hill lane being permanently closed. The Section 3 scheme also complements the Section 1 (widening between Elmhurst Road and Langley Road) and Section 2 (High Street/ Meadfield Road signalisation) schemes which currently have LEP conditional funding approval, with the aim to provide increased capacity and improved flow of traffic along Station Road and High Street in Langley. The scheme will also provide additional improvement to the operation of the Langley Road/ Station Road/ High Street junction, by adding an additional approach and exit lane on the Station Road arm. It is therefore designed to reduce additional congestion and delay through Langley, that is expected to otherwise occur due to the planned closure of Hollow Hill Lane.

In the short-term, the scheme will help to alleviate the current traffic congestion witnessed along High Street and Station Road, and the Langley Road/ Station Road/ High Street and Meadfield Road/ High Street junctions (beyond that which will be delivered through the Section 1 and 2 schemes). As High Street/ Station Road will continue to be a key road within Langley, it is likely that

the number of vehicles using the road will increase organically in line with anticipated economic growth predicted in the strategic documents reported above. As such, the scheme will help to ease congestion issues along High Street/ Station Road in line with gradual growth in vehicle numbers.

As aforementioned, in the longer-term, the widening of the carriageway will primarily support the anticipation of significant volumes of traffic being re-routed through Langley, via Station Road, as a result of the closure of Hollow Hill Lane.

Slough Borough Council understands the importance of the WRLtH and the significant benefits it will bring in terms of employment, connectivity and improved economic prosperity for both Langley, Slough and the wider Thames Valley area. However, the benefits associated with the WRLtH could be overshadowed by the possible negative effects of overly congested roads, environmental disbenefits associated with queueing/ stationary vehicular traffic, reduced vibrancy of Langley town centre and negative public opinion accompanying such conditions. Thus, a strategic objective of this scheme is to support Network Rail and the WRLtH by increasing capacity and reducing congestion on a key stretch of carriageway, whilst also striving to improve liveability in the urban environment.

There have been multiple independent studies commissioned to assess the impact of closing Hollow Hill Lane and the potential redistribution of traffic on surrounding local roads. The results of these studies support the strategic fit and provide evidence for a compelling case for change. The following four studies are discussed in further detail below:

- Experimental closure of Hollow Hill Lane and resulting traffic flow analysis, Slough Borough Council and Buckinghamshire County Council (2016);
- Western Rail Link to Heathrow modelling outputs, Network Rail (January 2020);
- Strategic traffic modelling using SATURN, Atkins (February 2019); and
- Local traffic modelling using LINSIG, Atkins (Spring, 2020).

Experimental closure of Hollow Hill Lane (Slough Borough Council and Buckinghamshire County Council)

In 2016, a six-month experimental closure of Hollow Hill Lane was conducted to better understand the effects upon the local highway network. This is the most robust example of impact analysis possible and strongly complements the strategic modelling undertaken by Network Rail and Atkins, along with the local modelling undertaken by Atkins reported in further detail below. Whilst the focus of the traffic impact study was on Iver, given that the investigation was commissioned by Buckinghamshire County Council, the Study Area also covered Langley Park Road which leads directly to Station Road and the extent of this Section 3 scheme. The Study reported the following key impacts upon Langley:

- 24 Hour: An additional 1,389 northbound and 2,836 southbound vehicles on Langley Park Road, which continues south onto Station Road through Langley and the proposed scheme;
- AM Peak flows between 08:00-09:00 show that approximately 60% of vehicles previously using Hollow Hill Lane as part of their journey route now use Langley Park Road; and
- PM peak flows between 17:00-18:00 observed a 48% increase in vehicles using Langley Park Road who would have previously used Hollow Hill Lane.

Although the study gives no indication to the percentage of vehicles that subsequently travel from Langley High Street to Station Road, as the major north-south road connector with relatively minor side roads along this stretch, we can confidently assume that a significant proportion of this re-distributed traffic carried through to Station Road. These modelling results show a similar pattern to the strategic traffic modelling undertaken separately by Network Rail and Atkins, reported on the following pages.

The Study found that a majority (67% based on 24 hour) of re-distributed traffic uses Langley Park Lane (and onwards to Station Road/ High Street through Langley) rather than the other most feasible alternate route being Thorney Lane North (25%) through Iver. This supports Station Road/ High Street as being an important location for the focus of remedial measures. As Station Road/ High Street is already frequently subject to congestion and queuing traffic during the AM and PM peaks, the anticipated increase in traffic volume stated above will place pressure on the network and adversely impact the passenger experience of using the road.

The Study concluded that the increased levels of traffic observed during the Study will serve to exacerbate the existing congestion and environmental functions of the roads within the Study Area. The Section 3 scheme will complement the Section 1 and Section 2 scheme which have already received conditional LEP funding to address the aforementioned issues. The proposed widening of the Station Road (between Langley Road and Langley rail station bridge) to two lanes in each direction will provide additional capacity for this expected increase in traffic and is therefore required as a strategic step towards mitigating the impacts of the WRLtH. The Section 3 scheme will also reduce delay at the Langley Road/ Station Road/ High Street junction. Slough Borough Council will continue to seek a wider package of works to implement before Hollow Hill Lane is permanently closed which will allow the High Street to continue to operate as a strategic through route and Langley to function as a centre for housing, employment, education and local commerce. This includes a further extension of the proposed highway widening scheme in the south from Elmhurst Road to the A4. The completion of carriageway widening along the entire length of High Street/ Station Road will significantly increase the capacity of the road and will support the organic and step change growth in vehicle numbers expected.

Western Rail Link to Heathrow modelling outputs (Network Rail)

In January 2020, to support their DCO submission and case for change to implement the Western Rail Link to Heathrow, Network Rail released the outputs of their highway modelling which assessed the impacts of the closure of Hollow Hill Lane on the surrounding local road network, including Langley High Street. The results of the modelling shown in Figure 5, are for absolute change in PCUs in the AM and PM peaks in a 2028 weekday scenario from 'without scheme' to 'with scheme', where the 'with scheme' includes the implementation of the WRLtH and the closure of Hollow Hill Lane.

Figure 5 - Western Rail Link to Heathrow modelling outputs (Change in PCUs: without scheme/with scheme).

In line with the outcomes of the Buckinghamshire County Council Iver study reported above, the results of the Network Rail modelling analysis show a high absolute change in the number of PCUs

using Langley Park Road and subsequently Station Road as an alternative route upon the closure of Hollow Hill Lane. The report continues to focus on individual junctions within the study area rather than the impact on stretches of road as proposed by this scheme. However, the junction flow diagrams above indicate that Langley Park Road/ Station Road will have a significant increase in the number of vehicles using the road during the AM and PM peaks, mirroring the trend observed during the experimental closure of Hollow Hill Lane.

One of the junctions identified by Network Rail as having a significant increase in traffic as a result of the closure of Hollow Hill Lane is the Station Road/Waterside Drive junction, located immediately north of the Langley rail station bridge, and adjacent to the scheme. The modelling showed an average additional 210 vehicles in 2022 and 190 vehicles in 2028 ‘with scheme’ scenarios, during the AM and PM peaks. The full results of the Station Road/ Waterside Drive junction are shown in Table 3 below.

Table 3 – Network Rail strategic modelling – traffic flows at Station Road/ Waterside Drive with and without Hollow Hill Lane closure.

Peaks	2022 without scheme*		2022 with scheme		2028 without scheme		2028 with scheme	
Station Road (northbound)								
AM	576	779 (+203)	562	763 (+201)				
PM	501	720 (+219)	522	723 (+201)				
Station Road (southbound)								
AM	592	800 (+208)	632	795 (+163)				
PM	608	817 (+208)	608	803 (+195)				

* The ‘scheme’ being the closure of Hollow Hill Lane and implementation of the WRLtH.

Whilst the Network Rail model results do not provide the expected increase in traffic south of Station Road/ Waterside Drive junction and along the extent of the Section 3 scheme, the only options for traffic to turn off of Station Road before reaching the scheme extents are Waterside Drive and the Langley rail station access road. These minor side roads have a combined peak hour average total flow of 312 vehicles in 2022 and 282 vehicles in 2028, in the ‘with scheme’ scenario. Thus, it can be safely assumed that a high proportion of this increase in traffic will also apply to Station Road along the Section 3 scheme extents. This provides a case for widening Station Road from one lane in each direction to two-lanes in each direction, and the benefit of providing the additional capacity required.

Strategic modelling to understand the wider area impact of the closure of Hollow Hill Lane (Atkins)

As aforementioned, Network Rail is proposing to create a high-speed rail link from Langley to Heathrow T5 (WRLtH), which would require the permanent closure of Hollow Hill Lane. Strategic modelling has also been undertaken by Atkins, in SATURN, a highway assignment model, and has demonstrated that the impact of this closure would be the re-routing/ re-distribution of a significant amount of Hollow Hill Lane traffic onto Station Road/ High Street, through Langley.

Figure 6 below captures the forecast change in traffic flows by the model in future year 2028, as a direct result of the closure of Hollow Hill Lane. It is evident that the model is forecasting a re-distribution of traffic from Mansion Lane/ Hollow Hill Lane/ Market Lane onto High Street, as vehicles are using the route through Langley as the most feasible alternative, supporting the findings of the two studies above.

Figure 6 - Changes in traffic flow associated with the closure of Hollow Hill Lane (output from the strategic model, where blue represents a reduction in traffic and green represents an increase in traffic).

Specifically, the model is forecasting an increase in traffic on Station Road/ High Street, north of Harrow Market in the centre of Langley, of between 140 and 190 vehicles in each direction, during the peak hours. This is an increase of approximately 15-30% in traffic in both directions along Station Road/ High Street, in relation to today's flows. The consequence of this, without the increased highway capacity which this scheme is designed to provide, is increased delay and queuing through Langley, and in particular Station Road south of Langley rail station bridge, leading to adverse environmental impacts as a result of stationary or slow-moving traffic (increased noise and reduced air quality).

Local junction modelling, to understand the direct impact upon Station Road/ High Street, due to the closure of Hollow Hill Lane (Atkins)

It is important to note the context of the Section 3 scheme, being that it is a direct extension to the improvements already delivered to Station Road and High Street, in addition to the planned improvements to the High Street/ Meadfield Road junction (Section 2) and carriageway widening between Elmhurst Road and Langley Road (Section 1) which have both secured conditional LEP funding.

As part of the Full Business Case for Section 1 and Section 2, local junction modelling within LINSIG was undertaken during Spring 2020 to understand:

- a) the impact of the Hollow Hill Lane closure on the junction and likely performance in the future (2028), without intervention.
- b) the benefit of the Section 2 scheme, being the signalisation of the junction, which has since received conditional approval for LEP funding.
- c) the benefit of the Section 1 scheme, being widening between Elmhurst Road and Langley Road which has since received conditional approval for LEP funding.

Based on the local junction modelling it was established that, firstly a significant worsening in operation due to the increased flows through the High Street/ Meadfield Road junction and High Street without any intervention; and secondly that the Section 1 and Section 2 scheme provided notable improvement to junction operations, with reduced levels of delay to traffic. It is pertinent to note that in undertaking this modelling, prior to the Business Case, it was discussed between the designers and modellers how having an additional exit lane on Station Road would provide further benefit to the junctions.

To quantifiably assess the benefit of the Section 3 scheme, two modelling approaches were discussed between Atkins, Slough Borough Council and the LEP. These were:

- a. To use the Atkins strategic model to assess the benefit gained along the Station Road in terms of delay.
- b. To use the Atkins local model for the Langley Road/ Station Road/ High Street and Meadfield Road/ High Street junctions, to assess the benefit gained at these junctions as a result of the Station Road widening and, in particular, the addition of an approach and exit lane on the Station Road arm of the Langley Road/ Station Road/ High Street junction. This benefit can be captured with regards to delay, queuing and junction performance.

Following further discussions, it was agreed by all parties that the benefit of Section 3 scheme should be derived by using the existing local junction model. The reasons for this were:

- The strategic model is more suitable for assessing wider area impacts rather than ‘section of road’ impacts as required for this scheme and Business Case. The results could therefore be considered less reliable at this scale of assessment, than using local junction modelling.
- The local junction model would therefore provide a greater level of clarity with regards to benefits than the strategic model.
- Using the local junction model would provide a consistent approach to scheme assessment as undertaken for the Section 1 and 2 Business Cases.

Subsequently, for this Section 3 scheme, further local junction modelling was undertaken in August 2020, using the existing LINSIG model for Langley Road/ Station Road/ High Street and Meadfield Road/ High Street, to establish the further benefit generated by widening of Station Road between Langley Road and Langley rail station bridge.

To ensure the model was consistent in approach and delivery with the Section 1 and 2 Business Cases, one future year was forecast (2028) which included the closure of Hollow Hill Lane. To ensure that the benefits of Section 3 scheme alone were captured, the ‘existing’ scenario in the model was assumed to be the existing layout plus the Section 1 and Section 2 improvement schemes, and the ‘proposed’ scenario was the existing layout, plus the Section 1 and Section 2 improvement schemes, plus the additional two lane northbound and southbound approach on Station Road as part of the proposed Section 3 scheme. The comparison between the ‘existing’ and ‘proposed’ results would therefore provide the change in delay, queuing and operation that the Section 3 scheme alone has.

It should be noted that the design of Meadfield Road/ High Street junction is not exactly as it was for the Section 1 and Section 2 Business Cases (outline design) and has been updated to reflect the tweaks as it has progressed through Preliminary Design. The Section 1 and Section 2 Business Cases (outline design) details Meadfield Road/ High Street junction with two lane approach on Meadfield Road with 3 stage staggered crossing (3 islands on Meadfield Rd arm), while during the Preliminary Design stage, the design was updated to one lane approach on Meadfield Road with a straight ahead crossing. The updated design in the Preliminary Design stage has been used to test the Section 3 scheme benefits.

The local junction model results are shown in Table 4 below. They show that the addition of the Section 3 scheme results in delay savings to all arms of the Langley Road/ Station Road/ High Street junction, with 18 PCU/hr combined saving in the AM peak (note: results are rounded to nearest second). There is a smaller scale time delay saving of 6 PCU/hr in the PM peak. The introduction of Section 3 is seen to have a negligible impact upon overall performance of the Meadfield Road/ High Street, with a small amount of delay savings in the AM peak offset by similar levels of additional delay in the PM peak. The delay savings at the Langley Road/ Station Road/ High Street junction are due to the Section 3 scheme adding an additional entry and exit lane on the Station Road arm, which allows for improved junction performance and throughput of traffic. Whilst not captured within the Economic Case (which uses the delay metrics of the model outputs only), the model results also show that the Section 3 scheme allows all arms of the Langley Road/ Station Road/ High Street junction to be under practical capacity (85% or less Degree of Saturation) in the AM peak, whereas with just the Section 1 and 2 schemes all three arms of the junction are between 85% and 100% Degree of Saturation (DoS) suggesting the junction is approaching theoretical capacity (100% DoS) by 2028. This demonstrates that Section 3 has an improvement in overall operation and the combined effects of all three Sections are more beneficial than the effects of individual schemes.

Table 4 – Junction model results – impact of Section 3

Within the Section 1 and 2 Business Cases, it was established that those schemes offer significant improvement to the operation of both junctions, to allow them to operate within theoretical capacity (under 100% DoS) in 2028 with reduced delay and queuing. This was found to mitigate the impact of Hollow Hill Lane closure. The Section 3 model results show that further delay savings can be made to help mitigate the expected increase in traffic through the junctions, particularly Station Road/ High Street/ Langley Road. It supports the case for also including the Section 3 scheme to the Section 1 and 2 schemes to provide a full package of improvements along Station Road/ High Street, as the combined improvement of all Schemes will be greater than that of the individual schemes.

It is pertinent to note that this modelling exercise only captures the benefit of the Section 3 scheme with regard to the operation of the Langley Road/ Station Road/ High Street junction i.e. only the southern extent of the scheme itself. It is expected that further traffic flow improvement will be gained by having two lanes in each direction along the whole extent of the scheme, from the junction to the Langley rail station bridge, however this cannot be captured within the local model. It is difficult to quantify the benefit of the northern section of the scheme (widening towards the rail bridge) as there are no junctions in the northern section to derive delay benefit from.

The added capacity on the overall stretch is expected to improve the general flow of traffic, as traffic will utilise two lanes rather than one, which will reduce any fluctuations in speed and therefore delay. Given the expected increase in traffic on Station Road due to the Harrow Hill Lane closure, two lanes in each direction will provide the capacity required to accommodate the amount of traffic forecast by the strategic model and enable it to travel in a free-flow manner. In addition, at the junction with Alderbury Road, having two southbound lanes will provide the added benefit of allowing vehicles to continue to travel southbound on Station Road, whilst another vehicle is waiting to turn right onto Alderbury Road, which at present is not possible.

Hence, although the benefits on the northern section of the scheme have not been quantified, the increased highway capacity along the entire stretch is expected to result in more free flowing traffic and should be taken into account as a benefit of the scheme. As well as general traffic, the scheme will support both frequent and new users of Station Road, bus service passengers and cyclists who will all benefit from increased capacity along Station Road. These users will also benefit from the downstream effects of reduced congestion, improved air quality and reduced noise pollution.

Scheme details

The proposed Section 3 scheme is to request funding for an extension of the original Langley Station scheme, to deliver improvements to Station Road/ Langley High Street by widening the carriageway between Langley Road and Langley rail station bridge. As previously mentioned, the overall aim of the proposed scheme is to increase road capacity to alleviate current congestion witnessed along Station Road/ High Street and better accommodate the additional traffic expected as a result of the potential closure of Hollow Hill Lane to the east of Station Road/ High Street.

The Section 3 scheme is an extension to the junction and rail station accessibility improvement scheme delivered at Station Road/ Waterside Drive in 2018, and the junction improvement scheme delivered at High Street/ Station Road/ Langley Road in March 2020. It is also an extension to the adjoining proposed junction improvements at Meadfield Road/ High Street (Section 2) and High Street widening between Elmhurst Road and Langley Road (Section 1) which have conditional LEP funding approval.

For the purposes of this assessment, we have used the modelled differences in delay at the Station Road/ High Street/ Langley Road junction as a measure of how the scheme can benefit traffic along Station Road and meet the expected increase in traffic due to the closure of Hollow Hill Lane. This local traffic modelling has shown that the scheme will complement the Section 1 and 2 schemes by further reducing delays, predominantly in the AM peak. Further information can be found in Appendix A.

The proposed scheme will therefore implement the following deliverables:

- Widening of Station Road from one lane in each direction to two lanes in each direction between Langley Road and Langley rail station bridge. The widening will primarily be undertaken on the western side of Station Road between Langley Road and Scholars Walk and then the eastern side of Station Road between Scholars Walk and Alderbury Road. This is to minimise the impact, as far as possible, upon Third Party Land.
- At the southern extent, the scheme will introduce a two-lane approach and exit to the Station Road arm of the Station Road/ Langley Road/ High Street junction.
- At the northern extent, the scheme will taper back down to one lane in each direction prior to the Langley rail station bridge. To avoid causing potential issues with turning movements into and out of the Alderbury Road side road, to the west of Station Road, it is currently proposed that the four lanes will taper back to two lanes by this junction.
- Adding a right turn filter lane at the Alderbury Road junction, to allow traffic turning right from Station Road onto Alderbury Road to do so safely and without holding up traffic on Station Road continuing southbound.

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- New footways will be provided on the western side of Station Road where the carriageway widening is proposed, to retain existing provision for pedestrians.
 - There will be no impact upon on street parking along the extent of the scheme.
 - There is no requirement, based upon the current design, to signalise any junctions along the Section 3 extents to deliver the scheme.
 - Retention of bus stops location along Station Road along the extents of the scheme.

These interventions will help to deliver improved operational performance through the centre of Langley and will be complimentary to the ongoing works along the High Street mentioned above.

As a result of the carriageway widening, delivery of Section 3 will require the following Third-Party land:

- A portion of East Berkshire College entry frontage, on the western side of Station Road, including the grassed verge between the college car park and the carriageway. This land is included within Slough Borough Council's development control remit.
- A portion of the vehicular entrance to Langley Business Park, on the eastern side of Station Road. There are plans for the redevelopment of the Business Park to a Data Centre with supporting residential and light retail opportunities. This is currently at outline planning stage and went to planning committee in July 2020. Early engagement has already taken place between Slough Borough Council and the Developer to outline the Section 3 proposals to ensure that the redevelopment of the site is fully compatible with the scheme. Slough Borough Council has outlined to the Developer the land required to deliver the scheme and will continue to work together to safeguard the land required for the carriageway widening. It is expected that a new access be designed for the site, which ties into the Section 3 proposals.
- A portion of the grassed frontage to the residential block just north of Scholars Walk, on the western side of Station Road. Slough Borough Council's development control team have started the initial process of engaging with the landowners and will continue to develop agreements/ arrangements to safeguard the land required to deliver the scheme.

Although no specific measures are being proposed to improve the facilities and safety for pedestrians and cyclists, the creation of four lanes (two in each direction) will create passive provision to turn one lane in each direction to a cycleway or bus lane in the future if deemed suitable based upon demand (i.e. should travel patterns significantly change and be sustained post COVID-19).

Whilst there is no opportunity to widen the carriageway further and introduce a central median between the opposing lanes of traffic, due to physical constraints i.e. buildings, opportunities will be sought as the design progresses to introduce public realm/ streetscape improvements as part of the scheme.

An outline design drawing for the proposed scheme can be found in Appendix B.

What barriers to growth will it address? What is the evidence?

Langley High Street/ Station Road is a key strategic route running from Langley Station to the A4 and is essential to supporting the vibrant and prosperous Langley and wider TVB economy. This important stretch of road currently suffers from traffic congestion during peak hours causing negative downstream impacts on the efficiency and productivity of businesses within the area.

Future growth in business, housing activity in addition to the closure of Hollow Hill Lane will likely result in further pressure along this corridor. Slough Borough Council recognises that this is a proactive response to a problem that, if not fixed in the short-term, will cause significant barriers to growth in the long-term. Research has shown that congestion reduces the effective productivity of capital and labour. As such, increased congestion on this road will inhibit the economic growth predicted for the local area and the TVB LEP, limit the attractiveness of the area to outside investment and may cause labour supply issues to businesses located on the High Street and surrounding Slough district. This is particularly important as we navigate the uncertainties surrounding the COVID-19 pandemic and our ability to strengthen the economy during a recession. Slough recognises that congestion issues put pressure on the local workforce and businesses, degrades the air quality and threatens the public health. These factors need to be addressed in order to foster 'smart' growth from investment that will support a strong pipeline of high-quality employment. The BLISviii identifies congestion as a key issue that will limit the delivery of future housing development, the delivery of which needs to be accelerated to achieve social and equality objectives.

The emerging Local Plan places emphasis on how Slough will support and benefit from the expansion at Heathrow, which includes the WRLtH tied into the wider rationale for the project. In 2010, there were a reported 4,090 on-airport Slough employees, which equates to 6.8% of the local area workforce. Slough Borough Council aim to support the delivery of the emerging Local Plan by improving residents' access to Heathrow.

The original scheme will prepare Langley for potential future investments including the Northern Extension situated to the north of Langley Station and, the development of Langley Business Park which has submitted multiple planning proposals. These include a data centre with retail, leisure and residential opportunities and other light industrial opportunities, with a minimum of 582 jobs created. As the proposed scheme focuses on the widening of Station Road between Langley Road and Langley rail station bridge, rather than the package of interventions proposed in January 2020, a proportionate approach has been taken to calculate the number of houses, jobs and employment floorspace the scheme will help to unlock. Further details can be found in Table 6.

The Northern Extension, Langley Business Park and future developments will all benefit from increased capacity, and thus reduced congestion, on the High Street. The scheme will not only support vehicles from the Hollow Hill Lane closure but will also cater for the additional trips generated from development, including Heavy Goods Vehicles required during construction. Although the proposed scheme will start to address the impacts of the WRLtH within Langley, Slough Borough Council recognises that this is only the beginning and further mitigation measures will be needed to fully address the impacts of the WRLtH.

In the short term, the scheme will support Langley High Street/ Station Road in transitioning to a new normal as a result of the COVID-19 pandemic, helping the High Street/ Station Road to return its previously vibrant nature. As communities are being encouraged to stay local, through walking and cycling, the effect of reduced congestion along High Street/ Station Road and on the surrounding network will reduce noise and air pollution associated with the start-stop nature of congested traffic, benefitting those using active travel to access the High Street and its amenities. The widening of Station Road will also include passive provision to convert one lane in each direction into a cycle lane and/or bus lane in the future, if there is sufficient demand and a reasonable case to do so to support active travel/ use of public transport.

What other options have been considered?

Alternative options to re-distribute traffic are limited due to a lack of north-south network links, particularly as Langley High Street/ Station Road is a popular commuter route to the A4, M4 and M25. Alternate north-south routes to the east through Iver and South Buckinghamshire and to the west through Middle Green will significantly increase journey time, vehicle operating costs and may have long-term adverse environmental impacts. Indeed, the temporary experimental closure of Hollow Hill Lane demonstrated that the majority of traffic would choose to use High Street/ Station Road in Langley rather than Thorney Lane north through Iver. This is partly due to the strategic location of High Street/ Station Road and its importance in providing access to local amenities as well as for commuters.

A different strategic option would be to consider building a new north-south road to accommodate the anticipated surge in demand on the High Street as a result of the WRLtH. However, as the TVB LEP SEP Implementation Plan states, the challenge for the wider TVB area is to maximise the capacity of existing infrastructure, as the options to develop new infrastructure are limited and costly. The wider Slough borough is characterised as a dense urban environment bounded by green belt, limiting its ability to expand. The local area surrounding Langley is primarily used for residential, light industrial and retail purposes, with the majority of land already heavily developed. The only feasible route to create a new road capable of accommodating a sufficient volume of traffic to mitigate the impact of the WRLtH, is to the East of Hollow Hill Lane/ Market Lane through Richings Park. However, this will also require crossing the WRLtH track and thus presents an issue of building a new and costly bridge which is not considered a feasible option at this stage. This option would also result in a permanent loss of land from Richings Park, a negative impact on the local environment and would likely be rejected by the local community.

As part of their modelling analysis and DCO preparation for the WRLtH, Network Rail have considered the possibility of constructing a new north-south road bridge across the rail tracks. However, this is not considered a feasible option as the road bridge would require a six-metre height clearance from the railway tracks. To achieve such clearance, long approach structures would be required which will cut off access to adjacent cottages and farmland and be a costly alternative.

Other options that promote a shift towards public transport to reduce the dependency on private vehicles, have already been recognised through the Slough Mass Rapid Transit (SMaRT) Phase 1 and 2 programmes and improved access to Langley station. The SMaRT programme has introduced highway infrastructure measures to improve the provision of bus services along the A4 between Slough Trading Estate, Slough Town Centre and High Street Langley/ M4 junction 5. One of the primary objectives of the SMaRT scheme is to increase public transport modal split. The proposed scheme of widening Station Road to two lanes in each direction will complement the SMaRT programmes by improving the reliability of bus services in Langley by reducing congestion. However, reduced dependency on private vehicles achieved through a long-term modal shift towards sustainable modes of transport is unlikely to make any significant impact on the congestion issues of High Street, particularly when combined with the anticipated surge in traffic from the closure of Hollow Hill Lane.

Additional options include the widening of the High Street carriageway from one lane in each direction to two lanes in each direction for the entire length of the High Street (between Langley Station rail bridge and the A4) have also been considered. It is believed that this will provide the maximum increase in capacity and enhance the benefits proposed as part of this scheme. The proposed scheme, widening the carriageway from Langley Road to Langley rail station bridge is the

final section of the northern High Street to apply for funding from the TVB LEP. The Council is keen to progress the widening of the northern section of the High Street, Elmhurst Road to Langley rail station bridge (Sections 1 and 3), and improvements to High Street/ Meadfield Road junction (Section 2) in close succession to maximise time and cost savings during planning and construction. Further sub-options for the Section 3 scheme were identified and discounted. The details are provided below:

- Option 1: 2-lanes north and southbound for general traffic between Langley Road and the rail bridge (SBC Scheme)
- Option 2: 2-lanes north and southbound for general traffic between Langley Road and a point 50-100m north of the junction
- Option 3: 2-lanes northbound for general traffic between Langley Road and a point 50-100m north of the junction and 2-lanes southbound for general traffic between the rail bridge and Langley Road
- Option 4: 2-lanes northbound for general traffic between Langley Road and a point 50-100m north of the junction, with a bus/cycle lane from this point to the rail bridge, and 2-lanes southbound for general traffic between the rail bridge and Langley Road.

Option 2 may well be a viable option as it will reduce Section 3 scheme costs and increase BCR. However, we would lose out on the additional, non-quantifiable, benefits to traffic operation mentioned under Option 1. These additional benefits, we believe, are important to meet the core aim of the scheme which is to address the closure of Hollow Hill Lane and the disbenefit that it will have upon traffic operation and accessibility in Langley. The same commentary applies to Option 3. At present there is not a strong case for having a bus lane as part of the Section 3 scheme due to insufficient demand for it based on current services and it does not address the immediate aim of the scheme which is to improve traffic operation due to Hollow Hill Lane closure. The passive provision for bus/cycle lanes will be there though should there be a desire and strategic case to implement them in future. In the case of a cycle lane for the short section from 100m north of the junction to the rail bridge, again the survey data does not suggest high demand along High Street/ Station Rd at present and it would also be a short and disjointed facility which may not be well utilised. A cycle lane would be better deployed along the entire stretch of Station Rd/ High St, which the scheme would provide passive provision for in the future should there be sufficient demand/ case for installing one (taking into account the disbenefit this would cause to general traffic).

Slough Borough Council will continue to seek further funding opportunities in the future to develop and implement the southern section of the scheme, widening of the carriageway between Elmhurst Road and the A4. However, Slough Borough Council is mindful that widening the full High Street is costly and disruptive to road users.

In summary, the widening of Station Road, delivered alongside the widening of High Street and Meadfield Road junction improvements (Sections 1 and 2), appears to be the most feasible option to address the rapid growth of traffic and to begin to accommodate the additional traffic anticipated as a result of the Hollow Hill Lane closure.

What would be the consequences of a “Do Nothing” option?

Doing nothing will result in higher traffic congestion on High Street/ Station Road as a result of background traffic growth in the region, with a notable rise following the closure of Hollow Hill Lane. This anticipated growth will put pressure on the highway network, compounding the

congestion already witnessed along High Street/ Station Road during peak times of the day. As aforementioned, the Council is also keen to progress with the full widening of the High Street from Langley rail station bridge in the north, to the A4 in the south, further preparing Langley Village for the closure of Hollow Hill Lane and future growth in traffic volumes.

The increased congestion may result in labour supply issues to the wider Slough district and potential adverse environmental impacts (increased noise and reduced air quality). Doing nothing may also lead to accessibility and connectivity issues to car users as higher levels of congestion may make it more difficult for car users in the north of the Borough to access Slough and employment opportunities via the A4 and surrounding motorways. These arguments are extended to bus passengers who will be impacted if bus services experiences delays, particularly during peak hours. The effects of reduced journey time reliability will produce a negative passenger experience and could lead to reduced patronage and negative perceptions towards public transport. This is particularly important for providing accessible and affordable transport for those who do not have access to a private vehicle.

The economic impact of the “Do Nothing” option would directly affect Langley High Street/ Station Road where, as a result of continuous congestion along the corridor, individuals will be discouraged to use the services and amenities along High Street/ Station Road due to its unappealing nature. This may result in the public choosing to shop elsewhere and a lack of investment from local businesses. This will diminish the vibrancy of the town centre and reduce the economic vitality of the High Street, affecting the delivery of the TVB SEP Packages described above. In addition, the lack of vibrancy could also lead to more residents driving away to access services and amenities, adding further congestion to High Street/ Station Road. This is particularly pertinent in the current climate where, as a result of the COVID-19 pandemic, High Streets are facing an even bigger challenge of convincing shoppers to purchase items locally in store rather than online or travelling to other retail destinations.

Currently, the quantitative evaluation of journey time benefits associated with the Section 3 scheme calculate a £2.18 million saving in journey time, in present value, discounted to 2010. The consequence of a “Do Nothing” scenario will result in no journey time savings for vehicles using High Street/ Station Road, and potentially will create further disbenefit through increased congestion as a result of the closure of Hollow Hill Lane. In addition, the qualitative discussion of other benefits described below including accidents, journey quality and air quality will be diminished in a “Do Nothing” scenario. Further details on the economic evaluation can be found in the subsequent pages.

Which partner organisations are involved in, and committed to, the scheme?

Slough Borough Council will be the sole partner for the scheme. As a result of previous infrastructure projects in Langley including the signalised junction improvements along the proposed route, Slough Borough Council will continue to have a close relationship with necessary supporters of the scheme including Langley Hall Primary Academy & Langley College, Langley Business Centre & Waterside Drive Business Park, Harrow Market Great Western Rail and Network Rail. Network Rail and Heathrow Airport are considered to be key organisations and although they are not directly contributing to the proposed scheme, they have been involved in the continuous discussion surrounding the closure of Hollow Hill Lane.

The scheme requires land take from East Berkshire College, Langley Business Park and a small parcel of land outside the residential block just north of Scholars Walk. As aforementioned, Slough Borough Council have already made initial discussions with land owners/ Developers to safe guard

the land required for the scheme and will continue to work closely with them to ensure the scheme can be successfully delivered. The extra capacity on Station Road will help to accommodate the Heavy Goods Vehicles required during the redevelopment of Langley Business Park and additional traffic that could result from the new Data Centre.

Slough Borough Council is working closely with the LEP to ensure infrastructure investments are delivered in line with its visions and objectives, particularly by addressing the opportunities associated with the expansion of Heathrow.

2. Value for money

What outputs will the scheme deliver?

Section 3 of High Street is a busy stretch of road with a constant stream of traffic during the AM and PM peak periods. In addition, the strategic model has shown that the future closure of Hollow Hill Lane will result in a re-distribution of traffic from Hollow Hill Lane to High Street, Meadfield Road, and Station Road. This re-routing of traffic is not expected to be absorbed by the existing road capacity of High Street/ Station Road, which is increasingly unable to operate satisfactorily during peak times even without this increase in traffic.

It is, therefore, prudent to plan for future potential congestion and provide additional benefits to the operational performance of adjacent junctions (High Street/Langley Road and High Street/ Meadfield Road). The proposed road widening of the Station Road carriageway between Langley Road and Langley rail station bridge is anticipated to reduce congestion on a key link, whilst also delivering decongestion benefits and a reduction in externalities (e.g. air pollution, accidents and noise).

Table 5 summarises the main expected benefits of the proposed scheme. These benefits are linked to relevant scheme objectives identified in the rationale for the scheme and strategic fit section.

Table 5 - Scheme expected benefits.

Expected benefit	Description	Scheme objectives
Journey time savings (decongestion and vehicle operating costs)	Benefits resulting from decreases in journey times have been inferred from the forecast reductions in delays as a result of the Station Road widening. Reductions in vehicle operating costs are also expected as a result of the scheme. Based on reduced congestion for car and bus users as well as cyclists, it is anticipated that fewer disruptions will be experienced by road traffic, thus resulting in improved reliability. The journey time savings for bus users and cyclists have not be quantified.	Relieve localised congestion and improve connectivity within Langley, including links to the rail network through Langley station and the wider highway network.

Increase Network capacity

The scheme will help to reduce congestion on a key link and will increase network capacity by supporting higher traffic flows derived from the closure of Hollow Hill Lane. The road widening is expected to provide additional benefits to the operational performance of adjacent junctions (High Street/Langley Road and High Street/ Meadfield Road).

Relieve localised congestion and provide potential additional capacity within the network

Journey quality

The proposed intervention is expected to improve journey quality factors, resulting in a better user experience for car users. As the scheme improves the overall connectivity, the journey quality for pedestrians will also improve due to improved footways.

Improved journey time and quality for road users

Physical Activity

Whilst there are no pedestrian or cycle improvements specifically related to Section 3, the road widening is expected to provide passive provision for the introduction of cycle infrastructure along Station Road in the future, should there be the demand and strategic direction to do so. Improved journey time and quality for road users

Air Quality and noise impacts

As the intervention will result in changes in traffic flows and speeds, environmental improvements in terms of a reduction to noise pollution and emissions are anticipated. Mitigate future impact of air pollution on Station Road.

Accidents

Proposed widening of High Street from one lane to two lanes in each direction could provide more safety to cyclists than the current one lane carriageway. The widening will provide safer cycling facilities and could potentially lead to reduction of personal injury accidents.

Improved journey time and quality for road users

In addition, the scheme will support the TVB SEP by facilitating the unlocking of future housing development, enhancing urban connectivity and supporting the creation of jobs and businesses. In this context, Table 6 estimates the outputs that the scheme will deliver, including details from the original Langley Station business case. The Section 3 will provide additional capacity along Station Road which provides access to several businesses, Harrow market and Langley Business Centre. Due to the scale and nature of the scheme, the Section 3 will provide greater benefit to supplement the Section 1 and 2 schemes in terms of unlocking land for new housing dwellings and supporting the creation of jobs and businesses. Estimates predicted in the Table 6 show that the proposal will facilitate the delivery of new 356 houses in total and provide additional support to the creation of 286 jobs that will yield 1967 square meters of employment area.

Table 6 - Scheme expected outputs in terms of new housing dwellings, retail space, jobs and businesses created.

Outputs	2019/2020	2020/2021	2021/2022	2022/2023	2023/2024
Later Total					
Houses (units) LGF/Growth Deal					
Other public sector (specify which)					246 246
Private sector		80	30	110	
Total		80	30	246	356
Jobs LGF/Growth Deal					
Other public sector (specify which)					
Private sector	74		212	286	
Total	74		212	286	
Employment floorspace (sq m) LGF/Growth Deal					
Other public sector (specify which)					
Private sector			1,967	1,967	
Total			1,967		
Businesses created LGF/Growth Deal					
Other public sector (specify which)					

Private sector
Total
Business assists LGF/Growth Deal
Other public sector (specify which)
Private sector
Total
Other (specify) LGF/Growth Deal
Other public sector (specify which)
Private sector
Total

How have these outputs been estimated?

TAG Unit A4.1 recommends monetisation of specific key impacts in order to appreciate their scale relative to other outcomes and to allow robust values to be presented in the appraisal. In accordance to the guidance, where individual impacts are considered to be of lesser importance or where sufficient data or valuations are unavailable to undertake a quantitative approach, it is more amenable to appraise such impacts in a qualitative manner. For this Business Case, only user benefits for car users (journey time savings) are quantified and monetised, using an approach which is proportionate to the size and cost of the scheme. In the interest of proportionality, an assessment on the qualitative a seven-point scale has been undertaken for other identified benefits attributable to the scheme (see Table 5).

The methodology for the assessment of journey time benefits mirrors the approach adopted for the economic appraisal of the High Street/ Meadfield Road junction (Section 2 - completed in May 2020, agreed with the LEP reviewer in June 2020) and widening of High Street (Section 1 - completed in June 2020, agreed with the LEP reviewer in July 2020). It compares the relative benefits of the Do Something (DS) scenario option against the Do Minimum (DM) scenario.

- DM: Existing layout with the addition of the Section 1 and 2 schemes which have received conditional funding approval from LEP. These are signalisation of the High Street/Meadfield Road junction (Section 2 scheme) and High Street widening between Elmhurst Road and Langley Road (Section 1 scheme), further details of DM modelling results are shown below; and
- DS: Includes as above, but with the addition of Section 3 scheme (Station Road widening between Langley Road and Langley rail station bridge).

The DM was established as part of the modelling carried out for the Section 1 and 2 Business Cases, undertaken in Spring 2020. The results of the DM modelling show:

- Whilst the Section 1 and 2 schemes significantly improve the operation of the High Street/ Meadfield Road and High Street/ Langley Road/ Station Road junctions, Section 3 provides further delay savings than can be achieved through Section 1 and 2 alone (Langley Road/ Station Road/ High Street junction has a 18 PCU/hr overall combined saving in the AM peak).
- By 2028, the Section 3 scheme reduces the number of approaches to the High Street/ Langley Road/ Station Road junction that would otherwise be approaching theoretical capacity (100%+ Degree of Saturation) and potentially under operational stress.
- Through delivering Section 3, along with Sections 1 and 2, both junctions are expected to have low levels of queuing and delay on all arms by 2028.

-
- Outside of the modelling exercise, it is considered that the DM scenario of retaining single lanes between the High Street/ Langley Road/ Station Road junction and Langley rail station bridge may result in general delay and congestion to traffic travelling along this stretch of road.

The impacts of the scheme on journey times for car users have been assessed based on the delay outputs during the AM and PM peak hours, as modelled in LINSIG. Further details of the LINSIG modelling outputs can be found alongside the scheme rationale in Chapter 1 and Appendix A. The models have considered the traffic flows along Station Road with the closure of Hollow Hill Lane. The future year flows also account for changes in flows due to background growth and introduction of other planned schemes in the wider area. The increase in flows on this road however are primarily due to the closure of Hollow Hill Lane.

Traffic flows and delays in seconds per PCU were estimated for both modelled years and for two peak hours: AM and PM in each year. In accordance with TAG Unit 1.3, the calculation of user benefits is based on the conventional consumer surplus theory, defined as the benefit which a consumer enjoys (i.e. reduction in travel time as a result of delay savings). The assessment of consumer surplus only incorporates changes in travel time and does not account for changes in vehicle operating costs or user charges. The difference between the total delay registered in the network in the DM and DS scenarios indicates the daily delay savings experienced on the route. Annual benefits were calculated on the assumption being that they are evenly accrued for 253 working days a year. Using this methodology, benefits were calculated for highway users, disaggregated by user type, with separate values of time for business and non-business users. This is because, as indicated in the guidance, the surplus associated with making a journey will not be the same for everybody and depends on the benefit each individual derives from making that journey.

To summarise, for the purpose of the economic analysis, the following assumptions have been made:

- For the purposes of this appraisal, the journey time savings have been inferred from the forecast changes in delays between the DM and DS;
- The impacts of the scheme have been assessed over a 60-year appraisal period, in line with TAG guidance, with an assumed opening year for the scheme of 2021;
- All costs and benefits in the economic appraisal are discounted to 2010 market prices in accordance with TAG Unit A1.1;
- Scheme costs have been converted from factor costs into market prices using the indirect tax uplift factor of 19%;
- It was discussed and agreed with the LEP Reviewer on 18th May 2020 that no Optimism Bias will be included in the PVC calculations;
- Different values of time were assumed for business drivers and passengers and for commuting and leisure trips (£17.689, £9.953, and £4.543, per hour, 2010 prices). This data has been taken from the TAG data book (May 2019 v1.12) table A1.3.1;
- Average values for the proportion of travel in work and non-working time were assumed.

This data has been taken from the TAG data book table A1.3.4.

An economic assessment was undertaken over a 60-year appraisal period using a bespoke Spreadsheet Model Tool based upon the delay outputs of the LINSIG model in line with TAG requirements to calculate the economic benefits generated by the proposed scheme. The aim of

economic assessment was to assess the performance of the Section 3 scheme in terms of the relative benefits generated by the scheme against the associated scheme costs. The economic assessment compares the monetised costs and benefits of the proposed scheme (DS) against the alternative without-scheme scenario (DM). These benefits were monetised to give a Present Value of Benefit (PVB) and compared against the present value of costs (PVC) to calculate a benefit cost ratio which demonstrates the scheme's value for money. Sensitivity analysis was carried out to assess if the value for money category is likely to change based on small changes in key elements of the value for money assessment. In accordance with requirements set out in 'The Value for Money Framework' published by the Department for Transport, this is a crucial step in mitigating uncertainty in the value for money assessment and increasing the level of confidence of decision-makers.

Along with the Section 1 and Section 2, the Section 3 scheme is also expected to support the Thames Valley Berkshire Strategic Economic Plan (SEP) by facilitating the unlocking of future housing development, enhancing urban connectivity and supporting the creation of jobs and businesses. Thus, as a standard assumption that markets are not perfectly competitive, 10% of business user benefits as wider impact of this scheme has been considered. As this Section 3 scheme will significantly improve the journey quality and capacity of the northern end of the scheme, reliability benefits over a 60-year appraisal period from the scheme was also assessed using a TAG compliant bespoke Appraisal Spreadsheet Tool (using the urban roads method from TAG A1-3).

This approach uses an established relationship based on empirical data between journey distance time in the DM and DS scenarios, reflecting existing levels of variable delay in the urban environment compared to free-flowing traffic and how this varies as a result of a scheme being implemented. This relationship is used to derive the change in standard deviation of journey time which that scheme generates. A reduced standard deviation implies less day-to-day variation in travel times for the same trip. This day-to-day variability excludes the predictable levels of delay which occur in the DM and DS scenarios, changes to which have been captured within the standard journey time savings. A benefit calculation has been performed for each zone to zone pair in each of the forecast years and time periods.

Reliability improvements are valued by highway users at 40% of an equivalent improvement in average journey time savings, allowing the impacts to be monetised and captured as part of the present value benefit (PVB) of the scheme. This value is additional to the benefits of reduced average journey times and is included in the 'adjusted PVB'.

On the other hand, the outputs reported in Table 6 above focus on planning applications and forecasts from Slough Borough Council's Planning Department. The original scheme (submitted to the LEP in January 2020) reported the indirect delivery of 1,500 dwellings however this has been scaled down to an estimated of 32 houses (public sector) as the original scheme is near completion, and this funding application is only focused on a short section of road (defined as 'Section 3' in the proforma application submitted in January 2020 – see Figure 1).

The other estimates predicted in the table for 2023/2024 include preliminary figures for a data centre at Langley Business Park (originally creating 4,000 sqm of space and 60 residential dwellings and retaining 432 jobs once completed), and current lease of the business park as a temporary filming studio. Likewise, these figures have been scaled down based on costs estimates to reflect the proportionate share to this scheme. In addition, estimates have also considered the cumulative impacts that will result from delivering all the three sub sections of the package of interventions

(see Figure 1). Thus, a corresponding percentage reduction has been applied to reflect the fact that this funding application is only focused on widening of Station Road (Section 3). It should be noted that this assessment is based on professional judgement, using knowledge in practice and critical reflection.

Although interdependencies between the different sections of the original scheme in terms of unlocking housing developments or additional jobs expected to be created are not straightforward to interpret; the estimate is considered conservative in comparison to the potential maximum outcomes to be achieved. These figures are based on publicly available documents and are indicative at this stage as it has not been possible to model the direct link between the new scheme and the benefits relating to housing, retail and employment growth.

It is also understood that in times of COVID-19 crisis and economic recession, the importance of investing in infrastructure, such as the proposed scheme, is vital to reviving the economy, boosting employment rates and economic prosperity.

What wider outcomes will be achieved in TVB? Please quantify these if possible.

As shown in Table 5 above, in addition to journey time benefits, other impacts are expected to arise including decreased externalities such as congestion, noise and air pollution and increased liveability and social vibrancy through better urban design. A quantification of such benefits was not undertaken at this stage, but a proportionate qualitative assessment on a seven-point scale was conducted. Results relative to the DM scenario are discussed below.

Journey quality

Moderate positive – Journey quality is generally understood as the cumulative travelling experiences of the quality and ambience of a journey . It represents a measure of the real and perceived physical and social environment experienced while travelling and includes factors such as perceptions of safety, information provision and comfort . Journey quality impacts cover a wide range of indicators and can be sub-divided into three categories: Traveller care (based on the general transport environment and facilities), Traveller views (the visual amenity provided by the site and impact on the surrounding visual environment) and Traveller stress (drawing on the perception of safety, security and confusion over onward travel or route choice).

As recognised in the literature and in TAG Unit A4.1, there is limited evidence on monetary valuations of journey quality in relation to highway projects. It is however prudent to conclude that the real and perceived physical environment experienced while travelling is expected to improve as a result of the proposed intervention. For car users, the reduction in travel time in DS scenario as compared to DM scenario can result in a moderate beneficial impact as a result of reduced frustration and stress. Car users are also likely to get benefit from saving in vehicle operating cost. Furthermore, the proposed widening of High Street from Langley Rail station bridge to the A4 from one lane in each direction to two lanes in each direction will reduce the frustration and fear of accidents for pedestrians and cyclists. In addition, the scheme is expected to improve streetscape and to create a more walkable environment which leads to the livable environment of a city. Overall, the Section 3 scheme will have a moderate beneficial impact in terms of journey quality.

Physical Benefits

Slightly to moderate positive – TAG Unit 4.1 notes that transport and the physical environment of urban areas both play a major role in the amount of physical activity that people are engaged in on a day-to-day basis. There is a longstanding recognition of the interrelationship between transport, the environment and health.

Whilst there are no pedestrian or cycle improvements specifically related to Section 3, the road widening is expected to provide passive provision for the introduction of segregated cycle infrastructure along Station Road in the future, should there be the demand and strategic direction to do so. The scheme will also maintain existing levels of pedestrian crossings to ensure the safety of students using High Street/ Station Road to access education facilities nearby, and supporting residents wishing to pursue an active and healthy lifestyle. Therefore, the immediate impact of the scheme to physical activity is considered to be slightly positive and moderately positive if the widened carriageway is going to be used for creation of passive provision to turn one lane in each direction to a cycleway in the future if deemed suitable based upon demand.

Accidents

Neutral – Historic collision data has indicated seven casualties on Station Road between Langley Road and Langley rail station bridge over the last 5-year period (6 slight and 1 serious incidents). Therefore, there is scope to improve safety on Station Road and reduce the current collision rates. It should also be noted that historic collision data available does not reflect the effects of the closure of Hollow Hill Lane. The potential closure of this road could result in a rerouting of traffic through the road stretch and therefore the base year for the analysis might show more collisions as compared with the observed data.

The literature reveals that the number and width of traffic lanes are key factors influencing cycling. Some authors have suggested that the vast majority of cyclists prefer to cycle on streets with two lanes rather than on wider roads (with 4 lanes) . This is because, drivers tend to pay more attention to other vehicles than to cyclists on wider roads, leaving them more exposed to accidents. On the other hand, the scheme is likely to derive in cumulative impacts and to provide additional benefit to the operation of adjacent junctions, which are expected to reduce pedestrians and cyclists' frustration and fear of accidents. Overall, it is likely that the effect of the scheme on accidents will be slight, as increases in the fear of potential accidents might be broadly balanced by relief of accidents derived from adjacent schemes (i.e. Sections 1 and 2). The impact of the scheme on safety is therefore expected to be neutral.

Air quality and noise

Neutral – A quantitative appraisal of the environmental impacts of the scheme has not been undertaken. A proportionate qualitative assessment was carried out to identify whether significant beneficial or adverse environmental effects are likely to arise. As a result of the scheme, a slight reduction in traffic delay and start/stop driving is predicted, which would decrease congestion-related impacts such as air and noise pollution levels. However, with the increased speed (due to reduced delays) those benefits might not be able to be achieved due to changes in driving patterns compared to congested conditions.

As indicated in the guidance (TAG Unit 4.2) air quality impacts are likely to occur where an intervention results in significant changes to traffic flows or speed, or where the physical gap between people and traffic is altered. As a consequence, noise and local air quality levels are not likely to be impacted as the scheme is not expected to significantly affect traffic flow or speeds. The anticipated impact on local air quality and noise is thought to be negligible.

Increase Network Capacity

Moderate positive – The scheme was designed as a long-term solution to reduce congestion now, allow for future traffic growth, and avoid new congestion problems arising in the future derived from the closure of Hollow Hill Lane. In addition, as the scheme is part of a package of interventions (see Figure 1), efficiencies and cumulative impacts are anticipated. In particular, the road widening

is expected to provide additional benefits to the operational performance of the Station Road and adjacent junctions (High Street/Langley Road and High Street/ Meadfield Road). This will help to expand the transport capacity to respond to future growth in demand.

On the other hand, connectivity for public transport users will also be enhanced through improved bus journey time reliability and customer experience. Moreover, cyclists will also benefit from increased capacity along High Street/ Station Road. Therefore, the impact of the scheme on network capacity/connectivity is considered to be moderate positive.

**To what extent are these outputs (and downstream outcomes/impacts) likely to be additional?
What is the basis for this assessment?**

The proposed road widening, together with the continuing transport network improvements across Slough and Langley will contribute towards reducing congestion and allow the town centres to remain vibrant places to live and work. This is likely to have downstream outcomes with improved access to labour supply, reliable journey times, and sustainable economic growth through increased productivity levels. In addition, positive impacts such as an increase in journey quality and an increase in network capacity and other efficiencies along the corridor are derived from the Do-Something scenario.

This supports the TVB LEP aims of investing in infrastructure that would unlock future opportunities to enhance cross boundary connectivity. A reliable transport network will also unlock the full potential for future housing developments and business investments, including the Northern Extension. The overall scheme deliverables and benefits also support other relevant strategies such as the delivery of the Berkshire Local Industrial Strategy (BLIS) and the Slough Local Development Framework Core Strategy. Further details are provided in the Chapter 1 of this funding application. What is the nature of the resourcing package that is proposed (e.g. balance between private sector investment, loans and grants, etc.)?

The Council is now proposing an extension to the existing Langley scheme (ref 2.21), which will cost an additional £2,053,000 in total. Of this, £1,643,000 is requested as a grant from the Thames Valley Berkshire Growth Development Fund to support the delivery of widening Station Road between Langley Road and Langley rail station. The remaining £410,000 (20%) will be contributed by Slough Borough Council, consistent with the minimum requirement as part of the total funding for any scheme extension agreed during this round of Growth Development Fund bidding.

Scheme costs have been developed based upon Slough's schedule of rates. The cost estimates for the individual elements of the scheme have been estimated by Quantity Surveying professionals, also using benchmarking against similar schemes including the recently implemented scheme at High Street/ Langley Road junction. The cost estimates are based upon the outline design and is expected to be refined as the design progresses to Preliminary Design stage.

The cost estimates above include an additional 35% of base construction cost for Main Contractor Preliminaries, which includes provision for the protection or diversion of utility services, which are anticipated to be heavily affected by the widening works in this area. A C2 utility search was carried out as part of the High Street/ Langley Road scheme design and therefore the design team already have sight of likely implications on utilities. Some design engineering has already been undertaken as part of the feasibility design, to limit impact (and cost) on utilities. The design team will ensure that the designs for the widening of Station Road to two lanes in each direction will be complementary to the High Street/ Meadfield Road junction improvement scheme and widening of High Street between Langley Road and Elmhurst Road.

The cost estimates also include a 20% risk contingency to support the risks identified in Table 14 below. This is based upon DfT guidelines for preparing scheme cost estimates at this feasibility stage of design, as well as professional judgement/ experience of delivering similar highway schemes in the past. Whilst recognising that a notable contingency has been allowed for within the scheme estimate, this is typical and prudent at this stage of highway design. A quantified risk register could be developed as the schemes progresses through additional stages of design, generating a more accurate representation of the risks presented below. The potential risk contingencies costs in the proposed scheme which have been accounted for include:

- Additional design costs for the refinement of the design through Preliminary and Detailed Design, as experienced on the Langley Road junction scheme.
- Additional base construction costs which are established through the Preliminary and Detailed Design process. This may include additional full depth carriageway construction, or additional signal pits and ducts, than assumed at this stage.
- Any Third Party Land cost which may occur, which was not included within the base construction costs as it is currently unknown.
- Additional time required for stakeholder engagement and buy in, including discussions/ negotiations with Third Party land owners and the Developer of the Langley Business Park.
- Additional utility costs. We have built into the capital costs a provision for utility works, as we know this is a certain. However, given the length of the scheme is significantly longer than that of Section 1 and 2 schemes, there is risk that the number of utility services affected (and resulting cost) will be larger than anticipated within the current costs, at this stage of design.
- There is also the risk (and experience thereof) that trial holes uncover additional buried equipment not accounted for in desktop plans, which require diversion. Utility costs are notoriously expensive and can therefore significantly impact upon overall delivery costs, should further works be required than assumed at this initial design stage.
- Provision for more general, unknown and unquantifiable cost uplifts which may affect the scheme:
 - ☐ Unforeseen cost overruns due to errors, omissions or abortive work as the design progresses (although this will be best managed to reduce likelihood of occurrence).
 - ☐ Degree of complexity involved in stakeholder/ public engagement/ approvals.
 - ☐ Overrun of outline programme – potential COVID-19 impact upon resources, ability for site surveys/ intrusive works i.e. trial holes, etc.

The level of risk contingency applied to the scheme estimate is in line with the DfT recommendation at this stage of design. Whilst it may appear high, there are a number of scheme cost risks as noted above, that need to be taken account of. The most notable of these are utility costs. Statutory Undertaking costs are better known for Sections 1 & 2 only, as these are at a more progressed (Preliminary) stage of design and have had C2 and C3 searches carried out. Section 3 is still at outline/ feasibility design stage and therefore it is not practical to carry out these searches yet. From our experience with Sections 1 & 2 cost estimates, when C3 searches were carried out in August 2020, the cost estimates provided by utility companies was indeed higher than originally estimated, and therefore the full amount of risk/ contingency applied was used up to cover this. This demonstrates that it is prudent to have a high amount of risk/ contingency applied, to best avoid risk of significant overspend, and indeed inability to deliver the scheme, as the design progresses.

A summary of the estimated cost of the scheme (in 2020 factor prices) can be found below in Table 7. The table also outlines additional assumptions applied to the construction costs around overheads and other professional costs. Slough Borough Council will regularly review the costs presented each stage of the design as they become a more accurate representation of the construction costs.

Table 7 – Section 3 cost estimate

Cost Item	Cost
Base construction costs	£479,050
Main Contractor Preliminaries	£167,5600
Overheads and profit	£55,000
Risk/ Contingency	£1,043,400
Professional Fees incl. Surveys	£307,950
Scheme cost estimate (rounded)	£2,053,000

Slough Borough Council is committed to funding any cost overruns; however, these are deemed unlikely if supported by careful financial management throughout the entire project lifetime by the Council's experienced project delivery team. Regular cost updates will be reported to the Project Manager to identify any potential risks that could impact the overall cost of the project.

What is the funding package through which the scheme will be delivered?

Slough Borough Council proposes to distribute the funds across the following financial years to assist with the development of further detailed designs and scheme mobilisation before commencing construction onsite in December 2020:

Table 8 - Funding profile for the widening of Station Road between Langley Road and Langley rail station bridge

Source Year	2019/20	2020/21	Later years	Total
Business rates retention pilot				
Growth Deal or other Government Grant	Capital	1,643,000		1,643,000
Revenue				
Other public sector	SBC Capital Funds	410,000		410,000
Private sector				
Total (rounded)				2,053,000

What assessment has been made of the value for money of this scheme?

Results of the value for money assessment prepared for the scheme are discussed in this section – see Table 9 for High level summary of costs and benefits for the Section 3 scheme. The following key economic statistics will be used to demonstrate whether the Do Something option achieves value for money:

- The Present Value of Benefits (PVB), representing monetised journey time savings, discounted to 2010 prices and values;
- The Present Value of Costs (PVC), representing the total project investment costs presented in Table 7, discounted to 2010 prices and values;
- The Net Present Value (NPV), representing the absolute difference between the PVB and PVC; and
- The ratio of PVB to PVC representing the high-level Value for Money of the scheme.

In addition to the above leading to an Initial BCR, benefits from imperfect market competition and journey time reliability were also accounted for and presented to provide an Adjusted BCR in the economic appraisal.

As The economic analysis is summarised in Table 9 below and suggests that the Section 3 scheme will generate an initial PVB of £2,182,000 from journey time savings (and initial NPV of £725,000), providing a BCR of 1.50. The scheme will additionally also generate £60,200 value of benefits from imperfect market competition and £519,000 as reliability benefits leading to adjusted PVB of £2,762,000 (adjusted NPV of £1,305,000) and adjusted BCR of 1.9 which implies a Medium Value for Money (VfM) as per DfT VfM categories .

Table 9 below presents a summary of the forecast PVBs and PVCs for implementing the proposed Section 3 scheme.

Table 9 - High level summary of costs and benefits for the Section 3 scheme

Analysis of monetised costs and benefits (2010 market prices, discounted to 2010)	Present value (£) – Rounded
Present value of journey time benefits	£2,182,000
Present Value of Total Benefits (PVB)	£2,182,000
Present Value of Costs (PVC)	£1,457,000
Net present value	£725,000
Initial BCR	1.5
Present value of benefits from imperfect market competition	£60,200
Present value of reliability benefits	£519,000
Adjusted PVB	£2,762,000
Adjusted NPV	£1,305,000
Adjusted BCR	1.9

How will this scheme contribute to the natural capital of Thames Valley Berkshire?

No quantification of environmental impacts has been undertaken as part of the economic analysis. Instead, a proportionate qualitative assessment was carried out in order to assess the environmental effects likely to arise as a result of the Station Road widening scheme in accordance with TAG Unit A3 – Environmental Impact Appraisal. This section provides a closer overview of how the scheme is expected to contribute to the natural capital of Thames Valley Berkshire.

In many areas, vehicle emissions have become the dominant source of air pollutants, including carbon monoxide (CO), carbon dioxide (CO₂), volatile organic compounds (VOCs) or hydrocarbons (HCs), nitrogen oxides (NO_x), and particulate matter (PM) . Likewise, in Langley and Slough, a common source of air and noise pollution is stationary or slow-moving road traffic. The increasing severity and duration of traffic congestion are recognised to have the potential to greatly increase pollutant emissions and to degrade air quality . The rationale behind the claim of lowering emissions is that congestion causes vehicles to function at sub-optimal speeds and accelerations, leading to incomplete combustion and additional emissions of NO_x, CO, etc .

As the scheme aims to reduce the start-stop nature from slow moving traffic associated with the Station Road/ High Street, vehicle emissions are likely to decrease, consistent with previous studies. However, the Hollow Hill Lane closure is expected to increase the volume of traffic using the High Street and lead to potential higher air and noise pollution levels, if no mitigation measures are applied.

When aligned with the objectives of Slough's Low Emission Strategy and the above assumptions, the anticipated impact of the scheme on air quality and noise pollution is therefore considered to be neutral.

The historic environment has been scoped out for further assessment as the potential for affecting the key historic environmental resources and assets is considered relatively low. There are five Grade II listed buildings located in close proximity to the Langley Road/ High Street/ Station Road junction, primarily on Langley Road, however these buildings are unlikely to be impacted by the works. A high-level environmental constraints appraisal has found that the route does not run through any sensitive areas in terms of biodiversity. Likewise, in terms of drainage and the water environment, an initial assessment has found that the impacts of construction and operation of the scheme will be negligible. These findings are in line with the original Langley Station improvement scheme business case. As a result, it is expected that the impact on biodiversity and water environment will be neutral.

How will this scheme maximise social value for Thames Valley Berkshire?

Despite specific social impacts which are considered to be an important element of a scheme proposal, a detailed approach to the appraisal of social impacts has not been scoped at this stage. Instead, a proportionate approach to deliver a high-level social impact assessment has been used in accordance with requirements set out in TAG Unit A4.1. Final results are presented in a seven-point scale of beneficial, neutral or adverse. Key points are as follows:

- Journey Quality and Accidents have been previously assessed as wider outcomes to be achieved in TVB (see Page 33-34);
- Security, Access to services, Affordability, Severance, and Option and non-use values will be assessed in a qualitative manner based on professional judgement. Results will be presented in this section.

Security

Neutral – Transport interventions may impact the level of security for transport users. TAG Unit A4.1 states that security concerns are greater on roads where motorists are required to slow or stop their vehicle, such as at the approaches to signals or congested conditions. The numerical results of the modelling in previous pages describe the effects that the road widening have in terms of delays reduction on the route, reducing the instances where vehicles will be slowed or stopped. Road users are expected to be less vulnerable to crime in such circumstances, particularly when considering the overall effect of the widening of the High Street between Langley Road and Langley rail station bridge, and the combined effect of all three Sections of the northern High Street. A more detailed analysis of recorded criminal acts and incidents of antisocial behaviour should be undertaken to support a final qualitative assessment. This analysis should be accompanied by a full appraisal of the different security indicators in line with TAG Unit A4.1. As this assessment has not been undertaken due to the size and scope of the scheme, the impact on security is considered to be neutral, however, this is considered to be a conservative evaluation.

Access to services

Moderately positive – Accessibility is defined as people's ability to reach desired goods, services and activities. Accessibility benefits can be similar to transport user benefits as the changes in journey time and operating costs reduce the generalised cost associated with travel and hence make transport more affordable. Reduced journey times, operating costs and transit delays also increase the range of services that can be accessed for the same cost. Modelling results have shown positive improvements to average journey time from the Do Minimum model scenario (measured

in delay in seconds). As a result, accessibility is anticipated to increase to some extent for both car and public transport users. The overall impact on accessibility is appraised as a moderate positive benefit.

Personal Affordability

Slightly positive – Affordability of transportation is primarily a distributional issue as it can be a major barrier to the mobility of certain groups. As mentioned in the TAG Unit 4.2, the most significant impacts of the costs of travel are on young and old people, and low-income households who have reduced access to a private vehicle and particularly when travelling to employment or education. As potential changes in the cost of travel have not been evaluated, the assessment presented in this section provides a ‘light touch’ qualitative consideration of affordability from a wider perspective. The results of this high-level analysis should be confirmed by the TUBA software or an equivalent process. For the proposed scheme, as sufficient data or valuations were unavailable to undertake a quantitative approach, it was considered more amenable to appraise this impact in a qualitative manner.

Following guidance in TAG Unit 4.1, positive affordability impacts may arise as an indirect consequence of an intervention if the intervention is implemented to improve transport efficiency, accessibility and/or safety. As widening is expected to reduce congestion along the route and improve efficiency, leading to reduced vehicles idling, braking and accelerating, a reduction in vehicle operating costs is anticipated. In some cases, minor affordability disbenefits can be found, likely caused by increased vehicle speeds leading to increased fuel consumption. However, the decreased vehicle operating costs are expected to outweigh these affordability disbenefits. Marginal safety benefits could be attributed to the scheme as a result of a reduction in the start-stop nature of congested traffic. Therefore, the overall impact of the scheme to personal affordability is appraised as slight beneficial.

Community Severance

Neutral – Community severance is defined in TAG Unit A4.1 as the separation of residents from facilities and services they use within their community caused by substantial changes in transport infrastructure, or by changes in traffic flows. This impact is of particular importance for certain social groups, including people without access to a car, children, older people, and people with disabilities and parents with pushchairs. As no significant traffic volume change is expected as a result of the scheme, the impact is likely to be neutral. In addition, the scheme is not expected to introduce or remove barriers to pedestrian movement and will continue to support existing pedestrian crossing facilities to access education sites close to the proposed scheme, including Langley College. The scheme’s neutral impact on community severance is important during the current COVID-19 pandemic where communities are encouraged to stay local which could result in an increased number of pedestrians walking in Langley Village.

Option and non-use values

Neutral – Option values and non-use values relate to the implementation or withdrawal of a public transport service. TAG Unit A4.1 requires that option values and non-use values are assessed if the scheme being appraised includes measures that will substantially change the availability of transport services within the study area. As the scheme does not include any changes to public transport routes or services provided in the area, no further appraisal is required for this indicator.

Apprenticeships

Neutral – The development phase (project management and design) of this scheme will not directly produce any apprenticeships. However, Slough Borough Council will work closely with the Slough

Academy to promote any opportunities that arise for apprentices during this scheme. The Council will also look to consider the use of apprentices as a criterion when procuring construction services.

3. Deliverability and risks

How secure are the funding contributions from your own organisation and elsewhere?

The 20% local contribution will comprise of Slough Borough Council capital funds and are considered a reliable source of funding.

A further extension to the scheme, which will deliver highway widening of a similar nature along the southern section of Langley High Street from Elmhurst Road to the A4, is not proposed for funding within the current Growth Deal. However, Slough Borough Council is exploring additional sources of funding to support the completion of this additional scheme.

What are the key scheme milestones?

The key milestones of the proposed scheme are presented below:

Table 11 - Key project milestones for the widening of Station Road between Langley Road and Langley rail station bridge scheme.

Date	Project Milestone
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January 2020 (already completed)	Feasibility design and initial cost estimate for Section 3 scheme.
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July 2020 (already completed)	Initial engagement between Slough Borough Council's Development Control Team and Third Party Land Owners/ Developers. Investigations into requirements for Third Party Land. (To be ongoing through programme).
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August/ September 2020	Additional local junction traffic modelling of Station Road/ High Street/ Langley Road and High Street/ Meadfield Road junctions to incorporate a two lane approach and exit to the Station Road arm (Section 3 scheme), to demonstrate the benefit of the scheme. Development of Full Business Case for Section 3.
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November 2020	Financial (LEP) approval.
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December 2020 – January 2021	Preliminary Design.
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Refinement and update of scheme cost.

Q1 2021	Stakeholder and public engagement/ consultation
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Q2 2021	Detailed Design.
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Refinement and update of scheme cost.

Q3 2021	Mobilisation and Statutory consents.
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Q3/Q4 2021	Commencement of site works.
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Q1 2022	Completion of site works.
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Slough Borough Council is confident that the proposed scheme can be successfully completed on time and in budget. The internal Council management structure has a wealth of experience in managing capital infrastructure improvements including close monitoring of cost and project progress. The recent delivery of the Station Road/ High Street/ Langley Road junction in March 2020, following Business Case submission in May 2019 demonstrates Slough Borough Council's competency in the timely management of transport infrastructure improvements.

Consideration has also been taken for the effects of COVID-19 on the proposed programme outlined above. At the time of writing (August 2020), the COVID-19 social distancing restrictions are continuing to ease and thus, the Council remain optimistic that the pandemic will have minimal impact on the delivery of the scheme. Slough Borough Council are confident that the next steps in the delivery of the proposed scheme, primarily feasibility/preliminary design and public engagement, can be successfully completed through computer and web-based work with minimal face to face interactions, eliminating the risks to individuals or the delivery of the project. The Council continue to closely monitor the restrictions surrounding COVID-19 and will take appropriate precautions during the development and delivery of the proposed scheme in line with Government guidelines.

Construction works will be assigned to Slough Borough Council's Direct Service Organisation (DSO) (Contractors), as an extension to the original scheme works recently completed on site at the High Street/ Langley Road junction and the original Langley Station and Access Improvements scheme. Slough Borough Council will continue to use the procurement process already in place for the previous schemes which has proven to provide a high quality and efficient service. In addition, resources are readily available from the original scheme and are ready to be mobilised at short notice. The Council will consider using the same contractor for this scheme and Sections 1 and 2 (widening of the carriageway between Langley Road and Elmhurst Road and the Meadfield Road junction improvement scheme), as previously submitted to the TVB LEP, to maximise cost and time efficiency. Therefore, Slough Borough Council deems it appropriate not to engage in any new, competitive procurement process.

What are the proposed arrangements for project management?

The Project Team in Slough Borough Council will be responsible for ensuring that the scheme follows the identified programme and will maintain overall responsibility for the delivery of the project. Each workstream will report quarterly to the Project Team on progress and expenditure. This method of governance has been effective for previous transport network improvements including the original Langley Station and Accessibility improvements and SMaRT Phase 1 and will be scaled appropriately for a scheme of this size. A consistent project team will be used in Slough Borough Council for the delivery of the proposed scheme, Section 1 widening of High Street between Langley Road and Elmhurst Road and Section 2 High Street/ Meadfield Road junction improvements which have secured LEP conditional funding approval. This will ensure that all three schemes are harmonious, and the Council will seek to use value engineering to deliver a more efficient construction programme, including reduced disruption to road users where possible. Responsibility for accurate, timely and appropriate communications within the project team rests with the Slough Borough Council Project Manager, who will also ensure that the Project Board is kept up to date with programme developments. Project team meetings are held on a monthly basis with regular updates provided to the LEP Board via the Berkshire Strategic Transport (BSTF) forums (officers and members). Throughout the project, the risk register will be maintained and updated as necessary, with mitigating and contingency measures used appropriately throughout the scheme delivery, including the risks associated with COVID-19. The Council will seek to allocate risks to the appropriate party to ensure the impacts associated with each risk are spread across the entire project team and thus mitigating the overall risk of the scheme.

Construction works will be assigned to SBC's DSO (Contractors), as an extension to the original scheme works completed on site at the High Street/ Langley Road junction in March 2020. Contracts will likely mirror the structure of the High Street/ Langley Road scheme. Slough Borough

Council anticipate that the same construction works contractor will be used for the proposed scheme, as for the Section 1 and 2 schemes which have secured conditional LEP funding approval.

What are the principal risks linked to the scheme’s delivery, and what actions will be (or have been) taken to mitigate and manage these?

A summary of the key strategic risks identified during this study can be found in the Table 12 below, including the risk COVID-19 presents to the delivery of the scheme.

Risks will continue to be reviewed as the project develops and progresses through feasibility/ detailed design stages. Mitigation actions have also been identified and described below.

Table 12 - Risk register for the widening of Station Road between Langley Road and Langley rail station bridge scheme.

Risk Likelihood

(H / M / L) Severity

(H / M / L) Mitigating actions

Increased cost due to need to protect/ relocate statutory undertakers equipment. M M

- ☐ C2 utility searches were carried out for Section 1 and 2 schemes prior to the development of Section 3, as they are at a more advanced stage of design. C2/ C3 searches have not yet been undertaken for Section 3 yet, although it is known that there will be a number of utility impacts, based on utility knowledge either side of the Section 3 scheme.
- ☐ C2/C3 NRSWA searches will be undertaken at the outset of Preliminary Design, so design engineering can be undertaken to best reduce impact on utilities.
- ☐ Early engagement with statutory undertakers at the outset of detailed design (C4), as experience shows that utility works are often the critical path through delivery.

Impact of COVID-19 delaying consultation and scheme delivery. M L

- ☐ Slough Borough Council will proactively monitor the COVID-19 pandemic situation with regards to public/stakeholder consultations and will seek alternative arrangements to ensure the safety of consultation attendees. For the Section 1 and 2 schemes, consultation was undertaken through virtual workshops which proves a successful alternative.
- ☐ If by the time of construction, pandemic continues to require social distancing measures, Slough Borough Council will take appropriate measures, guided by the central Government, to ensure the safety of construction workers.

Third Party Land M M - The carriageway widening as part of the proposed scheme requires the following Third-Party land:

- o A portion of East Berkshire College entry frontage, on the western side of Station Road, including the grassed verge between the college car park and the carriageway. This land is included within Slough Borough Council’s development control remit.
- o A portion of the vehicular entrance to Langley Business Park, on the eastern side of Station Road. There are plans for the redevelopment of the Business Park to a Data Centre with supporting residential and light retail opportunities. Early engagement has already taken place between Slough Borough Council and the Developer to outline the Section 3 proposals to ensure that the redevelopment of the site is fully compatible with the scheme.
- o A portion of the grassed frontage to the residential block just north of Scholars Walk, on the western side of Station Road.

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- Slough Borough Council's development control team have already started the process of engaging with the landowners/ Developers and will continue to develop agreements/ arrangements to safeguard the land required to deliver the scheme. As most of the land required has already been identified as being within Slough's permitted development control, the risk is reduced.
 - ☐ Slough Borough Council will continue discussions with Third Party Landowners/ Developer of the Business Park site throughout the design process in order to secure the land required at the earliest opportunity.
 - ☐ Should there be any issues with the acquisition of land required, the design team will endeavour to review and adjust the alignment of the carriageway widening so far as is feasible, so that the scheme can still be progressed.
- Environmental issues L L ☐ The scheme requires a small section of grassed land, acting as frontage to the residential block just north of Scholars Walk. This is not expected to result in any environmental issues of significance.
- ☐ It is anticipated that Slough Borough Council will undertake a full Noise and Air Quality assessment of the scheme determine if there are any adverse impacts of the widening in relation to closer proximity of traffic to residential receptors. However, as no significant increase in traffic as a result of the scheme is expected, this risk is considered to be low.
 - ☐ It is likely that the Noise and Air Quality assessment may find both beneficial and adverse impacts: potential benefit being the reduction in slow moving/ stationary traffic and potential disbenefit being moving traffic closer to residential receptors on the western side of Station Road only.
- Road safety M L ☐ The most likely potential road safety issues identified to date is the ability for traffic to turn out of the three side roads on the western side of Station Road, given the increase in carriageway lanes on Station Road.
- ☐ The design has already taken the above into account for Alderbury Road and is proposing to filter from four lanes to two lanes by the Station Road/ Alderbury Road junction, so there is no change to the turning arrangements as currently exist on site. To improve the right turn into Alderbury Road from Station Road, a right turn filter lane is proposed which will provide improvement for this movement over the existing layout.
 - ☐ The scheme will undergo an independent Road Safety Audit to determine if there are any road safety issues which may be caused by the scheme.
 - ☐ Any road safety issues identified by the Road Safety Audit will be address by the scheme Designer to mitigate them, as far as reasonably practicable.
- Objections through planning /consultation process L M ☐ Targeted public consultation and close working with Ward Members and key stakeholders to achieve early 'buy in'.
- ☐ Undertake an assessment so that the benefit of the scheme can be clearly communicated with the public and stakeholders.
- Impact on residential properties located on High Street/ Station Road L M ☐
- There are a number of residential properties located on High Street/ Station Road who will be temporarily disrupted during construction of the scheme. As the impacts on these residential properties is expected to be short term and temporary during the construction of Section 3 , a detailed assessment of the number of properties affected, or the severity of the impact, has not been undertaken.

☐ Slough Borough Council will undertake public consultation on the scheme to obtain feedback from residents on the proposals and look to amend the design where feasible to address any significant concerns/ issues.

Increase in construction costs L M ☐ Scheme to be delivered using the Council's term contractor using an agreed schedule of rates.

☐ Appropriate levels of contingency have been built into the initial cost estimates. Design engineering also to be undertaken to reduce overall scheme cost, including the potential to save time and cost by implementing Sections 1, 2 and 3 together.

☐ Reasonable level of confidence in initial scheme costing, based on actual scheme cost of junction improvement scheme delivered in 2019/20 for the High Street/ Langley Road junction.

☐ Scheme costs will be refined through Preliminary Design to provide increased level of confidence. C3 utility searches will be considered to be carried out during Preliminary Design to better assess utility costs.

☐ SBC to issue S151 letter to formally support delivery of the scheme should construction costs overrun.

Delay in construction or cancellation of the WRLtH L M ☐ Should the construction of the WRLtH be delayed or project completely cancelled, the anticipated step change in traffic demand along High Street and Meadfield Road will not occur, as Hollow Hill Lane will remain open to traffic. However, with peak hour congestion already witnessed along Station Road/ High Street, the strategic need for the scheme will remain the same. Reducing congestion will enhance the transport network to support and accommodate future growth in employment and housing. The scheme will also still offer an extension to the adjacent High Street/ Langley Road junction improvements delivered in March 2020, plus the Section 1 and 2 improvements which have secured LEP conditional funding approval.

Failure to coordinate with previous parts of the scheme / highway works on High Street L L

☐ The proposed scheme has already been designed to feasibility design stage to account for and tie into the junction improvement scheme at High Street/ Meadfield Road (Section 2) and the widening of the High Street between Elmhurst Road and Langley Road (Section 1), to ensure they are harmonious.