



Worcestershire County Council

EVESHAM TRANSPORT MODEL

Pre-Feasibility Option Testing





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Pre-Feasibility Option Testing

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1 INTRODUCTION

1.1 BACKGROUND

- 1.1.1. WSP has been commissioned by Worcestershire County Council (WCC) to carry out a pre-feasibility assessment of a number of submitted improvement schemes being considered for inclusion in the Evesham Transport Strategy, many of these schemes have been submitted by members of the public.
- 1.1.2. The Evesham Transport Strategy when completed will set out a long-term investment plan for Evesham's transport infrastructure and services, to enable it to support development growth and maintain and enhance the economic vitality of the town. WCC has commissioned the construction of a multimodal VISUM model, which will be used to test potential schemes and options being considered for inclusion in the Evesham Transport Model. There are a considerable number of possible options to assess and WCC recognises that multiple model runs would be both costly and time-consuming, hence the commission of WSP to assess the practicability of providing some of these improvement schemes, with the aim of ruling-out any scheme that cannot be practically delivered due to a variety of potential constraints.
- 1.1.3. This report provides the findings of a high level assessment of some of the submitted options that could potentially address the traffic challenges experienced at a number of key priority locations within Evesham. It considers the ability to practically deliver each option within the available highways space or with proportionate land, and whether the various options provide infrastructure that complies with current guidance and best practice. More details of the criteria for the assessment as agreed with WCC are provided in Section 3 of this Report.

1.2 PURPOSE OF REPORT

- 1.2.1. As mentioned above WCC has a considerable number of improvement schemes to consider, all of which aim to address traffic challenges at various locations within Evesham. This report aims to identify the options that can be practically delivered and therefore will be given further consideration for inclusion in the emerging Evesham Transport Strategy.
- 1.2.2. It sets out a methodical assessment of each of the suggested options against the pre-identified assessment criteria and with supporting evidence it provides a clear conclusion as to whether an option is suitable or not for further consideration.

1.3 REPORT STRUCTURE

- 1.3.1. The remainder of this report is structured as follows:
 - i **Section 2** - sets out all the initially identified options and provides a short list of options being considered for further assessment in this report;
 - i **Section 3** – sets out the criteria for the assessment and the methodology used for the assessment;
 - i **Section 4** – provides an assessment pro-forma for each scheme and weighs each option against the identified Assessment Criteria set out in Section 3; and
 - i **Section 5** – summaries the outcome of the assessment and the recommendations for each option.

2 OPTIONS DESCRIPTION

2.1 INTRODUCTION

2.1.1. A total of 19 individual options have been assessed within this report and are broadly described in the following sections. The locations of the proposed schemes are shown on **Figure 1** included in **Appendix A** of this report.

2.2 OPTIONS EXAMINED

2.2.1. The options assessed as part of this Pre-Feasibility Study are detailed under the following eight broad headings based on the type of scheme being proposed.

Junction Improvements

2.2.2. The following three schemes under this heading are included in WCC's Local Transport Plan fourth edition (LTP4). The LTP4 sets an ambition to investigate whether or not capacity and/ or safety can be improved at the following three junctions within Evesham:

- i **Scheme 1.1** – An expanded Abbey Bridge/ Waterside/ Cheltenham Road/ Pershore Road junction;
- i **Scheme 1.2** – A4184 High Street/ A4184 Greenhill/ B4624 Worcester Road junction; and
- i **Scheme 1.3** – A4184 Cheltenham Road/ Davies Road junction.

2.2.3. The investigation will consider lay-out changes and signalling apparatus changes (but signals will be retained at all three junctions).

Induced Queuing to Alleviate Port Street (Air Quality Management Area)

- i **Scheme 2.1** – This scheme considers the signalisation of the junction of Broadway Road and Elm Road, with the aim of holding town-centre-bound queuing traffic on Elm Road and on Broadway Road, which are both much wider and more 'open' than Port Street, thereby alleviating the air quality problems of Port Street.

Changes to the Town Centre Road Network

2.2.4. The following seven proposals from Evesham residents concentrate on changing the road network in Evesham Town Centre and have been collated by Vale of Evesham Civic Society. Scheme drawings of these proposals are provided in **Appendix A** of this report.

- i **Scheme 3.1** – This proposal would see Swan Lane, Chapel Street and Mill Street all converted to two-way traffic flow. This scheme also considers the following supplementary proposals:
 - Replace signals at Swan Lane/ High Street junction with a roundabout;
 - Prohibit left turns from Swan Lane and right turns from Oat Street; and
 - Relocate Swan Lane car parking to Chapel Street car park.

- i **Scheme 3.2** – This proposal would see the one-way restrictions on Swan Lane, Chapel Street and Oat Street reversed, together with the conversion of Mill Street to two-way working. This proposal contends that access to Mill Street should be limited to cars and light vehicles (enforced with physical width limiters) and that the buses that would otherwise have used Mill Street could instead be rerouted (to the town centre) via Abbey Bridge, or that the existing bus stand between Oat Street and Swan Lane could be swapped with the taxi rank and disabled parking.

This proposal further posits that the traffic signals on the Avon Street/ High Street / Swan Lane junction could be removed (but with new signals installed at the Oat Street/ High Street junction combined with a reversal of the one-way operation of Oat Street.

This scheme considers the following supplementary proposal: Prohibit right turns from Oat Street.

- i **Scheme 3.3** – This proposal would see Mill Street converted to two-way working, and it would see three mini-roundabouts introduced on that road; one on either end, and a third at the junction with Mill Bank. This proposal includes the suggestion that a 'priority' system would allow cars on Mill Street to give way to buses traveling towards High Street.

2.2.5. This scheme also considers the following supplementary proposals:

- i Pedestrian bridge over Chapel Street; and
- i Widen Oat Street.

- i **Scheme 3.4** – This proposal would see three box-junctions introduced; one either end of Mill Street and a third on the junction of High Street/ Oat Street. It would see Mill Street converted to two-way traffic flows and it would see a one-way introduced on Rynal Place.

- i **Scheme 3.5** – This proposal would see a large 'gyratory' one-way system introduced onto Bridge Street - Waterside - Abbey Road - Vine Street - High Street (southern end) with the existing one-way on Swan Lane - Chapel Street - Mill Street reversed. Traffic signals would be replaced with roundabouts at the junctions of Bridge Street/ Waterside, Waterside/ Abbey Road and High Street/ Swan Lane.

2.2.6. This scheme considers the following supplementary proposal: Make system anti-clockwise.

- i **Scheme 3.6** – This proposal would see Mill Street converted to two-way, the one-way restrictions on Oat Street, Swan Lane and Chapel Street reversed, a new stretch of one-way introduced on High Street (between Oat Street and Swan Lane) and a right turn prohibition for traffic emerging from Oat Street onto High Street (requiring those wishing to travel north on High Street to first travel south to the roundabout at Merstow Green).

- i **Scheme 3.7** – This option would see two-way traffic introduced onto the stretch of Mill Street south of its junction with Mill bank, new one-way restrictions imposed on Mill Bank and Conduit Hill, whilst the existing one-way restrictions on Oat Street, Chapel Street, Swan Lane and the Mill Bank to Oat Street stretch of Mill Street would all be retained. This option also includes traffic signals on the Mill Street/ Bridge Street junction.

2.2.7. This scheme considers the following supplementary proposal: Simply introduce two-way traffic to the stretch of Mill Street as indicated in the plan (i.e. from Bridge Street to Mill Bank), keeping the remainder of the one-way system as-is (and without new traffic signals at the junction of Bridge Street/ Mill Street).

Further Suggestions from the Civic Society

2.2.7.1 Schemes 4.1 to 7.1 detailed below also came via the Civic Society.

20 MPH Limit.

2.2.8. Introduction of a 20 mph limit either:

- i **Scheme 4.1** – in the town centre; or

- i **Scheme 4.2** – in the whole town.

Abbey Road/ Waterside Junction.

2.2.9. Over and above the LTP4-led assessment of this junction set out above (i.e. **Scheme 1.1**), this assessment considers the following further suggestions relating to the Abbey Road/Waterside Junction:

- i **Scheme 5.1** – Add a right turn (from Cheltenham Road) filter light to the signals and/ or lengthen the right-turn lane; and

- i **Scheme 5.2** – Replace signals with a roundabout.

New Roundabouts

2.2.10. New roundabouts are proposed at these two locations:

- i **Scheme 6.1** – Worcester Road/ Tesco entrance; and

- i **Scheme 6.2** – Cheltenham Road/ Davies Road

Proposed New Road

- i **Scheme 7.1** – This proposal would see a new road built to link Common Road to the A46, via the dismantled railway.

New or Amended Traffic Signals

2.2.11. The following two suggestions relating to traffic signals:

- i **Scheme 8.1** – New traffic signals at the junction of Elm Road/ Offenham Road; and

- i **Scheme 8.2** – A left-filter signal from Worcester Road to Greenhill.

2.3 SUMMARY

2.3.1. Each of the above-mentioned 19 options are weighed against the criteria set out Section 3 of this report and a simple pro forma have been used to provide the details of the performance of each option against the assessment criteria; these are provided in Section 4 of this report.

3 CRITERIA OF ASSESSMENT

3.1 INTRODUCTION

- 3.1.1. As detailed in the WCC's Consultants Brief for this commission, the assessment needs to consider the ability to practically deliver each option either within the available highway space or with proportionate acquisition of land, and that any option that requires a change in road layout should only be considered if it delivers infrastructure that complies with current guidance and best practice.
- 3.1.2. This assessment therefore considers the following in line with WCC's Consultant Brief:
- i The ability to provide an option within the available highway space or with proportionate acquisition of land. Also considered is whether the delivery of an option would require extensive acquisition/ demolition of property or felling of important trees/ hedges, in particular if this involves any listed buildings or buildings of character (or other local significance);
 - i The ability of an option to provide a scheme that meets standards set in current guidance and best practices;
 - i Whether an option precludes the passage of vehicles that are essential to the 'routine life' of the town, such as HGV/LGV delivery vehicles, public service vehicles and the emergency services; and
 - i Whether the cost of an option is likely to be disproportionate to its likely benefits or if it is likely to be beyond the funding that WCC might reasonably expect to assemble, either through direct funding or developer contributions. The cost of an option does overlap somewhat with acquisition of land or property of course, but an option might be costly without the need for such purchases. The benefits of an option will be expressed in terms of likely improvement to traffic capacity (rather than as costed-up estimates), and will be considered for the location of the option in question and, where appropriate, for the wider network too.
- 3.1.3. In addition to this the assessment considers the implications of a scheme on the environment and safety.
- 3.1.4. In summary, the criteria for this assessment are:
- i Guidance and best practice;
 - i Land and property;
 - i Vehicle access;
 - i Environmental and Safety Implications; and
 - i Benefits and costs.

3.2 ASSESSMENT CRITERIA SCORING

- 3.2.1. The assessment scores the performance of an option against the identified criteria set out in Section 3.1 using the 'Red-Amber-Green' (RAG) scoring system defined in Table 1 below and the performance of each option against the assessment criteria provided in Section 4 of this report.

Table 1 - RAG Scoring System for the various Assessment Criteria

| Assessment Criteria | Red (R) | Amber (A) | Green (G) |
|--|--|--|---|
| Land and Property | Scheme requires the purchase of an extensive amount of land or property outside the available highway space and or involves significant tree felling/impact on properties of significant importance. | Scheme requires the purchase of a reasonable amount of land or property, and or involves minimal tree felling. | Scheme can be provided within available highway space with no/minimal tree felling. |
| Guidance and Best Practice | All or majority of the elements of the proposed scheme does not meet current guidance and best practice standards | A few of the elements of the proposed scheme do not meet current guidance and best practice standards. | All aspects of the proposed scheme meet current guidance and best practice standards |
| Vehicle Access | Scheme significantly restricts access of vehicles that are essential to the 'routine life' of the town. | Scheme allows limited access of vehicles that are essential to the 'routine life' of the town. | Scheme allows the easy passage of vehicles that are essential to the 'routine life' of the town |
| Environmental and Safety Implications | Scheme significantly impacts adversely on safety and or the environment at the location in question. | Scheme has minimal impact on safety and or the environment at the location in question. | Scheme improves safety and the environment at the location in question. |
| Benefits and Cost | Scheme cost is significantly disproportionate to likely benefit. | Insignificant difference between scheme cost and likely benefit. | Likely scheme benefit significantly outweighs cost. |

4 ASSESSMENT OF OPTIONS

4.1 INTRODUCTION

- 4.1.1. This assessment has been informed by the findings of a desk-top study, a Site Meeting with WCC on the 27 February 2018 and subsequent site visits undertaken by WSP on Wednesday, 21 March 2018 in the PM peak and on Thursday 22 March 2018 in the AM peak.
- 4.1.2. Each of the options detailed in Section 2 of this report has been assessed against the identified criteria set out in Section 3 of this report and the detailed on the assessment pro-forma provided in this Section.

| | | |
|---|-----|---|
| Option Name | 1.1 | Junction Improvement - An expanded Abbey Bridge/ Waterside/Cheltenham Road/ Pershore Road Junction |
| Scheme Description | | |
| <p>This scheme is included in Worcestershire County Council's Local Transport Plan fourth edition (LTP4); and sets an ambition to investigate whether or not capacity and/ or safety can be improved at this junction. Considerations at this junction include lay-out changes and changes to the existing signalling.</p> <p>The location of this scheme is annotated as Scheme 1.1 on Figure 1 – Location of Schemes provided in Appendix A in this report.</p> | | |
| Existing Conditions | | |
| Junction Description | | |
| <p>The existing layout and conditions surrounding this junction are provided in this section.</p> | | |
| | | |
| <p>The junction is a signal controlled crossroads located south of Evesham Town Centre and immediately south of the River Avon.</p> | | |
| <p>All arms at the junction have single lane approaches flaring to 2 lanes on approach to the stop line. Each approach has one lane designated for left and ahead movements, and one for right turners. The exits on each arm are single lane exits.</p> | | |
| <ul style="list-style-type: none"> • The Abbey Bridge arm provides access to and from the Evesham Town Centre, the A46 North and built-up areas north of Evesham; • The Cheltenham Road arm is used for journeys to and from the A46 South, colleges south of Evesham and built-up areas south of Evesham; • The Pershore Road arm is for journeys to and from Hampton, Pershore , Worcester and areas to the west of Evesham; and • The Waterside arm is used for journeys to and from settlements to the east of Evesham and the Evesham Community Hospital, and also provides connections to the A46 via Elm Road. | | |
| <p>The junction was updated in 2014 as part of the scheme to replace Abbey Bridge. The signals at the junction were updated at that time.</p> | | |

Site and Desk Study Observations

As shown on the environmental constraint map provided in **Appendix C**, the junction lies adjacent to the River Avon and within Flood Zone 3, which means there is a 1 in 100 or greater annual probability of it being flooded by the river.

This junction is on a key approach/exit to Evesham Town Centre and lies on a corridor where significant land has been designated for housing and employment uses within the South Worcestershire Development Plan. Future development is anticipated to put additional pressure on this junction.

During the peak hours, few vehicles were observed to turn right from the Cheltenham Road approach; meaning that one of the two lanes on that approach is largely unused. This is observed to be due to most drivers turning right at the Fairfield Road/Cheltenham Road Junction before reaching the junction.

Long queues were observed on the Cheltenham Road arm in both the AM and PM peak, extending back to and beyond the Davies Road junction, with knock on impacts at that junction. During the AM peak, extensive queuing was also observed on the Pershore Road approach to the junction. The Abbey Bridge arm also experiences queuing in both peak periods.

Traffic data obtained from Google Application Programming Interfaces (API) show that within the AM and PM Peaks on the approaches to the junction, particularly on the Pershore Road and the Cheltenham Road arms experience significant queuing which impacts on other surrounding junctions. Screenshots of the Google traffic data are provided in **Appendix D**

MOVA (Microprocessor Optimised Vehicle Actuation) operates at this junction and therefore signal timings at this location are optimised at any given time to suit the demand at the junction, however it was observed the cycle time at the junction is about 150 seconds, which is 30 seconds longer than the generally accepted maximum of 120 seconds.

As part of the updates to the junction in 2014, various options were considered and modelled using LinSig, the industry standard tool for assessing the capacity of signalised junctions. A review of the LinSig model has shown that the layout and signal specification implemented, and as currently in operation on site, performed the best of all the options considered.

As mentioned earlier and illustrated on the Planned Developments Map provided in **Appendix B**, there is significant development planned for sites to the south west of Evesham and this will put additional pressure on the junction.

An expanded signalised junction to cater for the current and future demand is considered likely to require significant upgrades of the approach arms, which will be costly and will require the purchasing of land and property.

Photographs of this location are provided in **Appendix E**.

Assessment of Option against Identified Criteria

| | | | |
|-----------------------------------|---|-------|---|
| Guidance and Best Practice | <p>The Abbey Bridge provides a constraint to meeting standards. This restricts the changes that can be made on that arm, since any changes would require a new bridge to be built.</p> <p>It is possible to have an improved signal junction to meet DMRB standards at this location, however this can be only be achieved with purchasing of land and property at this location, and potentially building of a new bridge.</p> <table border="1" data-bbox="983 1675 1414 1727"> <tr> <td>Score</td> <td>A</td> </tr> </table> | Score | A |
| Score | A | | |
| Land and Property | <p>In order to achieve the full benefit of this scheme some of the approaches and exits at this junction would have to be made wider and this would require a substantial amount of land and property purchase.</p> <p>Due to the constraints of Abbey Bridge and the River Avon at this location, any land and property would have to be acquired to the south of the junction along Pershore Road, Cheltenham Road and Waterside.</p> <table border="1" data-bbox="983 1944 1414 1995"> <tr> <td>Score</td> <td>R</td> </tr> </table> | Score | R |
| Score | R | | |

| | |
|---|--|
| Vehicle Access | <p>The scheme will not preclude the passage of vehicles which are essential to the ‘routine life’ of the town, such as HGV/LGV delivery vehicles, public service vehicles and emergency services. It could allow improved passage of these vehicles should the traffic conditions at this location be improved by the proposed scheme.</p> <p>Specifically, Evesham Community Hospital is located in close proximity to the junction, on Waterside. An improvement to the junction would improve access to the hospital, for staff visitors and emergency vehicles. Also, to the north of the junction, accessed from Abbey Road is the Fire Station. Improvement to the junction would improve access for the fire service to the local road network.</p> <p>However, any improvement here might re-emerge as greater congestion elsewhere on the Evesham road network. Potentially more through traffic could be encouraged if the junction was significantly improved, which could ultimately be detrimental to the efficiency of the town’s road network</p> |
| Environmental and Safety Considerations | <p>Any improvement to the signals could be to design standards only if third party land could be acquired, and would cater for non-motorised users.</p> |
| Benefits and Cost | <p>Scheme cost – could potentially be Very High due to the need to purchase a significant amount of land and private property, and may require the building of a new bridge, to provide any measurable improvement at the junction.</p> <p>Benefits – if a scheme was developed to significantly change the junction the benefits could be significant due to the strategic location of the junction, and the potential upstream benefits at the Davies Road junction. However to fully cater for the existing and future traffic flows, there could be considerable disbenefit for local residents and at downstream junctions. The scale of the junction would also be beyond what is deemed suitable for such an urban location. Overall the benefits are considered to be medium, but would be subject to further detailed study.</p> |
| Summary and Conclusion | |
| <p>This is a key junction, which provides connection to Evesham Town Centre and areas beyond Evesham, there is also a considerable amount of development planned in close proximity to the junction. This junction was observed to be the busiest of the three junctions included within the LTP4 recommendations and considered as part of this pre-feasibility assessment. From site observations it is evident that there are congestion issues at this location that need addressing.</p> <p>Taking into consideration the Worcestershire Development Plan allocations which show a considerable amount of planned developments in close proximity of this junction, it is considered likely that this junction will experience more traffic congestion in the future, which may have a knock on effect at other locations.</p> <p>A scheme at this junction may potentially ease congestion issues at the Cheltenham Road / Davies Road junction. However any significant scheme here would incur substantial costs in terms of land and property acquisition, and potentially have impacts at downstream junctions and in the town centre. The scale of the junction would also be out of character for the local area.</p> | |
| Overall Conclusion | <p>Suitable for further consideration, but the Evesham Transport Model should be used to identify what the impacts on the town centre as a whole would be from any improvement at this location, and comparison made with other, more strategic solutions. Further detailed study is required before it can be recommended as part the Evesham Transport Strategy.</p> |

| | | |
|--------------------|------------|---|
| Option Name | 1.2 | Junction Improvement - A4184 High Street/ A4184 Greenhill/ B4624 Worcester Road Junction |
|--------------------|------------|---|

Scheme Description

This scheme is included in Worcestershire County Council's Local Transport Plan fourth edition (LTP4); and sets an ambition to investigate whether or not capacity and/ or safety can be improved at this junction. Considerations at this junction include lay-out changes and changes to the existing signalling. The location of this scheme is annotated as **Scheme 1.2** in **Figure 1** provided in **Appendix A** in this report.

Existing Conditions

Junction Description

The existing layout and conditions surrounding this junction are provided in this section.



The junction is a traffic controlled priority junction located north of Evesham Town Centre and immediately adjacent to the Evesham Train Station which lies in the southwestern corner of the junction.

- The Greenhill arm provides access to and from the A46 North, the A44 North and built-up areas north of Evesham. It consists of a 2 lane approach with a dedicated right turn lane and 1 exit lane;
- The High Street arm of the junction is on a bridge over the Cotswold Railway line and provides access for journeys to and from Evesham Town Centre and areas to the south of Evesham. It consists of a 1 lane approach and an exit lane; and
- The Worcester Road arm provides access to the Evesham Shopping Park and the A44 which provides connections to Worcester and the M5. It consists of a 2 lane approach with a short left turn lane and an exit lane.

| Site and Desk Study Observations | | | |
|---|---|-------|---|
| <p>The junction is bounded by residential and employment uses to the north and by the Cotswold Railway in the south, where access to the junction is via the High Street bridge. This junction is on a key approach/exit to Evesham Town Centre and provides connections to the north of Evesham and beyond.</p> <p>MOVA operates at this junction and therefore signal timings are optimised to suit the demand at this junction.</p> <p>During site observations, congestion was observed on a few occasions on the High Street arm of the junction going towards the town centre. This appeared to be as a result of queues and slow traffic from the Swan Lane signal junction on the High Street.</p> <p>Photographs of this location are provided in Appendix E.</p> <p>Traffic data obtained from Google API show that within the AM Peak the approaches to the junction experience slight levels of congestion, with traffic approaching at slow speeds on Worcester Road stretching back to the retail park, and on the Greenhill approach to the junction. The Worcester Road to High Street traffic blocks vehicles turning left due to the short flare for left turners at the junction. However only a handful of vehicles were observed to make that movement. Screenshots of the Google traffic data are provided in Appendix D.</p> | | | |
| Assessment of Option against Identified Criteria | | | |
| Guidance and Best Practice | <p>A scheme that meets DMRB standards can be provided at this location with proportionate amount of land and property purchase.</p> <p>However due to the bridge on the High Street arm, it will be costly to expand the High Street arm of the junction and thereby providing a constraint to what can be done at this location. Also due to the presence of the Evesham Train Station and a retaining structure to the south of Worcester Road any land and property acquisition would have to be obtained from the northern part of junction.</p> <table border="1" style="width: 100%; margin-top: 10px;"> <tr> <td style="width: 60%;">Score</td> <td style="background-color: #FFD700; text-align: center;">A</td> </tr> </table> | Score | A |
| Score | A | | |
| Land and Property | <p>In order to achieve the full benefit of this scheme some of the approaches and exits at this junction would have to be widened, specifically on the Worcester Road arm and this would require a third party land and property purchase.</p> <p>Due to constraints surrounding the High Street Bridge and the Evesham Train Station to the south of Worcester Road any land or property acquisition would have to be obtained from the north of the junction in the vicinity of the Vauxhall Garage.</p> <table border="1" style="width: 100%; margin-top: 10px;"> <tr> <td style="width: 60%;">Score</td> <td style="background-color: #FFD700; text-align: center;">A</td> </tr> </table> | Score | A |
| Score | A | | |
| Vehicle Access | <p>The scheme will not impact upon the passage of vehicles which are essential to the 'routine life' of the town, such as HGV/LGV delivery vehicles, public service vehicles and emergency services,</p> <table border="1" style="width: 100%; margin-top: 10px;"> <tr> <td style="width: 60%;">Score</td> <td style="background-color: #008000; color: white; text-align: center;">G</td> </tr> </table> | Score | G |
| Score | G | | |
| Environmental and Safety Considerations | <p>Any improvement to the signals could be to design standards and could potentially cater for non-motorised users.</p> <table border="1" style="width: 100%; margin-top: 10px;"> <tr> <td style="width: 60%;">Score</td> <td style="background-color: #008000; color: white; text-align: center;">G</td> </tr> </table> | Score | G |
| Score | G | | |
| Benefits and Cost | <p>Scheme cost for this scheme is considered to be Medium on account of land acquisition required</p> <p>Benefits – This is a key junction on the main route from/to the north of Evesham and therefore any improvements to traffic conditions at this location is likely to be beneficial and may provide wider benefits as well.</p> | | |

| | | | |
|---|--|-------|---|
| | <p>Due to the constraint of the railway bridge, is considered that any benefits will be limited due to the capacity of the High Street arm. The benefits of this scheme are therefore likely to be Low to Moderate.</p> | Score | A |
| <p>Summary and Conclusion</p> | | | |
| <p>This is a key junction, which provides connection to Evesham Town Centre and areas beyond Evesham. There is a considerable amount of development planned for Evesham which could put greater pressure at this location, it is therefore important that the congestion issues at the location be addressed.</p> <p>The scheme is considered to have moderate cost, but the benefits may be limited due to the railway bridge which will constrain the capacity of the High Street arm.</p> <p>It is observed that queuing on the High Street may impact on the performance of this junction, it is therefore recommended that an improvement at this junction should be considered in conjunction with High Street / Swan Lane signalised junction.</p> | | | |
| <p>Overall Conclusion</p> | <p>This scheme is suitable for further consideration if considered in conjunction with the High Street / Swan Lane signalised junction.</p> <p>Outside of this Pre-Feasibility study, WCC are currently considering improving the High Street/Swan Lane/Avon Junction by making Avon Street one-way away from High Street. This scheme could potentially offer improvements on High Street which in turn improve the operation of the High Street/ Greenhill/ Worcester Road. It is therefore recommended that this scheme be investigated further, in particular to consider upstream impacts at the High Street / Worcester Road / Greenhill junction.</p> | | |

| | | |
|--------------------|------------|---|
| Option Name | 1.3 | Junction Improvement - A4184 Cheltenham Road/ Davies Road Junction |
|--------------------|------------|---|

Scheme Description

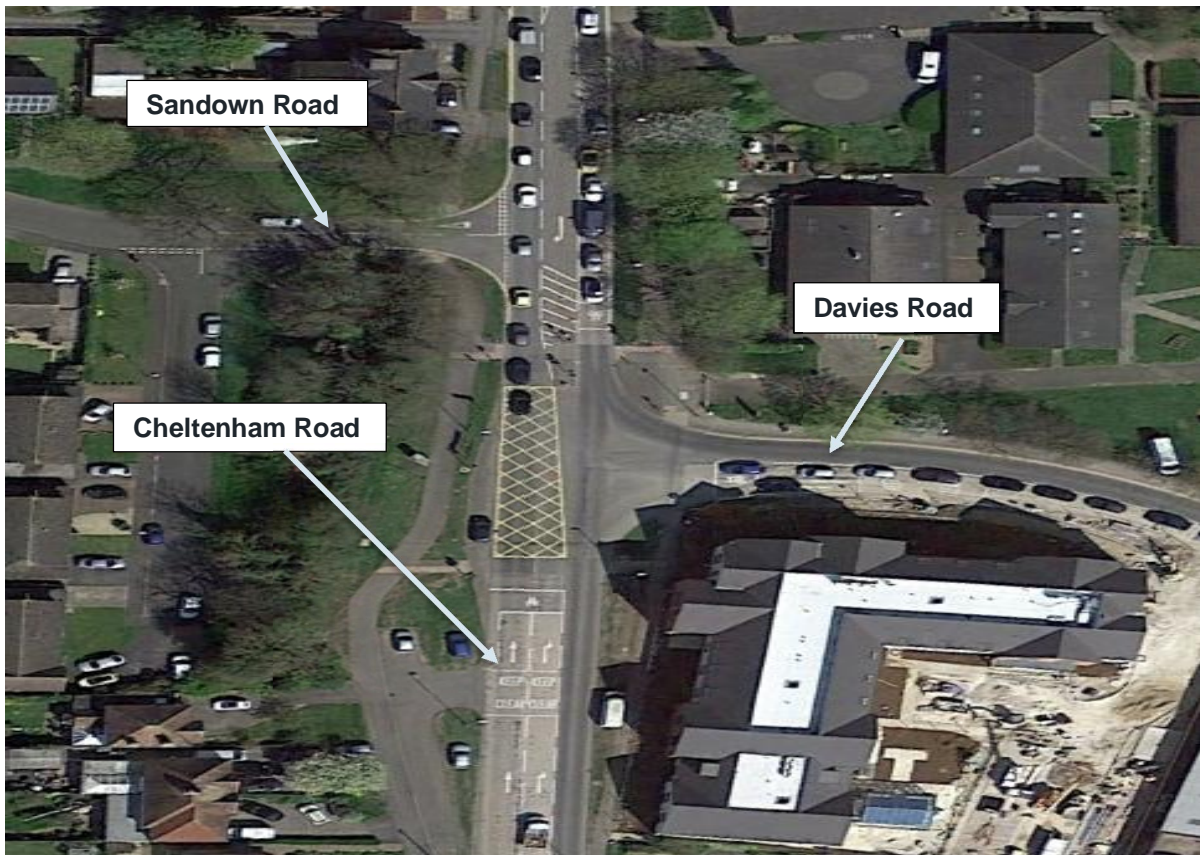
This scheme is included in Worcestershire County Council's Local Transport Plan fourth edition (LTP4); and sets an ambition to investigate whether or not capacity and/ or safety can be improved at this junction in Evesham. This scheme considers the upgrade of the signal control unit at this location and includes the provision of intelligent pedestrian detection.

The location of this scheme is annotated as **Scheme 1.3** in **Figure 1** provided in **Appendix A** in this report.

Existing Conditions

Junction Description

The existing layout and conditions surrounding this junction are provided in this section.



The layout of the signal controlled junction is as follows:

- Cheltenham Road (South) – Single lane approach flaring to 2 lanes at the stop line, with one lane designated for ahead and one lane designated for right turn to Davies Road. The exit to this arm has one lane;
- Cheltenham Road (North) – Single lane approach flaring to two lanes, but one of those lanes is the right turn into Sandown Road approximately 10m from the stop line, resulting in a single lane at the stop line 1 lane. The exit to this arm has a single lane;
- Davies Road (East) – Single lane approach flaring to two lanes at the stop line, with one lane designated for the left turn and one lane for the right turn. The exit to this arm has one lane.

The junction is bounded by residential properties, South Worcestershire College and a care home, and experiences a significant amount of pedestrian activity because of this.

Immediately to the north of the signal junction is the junction with Sandown Road. This is a 3-arm priority junction and provides access into an established residential area west of Cheltenham Road.

Site and Desk Study Observations

The signals at the junction are vehicle actuated (VA), but not currently running on MOVA which optimises signal timings, and in so doing maximises capacity and minimises delays. Therefore there are likely to be some benefits to be gained by upgrading to MOVA, Intelligent pedestrian detection is provided across the northern arm only, with standard pedestrian crossing on the other two arms. The introduction of intelligent pedestrian detection on the Davies Road and Cheltenham Road (S) arms could provide additional benefits at this location.

During site observations carried out in the AM and PM peaks, constant queuing was observed on Cheltenham Road northbound and Davies Road. The primary cause of this was observed to be queuing from the downstream Abbey Bridge/Waterside/Pershore Road/Cheltenham Road signal junction. The queuing on Cheltenham Road was observed to extend from the downstream signals through the Davies Road signal junction and further south. In the PM peak this resulted in significant queues on the Davies Road approach, because the queues on Cheltenham Road restricted the amount of vehicles that could turn right out of Davies Road, causing long queues and delays on that arm.

The junction is on a key arterial route into Evesham Town Centre and lies along a corridor where a significant amount of land has been allocated for housing and employment uses within the South Worcestershire Development Plan. Photographs of this location are provided in **Appendix E**.

From the site observations it is considered that the problems at the Cheltenham Road / Davies Road junction are a direct result of queuing at the downstream Abbey Road / Waterside / Cheltenham Road / Pershore Road junction. This is evident from traffic data obtained from Google API for a typical weekday peak period, screenshots are provided in **Appendix D**.

If the downstream junction was upgraded then it is expected that the Davies Road junction could operate better. It is considered that benefits resulting from an improvement at Davies Road would not be realised with the existing downstream queuing problems. Therefore it is assumed that no scheme is required at the Cheltenham Road / Davies Road junction at this stage.

Assessment of Option against Identified Criteria

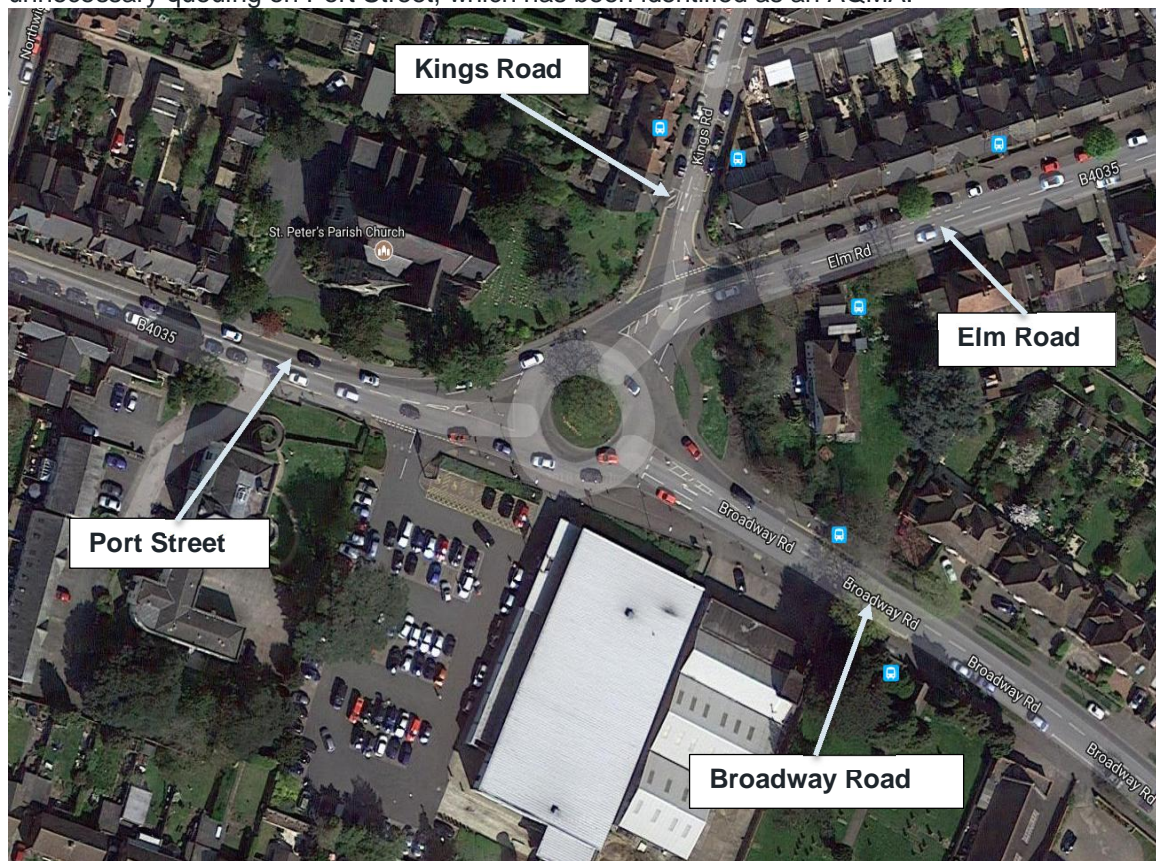
| | |
|-----------------------------------|---|
| Guidance and Best Practice | A scheme that meets DMRB standards can be provided at this location. <div style="text-align: right;">Score G</div> |
| Land and Property | This scheme can be provided within the existing highway. <div style="text-align: right;">Score G</div> |
| Vehicle Access | The scheme allows the easy passage of vehicles that are essential to the 'routine life' of the town. <div style="text-align: right;">Score G</div> |
| Environment and Safety | This scheme will improve conditions for pedestrians. <div style="text-align: right;">Score G</div> |
| Benefits and Cost | The scheme cost is estimated to be Low . Benefits – Moderate improvement could be realised at this location as a result of the scheme, this could however be tempered by the issue of queuing back from Abbey Bridge. The scheme benefit is considered to be Medium . <div style="text-align: right;">Score G</div> |

| | |
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| Summary and Conclusion | |
| This scheme is low cost and could potentially offer benefits at this location. However, the traffic problems at this junction are compounded by the impact of queuing from the downstream Abbey Bridge/Waterside/Pershore Road/Cheltenham Road junction. | |
| Overall Conclusion | Suitable for further consideration as the first step in solving the issues at this location. However recommended that further considerations should be given to undertaking the study of this junction in conjunction with the LTP4 study of the Abbey Bridge/Waterside/ Pershore Road/Cheltenham Road junction. |

| | | |
|--------------------|------------|--|
| Option Name | 2.1 | Induced Queuing To Alleviate Port Street (Air Quality Management Area (AQMA)) |
|--------------------|------------|--|

Scheme Description

This scheme aims to alleviate the air quality problems on Port Street by signalling its junction with Broadway Road and Elm Road, this will hold town-centre bound queuing traffic on Elm Street and Broadway Road and release traffic into Port Street in a controlled manner so as to prevent unnecessary queuing on Port Street, which has been identified as an AQMA.



The location of this scheme is annotated as **Scheme 2.1** on **Figure 1 – Location of Schemes** provided in **Appendix A** in this report.

Existing Conditions

Junction Description

Port Street approximately 450m in length provides the only connection to Bridge Street (via Workman Bridge which is the only river crossing on the eastern side of Evesham) and subsequently to Evesham Town Centre for journeys originating from the eastern side of Evesham.

The Port Street/Elm Road/Broadway Road three arm roundabout at the eastern end of Port Street provides connection to the A46 and A44, and subsequently to areas east of Evesham and beyond. All the arms at the roundabout have single lane approaches flaring to 2 lanes on approach to the stop line and single lane exits.

Site and Desk Study Observations

Port Street is a busy street for pedestrians and has many shops lining it and it is a main route into the town centre. The Port Street/Elm Road/Broadway Road roundabout also experiences a high level of pedestrian movements due to it being in a built-up area, and also due to the presence of a church, bus stops and Lidl Supermarket in close proximity to the roundabout.

There are bus stops on Elm Road within 70m of the roundabout and on Broadway Road within 70-100m of the roundabout. There is a Lidl store located between the Port Street and Broadway Road arms of the roundabout with vehicular access from Port Street approximately 30m west of the roundabout. There is also a church (St Peter's Parish Church) located in the north western corner of the roundabout, with access from Port Street.

Although the scheme is aimed at improving air quality by alleviating slow traffic on Port Street, it also provides an opportunity to improve conditions at The Port Street/Elm Road/Broadway Road for pedestrians, especially crossing conditions at this location which is currently uncontrolled.

There are a number of Grade II listed buildings in the vicinity of the roundabout which would have to be considered when reconfiguring the junction. These are shown on the environmental constraint map provided in **Appendix C** and include the following:

- Church of St Peter Parish Church;
- Lansdowne;
- 82,84,86 Port Street; and
- Former Stables to Lansdowne.

Also, due to their close proximity to the Port Street/Elm Road/Broadway Road roundabout, the access to the Lidl Supermarket and the Kings Road Junction would have to be taken into consideration in the design of the new signalised junction.

There is also a memorial located between Broadway Road and Elm Road.

During site observation it was noted that the queuing on Port Street is sometimes caused by vehicles accessing the on-street parking spaces on Port Street and vehicles turning in and out of the side roads on Port Street, particularly Church Street, Burford Road and Northwick Road.

If this proposal is to be developed further it is recommended that consideration should be given towards linking any signals here with the existing signals at the Port Street/Waterside/Bridge Street junction.

From traffic data obtained from Google API and provided in Appendix D of this report it is evident that in the peak periods there is slow traffic on both the Elm Road and Broadway arms of the roundabout all the way to their junctions with Offenham Road and Davies Road.

The signalisation of the Port Street/Elm Road and Broadway Road junction has the potential of worsening slow traffic on Elm Road and Broadway Road during the peak periods and subsequently impacting adversely on their respective junctions with Offenham Road and Davies Road. It is therefore recommended that a detailed study be undertaken to understand the impact of this scheme on Elm Road, Broadway Road and their respective junctions.

The scheme can be provided within the highway boundary and actually provides an opportunity to reclaim land to be used for other purposes at this location, such as creating a more pedestrian friendly environment around the junction, and to improve the setting of the memorial located between Broadway Road and Elm Road.

| Assessment of Option against Identified Criteria | | | |
|--|--|-------|---|
| Guidance and Best Practice | <p>A scheme that meets DMRB standards can be provided at this location.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; text-align: center;">Score</td> <td style="background-color: #00a651; color: white; text-align: center;">G</td> </tr> </table> | Score | G |
| Score | G | | |
| Land and Property | <p>This scheme can be provided within the available highway space. A signal junction would reduce the junction footprint and therefore provide an opportunity to reclaim land for other purposes, and to improve the public realm.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; text-align: center;">Score</td> <td style="background-color: #00a651; color: white; text-align: center;">G</td> </tr> </table> | Score | G |
| Score | G | | |
| Vehicle Access | <p>The scheme allows the easy passage of vehicles that are essential to the 'routine life' of the town, However, with the signalisation the Elm Road and Broadway Road arms of the junction, increased queuing could form on Broadway Road and Elm Road. However, overall journey times into the town</p> | | |

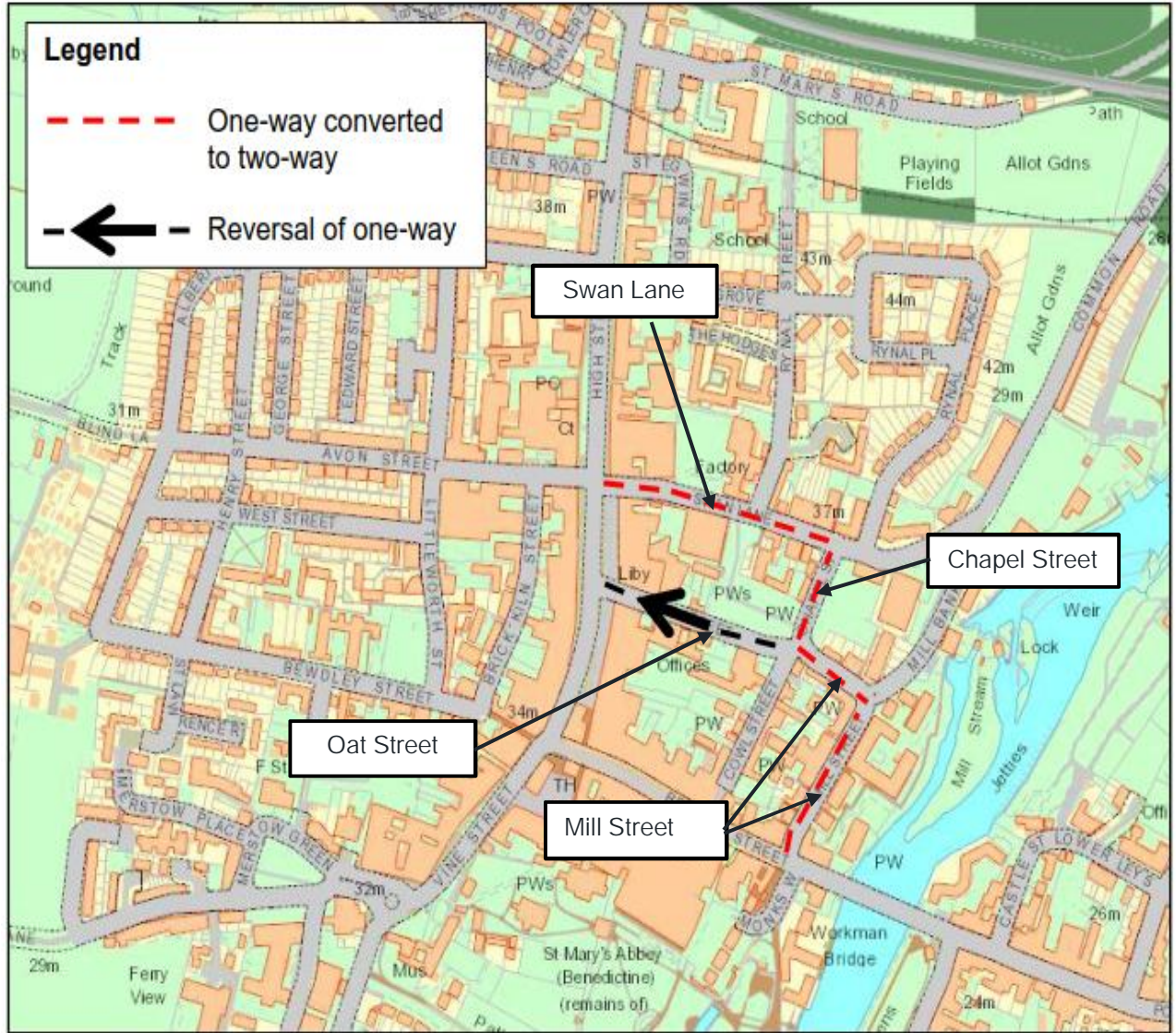
| | | | |
|--|---|-------|---|
| | <p>centre will not be significantly impacted, because queuing on Port Street would be reduced.</p> | Score | A |
| Environmental and Safety Considerations | <p>This scheme would not only help improve air quality on Port Street but would also provide a safer environment and crossing facilities for pedestrians, and improved public realm.</p> | Score | G |
| Benefits and Cost | <p>The scheme cost is estimated to be Medium.</p> <p>Benefits - Even though the scheme is highly likely to achieve its purpose of improving air quality on Port Street, and also provide improved conditions for pedestrians, there is the potential for knock on adverse impact at other surrounding junctions that needs to be considered. The benefit of this scheme at this location is therefore considered to be likely Medium.</p> | Score | A |
| Summary and Conclusion | | | |
| <p>This scheme can be provided within the available highway boundary and it is highly likely to achieve its objective and more. However further consideration must be given to the impact of the scheme on the junctions along Elm Road and Broadway Road.</p> | | | |
| Overall Conclusion | <p>This scheme is suitable for further consideration it could potentially achieve its purpose which is to improve air quality on Port Street. However, further study is required to develop a design and to assess in further detail how this scheme would impact on surrounding road network.</p> <p>Outside of this Pre-Feasibility Study, WCC are considering upgrading the Port Street / Waterside junction to be MOVA controlled. This could also improve air quality and introduce a pedestrian phase at the junction.</p> <p>It is recommended that further assessment be carried to assess the impact of each of the above schemes individually and also collectively, to determine the best and most effective solution.</p> | | |

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| Option Name | 3.1 to 3.4, 3.6 & 3.7 Changes To The Town Centre Road Network – Proposals 1 to 4, 6 & 7 |
|--------------------|--|

Scheme Description

A total of six options, plus a number of supplementary options, have been proposed which include converting Mill Street to two-lane running. These options are detailed below.

Option 3.1

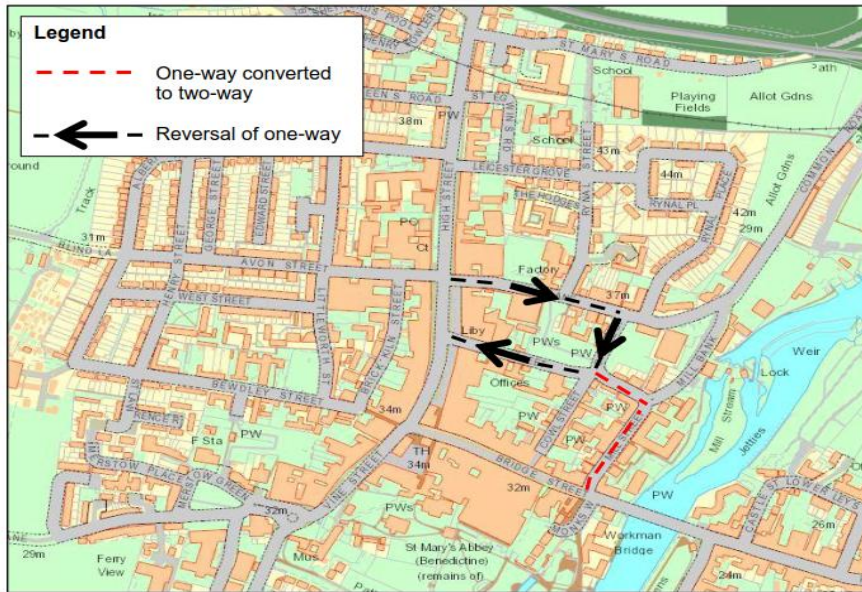


This proposal would see Swan Lane, Chapel Street and Mill Street all converted to two-way traffic flow, combined with a reversal of the one-way operation of Oat Street.

Supplementary proposals include:

- Replace signals at Swan Lane/ High Street junction with a roundabout.
- Prohibit left turns from Swan Lane and right turns from Oat Street.
- Relocate Swan Lane car parking to Chapel Street car park.

Option 3.2



This proposal would see the one-way restrictions on Swan Lane, Chapel Street and Oat Street reversed, together with the conversion of Mill Street to two way working.

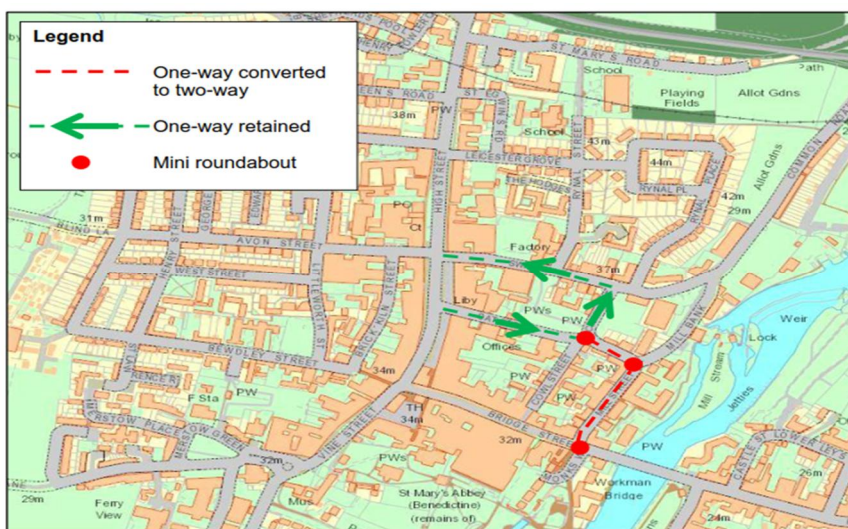
This proposal includes limiting access to Mill Street to cars and light vehicles only (enforced with physical width limiters) and that the buses that use Mill Street could instead (1) be rerouted (to the town centre) via Abbey Bridge, or (2) that the existing bus stand between Oat Street and Swan Lane could be swapped with the taxi rank and disabled parking.

This proposal also includes removal of the traffic signals at the Avon Street/ High Street/ Swan Lane junction, and new signals installed at the Oat Street/ High Street junction.

Supplementary proposals:

- Prohibit right turns from Oat Street.

Option 3.3



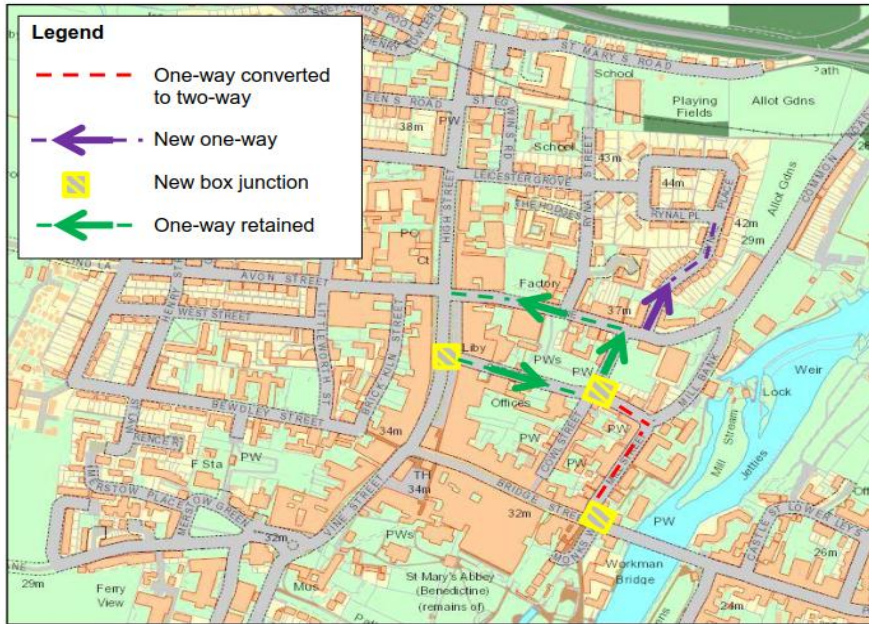
This proposal includes Mill Street being converted to two-way working, and three mini roundabouts introduced; one either end of Mill Street and a third at the junction with Mill Bank.

This proposal includes the suggestion that a 'priority' system would allow cars on Mill Street to give way to buses traveling towards High Street.

Supplementary proposals:

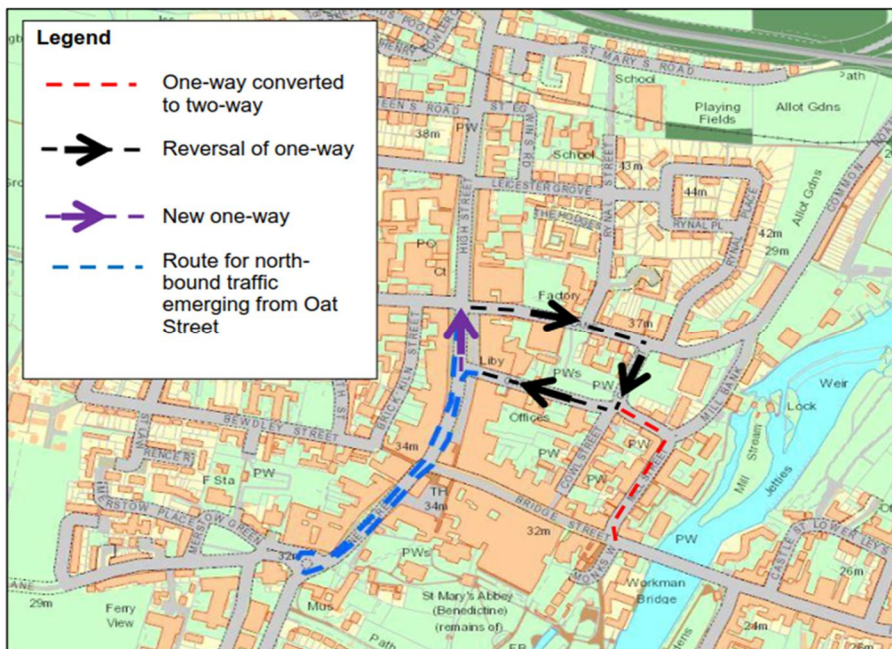
- Pedestrian bridge over Chapel Street.
- Widen Oat Street.

Option 3.4



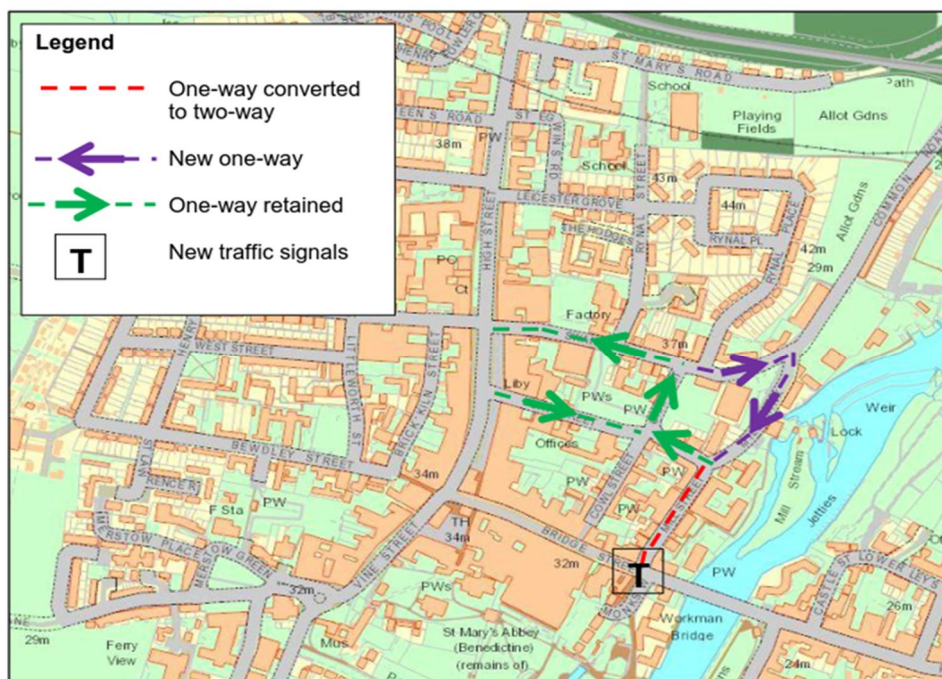
This proposal includes Mill Street being converted to two-way working, and three box-junctions introduced; one either end of Mill Street and a third on the junction of High Street/ Oat Street. In addition Rynal Place would be one-way northbound.

Option 3.6



This proposal includes Mill Street converted to two-way, the one-way restrictions on Oat Street, Swan Lane and Chapel Street reversed, a new stretch of one-way introduced on High Street (between Oat Street and Swan Lane) and a right turn prohibition for traffic emerging from Oat Street onto High Street.

Option 3.7



This proposal includes Mill Street converted to two-way on the stretch south of the junction with Mill Bank, new one-way restrictions imposed on Mill Bank and Conduit Hill, whilst the existing one-way restrictions on Oat Street, Chapel Street, Swan Lane and the Mill Bank to Oat Street stretch of Mill Street would all be retained. This option also includes traffic signals on the Mill Street/ Bridge Street junction.

Supplementary proposals:

- Introduce two-way traffic on Mill Street from Bridge Street to Mill Bank, keeping the remainder of the one-way system as it currently is.

Site and Desk Study Observations

These options cover the town centre area to the east of High Street and to the west of the River Avon and Workman Bridge. There is currently a one way system in operation along Mill Street, Chapel Street, Swan Lane and Oat Street.

Mill Street is one way but with two designated lanes from Bridge Street to Chapel Street, although the road narrows on the corner at the junction with Mill Bank. Mill Street has buildings close to the road on both sides, and along the western side has a retaining wall with buildings at a higher level than the road. The route from Workman Bridge through to High Street has priority over side roads, but queues do form on Swan Lane due to the signal junction with High Street.

Chapel Street and Swan Lane are also one way, with properties, car parks, on-street parking at various locations along the route. To the west of the signal junction with High Street, Swan Lane provides access to retail properties, including the Aldi supermarket service vehicle access on the southern side of Swan Lane and a large pet store on the northern side. The access to the Aldi Supermarket car park is from Chapel Street.

Oat Street is a one way street from High Street to Chapel Street. Oat Street has a single lane, which flares to two lanes on the immediate approach to Chapel Street, with one lane designated for the left turn into Chapel Street and one lane for the right turn into Cowl Street (for local access only – Cowl Street is a no through road)

The area is close to the Port Street AQMA and there are number of listed buildings within the town centre of varying grades. The area also lies within the town centre conservation area, but is located away from flood zone 3.

Currently junctions within the scheme area are priority give way junctions, with the exception of the Swan Lane / High Street four arm signalised crossroads.

During Evesham’s annual Mop Fair, which takes place on the High Street south of the Swan Lane junction, temporary traffic management is implemented to control traffic. This includes temporary traffic signals to allow traffic to run in both directions on Mill Street. The temporary signals control the traffic such that traffic runs in one direction at any one time. Whilst this situation is used during the Mop Fair, managing traffic in this way on a permanent basis would not be appropriate and could result in considerable congestion and delays in the town centre.

Photographs of the area covered by Options 3.1 to 3.4, 3.6 and 3.7 are provided in **Appendix E**.

Site visits have been undertaken during AM peak, inter peak and PM peak periods.

Assessment of Option against Identified Criteria

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|-----------------------------------|--|--|-------|---|
| Guidance and Best Practice | <p>Infrastructure should comply with current guidance and best practice even if at present it does not. The scheme should provide improvement for all road users.</p> <p>Options 3.1 to 3.4, 3.6 and 3.7 all propose Mill Street to be converted to two way. Without significant cost, the width and alignment of Mill Street, which is currently sub-standard, cannot be improved upon.</p> <p>Option 3.2, which includes a ban on HGV and buses on Mill Street, will not provide improvement for all road users and will impact on access to the eastern part of the town centre.</p> <p>Option 3.3, would allow buses through a bus priority system at the Mill Bank bend and junction. The alignment and junction visibility would be substandard. HGVs would still be banned and access to the town centre would be compromised.</p> <p>Extensive consultation would be required to change the one way direction, the junctions, on-street parking, and access to residential and business properties.</p> <p>The footway on the western side of Mill Street, near the Mill Bank junction, is substandard, in terms of width. Between Mill Bank and Chapel Street the footway is raised as well as narrow, and with front doors opening directly on to this footway. There are no barriers to prevent pedestrians falling down the raised kerb on Mill Street. There is not enough land within the highway space at this location to improve on the footway in any of the options assessed in this pro-forma.</p> | <table border="1" style="margin-left: auto;"> <tr> <td style="padding: 2px 5px;">Score</td> <td style="background-color: red; color: white; padding: 2px 5px;">R</td> </tr> </table> | Score | R |
| Score | R | | | |
| Land and Property | <p>Whilst some elements of Options 3.1 to 3.4, 3.6 & 3.7 can be provided within the available highway space if HGVs and buses are banned at certain locations, there are some elements where not banning HGVs and buses would require significant property acquisition to accommodate two way traffic on Mill Street.</p> <p>Where land acquisition is not required, changes to how properties and businesses are accessed, and changes to on-street parking, will impact on property owners, including loss of resident-only parking on Swan Lane.</p> <p>There are a number of listed buildings in the vicinity of the scheme.</p> | <table border="1" style="margin-left: auto;"> <tr> <td style="padding: 2px 5px;">Score</td> <td style="background-color: orange; padding: 2px 5px;">A</td> </tr> </table> | Score | A |
| Score | A | | | |

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| <p>Vehicle Access</p> | <p>Observations made on site showed that currently HGVs travelling along Mill Street are required to use the whole of the carriageway to negotiate the turn at the northern end of Mill Street at the Mill Bank junction. Photographs in Appendix E show a HGV making the turn.</p> <p>Given the level differences and the retaining wall on the western side of Mill Street, including a high level footway, the alignment cannot be improved upon. AutoTrack has been used to demonstrate how 16.5m HGVs need to use the road space to make the turn and shows how they need to use both lanes in both directions. These are included in Appendix F</p> <p>Options where HGVs and buses are banned from Mill Street will have a negative impact on vehicular access to the town centre</p> <p style="text-align: right;">Score R</p> |
| <p>Environment & Safety</p> | <p>All options include two way traffic on Mill Street, which will increase traffic flows and have a negative impact on noise and air quality affecting the residential properties which have frontages onto Mill Street.</p> <p>Given the constraints at the Mill Street/ Mill Bank junction, visibility is poor, so converting Mill Street to two way would have implications for road safety.</p> <p style="text-align: right;">Score R</p> |
| <p>Benefits and Cost</p> | <p>Costs - If a scheme that bans HGVs and buses on Mill Street was implemented, no acquisition of land or property is required, but a potentially considerable cost in terms of junction alteration, priority measures and signing would be required, with the cost assumed to be Low / Medium. However, if a scheme that allows the passage of HGVs and buses on Mill Street was implemented, the cost of the scheme, including land and property acquisition, would be High.</p> <p>Benefits – A scheme that bans HGV and buses on Mill Street would not be in line with best practice, would result in negative impacts in terms of access to the town centre from the east, road safety and environment. The overall benefit would be Very Low. A scheme where HGVs and buses are not banned and with Mill Street converted to a two way road might offer the prospect of improved access to the town centre, but there may still be adverse impacts elsewhere in the town centre. The benefits are considered to be Low.</p> <p style="text-align: right;">Score R</p> |
| <p>Further Comments</p> | <p>This section presents a summary of the assessment for each of the options considered in this pro-forma for town centre improvements</p> <p><u>Option 3.1</u></p> <p>This scheme involves having a two-way traffic system along Mill Street, Chapel Street and Swan Lane, and reversal of the one-way on Oat Street. As mentioned earlier due to constraints along Mill Street, a two-way system would require the banning of HGVs and buses along this route since they would not be able to safely traverse this proposed layout. This has implications for the servicing of the shops/supermarket along Swan Lane. For these reasons the option is not feasible.</p> <p><u>Option 3.2</u></p> <p>This scheme involves having a two-way traffic system along Mill Street, and reversal of the one-way on Chapel Street, Swan Lane and Oat Street.</p> |

As with Option 3.1 HGVs and buses would have to be banned from using Mill Street, meaning HGVs would have to access the shops/ supermarkets on Swan Lane from the High Street via Oat Street. Oat Street is very narrow indeed (both the carriageway and the footways) at its western end; requiring all HGVs to traverse this road would have severe adverse implications for safety.

Traffic signals would need to be introduced to the junction of High Street and Oat Street, which would negatively affect the traffic capacity locally. Moreover, the single running lane on Oat Street means that it has much less queuing capacity than Swan Lane (which has two lanes). Queues from the junction with High Street would therefore likely affect Mill Street and Chapel Street.

For these reasons the option is not feasible.

Option 3.3

This scheme involves having a two-way traffic system along Mill Street with the provision of mini-roundabout at the junctions along this route, and retaining the existing one-way system on Chapel Street, Swan Lane and Oat Street. As with Options 3.1 and 3.2 HGVs and buses would have to be banned from using Mill Street, meaning HGVs would have to use Oat Street to service the shops/supermarket on Swan Lane. Oat Street is particularly narrow (both the carriageway and the footways) at its western end; requiring all HGVs to traverse this road would have severe adverse implications for safety.

There is insufficient land to provide mini-roundabouts to the required standards along Mill Street, and, due to the poor visibility at the Mill Street /Mill Bank junction and Bridge Street/Mill Street junction, this could have safety implications for vehicles manoeuvring the roundabout.

For these reasons the option is not feasible.

Option 3.4

This scheme involves having a two-way traffic system along Mill Street with the provision of box junctions at a number of locations along this route, having a new one-way system along Rynal Place and retaining the existing one-way system on Chapel Street, Swan Lane and Oat Street.

As with Options 3.1, 3.2 and 3.3, HGVs and buses would have to be banned from using Mill Street, meaning HGVs would have to use Oat Street to service the shops/supermarket on Swan Lane. Oat Street is particularly narrow (both the carriageway and the footways) at its western end; requiring all HGVs to traverse this road would have severe adverse implications for safety.

Moreover, the box junction proposed at the corner of Bridge Street and Mill Street is at blind bend and would result in safety implications.

For these reasons the option is not feasible.

Option 3.6

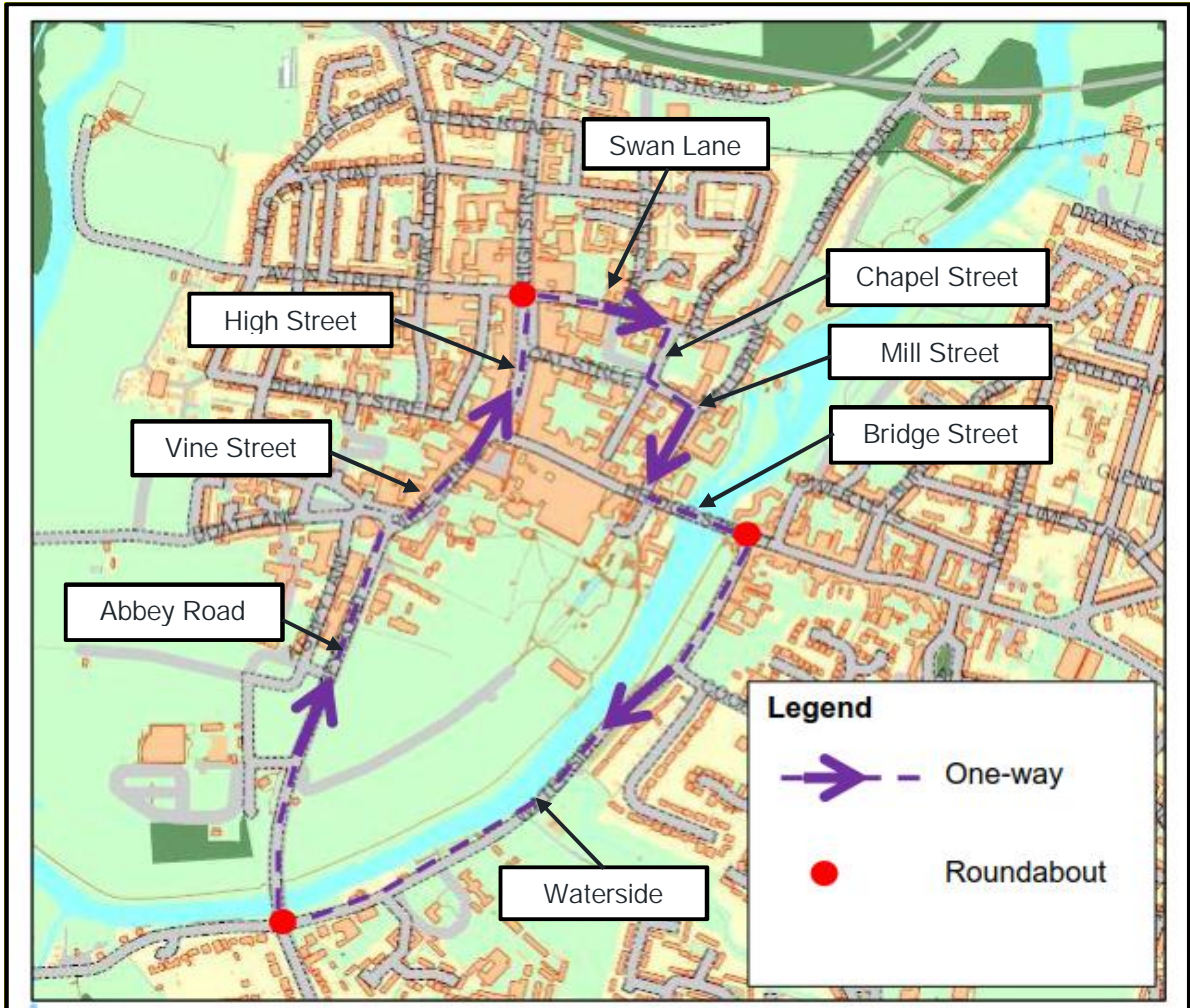
This scheme involves having a two-way traffic system along Mill Street having a new one-way system on the section of High Street between its junctions with Oat Street and Swan Lane, reversal of the one-way system on Swan Lane, Chapel Lane and Oat Street and having a left-out only for traffic exiting Oat Street.

As with Option 3.1, 3.2, 3.3 and 3.4, HGVs and buses would have to be banned from using Mill Street, meaning HGVs would have to use Oat Street to service the shops/supermarket on Swan Lane. Oat Street is

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| | <p>particularly narrow (both the carriageway and the footways) at its western end; requiring all HGVs to traverse this road would have severe adverse implications for safety.</p> <p>This option has adverse implications for the operation of the High Street, first and foremost the short section of the High Street proposed for one-way with its imposed 'loops' for traffic northbound from Oat Street/ southbound on High Street would add considerable pressure to traffic movement at this location and also extra time to journeys which may cause frustration for road users, far outweighing any benefit gained from this option.</p> <p>For these reasons the option is not feasible.</p> <p><u>Option 3.7</u></p> <p>This scheme involves having a two-way traffic system along the section of Mill Street between Bridge Street and Mill Bank, retaining one-way system on the rest of Mill Street, Swan Lane, Chapel Street and Oat Street, a new one-way along Mill Bank and a signalised junction at Mill Street/Bridge Street Junction.</p> <p>As with Options 3.1, 3.2, 3.3, 3.4 and 3.6 HGVs and buses would have to be banned from using Mill Street due constraints around the Mill Street/Mill Bank Junction, meaning HGVs would have to use Oat Street to service the shops/supermarket on Swan Lane. Oat Street is particularly narrow (both the carriageway and the footways) at its western end; requiring all HGVs to traverse this road would have severe adverse implications for safety.</p> <p>The one-way along Mill Bank has a very sharp turn from Common Road, which could have safety implications. The traffic signal junction proposed at the Bridge Street/ Mill Street junction as part of the scheme is crucial in addressing safety issues at that location arising from the scheme, however all the arms of the junction would require separate phases in addition to pedestrian phases. This would result in lengthy cycle time and delays in journeys at this location.</p> <p>For these reasons the option is not feasible.</p> |
| <p>Summary and Conclusion</p> | |
| <p>Options 3.1 to 3.4, 3.6 and 3.7 all involve two way traffic flows on Mill Street, which this assessment has shown is not feasible without significant cost to overcome the negative impacts. Also, other specific issues relating to each option have been identified which show that these schemes are not feasible. For these reasons it is not recommended that these options are taken further.</p> | |
| <p>Overall Conclusion</p> | <p>Unsuitable for further consideration</p> |

Option Name 3.5 Changes To The Town Centre Road Network – Proposal 5

Scheme Description



Option 3.5 is for an extended one-way system to include Bridge Street, Waterside, Abbey Road, Vine Street, High Street (southern end), with the existing one-way system on Mill Street, Chapel Street and Swan Lane being reversed. The option also includes roundabouts to replace existing traffic signals at the junctions of Bridge Street/ Waterside, Waterside/ Abbey Road / Cheltenham Road / Pershore Road, and High Street / Swan Lane.

Supplementary proposal:

- Make system anti-clockwise.

Site and Desk Study Observations

There is currently a one way system in operation along Mill Street, Chapel Street, Swan Lane and Oat Street, from Bridge Street to High Street.

Mill Street is one way but with two designated lanes from Bridge Street to Chapel Street, although the road narrows at the Mill Street/ Mill Bank junction. Mill Street has buildings close to the road on both sides, and along the western side has a retaining wall with buildings at a higher level than the road. The route from Workman Bridge through to High Street has priority over other side roads.

Chapel Street and Swan Lane are also one way with two designated lanes, with properties, car parks, on-street parking at various locations along the route. To the east of the signal junction with High Street, Swan Lane provides access to retail properties, including the service access to Aldi supermarket on the southern side of Swan Lane and a large pet store on the northern side. Access to the Aldi Supermarket car park is from Chapel Street. Junctions within the one-way system are priority give way junctions, with the exception of the Swan Lane / High Street four arm signalised crossroads.

Bridge Street links the Waterside / Port Street junction and the town centre via Workman Bridge over the River Avon. The road is single carriageway with two way traffic up to Mill Street. The Waterside / Port Street junction is signalised, and due to constraints around the junction it is restricted to single lanes of the junction approaches. The Port Street AQMA is adjacent.

Waterside is a wide single carriageway road which runs to the east of and alongside the River Avon. The eastern side of Waterside is lined by properties at the Bridge Street end and at the Abbey Bridge end, although it is tree lined with wide verges along much of its length. Evesham Community Hospital is located to the southern side of Waterside, and Waterside provides the only access to the hospital.

Abbey Road is a wide single carriageway which links Abbey Bridge to Vine Street and the town centre. The Abbey Road southbound approach to the Waterside / Cheltenham Road / Pershore Road / Abbey Road signals has two lanes on approach the junction over Abbey Bridge. There are several accesses along Abbey Road, including to the Evesham Leisure Centre and Fire Station, as well as residential properties at the Vine Street end. Abbey Road meets Vine Street at a roundabout.

Vine Street is effectively the southern end of High Street and performs a similar function. Vine Street and High Street form the main road through the town centre, giving access to the businesses, shops, and parking in the town centre. On street parking is provided at various locations. The High Street / Swan Lane signalised crossroads is the main junction in the centre of the town, linking as it does the one-way system east of the town centre with the main north-south route through the town.

Site visits have been undertaken during AM peak, inter peak and PM peak periods. Photographs of the area covered by Options 3.5 are provided in **Appendix E**.

The Option 3.5 route passes through the town centre, and there are a number of listed buildings within the town centre of varying grades. Part of the route lies within the town centre conservation area, and part is located in flood zone 3. Refer to maps included in **Appendix C**.

Housing development is planned for a site to the west of Abbey Road, with an access from Abbey Road.

Assessment of Option against Identified Criteria

Guidance and Best Practice

Infrastructure should comply with current guidance and best practice even if existing does not. The scheme should provide improvement for all road users.

However, Option 3.5 would introduce a significant one-way system which would result in additional journey times for journeys through the town centre, particularly in the southbound direction where all southbound traffic on High Street would be required to use the one-way system to get to access High Street south of Swan Lane.

Southbound High Street traffic, as well as eastbound traffic at the Abbey Road / Waterside / Cheltenham Road / Pershore Road junction, would be diverted onto less suitable routes to the east of High Street, where roads are narrow, fronted by residential properties, and with substandard bends which will act as pinch points.

The Option 3.5 one-way system will impact on the Fire Service, as fire appliances would not be able to turn right to go south out of the town centre, and on the hospital, particularly for emergency access from the south of Swan Lane and from south of Abbey Bridge.

In the supplementary option, reversing the one way would result in the same impacts, but in the opposite direction.

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| | <p>The scheme would severely impact on access to the town centre, as well as emergency services and access to the hospital.</p> <p>Replacing the signals with roundabouts will remove the pedestrian crossing facilities at the junctions, which were observed to be well used by pedestrians.</p> <p style="text-align: right;">Score R</p> |
| <p>Land and Property</p> | <p>The one-way system itself would not impact on highway boundaries and adjacent properties. However access to the properties will be impacted negatively.</p> <p>The proposed roundabouts that form part of the scheme would replace existing traffic signals. All three locations are constrained sites, with properties located close to all of the junctions. Abbey Bridge, Workman Bridge and the River Avon provide significant constraints at the junctions at either end of Waterside. As a result land and property acquisition would be required to implement the option.</p> <p>There are Grade II listed buildings within the immediate vicinity of the proposed roundabouts. These are</p> <ul style="list-style-type: none"> · At High Street / Swan Lane Junction: <ul style="list-style-type: none"> ○ <i>Former Barn at rear of number 66</i> ○ <i>Star Hotel</i> ○ <i>59,61 63,64,65,67,69 High Street</i> · At Bridge Street / Waterside Junction. <ul style="list-style-type: none"> ○ <i>1-3 Waterside</i> <p>It is likely that providing roundabouts at these locations would impact on these listed buildings.</p> <p>The supplementary option, reversing the one way would result in similar impacts.</p> <p style="text-align: right;">Score R</p> |
| <p>Vehicle Access</p> | <p>As stated in the best practice section above, the proposed option would have significant impacts on access to the town centre, which will also impact on the Fire Service and access to the hospital. Access to new development sites west of Abbey Road will be compromised.</p> <p>In the supplementary option, reversing the one way would result in similar impacts, but in the opposite direction.</p> <p style="text-align: right;">Score R</p> |
| <p>Environment and Safety</p> | <p>The increase in traffic on roads to the east of the town centre between High Street and Bridge Street will increase noise and reduce air quality for residents living along those roads.</p> <p>Providing a roundabout at the Waterside / Bridge Street is likely to impact on the public amenity space known as Workman Gardens.</p> <p>Replacing the signals with roundabouts will remove the pedestrian crossing facilities at the junctions, potentially resulting in a negative impact on safety.</p> <p>In the supplementary option, reversing the one way would result in similar impacts.</p> <p style="text-align: right;">Score R</p> |
| <p>Benefits and Cost</p> | <p>Acquisition of land or property is required to provide the three roundabouts. Cost likely to be High.</p> |

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| | <p>Scheme is not in line with best practice, would result in negative impacts in terms of access to the town centre, emergency services and environment, and the majority of journey times through the town will be increased. Benefits assumed to be Negative.</p> | | |
| | <table border="1"> <tr> <td data-bbox="997 365 1161 414">Score</td> <td data-bbox="1161 365 1412 414">R</td> </tr> </table> | Score | R |
| Score | R | | |
| <p>Summary and Conclusion</p> | | | |
| <p>Due to the proposed scheme impacting on access to the town centre and access for emergency services, for this reason it is not recommended that option 3.5 is taken further.</p> | | | |
| <p>Overall Conclusion</p> | <p>Unsuitable for further consideration</p> | | |

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| Option Name | 4.1 | 20MPH Limit in Evesham Town Centre |
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Scheme Description

The scheme assessed on this pro-forma is for the introduction of a 20mph speed limit in Evesham Town Centre, assumed to cover the area cordoned in red in the figure below. This scheme aims to reduce collisions and the severity of collisions around the town centre, as well as improve traffic conditions in the town centre by encouraging increased trips by active modes and increasing footfall in the town centre.



General Comments

This option is assumed to be 20mph limit signage scheme, which, unlike a 20mph zone scheme, does not require traffic calming measures.

There has been an expansion of 20mph limits in the country, with several local authorities such as Portsmouth, Oxford, Bristol, Warrington and Hackney implementing 20mph as the default limit for their town centre and residential streets. Norwich and Birmingham have made political commitment in recent years to 20mph limits in principle.

The Department for Transport's guidance, set out in DfT Circular 01/2013¹, encourages Highway Authorities to consider the introduction of more 20mph limits and zones, over time, in urban areas and built-up village streets that are primarily residential and with high pedestrian and cyclist presence to ensure greater safety for cyclists and pedestrians.

Literature found on the DfT², RoSPA (The Royal Society for the Prevention of Accidents) and the 20's Plenty websites on research work carried out on existing 20mph limit schemes across the country suggests that there is clear evidence of the effect of reducing traffic speeds on the reduction of collisions and casualties.

The RoSPA article "Road Safety Factsheet(November 2017)³" states that when assessing the benefits and effectiveness of a 20mph limit scheme, it is important to consider increases in walking and cycling and improvements in quality of life indicators, such as health improvements, community cohesion and better air quality, as well as reductions in vehicle speeds and road collisions and casualties. The article also acknowledges the importance of consulting and engaging with the local communities and other stakeholders on schemes like this. It states that emergency services must be consulted to ensure that their requirement to use the roads quickly is balanced with the considerable benefits of a 20mph speed limit.

The research on existing schemes as mentioned earlier shows that a scheme of this nature could potentially provide the following benefits:

- Reduction in collisions and the severity of an collision should one occur;
- Reduction in traffic, which in turn could lead to the reduction in congestion;
- Improvement in air quality, even though a 20mph speed limit may not lead to a direct change in air pollution, it could cause a reduction in traffic by reducing the number of through traffic journeys and by encouraging more people to leave their cars at home, instead walking and cycling to the town centre;
- Reduction in noise pollution;
- Improved health and wellbeing for local residents (20mph speed limits create a safer environment for pedestrians and cyclists and therefore may encourage people to switch to active modes of travel, such as cycling and walking); and
- Creation of a safer environment and improved accessibility to the town centre.

It is recommended that this scheme is backed with police enforcement, and or physical measures in areas where it is likely that the speed limit would not be adhered to.

| Assessment of Option against Identified Criteria | | | |
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| Guidance and Best Practice | <p>This scheme can be provided to meet the standards set in the DfT Circular 01/2013 and the Traffic Signs Regulations and General Directions (TSRGD) 201, DfT Circular 01/16 on the TSRGD and the Traffic Signs Manual.</p> <table border="1" style="width: 100%; margin-top: 10px;"> <tr> <td style="width: 60%;">Score</td> <td style="background-color: #008000; color: white; text-align: center;">G</td> </tr> </table> | Score | G |
| Score | G | | |
| Land and Property | <p>This scheme can be provided within the existing highway space or with minimal purchase of land and property.</p> <table border="1" style="width: 100%; margin-top: 10px;"> <tr> <td style="width: 60%;">Score</td> <td style="background-color: #008000; color: white; text-align: center;">G</td> </tr> </table> | Score | G |
| Score | G | | |
| Vehicle Access | <p>The scheme will not contradict the objective of allowing easy passage of vehicles that are essential to the 'routine life' of the town. However should any complementary traffic calming measure be introduced, this may slow</p> | | |

¹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/63975/circular-01-2013.pdf

² http://www.20splentyforus.org.uk/UsefulReports/Dft_TAL-09-99.pdf

³ <https://www.rosipa.com/road-safety/advice/drivers/speed/20mph-zones-and-limits/>

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| | <p>the movement of emergency vehicles, and in so doing impact on their response time. Consideration must be given to impact of the scheme on these services and they must be consulted during decision making.</p> | Score | A |
| Environmental and Safety Considerations | <p>This scheme has the potential to improve air quality around the town centre, reduce collisions and road casualties, and create a safer environment in the town centre for pedestrians and cyclists. This in turn would promote good health and wellbeing amongst local residents by encouraging the use of active modes of travel, such as walking and cycling, for journeys to the town centre.</p> | Score | G |
| Benefits and Cost | <p>The scheme cost is envisaged to be Low, however consideration should be given to police enforcement or the introduction of additional traffic calming measures to help enforce the 20mph speed limit in areas where it is likely that it would not be adhered to.</p> <p>As mentioned earlier this scheme could potentially achieve the following benefits:</p> <ul style="list-style-type: none"> • Reduction in collisions and the severity of collisions should they occur. • Reduction in traffic, which in turn could lead to the reduction in congestion in the town centre. • Improvement in air quality, even though a 20mph speed limit may not lead to a direct change in air pollution, it could cause a reduction in traffic by reducing the number of through traffic journeys and by encouraging more people to leave their cars at home and walking and cycling to the town centre; • Reduction in noise pollution • Improved Health and Wellbeing for local residents • Creation of a safer environment over all. <p>The potential benefits of this scheme are therefore considered to be High.</p> | Score | G |
| Summary and Conclusion | | | |
| <p>This scheme is considered very sensitive in nature for local residents, and therefore should be implemented with extensive engagement with local residents, other stakeholders, and with the emergency services.</p> <p>Engagement with local residents and stakeholders should lead the process of identifying areas for 20mph speed limits, informed by detailed analysis of speed and collision data for those areas.</p> <p>This scheme has the potential of providing a wide range of benefits, however due its sensitive nature it is advised that the local residents and other stakeholders (especially Emergency Services) be consulted before and during its implementation.</p> <p>Where necessary the scheme would have to be backed by police enforcement, and or physical measures.</p> | | | |
| Overall Conclusion | <p>Subject to a detailed analysis of collision data identifying a need for a 20mph speed limit, this scheme is suitable for further consideration.</p> | | |

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| Option Name | 4.2 20MPH throughout Evesham | |
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Scheme Description

The scheme assessed on this pro-forma is for the introduction of a 20mph speed limit throughout Evesham (excluding the A46 and A44), assumed to cover the area cordoned in blue in the figure below. This scheme aims to reduce collisions and the severity of collisions in Evesham, as well as improve traffic conditions in the town centre by encouraging greater uptake of trips by active modes and increasing footfall in the town centre.



General Comments

See the pro-forma for Option 4.1 for General Comments

DfT Circular 01/2013 recommends the use of signed only 20mph limit schemes in places where speeds are already low (<24mph), physical traffic calming is recommended in areas where speeds exceed 24mph. For areas outside of Evesham Town Centre it is more likely that existing speeds may be above this 24mph threshold. Therefore such a scheme is likely to require complimentary traffic calming measures for it to be more effective.

| Assessment of Option against Identified Criteria | |
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| Guidance and Best Practice | <p>This scheme can be provided to meet the standards set out in the DfT Circular 01/2013 and the Traffic Signs Regulations and General Directions (TSRGD) 201, DfT Circular 01/16 on the TSRGD and the Traffic Signs Manual.</p> <p style="text-align: right;">Score G</p> |
| Land and Property | <p>This scheme can be provide within the existing highway space or with minimal purchase of land and property.</p> <p style="text-align: right;">Score G</p> |
| Vehicle Access | <p>The scheme will not contradict the objective of allowing easy passage of vehicles that are essential to the 'routine life' of the town. However complimentary traffic calming measures may slow the movement of emergency vehicles, and in so doing impact on their response time. Consideration must be given to impact of the scheme on these services and they must be consulted during decision making.</p> <p style="text-align: right;">Score A</p> |
| Environmental and Safety Considerations | <p>Similar to Option 4.1, this scheme has the potential of improving the air quality in Evesham, reducing collisions and road casualties, and creating a safer environment for pedestrians and cyclist, which would in turn encourage healthy choices amongst local residents.</p> <p>It may lead to the unnecessary increase in journey times for road users and in so doing increase driver frustration, especially on roads which have less pedestrian and cyclist activity. Increased driver frustration can have negative implications on road safety in Evesham.</p> <p style="text-align: right;">Score A</p> |
| Benefits and Cost | <p>The cost of the scheme is envisaged to be Low to Medium primarily because of the extensive area covered by the scheme, and the need for traffic calming measures and enforcement.</p> <p>The benefits will be similar to Option 4.1 but over a wider area.</p> <p>Benefits in terms of reduction in collisions could potentially be High. The scheme also has the potential of supressing through-journeys and in so doing improving the traffic conditions at various locations, however it can also cause an unnecessary increase in journey times for most road users; for this reason the overall benefits of the scheme is considered to be Moderate.</p> <p style="text-align: right;">Score A</p> |
| Summary and Conclusion | |
| <p>This scheme has the potential of providing a wide range of benefits, however it can also cause an unnecessary increase in journey times and in so doing raise frustration for road users.</p> <p>This scheme would require greater police involvement to enforce it, since the coverage area is wider when compared to Option 4.1, and also since the existing speeds on roads outside the town centre are more likely to be above the 24mph limit advised by DfT for a 20mph limit scheme, this scheme is likely to require complementary traffic calming measures if it should be considered further.</p> | |
| Overall Conclusion | <p>A 20mph speed limit throughout Evesham is unsuitable for further consideration, unless a detailed analysis of collisions demonstrates a need for a 20mph speed limit.</p> |

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| Option Name | 5.1 | Abbey Bridge/ Waterside/Cheltenham Road/ Pershore Road Junction – Cheltenham Road Right Turn Filter Signal Head |
| Scheme Description | | |
| <p>This scheme is proposed over and above the LTP4-led scheme in Pro-forma 1.1 and it includes adding a right turn (from Cheltenham Road) filter light to the signals and/ or lengthen the right-turn lane at this Junction</p> <p>The location of this scheme is annotated as Scheme 5.1 (same as Schemes 1.1 and 5.2) on Figure 1 – Location of Schemes provided in Appendix A in this report.</p> | | |
| Existing Conditions | | |
| Junction Description | | |
| | | |
| See Pro-forma 1.1 for the existing conditions surrounding this junction. | | |
| Site and Desk Study Observations | | |
| <p>See the pro-forma for Option 1.1 for site and desk study observations for this location.</p> <p>For this scheme to be more effective the right-turn lane would have to be lengthened to accommodate enough right turners, but as observed at this location most vehicles turning right do so before reaching the junction via Fairfield Road, and will continue to do so even with this improvement scheme, if the junction as a whole is still congested.</p> | | |
| Assessment of Option against Identified Criteria | | |
| Guidance and Best Practice | <p>A scheme that meets DMRB standards can be provided at this location with proportionate amount of land purchase along Cheltenham Road.</p> <p>As stated earlier in relation to Option 1.1, there is currently no secondary signal head on the Abbey Bridge arm of the junction and therefore right turners waiting</p> | |

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| | <p>in the junction to turn right from Cheltenham Road have to guess when the light is red for the Abbey Bridge approach, which could result in safety issues.</p> <p>This issue could be improved by this scheme since those turning right would have to wait at the stop line until they are given the green light.</p> | Score | A |
| Land and Property | <p>This scheme includes the lengthening of the right turning lane on Cheltenham Road. Depending on the length of lane required, this may require acquisition of third party land.</p> | Score | A |
| Vehicle Access | <p>The scheme will not preclude the passage of vehicles which are essential to the 'routine life' of the town, such as HGV/LGV delivery vehicles, public service vehicles and emergency services, it would rather allow the easy passage of these vehicles should the traffic conditions at this location be improved by the proposed scheme.</p> <p>Specifically, Evesham Community Hospital is located in close proximity to the junction, on Waterside. An improvement to the junction would improve access to the hospital, for staff visitors and emergency vehicles. Also, to the north of the junction, accessed from Abbey Road is the Fire Station. Improvement to the junction would improve access for the fire service to the local road network.</p> | Score | G |
| Environmental and Safety Considerations | <p>Any improvement to the signals would be to design standards and would cater for non-motorised users.</p> <p>Safety would be improved for right turners who currently look for gaps in traffic entering from the Abbey Bridge arm.</p> | Score | G |
| Benefits and Cost | <p>Scheme cost – likely to be Low to Medium due to the potential need to purchase land along Cheltenham Road.</p> <p>Benefits – is considered to be Low because of the observations made that very few vehicles turn right at the junction during the peak hours. This is expected to continue to be the case and therefore the any potential benefit of this scheme would not be realised.</p> | Score | R |
| Summary and Conclusion | | | |
| <p>This scheme on its own will not provide significant benefits at this location, as the right turning lane of Cheltenham Road is currently under used during peak hours due to congestion issues at this junction.</p> <p>It is therefore recommended that this scheme should be considered together with the LTP4 scheme for the junction (Option 1.1).</p> | | | |
| Overall Conclusion | <p>This scheme is not suitable for further consideration as a standalone scheme. It should only be considered further alongside the LTP4 scheme for the junction (Option 1.1).</p> | | |

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| Option Name | 5.2 | Abbey Bridge/ Waterside/Cheltenham Road/ Pershore Road Junction – Replace signals with Roundabout | | |
| Scheme Description | | | | |
| <p>This scheme is proposed over and above the LTP4-led scheme in Option 1.1, and it is for the replacement of the signalised junction at Abbey Bridge/ Waterside/Cheltenham Road/ Pershore Road Junction with a roundabout.</p> <p>The location of this scheme is annotated as Scheme 5.2 (same as Schemes 1.1 and 5.1) on Figure 1 – Location of Schemes provided in Appendix A in this report.</p> | | | | |
| Existing Conditions | | | | |
| Junction Description | | | | |
| | | | | |
| <p>See the pro-forma for Option 1.1 for the existing conditions surrounding this junction.</p> | | | | |
| Site and Desk Study Observations | | | | |
| <p>See the pro-forma for Option 1.1 for the observations for this location.</p> | | | | |
| Assessment of Option against Identified Criteria | | | | |
| Guidance and Best Practice | <p>A scheme that meets DMRB standards can be provided at this location with proportionate amount of land purchase along Cheltenham Road.</p> <p>Due to Abbey Bridge the junction will have to be moved south of its current location in order to achieve that required deflection for the Abbey Bridge approach. The one lane exit on Abbey Bridge also acts as a constraint since any proposal will have to keep it as a one lane exit.</p> <table border="1" data-bbox="983 1879 1410 1928"> <tr> <td data-bbox="983 1879 1155 1928">Score</td> <td data-bbox="1160 1879 1410 1928">A</td> </tr> </table> | | Score | A |
| Score | A | | | |
| Land and Property | <p>In order to provide a roundabout that meets the standard set in DMRB for a junction of this nature a significant amount of land and property would have to be</p> | | | |

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| | <p>purchased away from the Abbey Bridge. In comparison with the LTP4 scheme set out on pro-forma for Option 1.1, more land and property would have to be purchased for this scheme.</p> | Score | R |
| Vehicle Access | <p>The scheme will not preclude the passage of vehicles which are essential to the 'routine life' of the town, such as HGV/LGV delivery vehicles, public service vehicles and emergency services, however, it may not improve the issues at this location and therefore will not improve the passage of these vehicles.</p> | Score | A |
| Environmental and Safety Considerations | <p>This scheme will make conditions at this location less safe for non-motorised users and because of the built-up nature of that location there is a notable presence of pedestrians and vulnerable Road Users.</p> | Score | R |
| Benefits and Cost | <p>Cost for this scheme would be High due to the need to purchase significant amount land and property to the south of the junction in order to accommodate the required roundabout diameter for the level of traffic flow at this junction.</p> <p>Benefits – A roundabout could be designed to operate within capacity, but the junction would be out of character with the local area. The roundabout would provide less control of traffic and would not provide the same level of pedestrian/cycle facility. Increased capacity at this junction could result in adverse impacts at downstream and in the town centre. The benefits of this scheme at this location is therefore considered to be likely Medium.</p> | Score | R |
| Summary and Conclusion | | | |
| <p>Scheme is very costly due to land and property acquisition and expected to provide benefits to traffic. Whilst the scheme could improve the operation of the junction, it would worsen conditions for non-motorised road users, and would be out of character for the local area.</p> | | | |
| Overall Conclusion | Unsuitable for further consideration | | |

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| Option Name | 6.1 | New Roundabout at Worcester Road/ Tesco entrance |
| Scheme Description | | |
| <p>This scheme proposes to replace the right turn ghost island junction at the Worcester Road/ Tesco entrance with a roundabout.</p> <p>The location of this scheme is annotated as Scheme 6.1 on Figure 1 – Location of Schemes provided in Appendix A in this report.</p> | | |
| Existing Conditions | | |
| Junction Description | | |
| <p>The existing layout and conditions surrounding this junction are provided in this section.</p> | | |
| <p>The image is an aerial photograph showing a junction. A road labeled 'Worcester Road' runs vertically through the center. To the left of Worcester Road, there is a large parking lot with many cars, and a building with a grey roof. An arrow labeled 'Tesco Access' points from the parking lot towards the junction. To the right of Worcester Road, there is another parking lot with cars and a building. An arrow labeled 'B&M Home Store Access' points from the parking lot towards the junction. The junction itself is a signal-controlled crossroads with a right-turn ghost island.</p> | | |
| <p>The junction is a signal controlled crossroads located south of Evesham Town Centre and Junction Description</p> | | |
| <p>The existing junction is a right turn ghost island junction which provides access to the Tesco superstore off Worcester Road and is located in the vicinity of the Evesham Shopping Park.</p> | | |
| <p>The Worcester Road provides connection to Evesham Town Centre, A44 (N) and A46 (N), and to Worcester and other areas located northwest of Evesham.</p> | | |
| <p>Immediately south (approximately 20m) of this junction, which provide access to the B&M Home Store located on the opposite side of Worcester Road.</p> | | |

| Site and Desk Study Observations | | | |
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| <p>No traffic issues were identified at this location during the site meeting and the subsequent site visits, so it is not clear what the roundabout is meant to address. Further monitoring of the junction is required to understand what the issue is.</p> <p>Due to the close proximity of the B&M Home Store access to this junction, it would have to be incorporated in the design of the new roundabout, with the B&M access being relocated altogether.</p> <p>The scheme cannot be provided within the available highway space and would require the purchase of third party land.</p> <p>The scheme is likely to result in the loss of Tesco and B&M car parking spaces. In addition, the B&M car park layout and access would have to be reconfigured.</p> <p>There is a difference in level between the Tesco access and the B&M car park, which would have to be addressed in order to provide the roundabout.</p> | | | |
| Assessment of Option against Identified Criteria | | | |
| Guidance and Best Practice | <p>Without land acquisition a scheme that meets DMRB standards cannot be provided at this location.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; text-align: right;">Score</td> <td style="background-color: red; color: white; text-align: center;">R</td> </tr> </table> | Score | R |
| Score | R | | |
| Land and Property | <p>The scheme cannot be provided within the available highway space and land would have to be purchased. It would impact on land and property belonging to Tesco and B&M, and require the reconfiguration of the B&M car park.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; text-align: right;">Score</td> <td style="background-color: red; color: white; text-align: center;">R</td> </tr> </table> | Score | R |
| Score | R | | |
| Vehicle Access | <p>The scheme is not envisaged to have any impact on the passage of vehicles that are essential to the 'routine life' of the town.</p> <p>Access out of Tesco and B&M for right turning vehicles will be improved.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; text-align: right;">Score</td> <td style="background-color: green; color: white; text-align: center;">G</td> </tr> </table> | Score | G |
| Score | G | | |
| Environmental and Safety Considerations | <p>No foreseeable change on the environment and safety as a result of this scheme.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; text-align: right;">Score</td> <td style="background-color: yellow; text-align: center;">A</td> </tr> </table> | Score | A |
| Score | A | | |
| Benefits and Cost | <p>Scheme cost is considered to be High due to cost associated with purchasing of land, rearranging the B&M car park and access, and also levelling out the area in order to provide the roundabout.</p> <p>Benefits – with no identified issues during site observation is difficult to predict the scale of the likely benefit such a scheme could bring. The benefit of this scheme is therefore considered to be likely Low.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; text-align: right;">Score</td> <td style="background-color: red; color: white; text-align: center;">R</td> </tr> </table> | Score | R |
| Score | R | | |
| Summary and Conclusion | | | |
| <p>This scheme would be costly and the issues at this location may not require a scheme of this scale. It is recommended that the junction be monitored to understand what the existing issues and causation are at this location.</p> | | | |
| Overall Conclusion | <p>This scheme is unsuitable for further consideration.</p> | | |

| | | |
|--------------------|------------|--|
| Option Name | 6.2 | New Roundabout at A4184 Cheltenham Road/ Davies Road Junction |
|--------------------|------------|--|

Scheme Description

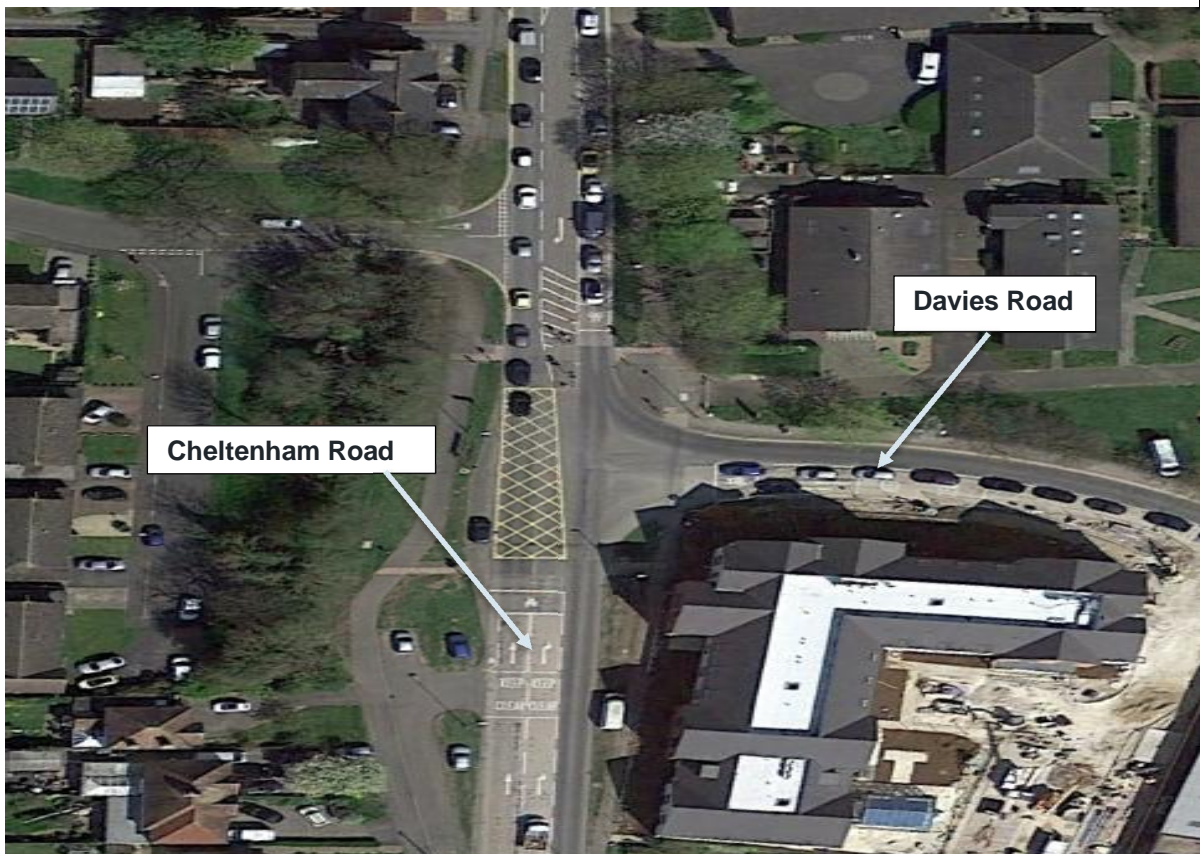
This scheme is proposed over and above the LTP4-led scheme in Option 1.3, and it is for the replacement of the signalised junction at this location with a roundabout.

The location of this scheme is annotated as **Scheme 6.2** (same as scheme 1.3) in **Figure 1** provided in **Appendix A** in this report.

Existing Conditions

Junction Description

The existing layout and conditions surrounding this junction are provided in this section.



See the pro-forma for Option 1.3 for the existing conditions surrounding this junction.

Site and Desk Study Observations

See the pro-forma for Option 1.3 for site and desk study observations for this location.

Assessment of Option against Identified Criteria

| | | | |
|-----------------------------------|----------------|-------|-----|
| Guidance and Best Practice | Not applicable | Score | N/A |
| | | | |
| Land and Property | Not applicable | Score | N/A |
| | | | |

| | | | |
|---|--|-------|-----|
| Vehicle Access | Not applicable | Score | N/A |
| | | | |
| Environment and Safety | Not applicable | Score | N/A |
| | | | |
| Benefits and Cost | Not applicable | Score | N/A |
| | | | |
| Summary and Conclusion | | | |
| <p>As with the LTP4 scheme at this location, the traffic problems at this junction are observed to be primarily due to queues from the downstream Abbey Bridge/Waterside/Pershore Road/Cheltenham Road Junction which extends back to this junction and beyond, impacting on the Davies Road and Cheltenham Road (S) approaches. Introduction of a roundabout would remove the existing signalised pedestrian crossing at this location.</p> <p>As with the LTP4 scheme in Option 1.3, this scheme is not expected to improve this junction unless the Abbey Bridge/Waterside/Pershore Road/Cheltenham Road junction is improved.</p> | | | |
| Overall Conclusion | Unsuitable for further consideration at this stage. | | |
| | It is recommended that the LTP4 study of this junction is undertaken in conjunction with the LTP4 study of the Abbey Bridge/Waterside/ Pershore Road/Cheltenham Road junction. | | |

| | | |
|--------------------|------------|--|
| Option Name | 7.1 | New Common Road – A46 Link Road |
|--------------------|------------|--|

Scheme Description

This scheme is for the provision of a new link road from Common Road to the A46, via the dismantled railway north-east of Evesham Town Centre

The location of this scheme is annotated as **Scheme 7.1** on **Figure 1 – Location of Schemes** provided in **Appendix A** in this report.

Existing Conditions

Scheme Location



Common Road is located on the north-eastern side of Evesham Town Centre, it is approximately 380m in length from its junction with Mill Bank to where it terminates at the railway bridge, and at this point it is approximately 1.2km from the A46.

The proposed route for the link road is through green fields, with hardly any built-up area in close proximity, therefore this proposed route will solely be for journeys to and from Evesham Town Centre and the A46.

Common Road currently serves the handful of residential properties which have frontage access onto Common Road, as well the residential development adjacent to the railway bridge. Long sections of the carriageway are used for on-street parking by the residents.

There are allotments present on the western side of Common Road, and also there is a long stretch of retaining structure or embankment lining the carriageway on the western side.

| Site and Desk Study Observations | | | |
|--|---|-------|---|
| <p>There are already two connections from Evesham to the A46 within 2 km of the proposed scheme; the A4184 Greenhill/A46/Evesham Road Roundabout and the A46/B4035 Badsey Road junction. The proposed link road would meet the A46 between these junctions. These routes go through built-up areas allowing near-by residents to access the A46 without having to go through the town centre.</p> <p>This proposed route via Common Road has the potential of attracting more trips through the already congested town centre.</p> <p>The current carriageway width and on-street parking along Common Road, means the standard of the current carriageway is not appropriate to form part of a new route from the A46 to the town centre and it would have to be upgraded to the correct standard should the scheme go ahead. Also, there are constraints along Common Road, such as on-street parking and the embankment along the western side of Common Road, which would have to be taken into consideration.</p> <p>A major constraint for the scheme is the rail bridge under which the proposed road would pass, which is approximately 4m wide. Unless it was widened, the new road would have to restrict movements under the bridge to be one direction at a time. This also provides constraints to the standard of any pedestrian infrastructure that can be provided at the location.</p> <p>There is also a 13ft 9in height restriction at the bridge which restricts the type of vehicles that would be able to use the new link road.</p> | | | |
| Assessment of Option against Identified Criteria | | | |
| Guidance and Best Practice | <p>This scheme cannot fully meet DMRB standards, due to several identified constraints, such as the railway bridge at the end of Common Road and the long stretch of embankment on the western side of Common Road.</p> <p>An additional junction on the A46 is unlikely to be supported by Highways England (HE), due its impact on the efficient operation of the A46.</p> <table border="1" style="width: 100%; margin-top: 10px;"> <tr> <td style="width: 60%;">Score</td> <td style="background-color: red; color: white; text-align: center;">R</td> </tr> </table> | Score | R |
| Score | R | | |
| Land and Property | <p>In order for this scheme to go ahead an extensive amount of land would have to be purchased.</p> <p>It is also likely that current on-street parking for residents on Common Road would need to be removed.</p> <table border="1" style="width: 100%; margin-top: 10px;"> <tr> <td style="width: 60%;">Score</td> <td style="background-color: red; color: white; text-align: center;">R</td> </tr> </table> | Score | R |
| Score | R | | |
| Vehicle Access | <p>The scheme will provide an alternative route to town centre for vehicles that are essential to the 'routine life' of the town. However, the narrow and height restricted bridge would restrict movements unless it is modified accordingly.</p> <table border="1" style="width: 100%; margin-top: 10px;"> <tr> <td style="width: 60%;">Score</td> <td style="background-color: yellow; text-align: center;">A</td> </tr> </table> | Score | A |
| Score | A | | |
| Environmental and Safety Considerations | <p>Since most of Common Road is on a slope there are visibility issues to contend with, there is also the possibility that the new link would attract more traffic through the town centre and in so doing worsening congestion and air quality around that area.</p> <p>The scheme would bring more traffic into the town centre on unsuitable roads to the east of the town centre. There will also be environmental impacts associated with the provision of a new link through green fields to consider. In addition, the area through which the new link road would be built is adjacent to the River Avon and within Flood Zone 3, which means there is a 1 in 100 or greater annual probability of it being flooded by the river.</p> <table border="1" style="width: 100%; margin-top: 10px;"> <tr> <td style="width: 60%;">Score</td> <td style="background-color: red; color: white; text-align: center;">R</td> </tr> </table> | Score | R |
| Score | R | | |

| | |
|--|--|
| Benefits and Cost | <p>The scheme cost is envisaged to be High, on account of the cost of construction the new road and the constraint on Common that would have to be overcome to provide this new road.</p> <p>Benefits – No significant benefits associated with this scheme has been identified. Moreover it is unlikely Highways England would support such a scheme.</p> <p>The following dis-benefits associated with this have been identified:</p> <ul style="list-style-type: none"> ○ Increased traffic and delays on the town centre road network due to an increase in through journeys; ○ Negative impact on the efficient operation of the A46 due to a new junction in close proximity to the existing junctions on the A46; and ○ Environmental impacts associated with providing a new road through green fields. <p>For the above reasons the benefits associated with this scheme are considered Low.</p> |
| Summary and Conclusion | |
| <p>The dis-benefits associated with this scheme are expected to outweigh any benefits it might bring, and the cost of the scheme is expected to be high. An additional junction on the A46 is unlikely to be supported by Highways England (HE), due its impact on the efficient operation of the A46.</p> | |
| Overall Conclusion | Unsuitable for further consideration. |

| | |
|-------|---|
| Score | R |
|-------|---|

| | | |
|--|-----|--|
| Option Name | 8.1 | New traffic signals at the junction of Elm Road/ Offenham Road. |
| Scheme Description | | |
| <p>This scheme proposal is to have a signalised junction at the Elm Road/Offenham Road Junction.</p> <p>The location of this scheme is annotated as Scheme 8.1 in Figure 1 provided in Appendix A in this report.</p> | | |
| Existing Conditions | | |
| Junction Description | | |
| <p>This junction was changed from a priority junction to a mini roundabout in the early part of 2017. The pictures below show the junction before the mini roundabout was implemented, the current layout of the junction.</p> | | |
| Previous Layout | | |
|  | | |
| Current Layout | | |



Site and Desk Study Observations

As part of the Orchards Housing Estate planning application (reference W/10/00295/OU), a condition (paragraph 39) was imposed to upgrade the Elm Road /Offenham Road junction to a mini-roundabout in order to cope with the increased traffic. This has now been implemented and the junction is currently a mini-roundabout.

The scheme assessed here was proposed prior to the reconfiguration of the junction to a mini – roundabout, and therefore the circumstance surrounding the proposed scheme has changed. For this reason this scheme has not been assessed against the identified criteria.

Assessment of Option against Identified Criteria

| | | | |
|-----------------------------------|----------------|-------|-----|
| Guidance and Best Practice | Not applicable | Score | N/A |
| | | | |
| Land and Property | Not applicable | Score | N/A |
| | | | |
| Vehicle Access | Not applicable | Score | N/A |
| | | | |
| Environment and Safety | Not applicable | Score | N/A |
| | | | |
| Benefits and Cost | Not applicable | Score | N/A |
| | | | |


Summary and Conclusion

As mentioned earlier this scheme was proposed prior to the reconfiguration of the junction to a mini – roundabout, and therefore the circumstance surrounding the proposed scheme has changed.

Site observations showed that there are no major traffic issues at this junction with the current arrangement and therefore this scheme is not recommended for further consideration. However the junction should be monitored.

Overall Conclusion

Unsuitable for further consideration.

| | | |
|--|------------|--|
| Option Name | 8.2 | A4184 High Street/ A4184 Greenhill/ B4624 Worcester Road Junction – Introduce a Left-Filter Signal from Worcester Road to Greenhill |
| Scheme Description | | |
| <p>This scheme is proposed over and above the LTP4-led scheme in Option 1.2 and it is for having a left-filter signal from Worcester Road to Greenhill.</p> <p>The location of this scheme is annotated as Scheme 8.2 (same as scheme 1.2) in Figure 1 provided in Appendix A in this report.</p> | | |
| Existing Conditions | | |
| Junction Description | | |
| <p>The existing layout and conditions surrounding this junction are provided in this section.</p> | | |
|  | | |
| <p>See the pro-forma for Option 1.2 for the existing conditions surrounding this junction.</p> | | |
| Site and Desk Study Observations | | |
| <p>See the pro-forma for Option 1.2 for site and desk study observations for this location.</p> <p>As mentioned for Option 1.2, the Worcester Road to High Street traffic blocks vehicles turning left due to the short flare for left turners at the junction, which is approximately 2 vehicle lengths. As mentioned earlier only a handful of vehicles were observed to make that movement.</p> <p>For this scheme to be more effective the left-turn lane would have to be lengthened to accommodate enough left turners and therefore land and property would have to be purchased, but not to the scale of Option 1.2.</p> | | |

| Assessment of Option against Identified Criteria | |
|---|---|
| Guidance and Best Practice | <p>A scheme that meets DMRB standards can be provided at this location with proportionate amount of land and property purchase.</p> <p>The width of the lanes on the Worcester Road approach are currently narrow, therefore this scheme provides an opportunity to have wider lanes at this location.</p> <p style="text-align: right;">Score G</p> |
| Land and Property | <p>To maximise the benefit of this scheme, the left turning lane on Worcester Road would need to be lengthened, and this would require a proportionate amount of land purchase in the vicinity of the Vauxhall Garage.</p> <p style="text-align: right;">Score A</p> |
| Vehicle Access | <p>The scheme will not preclude the passage of vehicles which are essential to the 'routine life' of the town, such as HGV/LGV delivery vehicles, public service vehicles and emergency services.</p> <p style="text-align: right;">Score G</p> |
| Environmental and Safety Considerations | <p>Any improvement to the signals would be to design standards and would cater for non-motorised users.</p> <p style="text-align: right;">Score G</p> |
| Benefits and Cost | <p>Scheme cost – likely to be Low to Medium, depending on the amount of third party land required along Worcester Road.</p> <p>Benefits – considered be Low because generally only vehicles turning left from Worcester Road would benefit from this scheme and it will not significantly improve the overall operation of this junction.</p> <p style="text-align: right;">Score R</p> |
| Summary and Conclusion | |
| This scheme will not provide significant benefits at this location, and will require acquisition of third party land. | |
| Overall Conclusion | Unsuitable for further consideration. |

5 SUMMARY AND CONCLUSION

5.1 SUMMARY OF ASSESSMENT

5.1.1. A summary of the outcome of the assessment is provided in **Table 2** below, it provides a summary of the performance of each option against each identified assessment criteria.

Table 2 – Summary Options Performance against the Assessment Criteria

| | | | Assessment Criteria | | | | | Suitable for Further Consideration |
|---------|-------------------------------|---|----------------------------|-------------------|----------------|-----------------------|-------------------|------------------------------------|
| | | | Guidance and Best Practice | Land and Property | Vehicle Access | Safety and Environm't | Benefits and Cost | |
| Options | 1.1 | Junction Improvement - An expanded Abbey Bridge/ Waterside/ Cheltenham Road/ Pershore Road Junction | R | A | A | G | A | Further study required |
| | 1.2 | Junction Improvement - A4184 High Street/ A4184 Greenhill/ B4624 Worcester Road Junction | A | A | G | G | A | Further study required |
| | 1.3 | Junction Improvement - A4184 Cheltenham Road/ Davies Road Junction | G | G | G | G | G | Yes |
| | 2.1 | Induced Queueing To Alleviate Port Street (Air Quality Management Area) - Signalisation of the junction of Broadway Road and Elm Road | G | G | A | G | G | Yes |
| | 3.1, 3.2, 3.3, 3.4, 3.6 & 3.7 | Changes To The Town Centre Road Network – Proposal 1, 2, 3, 4, 6 & 7 | R | A | R | R | R | No |
| | 3.5 | Changes To The Town Centre Road Network – Proposal 5 | R | R | R | R | R | No |
| | 4.1 | 20 MPH Limit in the Town Centre | G | G | A | G | G | Yes |
| | 4.2 | 20 MPH Limit throughout Evesham Town | G | G | A | A | A | No |
| | 5.1 | Abbey Road/ Waterside Junction additional proposals - Add a right turn (from Cheltenham Road) filter light to the signals and/ or lengthen the right-turn lane. | A | A | G | G | R | No |

| | | | | | | | |
|-----|--|------------|---|---|---|---|-----|
| 5.2 | New roundabout to replace signals at Abbey Road/ Waterside Junction | A | R | A | R | R | No |
| 6.1 | New roundabout at Worcester Road/ Tesco entrance Junction | R | R | G | A | R | No |
| 6.2 | New roundabout to replace signals at Cheltenham Road/ Davies Road Junction | Not Scored | | | | | No |
| 7.1 | Proposed New Road - A new road built to link Common Road to the A46, via the dismantled railway. | R | R | A | R | R | No |
| 8.1 | New traffic signals at the junction of Elm Road/ Offenham Road. | Not Scored | | | | | N/A |
| 8.2 | Amended Traffic Signals - A left-filter signal from Worcester Road to Greenhill. | G | A | G | G | R | No |

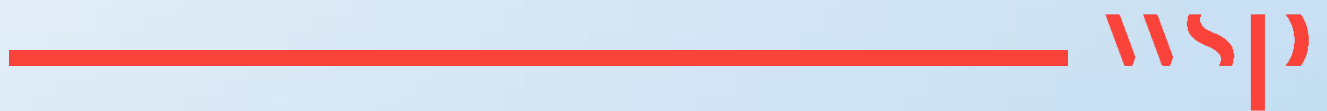
5.2 CONCLUSION AND RECOMMENDATIONS

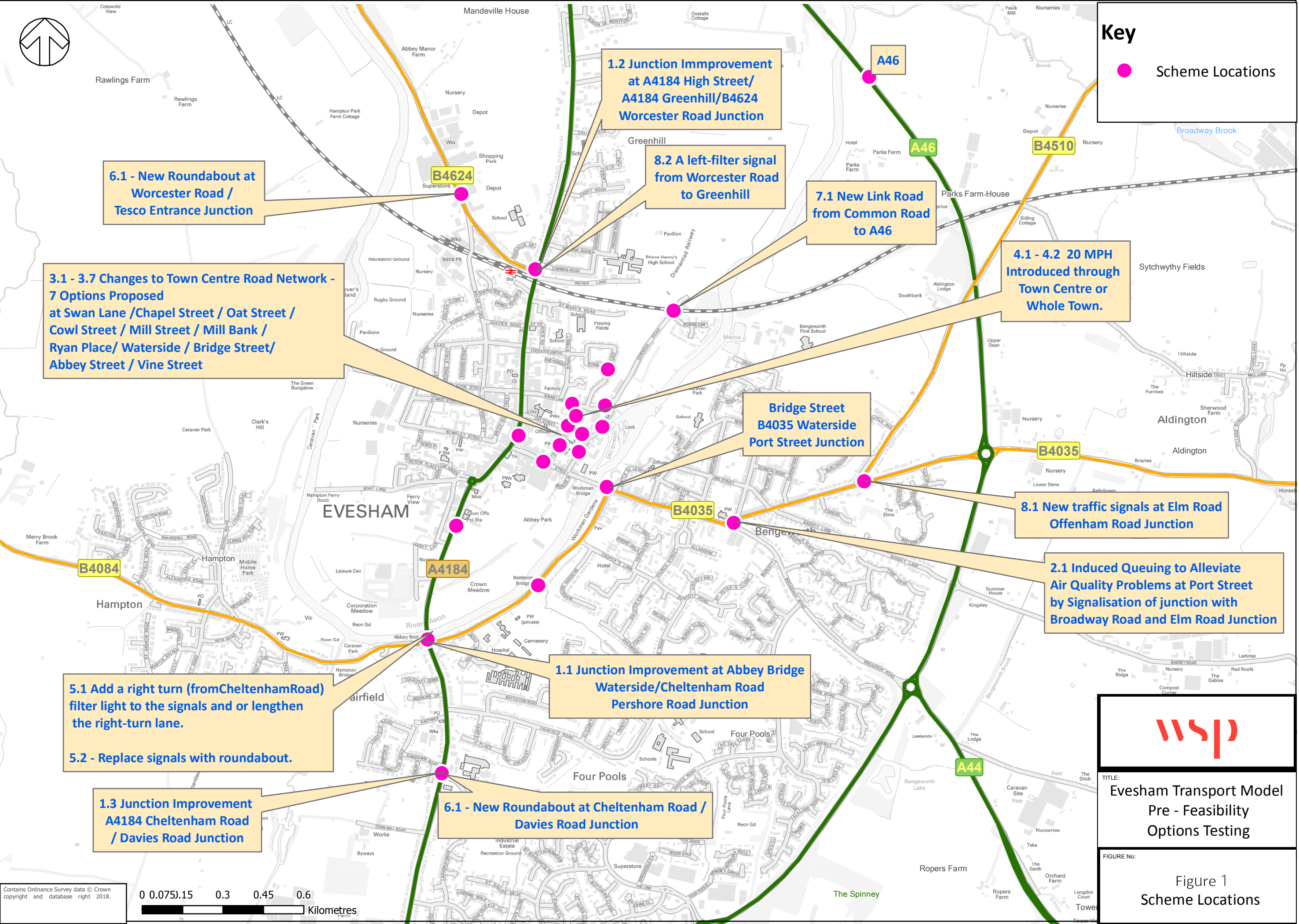
5.2.1. The following schemes are recommended to be suitable for further considerations:

- **Option 1.1** – An expanded Abbey Bridge/ Waterside/ Cheltenham Road/ Pershore Road junction (Further study required);
- **Option 1.2** – A4184 High Street/ A4184 Greenhill/ B4624 Worcester Road junction (Further study required);
- **Option 1.3** – Signal Improvements at Junction Improvement - A4184 Cheltenham Road/ Davies Road Junction;
- **Option 2.1** – Induced Queueing to Alleviate Port Street (Air Quality Management Area); and
- **Option 4.1** – 20 MPH Limit – in the town centre (subject to stakeholder engagement and collision analysis)

Appendix A

Location of **S**chemes





Key

- Scheme Locations

6.1 - New Roundabout at Worcester Road / Tesco Entrance Junction

1.2 Junction Improvement at A4184 High Street/ A4184 Greenhill/B4624 Worcester Road Junction

8.2 A left-filter signal from Worcester Road to Greenhill

7.1 New Link Road from Common Road to A46

4.1 - 4.2 20 MPH Introduced through Town Centre or Whole Town.

3.1 - 3.7 Changes to Town Centre Road Network - 7 Options Proposed at Swan Lane / Chapel Street / Oat Street / Cowl Street / Mill Street / Mill Bank / Ryan Place/ Waterside / Bridge Street/ Abbey Street / Vine Street

Bridge Street B4035 Waterside Port Street Junction

8.1 New traffic signals at Elm Road Offenham Road Junction

2.1 Induced Queuing to Alleviate Air Quality Problems at Port Street by Signalisation of junction with Broadway Road and Elm Road Junction

1.1 Junction Improvement at Abbey Bridge Waterside/Cheltenham Road Pershore Road Junction

5.1 Add a right turn (from Cheltenham Road) filter light to the signals and or lengthen the right-turn lane.
5.2 - Replace signals with roundabout.

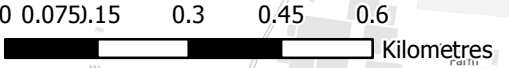
1.3 Junction Improvement A4184 Cheltenham Road / Davies Road Junction

6.1 - New Roundabout at Cheltenham Road / Davies Road Junction



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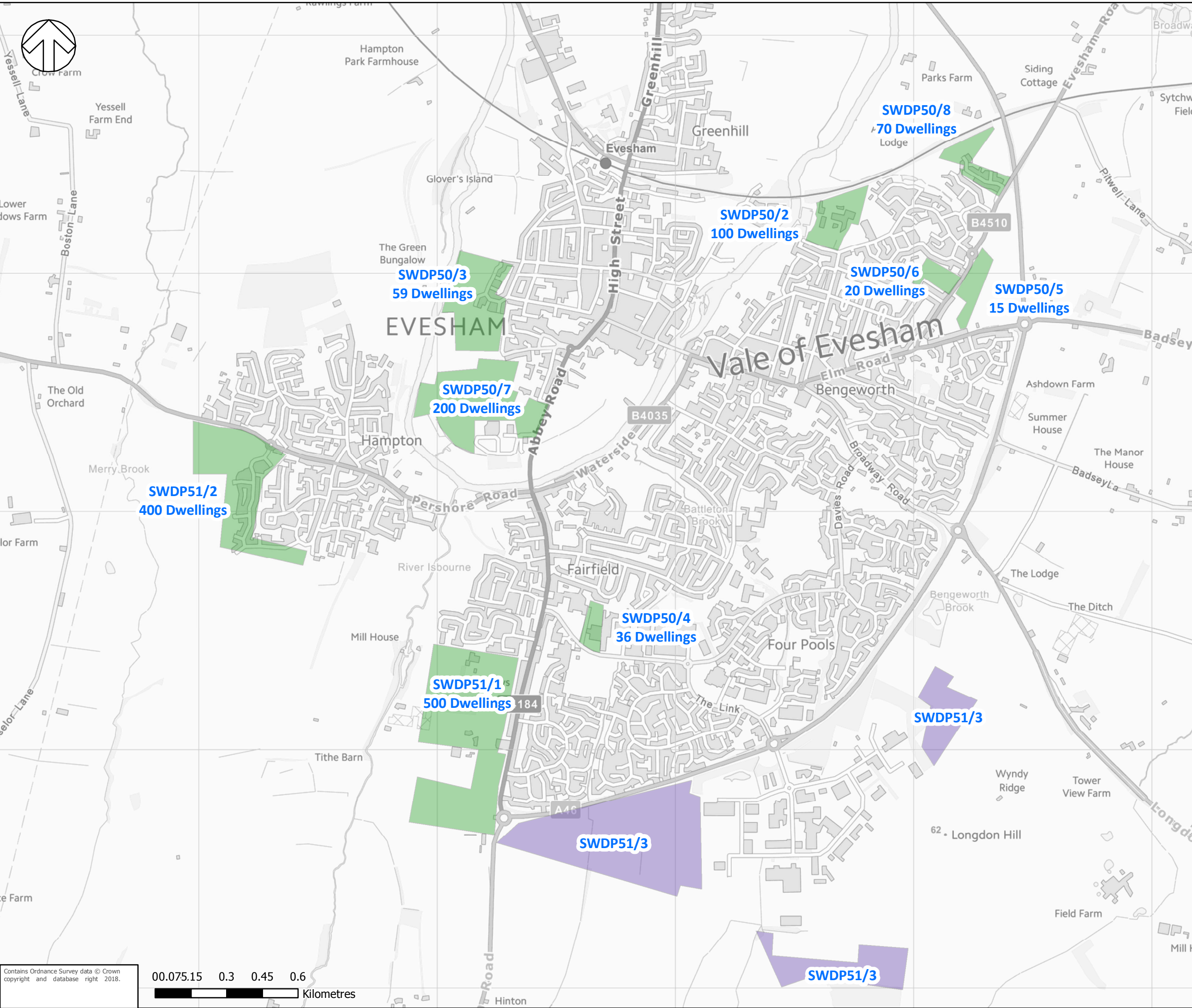
FIGURE No:
Figure 1 Scheme Locations



Appendix B

Planned **D**evelopments





Key

SWDP Land Allocation With Policy Number & Number of Dwellings

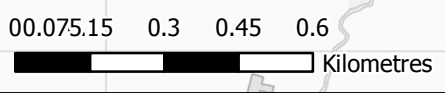
- Housing
- Employment*

* Total Employment Floor Space between 3 Sites = 34ha



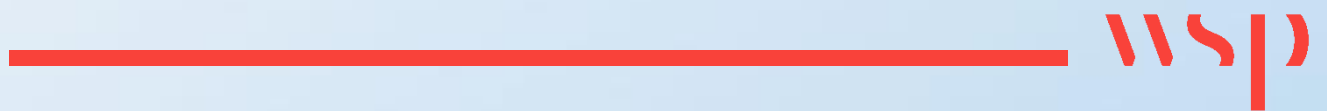
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**Evesham Transport Model
Pre - Feasibility
Options Testing**

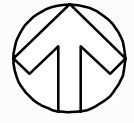
FIGURE No:
Housing Allocations



Appendix C

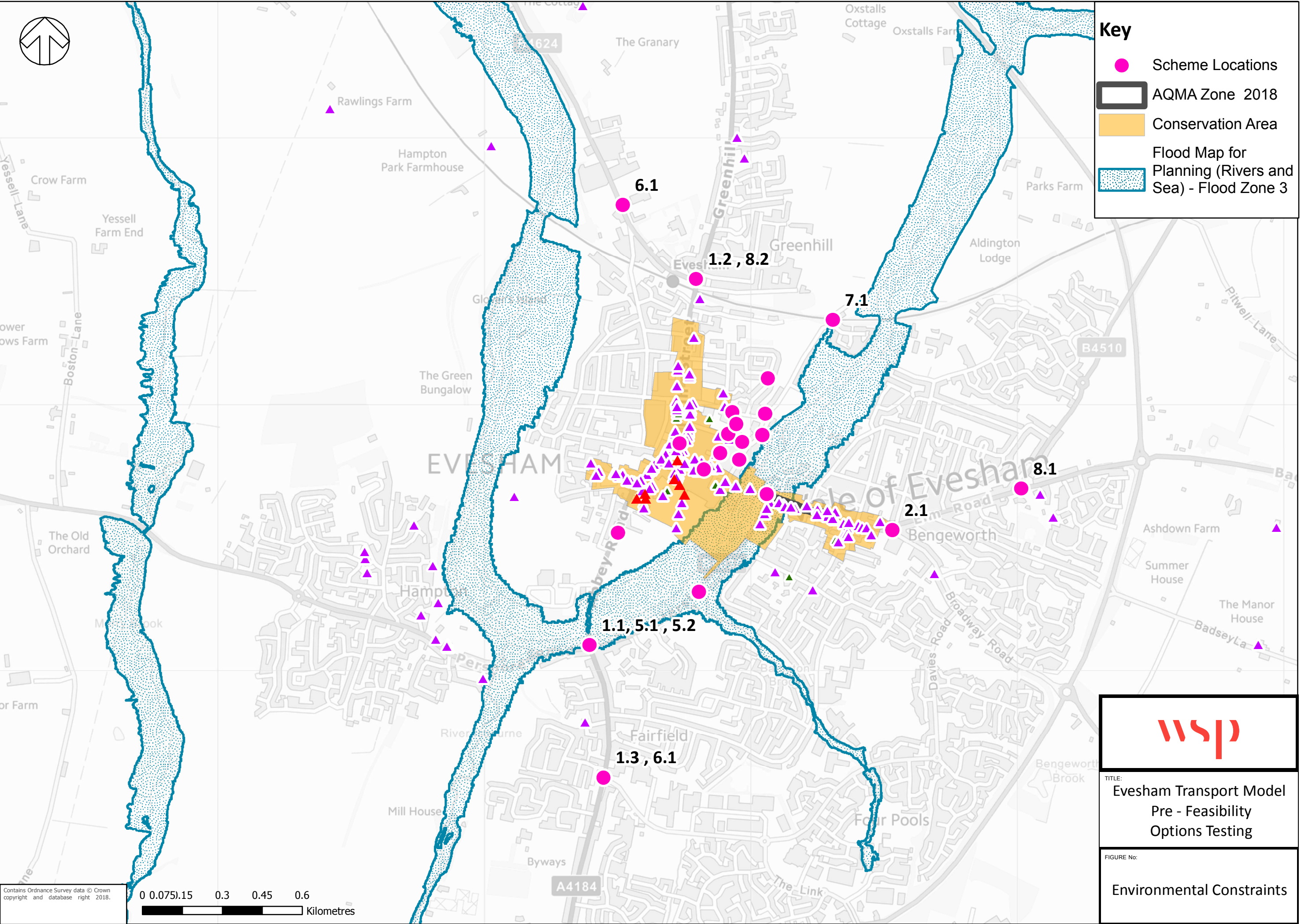
Environmental **C**onstraints




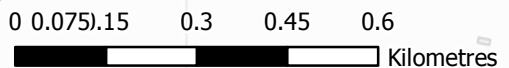


Key

- Scheme Locations
- AQMA Zone 2018
- Conservation Area
- Flood Map for Planning (Rivers and Sea) - Flood Zone 3



Contains Ordnance Survey data © Crown copyright and database right 2018.

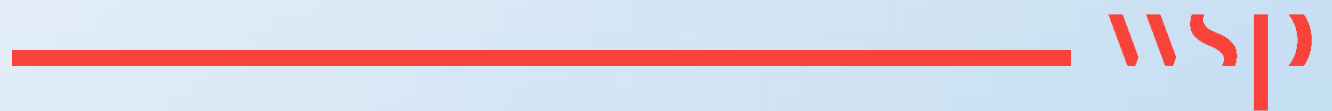


TITLE:
Evesham Transport Model
Pre - Feasibility
Options Testing

FIGURE No:
Environmental Constraints

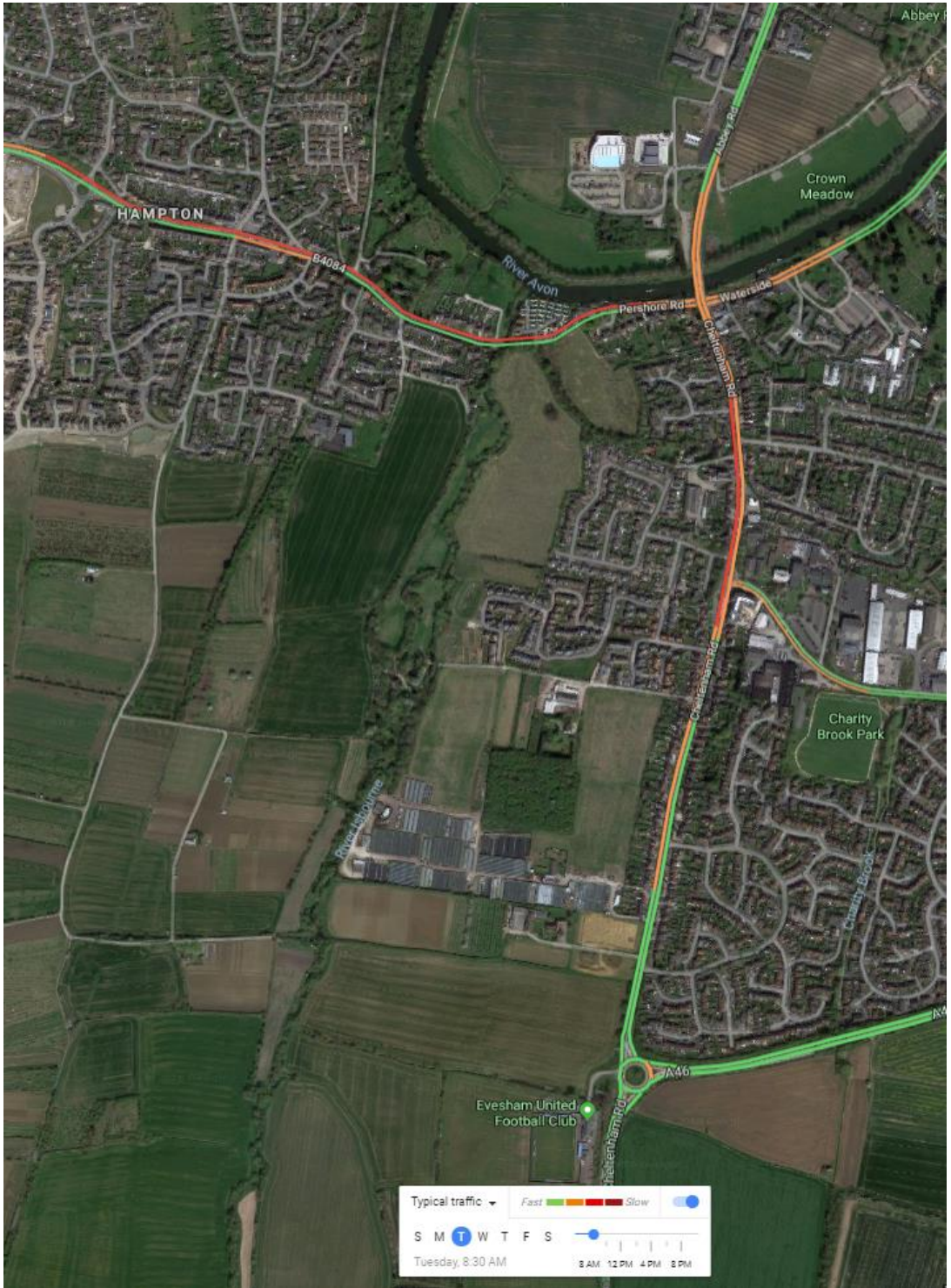
Appendix D

Traffic **D**ata

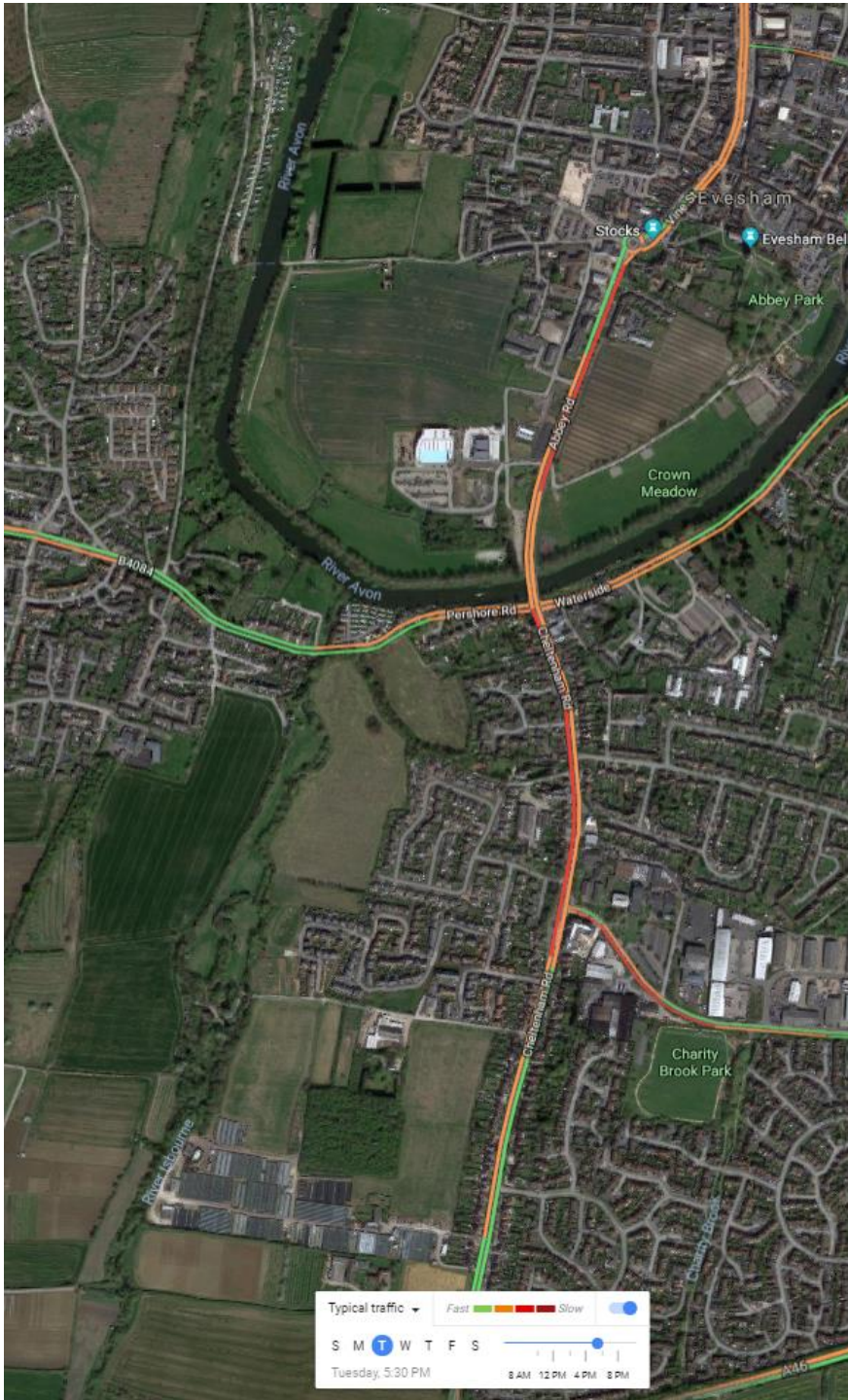


Scheme 1.1 & 1.3 Junction Improvement - An expanded Abbey Bridge/ Waterside/ Cheltenham Road/ Pershore Road Junction.

AM Peak



Pm Peak

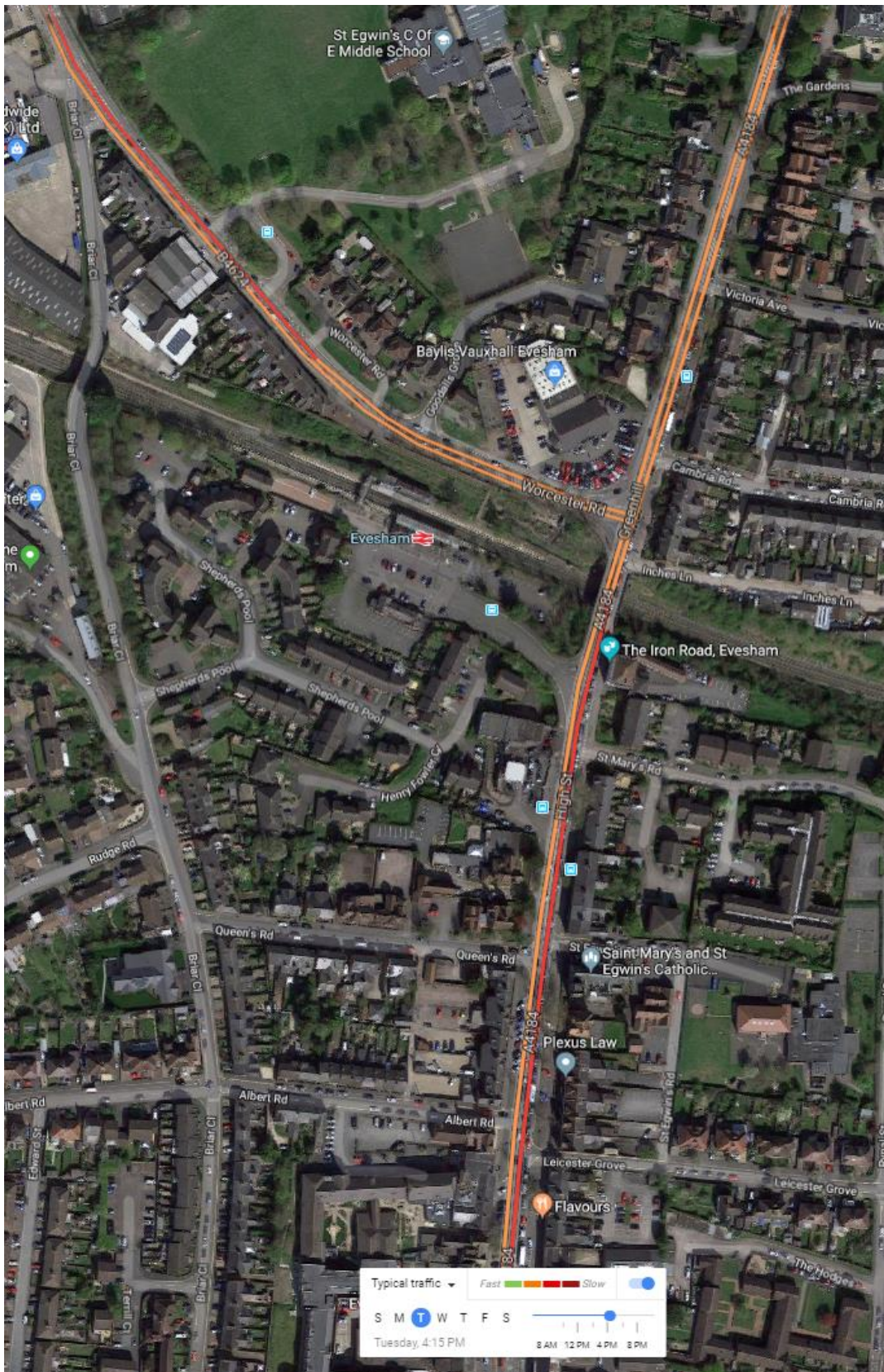


Scheme 1.2 Junction Improvements - A4184 High Street/ A4184 Greenhill/ B4624 Worcester Road Junction

AM Peak



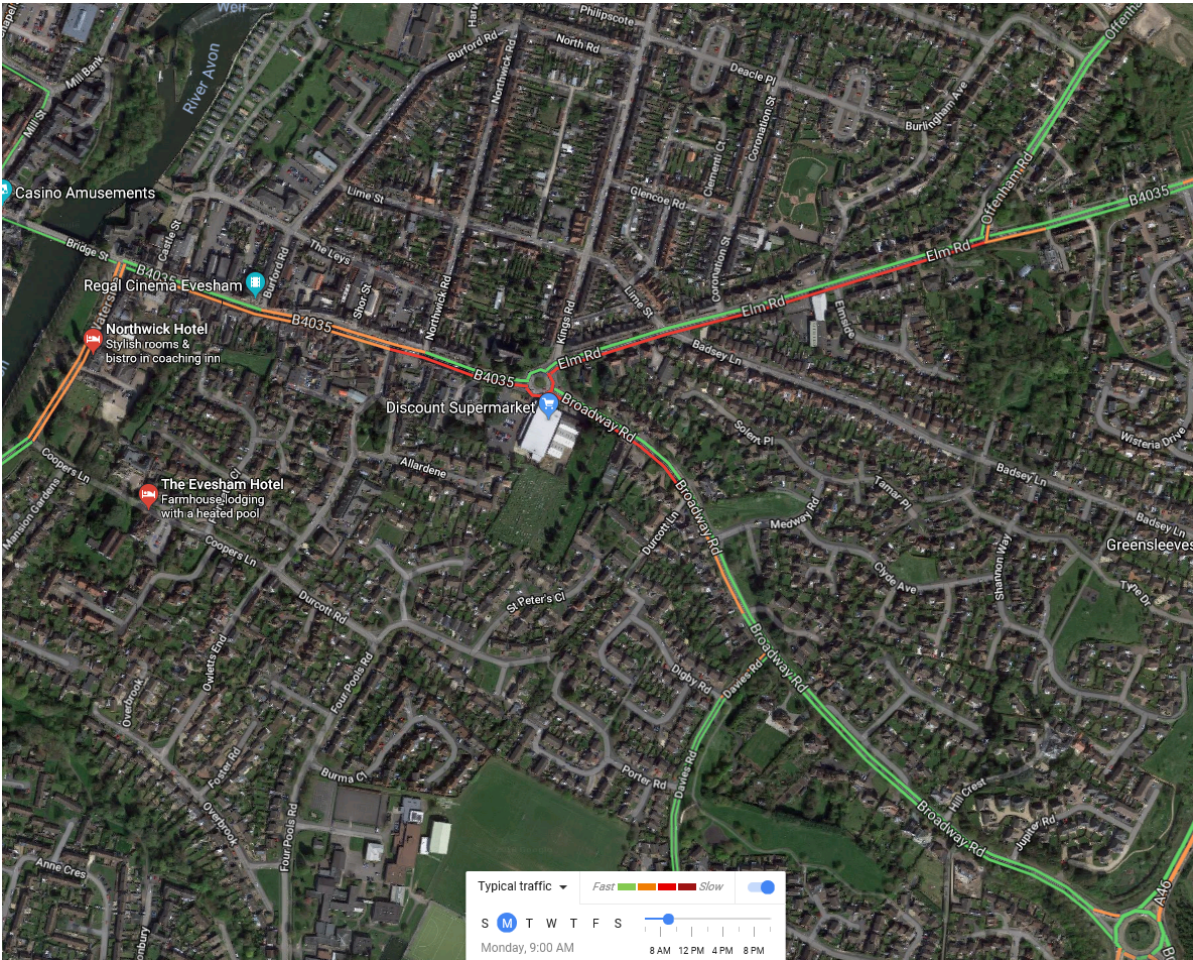
PM Peak

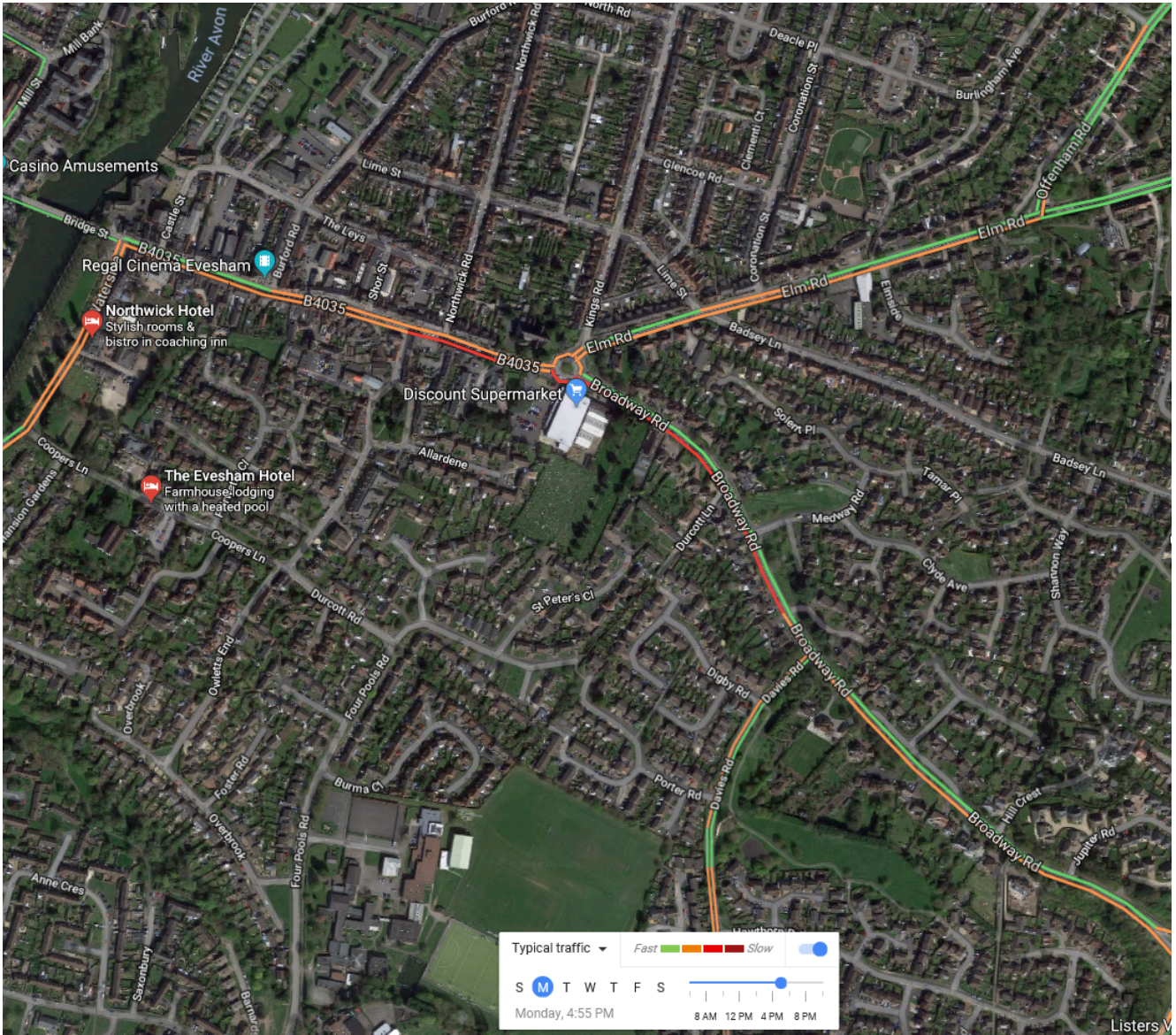




Scheme 2.1

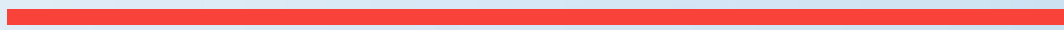
AM Peak





Appendix E

Site Photographs





Option Number – 1.1 / 5.1 / 5.2

Junction Improvement - An expanded Abbey Bridge/ Waterside/Cheltenham Road/ Pershore Road Junction





Option Number – 1.2 / 8.2

**Junction Improvement - A4184 High Street/
A4184 Greenhill/ B4624 Worcester Road
Junction**





Option Number – 1.3 / 6.2

Junction Improvement - A4184 Cheltenham Road/ Davies Road Junction





Option Number – 2.1

**Induced Queueing To Alleviate Port Street
(Air Quality Management Area)**





Option Number – 3.1

Changes to the Town Centre Road Network





Option Number – 6.1

New Roundabouts - Worcester Road/ Tesco entrance





Option Number – 7.1

Proposed New Road - A new road built to link Common Road to the A46, via the dismantled railway.





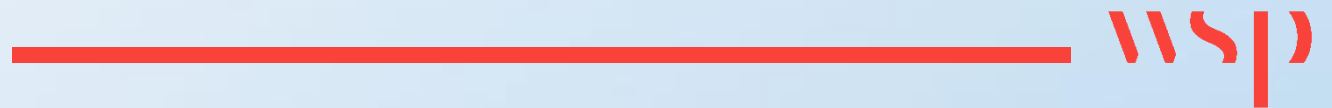
Option Number – 8.1

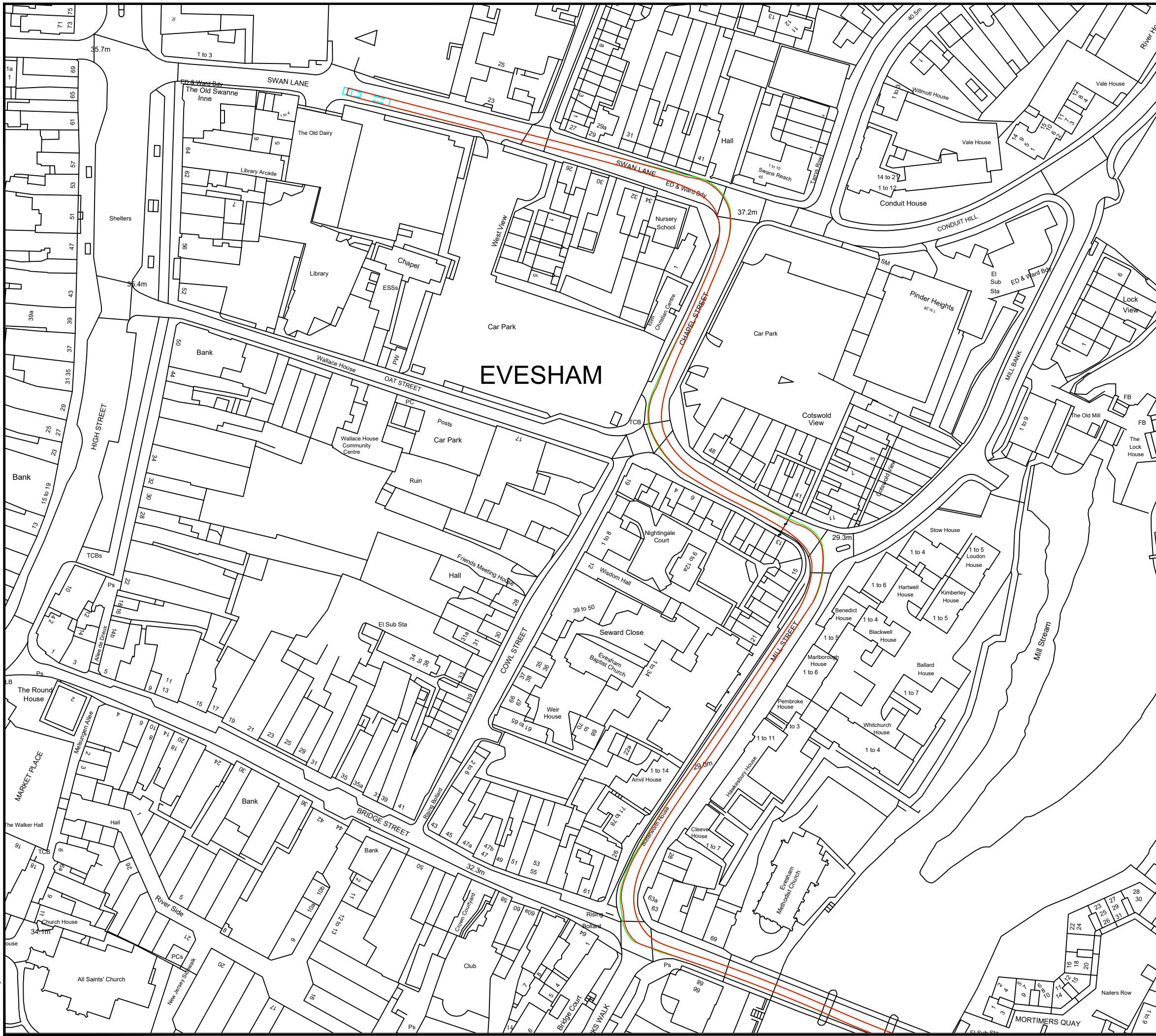
New or Amended Traffic Signals - New traffic signals at the junction of Elm Road/Offenham Road.



Appendix F

Swep**t P**ath **A**nalysis





DO NOT SCALE

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PROJECT:

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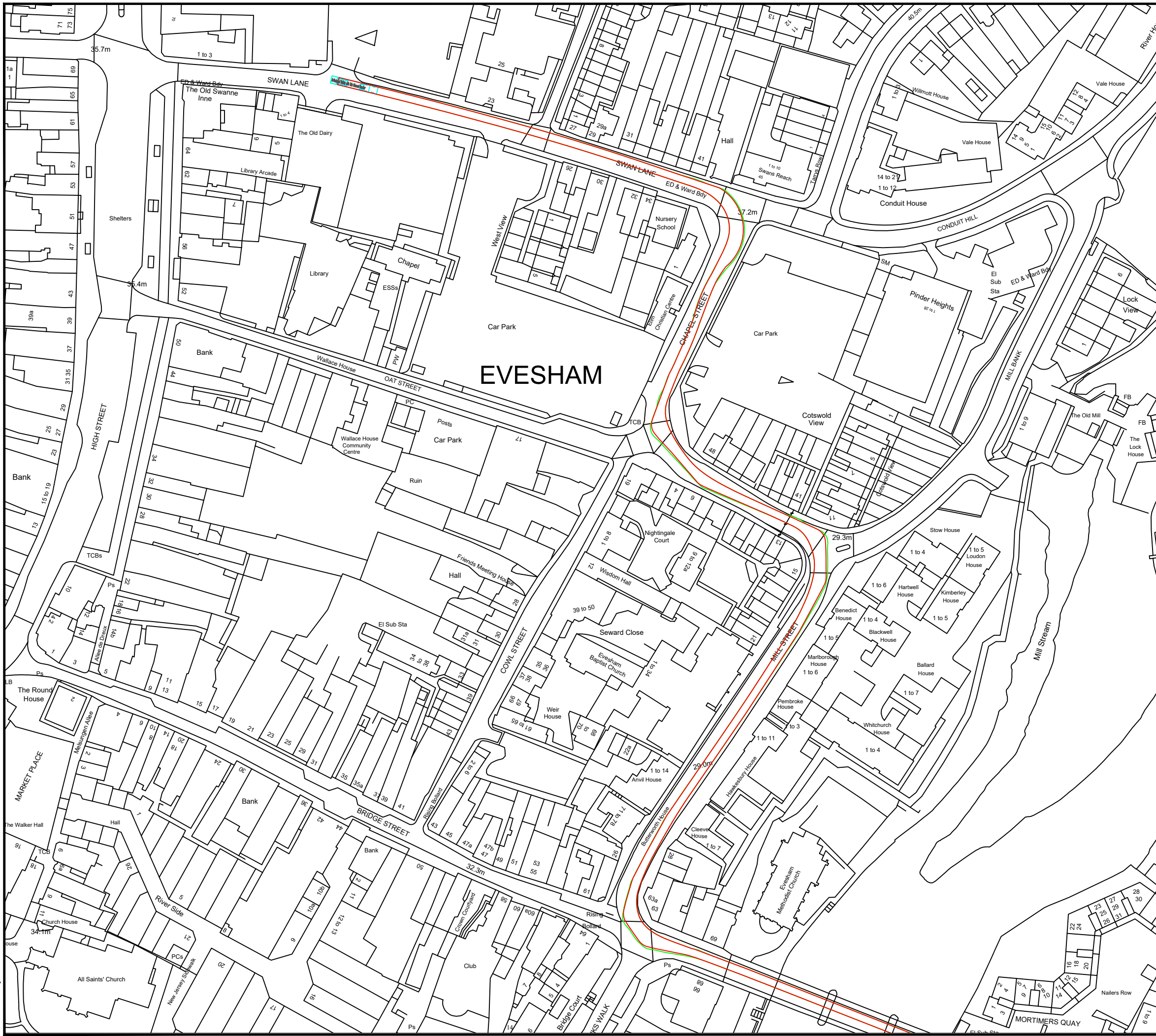
Evesham Vehicle Tracking Northbound

| | | |
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| Not To Scale | | |

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| 70042908 | MS | MS | March 18 |

| | |
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| DRAWING No: | REV: |
| Evesham Vehicle Track Drawings | P04 |

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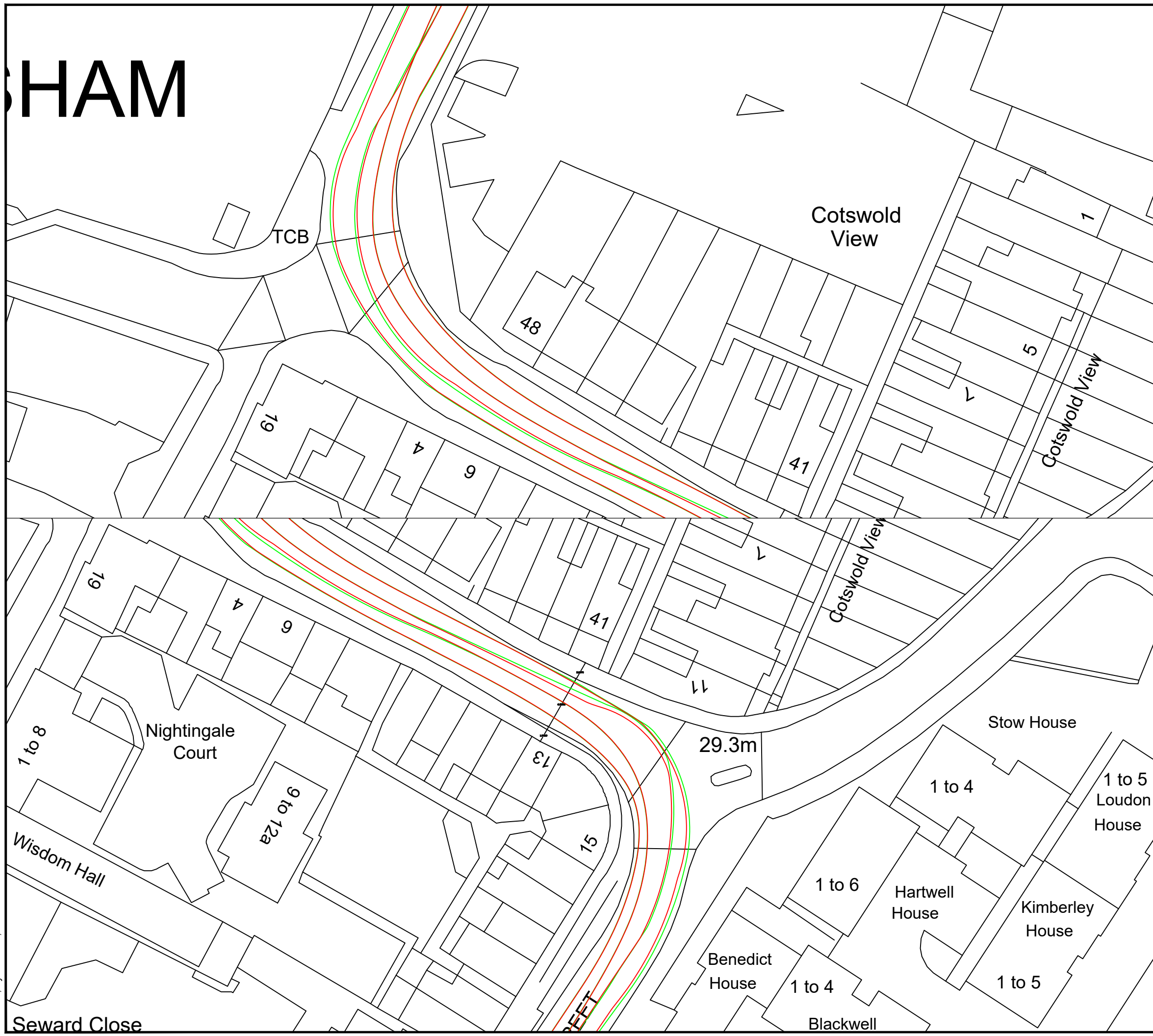
Evesham Vehicle Tracking Southbound

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|-------------|-----------|--------|----------|
| PROJECT No: | DESIGNED: | DRAWN: | DATE: |
| 70042908 | MS | MS | March 18 |

| | |
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CLIENT:

ARCHITECT:

PROJECT: Evesham Transport Model Pre-feasibility

TITLE: Evesham Vehicle Tracking Two Way Combined

SCALE @ A3: Not To Scale

PROJECT No: 70042908

DRAWING No: Evesham Vehicle Track Drawings

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