What is the Southern Quadrant Transport Strategy?

The Southern Quadrant Transport Strategy (SQTS) sets a ten year vision for transport in the southern area of High Wycombe.

It establishes priorities and schemes that will deliver positive benefits for all, supporting District Council land use planning.

It sets out the strategy and how it will deal effectively with increasing travel demands forecast for the area.

How was it developed?

It has been shaped and informed by extensive data collection, analysis, and public engagement. It has assessed existing and future travel patterns, opportunities and constraints to establish an effective package of schemes.

It is consistent with the County Council’s Local Transport Plan 3 objectives, and is the first in a set of area-based strategies that will form an overarching strategy for High Wycombe.

This version has been developed to inform the District Council’s Development Brief for RAF Daws Hill, whilst acknowledging future known and likely proposals. It identifies the schemes needed to enable development at RAF Daws Hill, in the context of wider transport and social objectives.

What are our objectives?

The package of schemes has been developed to contribute to the County and District Councils’ objectives described in Corporate Plans, the Sustainable Community Strategy, and other key policy documents, summarised below. Transport plays an important part in the successful delivery of these objectives.

“To make Buckinghamshire a more successful, healthy and safe place to live, work and visit”

Local Transport Plan 3

Stakeholder and public consultation. Steering and Reference Groups

Shared vision for High Wycombe

Transport Objectives (LTP3)

TRIM Strategy

Challenges, Problems, Issues

Thriving Economy

Sustainable Environment

Safe Communities

Health and Well-being

Cohesive and Strong Communities
Southern Quadrant Transport Strategy

What is the Southern Quadrant like?

National data suggests that the southern quadrant has low indices of multiple deprivation, and a relatively high quality of life, compared with local or national average figures.

Car ownership is relatively high, and work journeys are predominantly by private car. The proportion of work journeys made by foot are relatively high (10%), but less than 1% of work journeys are made by bike.

What are current transport conditions like?

Journeys made in this area of High Wycombe are a complex mix of longer distance trips and shorter distance commuter trips (including many associated with Cressex Business Park).

About 20% of traffic on the A404 and the A4010 is longer distance (i.e. traffic travelling through High Wycombe to the Thames Valley).

Another important journey type in this area is the school run. There are a large number of school bus movements with almost 50% of all school journeys by public transport, and 30% by car.

Traffic congestion is a feature in this area, with delays on the A4010 and A404 affecting trips on connecting routes.

What might transport conditions look like in future without a Strategy?

According to Government forecasts of population and job growth, traffic is predicted to increase in High Wycombe by 17% by 2022. This is based on growth projections that consider planning data (changes in population and employment) and trend-based socio-economic changes (e.g. car ownership levels).
What are our key transport challenges?

Traffic congestion affects journey times and delays public transport services. School run trips are also affected by congestion, but in some areas these journeys increase delay for general traffic. Any further development that results in unmitigated traffic growth in the southern quadrant would worsen congestion with associated environmental and health impacts including noise and air quality issues. The Transport Strategy must address these challenges and its aim, in summary, is:

To better manage traffic congestion, school-related trips, and development pressures.

The assessment of existing and future challenges is based on up-to-date data including traffic counts, queue length surveys, and modelling data. The Strategy acknowledges existing and potential development proposals and therefore work has considered future transport and conditions in the area in the next ten years, by 2022.

Key Transport Challenges in the Southern Quadrant
Southern Quadrant Transport Strategy

Key transport challenges - school travel

Daws Hill Lane – Transport Conditions

The school run presents a big challenge in this area, particularly on Daws Hill Lane during the morning peak period. St Augustine’s and St Bernard’s Catholic Schools are accessed directly from Daws Hill Lane.

During term time, in the morning peak, Daws Hill Lane currently accommodates about 200 school run vehicle trips, with 50 vehicles ‘dropping off’ either on Daws Hill Lane or residential roads off Daws Hill Lane.

Approximately 70% of all school-related trips come from the ‘west’ (via Marlow Hill). There are 25 bus movements, and many pick up or drop off on Daws Hill Lane.

A school crossing patroller, west of the School Lane junction, helps 250 people cross the road during the morning peak.

Total traffic volumes at peak times on Daws Hill Lane are about 650 westbound and 750 eastbound.

This complex mix of movements coupled with limited capacity in the area, means queues of up to 1km in length can develop westbound to Marlow Hill, with queues blocking back from School Lane onto Marlow Hill eastbound.

Why does queuing and delay occur?

Data shows that it is not just high traffic volumes that result in queuing and longer journey times, as represented by the graphs, opposite. Delays occur as a combination of factors related to the interaction on Daws Hill Lane between school and background traffic movements.

The recorded journey times on Daws Hill Lane for non-school periods indicate that higher traffic volumes could be possible if the delay causing factors associated with the school were relocated.
Southern Quadrant Transport Strategy

Key transport challenges – future development

Future Development and Traffic Growth
The Southern Quadrant is a focus for development in High Wycombe. Handy Cross Hub, including a Coachway Park & Ride, an improved sports centre facility and business park, already has planning consent. There are further developments proposed for this area including expansion of existing retail sites (John Lewis), possible new retail / commercial development (Cressex Island), and housing and employment (former RAF Daws Hill site and possibly Abbey Barn South). These are shown on the plan that follows.

The likely trip generation from these sites has been calculated and a trip distribution for extra traffic determined by the High Wycombe Transport Model. The map below shows forecast increases in traffic volume during peak hours across the area. These estimates take no account of the Transport Strategy measures and any mitigation that these may offer.

The information shows how transport conditions may change in the future if unchecked, and highlights those aspects that the Transport Strategy needs to address to Transfer, Reroute, Intercept, or Manage in line with the County Council’s TRIM approach.

Map showing ‘highest’ peak hour traffic growth (2010 – 2022) – (No Transport Strategy)

Figures shown rounded to the nearest 50 vehicles
What are our transport solutions?

A thorough appraisal has been carried out to inform the development of this strategy, and key stakeholders have also provided input in reference groups and workshops. This has been central to helping develop an effective and deliverable package of measures and schemes.

With such a complex mix of issues, there is no silver bullet (one single scheme) that will alone bring about significant improvements in this area. The strategy seeks to address problems and meet objectives by combining a number of measures to improve conditions for all modes. This package delivers incremental improvements without disproportionate negative environmental impacts.

This package shown on the map will also be supported by ongoing ‘smarter choices’ and travel planning initiatives. Managing and reducing traffic growth remains fundamental to any transport strategy, and behaviour change programmes, such as school and workplace travel planning, remain vital. In this area, such programmes will focus upon encouraging use of the Handy Cross Hub.

Map showing a package of transport improvement schemes
Southern Quadrant Transport Strategy

Strategy for Handy Cross Hub

**What is the Strategy?**
The Handy Cross Hub site has planning consent for redevelopment of the leisure centre and provision of office employment, though a revised planning application is expected. The site will include a Coachway Park and Ride facility enabling travellers to transfer from car or bus to bus or coach for all trip types.

Existing and new bus services will be re-routed through the site to support long term financial viability and a network of cycleways and footways will transform how people travel by connecting the hub to the wider area.

**What are the benefits?**
The new facility will provide the following benefits for travellers in the Southern Quadrant:

- A new Coachway service will **Intercept** longer distance trips, providing a genuine alternative to commuting to regional destinations by car.
- The Park and Ride service will **Intercept** traffic on Marlow Hill with a destination in the town centre and also provide a direct service connecting with the train station for people who live in the area.
- Trips to and from the town centre can be **Transferred** to sustainable modes and therefore reduce traffic volumes with the implementation of the new services, particularly on Marlow Hill.
- The creation of a travel hub will support the longer term viability of public transport services, helping to maintain or increase service frequency.
- The hub will create the opportunity to **Manage** school drop offs by providing alternative off-road facilities for school travel with an appropriate parking strategy.
- The business park will help retain skilled workers in High Wycombe, shortening average journey distances by reducing the proportion of ‘out-commuting’ to destinations including the Thames Valley.

The junctions with Marlow Hill (A, B and C) will be reconfigured and improved, to accommodate the additional trips associated with the site. Further design will consider how best to encourage the appropriate routing of vehicles, particularly school drop offs, via junction B.

Traffic Modelling shows that the A404 access junction (A) will operate within capacity Ratio Flow to Capacity (RFC) ‘Sports Centre’ Junction – AM = 73% PM = 88% * where an RFC <90% shows the junction operates within its theoretical capacity.
Southern Quadrant
Transport Strategy

Strategy for Daws Hill Lane

What is the Strategy?
The strategy sets out measures to manage or reduce traffic on roads near to schools. At Daws Hill Lane, the key to addressing existing issues and accommodating extra trips from new development sites is to separate school run trips for St Augustine’s and St Bernard’s schools from general traffic using the road.

Providing the alternative school drop off is a critical measure for the strategy and the area. In addition, a new bus-only public transport route in the vicinity of Daws Lea will maximise the opportunities provided by the Handy Cross Hub transport interchange. The two options to achieve this link described on Page 6 are being considered as part of further feasibility studies. Other measures for Daws Hill Lane include improvements at the Daws Hill Lane / Marlow Hill junction to reduce queue lengths compared to existing conditions.

What are the benefits?
The package of measures for Daws Hill will provide the following benefits:

- A new dedicated ‘western’ school drop off area accessed via the Sports Centre junction which separates background traffic from school traffic movements, hence minimising vehicular delay.
- Improved junction performance with better Managed traffic and reduced queues on Daws Hill Lane, with other nearby junctions including the Sports Centre upgraded and operating within capacity.
- Provision of a new route for pedestrians, cyclists, school buses and public transport services with improved frequencies, providing wider benefits for travellers from Flackwell Heath and Bourne End.
- The retention or addition of appropriate vehicular speed management measures and parking controls to support safe travel in the area.
- An additional ‘eastern’ school drop off point to accommodate journeys from the east. Widened footways and foot/cycle-way connections to Wycombe Marsh to Transfer traffic to sustainable modes.
- Improved pedestrian facilities including the provision of footways along both sides of the length of Daws Hill Lane will be sought as part of development proposals in this area.

The junction of Marlow Hill/Daws Hill Lane will be improved by increasing the capacity of the left turn, with linked signal timings to smooth traffic flow.

Options to accommodate higher traffic volumes generated by other developments exist including the potential to open the right turn from Daws Hill Lane, and an additional lane on egress towards Cressex to reduce queuing on Marlow Hill and reduce congestion at the Marlow Hill / Marlow Road gyratory.

Note: Two routing options subject to detailed feasibility study (see page 6)
Southern Quadrant
Transport Strategy

Strategy for Cressex Island / John Hall Way

What is the Strategy?
The A4010 is both a major traffic distributor road in High Wycombe and an important interurban route for trips between Aylesbury and Thames Valley. Maintaining traffic flow on the A4010 is key to the strategy.

The John Hall Way / Crest Road roundabout is a critical junction on the A4010, with its proximity to Handy Cross and existing or planned retail development in the Cressex Island area. To accommodate future increased traffic volumes, the strategy proposes a signalised junction, to improve access and egress options to the Cressex Island area for all traffic including public transport.

The County Council will review in due course the optimal routing, timing and stop locations for existing and new public transport services across the Southern Quadrant including services to Cressex Island, in consultation with stakeholders.

What are the benefits?
The Strategy will provide the following benefits for travellers on the A4010 and in the Southern Quadrant:

- An upgraded junction with additional traffic capacity to Manage travel through the area and to provide controlled access and egress to nearby retail developments.
- Link the operation of this junction with the signals at Handy Cross to ensure optimal network operation on the A4010 and control of junctions to ensure that traffic does not block back from this junction into Handy Cross in future.
- The provision of a signalised pedestrian crossing on the western arm of the junction to support sustainable travel to existing and future developments at Cressex Island.
- Securing additional funding for public transport services will ensure that the accessibility of the Cressex area by bus is maintained or improved, despite the relocation of the Park and Ride.

The capacity of the junction has been modelled with forecast traffic growth. The junction will be designed to accommodate the traffic and operate with acceptable performance. An improved roundabout was considered but would not be as effective at managing traffic at this location.

<table>
<thead>
<tr>
<th>Ratio Flow to Capacity (RFC)</th>
<th>Max on A4010</th>
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<tr>
<td>AM 73%</td>
<td>PM 90%</td>
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* where an RFC <= 90% shows the junction operates within its theoretical capacity
What is the Strategy?
Major junction works or new traffic lanes in this area are neither desirable nor feasible. The strategy aims to provide more direct traffic routes for light vehicles at the Cressex Road / Cressex Link junction by opening left turns (west to north and east to south) therefore reducing traffic at other junctions.

Improved facilities for pedestrians and cyclists, including advance cycle stop-lines and cycle lanes can be added as part of the junction improvements. A new way-finding strategy will improve the legibility and coherence of pedestrian routes.

What are the benefits?
The Strategy will provide the following benefits for travellers in this area of the Southern Quadrant:

• Opening the two left turns provides improved accessibility by Re-routing traffic, with more direct journeys for Cressex Business Park and residential and retail areas.

• Traffic volumes and delays reduce at the New Road / Cressex Road / John Hall Way junction and at the A4010 / Turnpike Road junction.

• Additional traffic is not attracted to the area, therefore overall two-way traffic volumes on Cressex Road do not increase. Clear signage will indicate appropriate routes for HGVs associated with Cressex Business Park.

• Traffic has an appropriate alternative route from the west to the north via Desborough Avenue.

• An ‘all-red’ phase is maintained for pedestrians, and advance cycle stop-lines are introduced to support east-west cycle journeys.

• Traffic management measures on Cressex Road will discourage inappropriate routing of vehicles and maintain appropriate vehicle speeds near Cressex Community School.

Peak hour traffic rerouting
The left turn from Cressex Road into Coronation Road will benefit up to 400 trips. The left turn from Cressex Road into the Cress Link will benefit up to 150 trips.
Southern Quadrant Transport Strategy

Which schemes have been discounted?

**Assessment Process**

Developing the strategy has included assessing a long list of options previously considered or proposed. Each has been reviewed to determine if it is effective, deliverable, and consistent with policy. This involved discounting some options as impractical or undeliverable.

A series of workshops and reference groups have also taken place to inform the strategy, with feedback collated into a set of minutes and action points. The programme of engagement has been an important part of the Strategy development process.

Judgements on schemes and Strategy measures were informed by analysis and comments and feedback from stakeholders to ensure that the most effective and deliverable package of schemes is proposed.

**Key schemes not part of the Strategy**

- Previous modelling work has shown the SLINK is not effective because it increases traffic volumes in key areas of the road network including Daws Hill Lane. Furthermore, there are environmental constraints and the scheme is high cost.
- The M40 Junction 3 only provides an eastbound on-slip and westbound off-slip. Engineering and cost constraints mean that the completion of the remaining two slip roads at this location is not feasible. This solution is not supported by the Highways Agency.
- A scheme has been considered to widen Marlow Hill to provide a full three lanes from Daws Hill Lane to the gyratory at the top of Marlow Hill. This option is not effective as it would not reduce queues in the traffic lane towards Cresssex.
- Modelling work has shown that the signalisation of the New Road / Cressex Road junction is not effective as each approach would operate over capacity (>100% RFC).
- The realignment of Daws Hill Lane would not reduce traffic volumes on this route, and would not deal effectively with the congestion associated with the school drop off.
Managing risk - a flexible approach
The strategy details a package of schemes and measures to improve the operation of the transport network now and in the future. It must be recognised that predictions about the future cannot be certain. Any scenario that considers future developments and traffic growth are likely to change as County and District policies change, and other factors influence travel behaviour.

The strategy remains flexible, and will be monitored and refreshed when necessary. But, the principles that guide the strategy remain consistent.

Deliverability and Funding
Whilst developing the strategy, a range of possible funding sources was considered. The strategy is ambitious yet realistic, to ensure that the schemes can be delivered with the likely available funds.

The main source of funding for transport schemes will be developer contributions. Developers are able to deliver schemes that both improve transport conditions and secure wider benefits as part of their proposals.

As a statutory consultee for any development, the County Council can ensure that any proposals will not have an unacceptable impact on Local Authority routes and developers would assist in the delivery of schemes that are part of the wider strategy or contribute to key shared objectives. The Highways Agency would be consulted on any development proposal that may increase congestion.

The County Council will continue to work with the Department for Transport and the Highways Agency on other related or strategic schemes and prepare funding bids where opportunities exist.

Next Steps
The strategy will form part of an overall transport strategy for High Wycombe that is consistent with the objectives and vision set out in the County Council’s Local Transport Plan 3.

A flexible approach to delivery
As an example of a flexible approach, WDC is not proposing to release Abbey Barn South for development but this may be required for release in future. Development at this site would require additional transport mitigation. The provisional view of BCC is that if proposals are brought forward by the landowner then they should look to support the Southern Quadrant Transport Strategy in 3 specific areas:

- connections with the strategic road network
- improvements in the area of the Marlow Road/Marlow Hill gyratory and the Desborough Avenue roundabout
- network and junction capacity in the Abbey Barn Lane / Abbey Barn Road / London Road area.

Highways Agency (HA) Pinch Point Programme
Buckinghamshire County Council will promote potential schemes through national funding sources such as the HA’s Pinch Point Programme.

As part of this programme, the County are supporting two potential schemes in this area; improvements to the A404 Bisham Junction and an M40 Junction 3a.

The package of SQTS measures is sufficient to provide positive benefits without the provision of more ‘strategic’ schemes; however, both proposals have the potential to improve transport in the Southern Quadrant, over and above the schemes described in this document.

The Southern Quadrant Transport Strategy will deliver shared objectives and improve travel conditions for all, by implementing a complementary package of effective schemes.
Appendix A:
Schedule of Changes - SQTS
<table>
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<tr>
<th>ID</th>
<th>Comment</th>
<th>Change?</th>
<th>Response</th>
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<tbody>
<tr>
<td>1a</td>
<td>The TFG recommends that the County Council should work towards securing financially viable public transport services in the Southern Quadrant area. With the use of developer contributions the TFG’s preferred solution would be two dedicated bus routes and a continuance of Route 36.</td>
<td>Y</td>
<td>A shuttle service to Cressex Island is proposed as part of the Strategy. Rephrase second bullet point to &quot;...provide a direct service connecting with the train station...&quot; Add phrase 'to support long term financial viability' to second paragraph. No change to the strategy for Route 36 as this approach would be far less effective at securing the long term financial viability of the service.</td>
</tr>
<tr>
<td>1b</td>
<td>Pedestrian signage is needed on Cressex Business Park to indicate all pedestrian routes to reach bus stops across the immediate area.</td>
<td>Y</td>
<td>This recommendation supports the approach described in the SQTS. Add label to plan on page 6 to say &quot;Improved signage of pedestrian routes&quot;. New bullet point on Page 10 to say &quot;A new way-finding strategy will improve the legibility and coherence of pedestrian routes&quot;.</td>
</tr>
<tr>
<td>2</td>
<td>The TFG urges the District and County Councils to seek funding for Junction 3a and the facilitation of a road network to that proposed junction.</td>
<td>N</td>
<td>This recommendation supports the approach described in the SQTS. In line with the recommendation, further traffic modelling will be undertaken to demonstrate the benefits of a Junction 3a. This does not necessitate a change to the Strategy.</td>
</tr>
<tr>
<td>3</td>
<td>The TFG does not agree with the proposed Daws Lea link to the Handy Cross Hub, and believes that the better solution is to improve traffic flows on Daws Hill Lane and promote public transport to: (5 solutions listed)</td>
<td>N</td>
<td>The Strategy approach includes solutions a), b), c), d) and e). These solutions would be necessary in combination with a solution which connects Route 36 with the Park and Ride in the optimal way in order to ensure the long term financial viability objective is met. The issue of school drop off and public transport routing/financial viability are distinctly separate issues, with distinctly different solutions.</td>
</tr>
<tr>
<td>4</td>
<td>The TFG does not support any routing of Daws Hill Lane traffic through the proposed RAF Daws Hill development. A diagram/map of the unsupported routing attached as Appendix B.</td>
<td>N</td>
<td>This recommendation supports the approach described in the SQTS.</td>
</tr>
<tr>
<td>5</td>
<td>Incorporate the revised parking standards set out below into any future development brief to allow for an appropriate increase in both the number of parking spaces and size of parking spaces.</td>
<td>N</td>
<td>Parking standards are a matter for Wycombe District Council and the RAF Daws Hill development brief. No change to the SQTS necessary as a result of this recommendation.</td>
</tr>
<tr>
<td>6</td>
<td>The TFG recommends that the existing access on the road to the present sports centre should not be available for use by the proposed businesses, supermarket, park and ride, bus/coachway or hotel traffic. All traffic for the Handy Cross Hub site should use the middle access point.</td>
<td>Y</td>
<td>The STQS must acknowledge committed schemes. The current Handy Cross Hub site layout is a planning commitment. This includes access for the business park and Sports Centre via the ‘unnamed road’. The STQS will be updated to acknowledge that further detailed design of the internal site layout will be undertaken by the applicants with a view to encouraging appropriate routing of vehicles, particularly school drop offs, via the middle access junction. Comment will be added on Page 7 accordingly.</td>
</tr>
<tr>
<td>7</td>
<td>To improve enforcement of parking restrictions across the district, there should be a review by BCC of its enforcement regime, which should include consultation with WDC and BCC elected members over the concerns within their Wards and/or Divisions.</td>
<td>Y</td>
<td>Parking controls are referred to on the map on Page 6. Phrase &quot;with an appropriate parking strategy&quot; will be added to 5th bullet on Page 7. Wider parking restriction reviews are are a separate matter and will be considered in a different forum.</td>
</tr>
<tr>
<td>8a</td>
<td>The TFG recommends that footways be provided on both sides of Daws Hill Lane, going beyond the current wording that only specifies “new and improved footways”</td>
<td>Y</td>
<td>This recommendation supports the approach described in the current SQTS. An additional bullet point will be added to Page 8 to emphasise the need for optimal footway provision. &quot;Improved pedestrian facilities including provision of footways along both sides of the length of Daws Hill Lane will be sought as part of development proposals in this area&quot;</td>
</tr>
<tr>
<td>8b</td>
<td>The careful provision of any cycle tracks should be considered, taking into account the topography of the area. Value for money should be an overall concern in how developer contributions are used. The SQTS shows that there is a very low rate (only 1 %) of journeys to work by bicycle in the Southern Quadrant.</td>
<td>Y</td>
<td>This recommendation supports the approach described in the current SQTS. Topography is a key consideration, and there are no severe topography constraints in the SQTS in an east-west direction. Studies show that walking and cycling offer better value for money that other schemes. The low current rate of cycling is an opportunity rather than a constraint. Comment will be added to Page 7 &quot;transform how people travel by connecting&quot;.</td>
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## Schedule of Changes

### Southern Quadrant Transport Strategy

<table>
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<tr>
<td>9</td>
<td>The removal of speed humps on Daws Hill Lane (from the junction with Marlow Hill to the bridge over the M40 on the eastern edge of Daws Hill Lane) and should be replaced with Vehicle Activated Signs (VAS), adjacent to the school and operational in term times, to encourage sensible driving behaviour.</td>
<td>Y</td>
<td>This is a separate matter for detailed consideration in due course. A bullet point will be added to Slide 8 to support the recommendation. “The retention or addition of appropriate vehicular speed management measures and parking controls to support safe travel in the area”.</td>
</tr>
<tr>
<td>10</td>
<td>The Highways Agency should consider the provision of “box junctions” or “Keep Clear” markings at access and egress points on the Handy Cross roundabout at Junction 4 of M40. These should be enforced with the aid of red light cameras.</td>
<td>N</td>
<td>This is a detailed matter for Highways Agency consideration. BCC will bring this matter to the attention of the HA for their review.</td>
</tr>
<tr>
<td>11</td>
<td>The TFG wishes to understand the definitive timetable for the linking and synchronisation of traffic signals across High Wycombe town and on surrounding roads leading to / from Junction 4.</td>
<td>N</td>
<td>This recommendation supports the approach described in the SQTS. BCC will communicate further as a separate matter on plans and programmes for the linking and synchronisation of traffic signals.</td>
</tr>
<tr>
<td>12</td>
<td>The TFG both endorses and supports the SQTS proposal for a left turn at the junction of Cressex Link Road and Cressex Road and a left turn at the junction of Cressex Road with Coronation Road.</td>
<td>N</td>
<td>This recommendation supports the approach described in the SQTS.</td>
</tr>
<tr>
<td>13</td>
<td>That a preferred/advisory route be sought from the High Heavens Waste Transfer site – Booker Road/Cressex Road/ turning right onto John Hall Way at the junction of Cressex Road and New Road and onwards to junction 4 on the M40 via Handy Cross roundabout.</td>
<td>N</td>
<td>This is consistent with discussions that have taken place as part of the application process for this site.</td>
</tr>
<tr>
<td>14</td>
<td>The County Council to provide clear signage for HGV routes into and out of Cressex Business Park via Turnpike Road and Cressex Link Road / John Hall Way, following consultation with businesses on the Business Park that generate HGV movements.</td>
<td>Y</td>
<td>A note will be added to Page 10 after paragraph 3 “Clear signage indicating appropriate routes for HGVs associated with Cressex Business Park.”</td>
</tr>
<tr>
<td>15</td>
<td>The TFG recommends that deliveries for any permitted commercial units at Cressex Island and at Handy Cross Hub should be made outside peak times and school start and finish times, to reduce impact on congestion.</td>
<td>N</td>
<td>This is a detailed matter that would be considered as part of a planning application for a particular development site.</td>
</tr>
<tr>
<td>16</td>
<td>The TFG recommends the County Council revise junction arrangements at Chapel Lane (the A4010) and West Wycombe Road (the A40) to give priority to the A4010 as a matter of urgency, recognising the role of the A4010 as the principal route.</td>
<td>N</td>
<td>While this junction is outside the study area for the SQTS, this recommendation will be taken forward into the work for the wider High Wycombe Transport Strategy to ensure that appropriate and supportable measures are introduced at this junction.</td>
</tr>
<tr>
<td>17</td>
<td>The Highways Agency is asked to provide their views and an update on the following matters: (related to the Pinch Point Programme)</td>
<td>N</td>
<td>BCC will continue to liaise with the HA on matters relating to the PPP.</td>
</tr>
<tr>
<td>18</td>
<td>As discussed at the 18 June 2012 meeting of the Improvement and Review Commission (IRC) that the Commission is asked to establish a TFG at the appropriate time to look at transport issues in other areas of the town and district, since the SQTS document describes itself as the first in a set of area based strategies that will form an overarching strategy for High Wycombe.</td>
<td>N</td>
<td>The further input of a TFG is welcome with regard to the development of the wider High Wycombe Transport Strategy.</td>
</tr>
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### Consultation Responses (Grouped)

<table>
<thead>
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<tbody>
<tr>
<td>19</td>
<td>The document is too narrow in its focus and does not address the problems of traffic flow outside the SQTS area e.g. Flackwell Heath and Loudwater.</td>
<td>N</td>
<td>The wider High Wycombe Transport Strategy will seek to address other areas outside of the SQTS, however further information has been added via the supplementary package of information including changes in traffic volumes and junction performance data.</td>
</tr>
<tr>
<td>ID</td>
<td>Comment</td>
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<tr>
<td>20</td>
<td>There are concerns that the document is making incorrect assumptions regarding traffic and public transport usage from new development areas.</td>
<td>N</td>
<td>A set of assumptions must be formed in order to forecast future traffic conditions. An additional report will be released as part of a supplementary data package to explain further technical assumptions. Any assumptions have been made on the basis of industry standard approaches and on information on planning ‘commitments’ from Wycombe District Council. A detailed assessment of a specific development site including trip generation would be undertaken by a developers consultant as part of a planning application process.</td>
</tr>
<tr>
<td>21</td>
<td>The document doesn’t seem to address the pollution issues.</td>
<td>Y</td>
<td>Further reference will be added to environmental issues on Page 3. ‘Sustainable Environment’ and ‘Health and Well-Being’ are key objectives as set out on Page 1. The Strategy measures are aligned to meeting these environmental and health objectives by improving transport system performance, reducing traffic growth, reducing congestion and encouraging travel by more environmentally friendly modes of transport.</td>
</tr>
<tr>
<td>22</td>
<td>The proposed SQTS does not provide enough detail on the proposed bus route through Daws Lea.</td>
<td>N</td>
<td>The level of detail is proportionate to that necessary for a Transport Strategy which sets the overall objectives and broad package of measures for an area. Further detailed design work and studies would be undertaken on any of the final SQTS scheme proposals in due course. More detailed work at this stage prior to gaining stakeholder feedback and finalising the SQTS would not be appropriate.</td>
</tr>
<tr>
<td>23</td>
<td>There is unclear information regarding Junction 3a on what impact the proposed new junction would have and what traffic would relieve / increase other roads.</td>
<td>N</td>
<td>The level of detail is proportionate to that necessary for a Transport Strategy, However, some further detail will be released as part of a final supplementary package of information.</td>
</tr>
<tr>
<td>24</td>
<td>There as concern that “improvements” to Winchbottom Lane, including anything which would change its quiet rural character or make the Winchbottom Lane / Abbey Barn Lane a main through route should be excluded from any transport solutions.</td>
<td>N</td>
<td>This recommendation supports the approach described in the SQTS.</td>
</tr>
<tr>
<td>25</td>
<td>The environmental impact of the M40 has been included as a main issue, but there was no mention of the traffic congestion in the area.</td>
<td>N</td>
<td>Traffic congestion has been described as one of the key challenges on Page 3.</td>
</tr>
<tr>
<td>26</td>
<td>There are concerns on whether the infrastructure can cope with the increased traffic demands from so many new developments in the area.</td>
<td>N</td>
<td>The additional traffic growth from a range of developments has been factored into the Strategy development process. The Highway Authority have a statutory duty to consider the impacts of new developments and is responsible for scrutinising the transportation impacts of any proposals that a developer brings forward as part of its highways development control responsibilities. The SQTS provides a framework for those discussions by setting out a package of schemes that proposed developments could reasonably be asked to provide. Further and more detailed work will be required of developers and their consultants as part of the planning application process.</td>
</tr>
<tr>
<td>27</td>
<td>Numerous comments in relation to public transport routing proposals via rear of St Augustines and St Bernards schools.</td>
<td>N</td>
<td>A supplementary analysis has been undertaken of the various bus routing options that would secure the longer term financial viability of public transport services in this area including the Park and Ride service.</td>
</tr>
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<tr>
<td>28</td>
<td>Efforts should be made to reduce noise. It is vital to keep the traffic generation potential of a site to a minimum by limiting the number of dwellings permitted.</td>
<td>Y</td>
<td>Further reference will be added to environmental issues on Page 3. ‘Sustainable Environment’ and ‘Health and Well-Being’ are key objectives as set out on Page 1. The Strategy measures are aligned to meeting these objectives by improving transport system performance, reducing traffic growth, reducing congestion and encouraging travel by more environmentally friendly modes of transport. Any matters relating to a specific proposed development site including the quantum of development set out in the Development Brief for RAF Daws Hill would be dealt with as part of the planning application process.</td>
</tr>
<tr>
<td>29</td>
<td>Additional thought should be given to addressing congestion issues through a Junction 3a and the benefits the impacts this would have on existing roads along the A40 and A404.</td>
<td>N</td>
<td>The level of detail is proportionate to that necessary for a Transport Strategy. This recommendation supports the approach described in the current SQTS. In line with the recommendation, further traffic modelling will be undertaken to demonstrate the benefits of a Junction 3a. This does not necessitate a change to the Strategy.</td>
</tr>
<tr>
<td>30</td>
<td>Suggestion to use relief roads south of and parallel to the M40 between Junction 3 and 4 to ease congestion.</td>
<td>N</td>
<td>It is unclear as to the nature of the proposed relief roads as referred to in this statement, but this would likely involve a major infrastructure project with significant cost and negative environmental impact. The SQTS approach to easing congestion is described in the documentation and considers effectiveness and deliverability.</td>
</tr>
<tr>
<td>31</td>
<td>Schools should be responsible for providing onsite facilities for buses and drop offs / pick up activities.</td>
<td>N</td>
<td>The schools are limited by their own landownership and location in what they can achieve by themselves which is why a wider solution needs to be found to the problem. Any such measure would not reduce the number of vehicles and associated congestion in sensitive areas of the transport network including Daws Hill Lane. The Handy Cross Hub alternative drop off area as proposed in the SQTS would be the most effective solution.</td>
</tr>
<tr>
<td>32</td>
<td>Suggestion for the RAF Daws Hill development site of a retirement village, generating the minimum of traffic at peak times. This, in conjunction with bus drop off and pick points on the site, would probably preclude the need for any new traffic scheme.</td>
<td>N</td>
<td>Any matters relating to a specific proposed development site including quantum of development would be dealt with as part of the planning application process for that site.</td>
</tr>
<tr>
<td>33</td>
<td>Would like to see some evidence that traffic conditions would be better.</td>
<td>N</td>
<td>This information is presented in the SQTS. Further more detailed work would be undertaken and reported in a transport assessment produced by a developers consultant as part of a planning application process for the site.</td>
</tr>
<tr>
<td>34</td>
<td>The existing roads would not cope with the additional traffic for the proposed business park.</td>
<td>N</td>
<td>The Handy Cross Hub redevelopment has already been granted consent through a previous planning application process. The transport implications of this have been assessed through the bespoke transport assessment studies included in Wycombe District Councils planning portal website. The traffic generation forecasts associated with the site have been factored into the SQTS.</td>
</tr>
<tr>
<td>35</td>
<td>Opposition to the creation of a bus lay-by on the north side of Daws Hill Lane in the close vicinity of the school entrance as this is unlikely to be of a significant benefit and there is insufficient room for children to disembark. The left turn from Daws Hills Lane onto Marlow Hill must be improved.</td>
<td>N</td>
<td>This recommendation supports the approach described in the SQTS.</td>
</tr>
<tr>
<td>36</td>
<td>The problems of traffic has been identified but not the solution. The area needs more accesses and not to tinker around the edges. A routeing of Daws Hill Lane within the RAF Daws Hill area would allow the present road to drop off children on the ‘school’ side of the road thus avoiding crossing.</td>
<td>N</td>
<td>The transport solutions are presented in the SQTS package of information. The re-routing of Daws Hill Lane would not be an effective measure as it would do little to solve the problems of school drop off traffic on this road. A reduction in the level of school traffic on Daws Hill Lane would be achieved with the implementation of the SQTS package of measures.</td>
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</table>
## Schedule of Changes

### Southern Quadrant Transport Strategy

<table>
<thead>
<tr>
<th>ID</th>
<th>Comment</th>
<th>Change?</th>
<th>Response</th>
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<tbody>
<tr>
<td>37</td>
<td>Concerns regarding the traffic on Daws Hill Lane during school term time. Concern that increasing the level of development in the area will exacerbate the present situation</td>
<td>N</td>
<td>The traffic problems associated with Daws Hill Lane have been identified and an effective package of measures have been defined to help mitigate these issues. Development proposals, should these come forward, can contribute financially to the package of measures described in the SQTS. Further transport assessment work would be undertaken by developers consultants as part of a specific planning application for a new development</td>
</tr>
<tr>
<td>38</td>
<td>For the revised school bus and drop off points to work there should be no stopping allowed on Daws Hill Lane and parking enforcement measures on surrounding roads.</td>
<td>N</td>
<td>This recommendation supports the approach described in the SQTS.</td>
</tr>
<tr>
<td>39</td>
<td>In order to reduce congestion, a link road needs to be formed as soon as possible to resolve the pick-up for St Augustine’s and St Bernard’s Schools which currently cause congestion on Daws Hill Lane. A proposal to reduce school’s congestion would be to utilise the existing road to the Schools and link it to the sports centre road and operate on a one way tidal flow basis – southbound in the morning and northbound in the evening thus avoiding peak traffic flows on the Sports Centre and minimising the need for the widening of the existing road.</td>
<td>N</td>
<td>This option has been considered as part of the development of the SQTS. This option would be entirely out of context with the area and would increase the level of traffic past the schools and past the residents of Fair Ridge. This option would not facilitate the provision of a dedicated drop off facility away from general traffic for the schools. This option would not provide a traffic free public transport route in order to secure journey time reliability and long term financial viability.</td>
</tr>
<tr>
<td>40</td>
<td>There are gridlock concerns for residents entrance to and exit from Fair Ridge, Fowleigh, Spinney and John North Close.</td>
<td>Y</td>
<td>The STQS must acknowledge committed schemes. The current Handy Cross Hub site layout is a planning commitment. This includes access for the business park and Sports Centre via the 'unnamed road'. The SQTS will be updated to acknowledge that further detailed design of the internal site layout will be undertaken by the applicants with a view to encouraging appropriate routing of vehicles, particularly school drop offs, via the middle access junction. Comment will be added on Page 7 accordingly.</td>
</tr>
<tr>
<td>41</td>
<td>Residents would like more information on the Coachway Park and Ride facility</td>
<td>N</td>
<td>Further information on the Coachway Park and Ride can be found on Wycombe District Councils planning portal page which provides detail on this site specific application. Also further information from the previous Major Scheme Business Case can be found on the Transport for Buckinghamshire website at the following link: <a href="http://www.transportforbucks.net/Roadworks-Centre/Schemes-and-projects/Our-schemes-and-projects/Wycombe-coachway/Background.aspx">http://www.transportforbucks.net/Roadworks-Centre/Schemes-and-projects/Our-schemes-and-projects/Wycombe-coachway/Background.aspx</a></td>
</tr>
<tr>
<td>42</td>
<td>The conversion of bus service 36 to a park and ride service is not consistent with your statement “a direct non stop service connecting with the train station”. Will people have to change buses at the park and ride stop? Various comments about the operation of the site.</td>
<td>Y</td>
<td>This will be rephrased on page 7 as ‘a direct service connecting with the train station’. Individuals on the no 36 bus will not have to change service as this will become the Park and Ride service on its direct route into the town. More detailed work will be necessary to define the precise operation of the service. For further information on the Coachway Park and Ride see previous response.</td>
</tr>
<tr>
<td>43</td>
<td>Concern about significant queuing time on the A404 approach from Marlow Hill to the M40 junction 4 not highlighted in red on your key transport challenges</td>
<td>Y</td>
<td>This will be added to the key transport challenges map.</td>
</tr>
<tr>
<td>44</td>
<td>The challenges outlined do not look at the knock on effects of the development to the A40 which is heavily congested East and West along the A40 between Marlow Hill and junction 3 of the M40</td>
<td>N</td>
<td>This is a Southern Quadrant Transport Strategy. The study area for the Strategy is shown in the material. Further Quadrants will be examined as part of wider work on the High Wycombe Transport Strategy.</td>
</tr>
<tr>
<td>45</td>
<td>What will be the effect of the improvements through signalisation at the John Hall Way/Crest Road junction on the junction of John Hall Way and Lansdowne Road, which lies between Handy Cross and the new signalised junction?</td>
<td>N</td>
<td>There will be no material effect on the Lansdowne Road junction.</td>
</tr>
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<tr>
<td>46</td>
<td>Has the Strategy taken into account the additional HGV traffic generated by the Waste Transfer Site at High Heavens? If so how will this be properly and effectively managed?</td>
<td>N</td>
<td>The SQTS has taken into account the High Heavens site. Questions regarding the management of the traffic from this site are a matter for the specific planning application.</td>
</tr>
<tr>
<td>47</td>
<td>At present this junction is signal controlled so when you quote ‘with linked signal timings to smooth traffic flow’ are you suggesting that this is not the case at present?</td>
<td>N</td>
<td>This refers to the implementation of signal co-ordination on the A404 between Daws Hill Lane and the Sports Centre junction. The signal controller logic currently optimises the performance of these signals individually rather than as a corridor.</td>
</tr>
<tr>
<td>48</td>
<td>A bus service to serve the existing park and ride route serving the retail outlets around Cressex Island, Cressex Business Park, the hospital, railway station and town centre should be retained. Further there should be a dedicated service serving the new Coachway Park and Ride, with the routing to be decided by BCC Officers in consultation with the bus operator.</td>
<td>N</td>
<td>This recommendation supports the approach described in the SQTS. The Handy Cross Hub scheme is a commitment, however the Strategy is to secure a replacement public transport service for the Cressex Island area.</td>
</tr>
<tr>
<td>49</td>
<td>The bus serving Flackwell Heath via Daws Hill Lane and the proposed new development should remain on its current route and increase the frequency of service and capacity.</td>
<td>N</td>
<td>Securing the long term financial viability of public transport services is vital for this area. Increasing the frequency of this service is part of the Strategy, but it is not likely that an improved frequency service could be sustained in the long term on its current route. The most effective way to secure the financial viability of an increased service frequency is explained as part of the SQTS material.</td>
</tr>
<tr>
<td>50</td>
<td>Strategy for Cressex Road A4010 Left turns at the junction of Cressex Road/Coronation Road and Cressex Road/Cressex Link Road must be such that HGV can not use them.</td>
<td>Y</td>
<td>Page 10 will be updated to explain that the left turns would be designed with light vehicles in mind only. Heavy vehicles would travel on their existing routes. The second paragraph will be updated to state &quot;The strategy aims to provide more direct traffic routes for light vehicles at the Cressex Road.....&quot;.</td>
</tr>
<tr>
<td>51</td>
<td>The Highways Agency would like the Brief and SQTS to explicitly state that M40 junction 4 Handy Cross should be protected from any development that may increase congestion in the area.</td>
<td>Y</td>
<td>Page 12 will be updated as follows: “….can ensure that any proposals will not have an unacceptable impact on Local Authority routes and developers would assist in the delivery of schemes….”. Also, &quot;The Highways Agency would be consulted on any development proposal that may increase congestion&quot;.</td>
</tr>
<tr>
<td>52</td>
<td>Options should be explored to ensure that traffic utilises north-south routes instead of east-west routes via Cressex Road. The Turnpike Junction could be included with a traffic light controlled solution.</td>
<td>Y</td>
<td>The Cressex Road / Cressex Link scheme will not increase through trips on Cressex Road, overall the modelling indicates there will be a marginal benefit. Traffic calming and management measures in the vicinity of the Cressex Community school on Cressex Road will encourage appropriate routing of vehicles via Holmers Farm Way. A further bullet point will be added to Page 10 “Traffic management measures on Cressex Road in the vicinity of Cressex Community School will discourage inappropriate routing of vehicles and maintain appropriate vehicle speeds near Cressex Community School”. A signal control junction at Turnpike Road has been considered but this scheme would introduce additional delay along the A4010 which is not desirable at this location. The reduction in right turning traffic at this location will contribute to a reduction in delay at this junction.</td>
</tr>
<tr>
<td>53</td>
<td>The Highway Agency recommends that costing for future improvements and funding sources should be explored.</td>
<td>N</td>
<td>A breakdown of scheme costs and funding sources will be included in the final supplementary package of information.</td>
</tr>
<tr>
<td>54</td>
<td>Additional school traffic and buses would make conditions on Daws Lea worse with air pollution and noise issues. Introducing a bus route would make the road dangerous for children playing and walking.</td>
<td>Y</td>
<td>The volume of school traffic will not increase and would not need to use the Daws Lea route. Page 8 will be updated to make this clear. Further more detailed work will be undertaken on the design and function of the two school link options to ensure the safe operation of the services. The Council will work with operators to ensure the best possible quality of public transport service including low emission vehicles will be secured as part of the new combined 36 / Park and Ride service.</td>
</tr>
<tr>
<td>ID</td>
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<tr>
<td>55</td>
<td>Daws Lea runs east to west and consequently during icy / snowy conditions, the road is in shadow from the houses on the South side of the road. The road is often impassable under these conditions due to the gradients which could then block residents’ access.</td>
<td>N</td>
<td>This will be considered as part of further more detailed work on the design and function of the school link to ensure the safe operation of the services.</td>
</tr>
<tr>
<td>56</td>
<td>Some residents strongly believe that the parking restrictions are unnecessary and will cause problems for residents with multiple guests visiting them.</td>
<td>N</td>
<td>There is support for the provision of appropriate parking enforcement in order to mitigate the current issues associated with school drop offs. Further work and consultation will be undertaken as a matter of course with any proposal to change parking enforcement. Any risks associated with the introduction of parking enforcement emphasises the need to provide alternative school drop off provision.</td>
</tr>
<tr>
<td>57</td>
<td>The school drop off points should be located away from residential property to reduce noise and to minimise adverse impact on residential properties. Current safety issues for kids.</td>
<td>N</td>
<td>This recommendation supports the approach described in the SQTS. The alternative school drop off facility will separate drop off movements from general background traffic, helping to minimise the safety issues associated with school drop offs.</td>
</tr>
<tr>
<td>58</td>
<td>Why are there improved facilities for pedestrians and cyclists proposed when the number using these are so low?</td>
<td>N</td>
<td>The current low mode share of cycling is an opportunity for this area. Measures to limit the growth of traffic are important for this area and travel by different modes is one of a number of measures that will help achieve this. The Southern Quadrant does not suffer from the gradient issues of much of the rest of the town and journeys can quite feasibly be linked between existing and proposed residential areas, new business and leisure areas including the Handy Cross Hub, the Cressex Business Park, and a number of schools.</td>
</tr>
<tr>
<td>59</td>
<td>How can one be convinced that the cycleways will prove to be good value for money and when budgets are tight as they are now, how can the expense be justified?.</td>
<td>N</td>
<td>Cycling infrastructure provision is typically recognised as low cost relative to other measures and high value for money but would only be implemented where there is a reasonable prospect of increasing mode share.</td>
</tr>
<tr>
<td>60</td>
<td>Improvements to the cycle lanes and footpaths from Handy Cross hub and Flackwell Heath should be considered.</td>
<td>Y</td>
<td>Reference to this will be added to the map on Page 6 to emphasise better connections with Flackwell Heath in terms of cycling, walking and public transport.</td>
</tr>
<tr>
<td></td>
<td>Other (incl. Reference Group Feedback not covered above)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61</td>
<td>Need to include further references to environmental factors including noise and air quality</td>
<td>Y</td>
<td>Additional text added to Page 3 to state “would worsen congestion, with associated environmental and health impacts including noise and air quality issues.”</td>
</tr>
<tr>
<td>62</td>
<td>Revise wording on page 11 of the SOTS regarding the statement on workshops and reference groups.</td>
<td>Y</td>
<td>Change this paragraph on Page 11 to “A series of workshops and reference groups have taken place to inform the strategy, with feedback collated into a set of minutes and action points. This programme of engagement has been an important part of the Strategy development process. Judgements on schemes and Strategy measures were informed by analysis, comments and feedback from stakeholders to ensure that the most effective and deliverable package........”</td>
</tr>
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Appendix B:
High Wycombe Transport Model - Traffic Forecasting and Assumptions – Final Report
High Wycombe Transport Model

Traffic Forecasting and Assumptions

July 2012
Jacobs U.K. Limited

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## Contents

1 Introduction  
1.1 Purpose of Report  
1.2 High Wycombe Study Area  
1.3 Structure of Report  

2 Land Use Assumptions  
2.1 Policy Background  
2.2 Do-Minimum Development  

3 Transport Infrastructure Provision  

4 Traffic Forecasting  
4.1 Introduction  
4.2 Overview of Modelling Methodology  
4.3 Through-Trip and Trend-Based Growth Factors  
4.4 Do-Minimum Development Trip Generation  
4.5 Final Forecast Matrices  

5 Summary  

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-A</td>
<td>Transport Provision associated with Do-Minimum Developments</td>
<td>5</td>
</tr>
<tr>
<td>4-A</td>
<td>Growth Factors for Background Growth and Through Trips</td>
<td>7</td>
</tr>
<tr>
<td>4-B</td>
<td>Peak Period Trip Generation from Developments</td>
<td>8</td>
</tr>
<tr>
<td>4-C</td>
<td>Total Trips for Forecast Scenario</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-A</td>
<td>High Wycombe Study Area</td>
<td>1</td>
</tr>
<tr>
<td>2-A</td>
<td>Locations of Do-Minimum Land Use Development</td>
<td>4</td>
</tr>
<tr>
<td>4-A</td>
<td>Overview of Forecasting Methodology</td>
<td>6</td>
</tr>
</tbody>
</table>

Appendix A Glossary  
Appendix B Do-Minimum Development Assumptions  
Appendix C AM and PM Peak Hour Traffic Volumes
1 Introduction

1.1 Purpose of Report

Jacobs was commissioned by Buckinghamshire County Council (BCC) to update the 2006 CONTRAM highway assignment model for High Wycombe to develop a 2010 strategic base year model which reflects updated traffic conditions, providing a platform from which future traffic levels and patterns of movement can be assessed. Details of the base model development are provided in the Local Model Validation Report for the High Wycombe Model dated June 2012.

This report describes the traffic forecasting work that was necessary to establish a future year land use scenario for 2022. This scenario is considered to be the Do-Minimum scenario, and provides the means to assess the future performance of the High Wycombe highway network and the impact of potential changes in land use or transportation infrastructure.

1.2 High Wycombe Study Area

High Wycombe is located in the Wycombe District of Buckinghamshire, with a current population of around 100,000. The town is situated north of the M40 motorway, at the hub of five radial highway corridors which include the A40 (east and west), A404 (north and south) and the A4128 Hughenden Road. The A4010, situated in the west of the town, provides a route for north – south movements towards Aylesbury.

The study area for this assessment comprises the urban area of High Wycombe, and its approaches, as shown in Figure 1-A.

![Figure 1-A High Wycombe Study Area](image)
1.3 Structure of Report

This report outlines the methodology and assumptions used to forecast future traffic levels in High Wycombe, using the High Wycombe Transport Model as a base. The contents of the report are outlined below:

- Section 1 – overview of the report purpose and background information
- Section 2 – description of assumptions regarding housing and employment land use
- Section 3 – description of assumed changes to transport provision
- Section 4 – description of traffic forecasting methodology including traffic growth factors
- Section 5 – summary of the report

A glossary of terms is presented in Appendix A.
2 Land Use Assumptions

2.1 Policy Background

The Wycombe District Local Plan was adopted in January 2004. It was saved and extended in 2007 and partially replaced by the Wycombe Development Framework Core Strategy in July 2008. Together, these provide the spatial planning policy framework for the District, guiding the scale and direction of growth in the District, identifying areas for protection from development and providing a more detailed policy framework to inform day to day development management decisions.

The development strategy in the Core Strategy sets a requirement for 8,050 dwellings to be provided in the District in the period 2006-26, amounting to just over 400 dwellings per year on average. Around 90% of this is to be provided in the south-eastern part of the District including High Wycombe itself, Marlow and Bourne End. The Core Strategy identifies High Wycombe in particular as the principal focus of new development, with the emphasis being on the re-use of previously developed land (‘brownfield’ sites) before the release of greenfield sites. In the first five years of the plan period, (i.e. 2006-11), a total of 2,722 dwellings were provided, well above the annualised target with the vast majority of this provided on previously developed land within the main urban areas.

2.2 Do-Minimum Development

This section establishes the Do-Minimum land use development in High Wycombe consisting of committed sites. The information on sites that will deliver housing was provided by the planning authority, Wycombe District Council (WDC). The current supply of housing land is made up of:

- Sites with planning permission
- Sites that do not yet have planning permission, but have been approved in principle, subject to the completion of a Section 106 or planning obligation agreement

A plan of the housing, mixed-use and employment developments is shown in Figure 2-A, with a full list presented in Appendix B. For the purposes of forming the Do-Minimum model, it was assumed that all of these developments will be completed by 2022.

In addition to the developments presented in Appendix B, there are also a number of smaller development sites. In order to include for the effect on traffic from the smaller sites, growth resulting from these particular sites was applied as a blanket growth to the whole town area.
Figure 2-A  Locations of Do-Minimum Land Use Development
3 Transport Infrastructure Provision

The majority of the Do-Minimum developments described in Section 2 will be delivered without the need for significant new highway infrastructure. However, some of the larger developments will provide new access junctions or link roads. A list of new transport infrastructure to be assumed in the forecast modelling is presented in Table 3-A. Any provision associated with Do-Minimum development that is already constructed forms part of the ‘baseline’ infrastructure, and hence is excluded from this table.

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<tr>
<th>ID</th>
<th>Development</th>
<th>Assumed Provision associated with Do-Minimum Developments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High Wycombe Railway Station Improvement</td>
<td>This includes associated junction amendments (including new signals and revised junction arrangements)</td>
</tr>
<tr>
<td>2</td>
<td>A40 London Road Corridor – Loudwater to Wycombe Town Centre</td>
<td>New traffic signal junction on the A40 located approximately 100m east of Hatters Lane roundabout to serve Wycombe Marsh development.</td>
</tr>
<tr>
<td>3</td>
<td>Heath End Road / Abbey Barn Lane junction</td>
<td>Improvements to widen Abbey Barn Lane at junction with Heath End Road to create separate left and right turn lanes onto Heath End Road. In conjunction with the Wycombe Marsh development to improve safety and increase capacity.</td>
</tr>
<tr>
<td>4</td>
<td>Compair Spine Road</td>
<td>New road through the Compair and De La Rue sites from Morrisons to Coates Lane.</td>
</tr>
</tbody>
</table>

*Table 3-A Transport Provision associated with Do-Minimum Developments*
4 Traffic Forecasting

4.1 Introduction

This section describes the traffic forecasting methodology for the development of the 2022 Do-Minimum scenario. The forecasting process utilises the land use and transport infrastructure assumptions described in Sections 2 and 3.

4.2 Overview of Modelling Methodology

The High Wycombe Transport Model provides an accurate baseline in terms of traffic volumes, journey times, and general congestion and is an appropriate base upon which to apply traffic growth forecasts. The High Wycombe Transport Model is validated to a 2010 base year and reflects typical morning (08:00 – 09:00) and evening (17:00 – 18:00) peak traffic conditions. Further detail on the 2010 base year model may be viewed in the Local Model Validation Report for the High Wycombe Transport Model, dated June 2012.

The approach to establishing forecast scenarios takes the 2010 scenario as the baseline and translates the trend, land use, and transport infrastructure assumptions into a set of traffic growth assumptions. Figure 4-A presents an overview of the forecasting methodology.

![Figure 4-A Overview of Forecasting Methodology](image)

First, a set of traffic growth factors are derived from the TEMPRO database. TEMPRO is a software package created by the Department for Transport (DfT), which provides forecast data on trips for transport planning purposes. The version of the software used in this assessment (version 6.2 with dataset version 6.2) provides multi-modal trip data for the years 1991 to 2041. Outputs are given in terms of growth factors between the selected base and forecast years or as raw trip-end data.

TEMPRO provides two elements of the traffic growth forecast in this approach. Firstly, factors are derived for longer distance (external – external) through-trips which are not directly associated with land use in High Wycombe. In the absence of firm committed growth levels across the UK as a result of recent changes in planning policy, this is considered a reasonable approach. Secondly, the TEMPRO database provides a trend-based traffic growth factor related to socio-demographic
changes in High Wycombe. The second growth factor affects only those trips with an origin and/or a destination within High Wycombe. Each of these growth factors is further adjusted by the application of a fuel price and income adjustment factor which is appropriate for transport models with fixed trip matrices.

Next, traffic growth levels associated with the Do-Minimum land use assumptions are established. Whilst the TEMPRO software provides factors to reflect both socio-demographic trends and policy-based growth related to land use, the zones within TEMPRO are large, and as a result the analysis is coarse. As such, the application of broad growth factors is considered to be inappropriate to assess accurately the impact of land use changes i.e. for individual developments. It is important to ensure that trips associated with each development are localised on the network in the appropriate area, as opposed to being distributed over the entire study area.

TEMPRO policy-based land use factors for the trips internal to High Wycombe are therefore not applied. Instead, the relevant Transport Assessment for a development or the TRICS database was interrogated to provide absolute trip generation estimates for each Do-Minimum development. The methodology ensures there is no ‘double-counting’ of trips from new land use development.

The Do-Minimum developments are assumed to have been fully completed by 2022.

### 4.3 Through-Trip and Trend-Based Growth Factors

The growth factors for through trips and trend-based socio-demographic changes are presented in Table 4-A, and include adjustments to reflect changes in fuel price and income.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Factor applied to 2010 trips</th>
<th>AM</th>
<th>PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>External Through-Trips</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010 - 2022</td>
<td></td>
<td>1.209</td>
<td>1.215</td>
</tr>
<tr>
<td>Internal Trend-Based Growth</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010 - 2022</td>
<td></td>
<td>1.068</td>
<td>1.070</td>
</tr>
</tbody>
</table>

*Table 4-A  Growth Factors for Background Growth and Through Trips*

The factors for external through-trips were determined from TEMPRO 6.2 (Dataset 6.2), based upon the growth rate for Buckinghamshire between the base year 2010 and 2022, using the default housing and employment assumptions. The factors for internal trend-based growth were derived from the same dataset, based upon the growth rate for High Wycombe Town. The factors for High Wycombe assumed no increase in jobs and household numbers as these are applied explicitly through the Do-Minimum developments.

### 4.4 Do-Minimum Development Trip Generation

The assumptions defined in the future land use were translated into estimates of trip generation utilising the evidence presented in the relevant Transport Assessment or the TRICS database. Table 4-B summarises the total peak period trip generation for the 2022 Do-Minimum developments of all sizes.
The average trip rates (not 85th percentile) were used to generate the trips to take account of the implementation of a sustainable transport strategy to manage and limit the growth of vehicular trip making.

BCC’s High Wycombe Transport Strategy is founded on a set of principles known as TRIM, i.e. ‘Transfer’, ‘Re-route’, ‘Intercept’ and ‘Manage’. The sustainable approach adopted by BCC has a clear focus upon packages of smarter choices type measures, which serve to encourage travel by sustainable modes and to manage the level of overall travel demand, particularly demand for highway travel. The trip generation needs to take account of internalisation, whereby trips to and from services such as local shops and remaining wholly within the development should not be included in the impact on the wider network. To account for this and the influence of a sustainable Transport Strategy, particularly in new developments, the use of average trip rates rather than 85th percentile provides an appropriate reduction in the level of vehicular trip making.

4.5 Final Forecast Matrices

Table 4-C presents the total vehicular trips generated by the modelling process for the 2022 Do-Minimum scenario.

The resultant traffic flows for the AM and PM peak hours are presented in Appendix C.
Jacobs was commissioned by Buckinghamshire County Council (BCC) to update the High Wycombe Transport Model to provide a robust modelling platform from which to meet the future transport assessment needs. This report describes the traffic forecasting work that was necessary to establish a future year Do-Minimum land use scenario. This scenario provides a means to assess the performance of the High Wycombe highway network in future and the impact of potential changes in land use and transportation infrastructure.

The Wycombe District Local Plan was adopted in January 2004. It was saved and extended in 2007 and partially replaced by the Wycombe Development Framework Core Strategy in July 2008. Together these provide the spatial planning policy framework for the District, guiding the scale and direction of growth in the District, identifying areas for protection from development and providing a more detailed policy framework to inform day to day development management decisions. This report establishes the Do-Minimum land use development in High Wycombe and the assumptions on the location of housing and employment developments which have been agreed with WDC.

This process has established a set of assumptions which in turn inform relevant traffic growth factors and trip generation estimates. This data is used to establish the 2022 Do-Minimum traffic scenario which provides a suitable forecast for the assessment of potential changes in land use and transportation infrastructure.
<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCC</td>
<td>Buckinghamshire County Council</td>
</tr>
<tr>
<td>Capacity</td>
<td>The ability of a highway link or junction to carry or accommodate traffic flow</td>
</tr>
<tr>
<td>DfT</td>
<td>Department for Transport</td>
</tr>
<tr>
<td>GFA</td>
<td>Gross Floor Area</td>
</tr>
<tr>
<td>NTEM</td>
<td>National Trip End Model – provides a set of predictions of growth in car ownership and car traffic, with associated planning data projections, at any geographical level down to local authority districts. It forms part of the same forecasting system as the 1997 National Road Traffic Forecasts (NRTF97)</td>
</tr>
<tr>
<td>TEMPRO</td>
<td>Trip End Model Presentation Program – is a modelling tool designed to allow users to look at the growth in trip ends, using actual and forecast data supplied by the Department for Transport</td>
</tr>
<tr>
<td>TRICS</td>
<td>Trip Rate Information Computer System – An interactive computer program (and website) designed to calculate the likely rate or arrivals at and departures from a development</td>
</tr>
<tr>
<td>TRIM</td>
<td>BCC’s High Wycombe Transport Strategy is founded on a set of principles known as TRIM, i.e. ‘Transfer’, ‘Re-route’, ‘Intercept’ and ‘Manage’</td>
</tr>
<tr>
<td>WDC</td>
<td>Wycombe District Council</td>
</tr>
<tr>
<td>WDLP</td>
<td>Wycombe District Local Plan</td>
</tr>
</tbody>
</table>
## Appendix B  Do-Minimum Development Assumptions

<table>
<thead>
<tr>
<th>No</th>
<th>Name of Development</th>
<th>Type</th>
<th>No. of dwellings</th>
<th>GFA (m²)</th>
<th>Trip Rate Source</th>
<th>AM Origins</th>
<th>AM Destinations</th>
<th>PM Origins</th>
<th>PM Destinations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Wycombe Marsh Development</td>
<td>Mixed</td>
<td>538</td>
<td>2943</td>
<td>TA</td>
<td>222</td>
<td>136</td>
<td>157</td>
<td>189</td>
</tr>
<tr>
<td>2</td>
<td>Compair Site</td>
<td>Mixed</td>
<td>672</td>
<td>495</td>
<td>TRICS</td>
<td>14</td>
<td>17</td>
<td>25</td>
<td>18</td>
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<tr>
<td>3</td>
<td>First Church of Christ Scientist</td>
<td>Residential</td>
<td>24</td>
<td></td>
<td>TRICS</td>
<td>10</td>
<td>4</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>4</td>
<td>25-31 Penn Road Hazlemere</td>
<td>Residential</td>
<td>28</td>
<td></td>
<td>TRICS</td>
<td>12</td>
<td>4</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>5</td>
<td>Constant Air Systems Ltd Dashwood Avenue</td>
<td>Residential</td>
<td>23</td>
<td></td>
<td>TRICS</td>
<td>10</td>
<td>3</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>6</td>
<td>179 - 183 West Wycombe Road</td>
<td>Residential</td>
<td>20</td>
<td></td>
<td>TRICS</td>
<td>8</td>
<td>3</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>7</td>
<td>Terriers County First School</td>
<td>Residential</td>
<td>59</td>
<td></td>
<td>TRICS</td>
<td>25</td>
<td>9</td>
<td>13</td>
<td>23</td>
</tr>
<tr>
<td>8</td>
<td>Elvaston 2 Rectory Avenue</td>
<td>Residential</td>
<td>23</td>
<td></td>
<td>TRICS</td>
<td>10</td>
<td>3</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>9</td>
<td>John North Hall of Residence</td>
<td>Residential</td>
<td>98</td>
<td></td>
<td>TRICS</td>
<td>41</td>
<td>15</td>
<td>22</td>
<td>39</td>
</tr>
<tr>
<td>10</td>
<td>William Bartlett And Son Grafton Street</td>
<td>Mixed</td>
<td>105</td>
<td>201</td>
<td>TA</td>
<td>40</td>
<td>60</td>
<td>59</td>
<td>38</td>
</tr>
<tr>
<td>11</td>
<td>Land off Lance Way</td>
<td>Residential</td>
<td>22</td>
<td></td>
<td>TRICS</td>
<td>9</td>
<td>3</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>12</td>
<td>Bellfield first and middle school</td>
<td>Residential</td>
<td>90</td>
<td></td>
<td>TRICS</td>
<td>38</td>
<td>14</td>
<td>20</td>
<td>35</td>
</tr>
<tr>
<td>13</td>
<td>Lily's Walk Gas Works</td>
<td>Residential</td>
<td>120</td>
<td></td>
<td>TRICS</td>
<td>50</td>
<td>18</td>
<td>27</td>
<td>47</td>
</tr>
<tr>
<td>14</td>
<td>Kingswood County First School</td>
<td>Residential</td>
<td>39</td>
<td></td>
<td>TRICS</td>
<td>16</td>
<td>6</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td>15</td>
<td>Former De La Rue Site Coates Lane</td>
<td>Mixed</td>
<td>97</td>
<td>2400</td>
<td>TRICS</td>
<td>46</td>
<td>47</td>
<td>49</td>
<td>43</td>
</tr>
<tr>
<td>16</td>
<td>The Cressex School</td>
<td>Employment</td>
<td>2923</td>
<td></td>
<td>TRICS</td>
<td>27</td>
<td>41</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>17</td>
<td>Yellow Storage</td>
<td>Employment</td>
<td>5988</td>
<td></td>
<td>TRICS</td>
<td>5</td>
<td>8</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>18</td>
<td>Wycombe Ski Slope</td>
<td>Employment</td>
<td>6143</td>
<td></td>
<td>TRICS</td>
<td>27</td>
<td>34</td>
<td>72</td>
<td>96</td>
</tr>
<tr>
<td>19</td>
<td>The Chilterns (Hotel)</td>
<td>Employment</td>
<td>2435</td>
<td></td>
<td>TRICS</td>
<td>11</td>
<td>7</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>20</td>
<td>Handy Cross Hub (incl. Sports Centre)</td>
<td>Employment</td>
<td>33105</td>
<td></td>
<td>TA</td>
<td>214</td>
<td>837</td>
<td>795</td>
<td>404</td>
</tr>
<tr>
<td>21</td>
<td>17-25 Octagon Parade</td>
<td>Employment</td>
<td>2161</td>
<td></td>
<td>TA</td>
<td>20</td>
<td>5</td>
<td>10</td>
<td>24</td>
</tr>
<tr>
<td>22</td>
<td>Keep Hill Care Home</td>
<td>Employment</td>
<td>2848</td>
<td></td>
<td>TA</td>
<td>4</td>
<td>8</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>23</td>
<td>Premier Inn Archway</td>
<td>Employment</td>
<td>3670</td>
<td></td>
<td>TA</td>
<td>17</td>
<td>7</td>
<td>12</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>Coachway / Park&amp;Ride facility</td>
<td>Other</td>
<td>556 Car Parking spaces</td>
<td>TA</td>
<td>0</td>
<td>102</td>
<td>96</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------</td>
<td>-------</td>
<td>------------------------</td>
<td>----</td>
<td>---</td>
<td>-----</td>
<td>----</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>876</td>
<td>1392</td>
<td>1422</td>
<td>1078</td>
<td></td>
</tr>
</tbody>
</table>

1 Dwellings to be constructed from 1st April 2010
2 Total for major Do-Minimum sites only
Appendix C: Traffic Volumes
Current Traffic Volumes – AM Peak

Source: High Wycombe Transport Model
For further information please see ‘Local Model Validation Report, June 2012’
Current Traffic Volumes – PM Peak

Source: High Wycombe Transport Model
For further information please see ‘Local Model Validation Report, June 2012’
‘Do Minimum’ 2022 Traffic Volumes – AM Peak

Source: High Wycombe Transport Model
‘Do Minimum’ 2022 Traffic Volumes – PM Peak

Source: High Wycombe Transport Model

Source: High Wycombe Transport Model
Traffic Growth ‘Do Something – Do Minimum’ – PM Peak
Traffic Volume Changes – M40 Junction 3a – 2022 - AM Peak

100 vehicle reduction on Winchbottom Lane

200 vehicle reduction in each direction on Daws Hill Lane

200 vehicle reduction in each direction on Marlow Hill

Redistribution from Cressex Road to A4010

EB Off and WB Onslips reduced traffic

WB Offslip increase in traffic – reduced overall impact - rebalance signal timings

Traffic reductions of 100 vehicles in each direction on London Road

531 EB, 809 WB

100 vehicle reduction on Winchbottom Lane
Traffic Volume Changes – M40 Junction 3a – 2022 - PM Peak

- Traffic reductions of 50 vehicles in each direction on London Road
- Traffic reductions of 50 vehicles in each direction on Daws Hill Lane
- Redistribution from Cressex Road to A4010
- 300 vehicle reduction in Northbound direction on Marlow Hill
- Traffic reductions of 50 vehicles in each direction on Winchbottom Lane
- WB Offslip increase in traffic – reduced overall impact - rebalance signal timings
- 100 vehicle reduction on Winchbottom Lane

881 EB, 1103 WB
Appendix D:
Strategy Benefits
Reduced traffic volumes and delays

Improved junction performance

Improved pedestrian crossing provision

Linked signals - reliable journey times

School drop off facilities reduce congestion

Reduced traffic volumes and queuing on Daws Hill Lane

Resolves queuing eastbound and blocking back onto Marlow Hill

Reduces inappropriate school drop off parking

School drop off area intercepts school buses from East

15-minute frequency bus improves services for Flackwell Heath and the Southern Quadrant and reduces traffic volumes

Park & Ride intercepts and reduces traffic on Marlow Hill

Dedicated school drop off area - reduces delays on Daws Hill Lane

Linking with Service 36 provides financially viable Park & Ride service

Dedicated school drop off area - reduces delays on Daws Hill Lane

Open left turns to improve accessibility to Business Park and Cressex Island

Reduction in right turn traffic into Turnpike Road and reduction in delays on A4010 (NB & SB)

Reduces inappropriate school drop off parking

Improved capacity junction - reduced delays

Delay associated with school drop offs minimised

Reduce traffic volumes as a result of opening left turn to Cressex - reduced delays

School drop off facilities reduce congestion

Improved pedestrian crossing provision

Linked signals - reliable journey times

15-minute frequency bus improves services for Flackwell Heath and the Southern Quadrant and reduces traffic volumes

Park & Ride intercepts and reduces traffic on Marlow Hill

Dedicated school drop off area - reduces delays on Daws Hill Lane

Linking with Service 36 provides financially viable Park & Ride service

Dedicated school drop off area - reduces delays on Daws Hill Lane

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Dedicated school drop off area - reduces delays on Daws Hill Lane

Linking with Service 36 provides financially viable Park & Ride service

Dedicated school drop off area - reduces delays on Daws Hill Lane

Open left turns to improve accessibility to Business Park and Cressex Island

Reduction in right turn traffic into Turnpike Road and reduction in delays on A4010 (NB & SB)
Appendix E:
Qualitative Appraisal - SQTS Bus Route Options
**Option Appraisal Table: Reliability and long term viability of public transport services**

This table presents a range of options to achieve the long term viability of public transport services in the Southern Quadrant area. The overall approach to securing financial viability is to combine service number 36 with the Park & Ride service from the new Coachway / Park & Ride site. As part of the package of measures, it is also important to secure journey time reliability for the service in order to generate viable levels of patronage, and therefore to limit the level of traffic growth in the Southern Quadrant.

The question then is which option is preferred to achieve this objective. The option proposed as part of the Southern Quadrant Transport Strategy is Option 2.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Option 1</th>
<th>Option 2</th>
<th>Option 3</th>
<th>Option 4</th>
<th>Option 5</th>
<th>Option 6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Effectiveness (service reliability)</strong></td>
<td>Do Nothing</td>
<td>Daws Lea transport link</td>
<td>South of Daws Lea transport link</td>
<td>South of Daws vehicular route</td>
<td>School access road transport link</td>
<td>A404 Bus priority measures</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>- Service reliability would be affected by congestion on Daws Hill Lane, and the A404</td>
<td>- Traffic free dedicated public transport route</td>
<td>- More direct route to Handy Cross Hub</td>
<td>- Traffic free dedicated route</td>
<td>- Bus priority measures will assist reliability on egress from Daws Hill Lane and on A404</td>
<td>- Outbound journey should be quicker as a result of slip road</td>
</tr>
<tr>
<td>Cost</td>
<td>- No additional cost</td>
<td>- Relatively low cost involved in works to Daws Lea, and bus gate</td>
<td>- Relatively low infrastructure costs to connect route to rear of schools</td>
<td>- Relatively low infrastructure costs to connect route to rear of schools</td>
<td>- Likely to be a relatively low cost option depending upon the extent of bus priority measures</td>
<td>- Will only be partially effective and issues remain regarding indirect routing of bus services</td>
</tr>
<tr>
<td>Deliverability (e.g. land ownership)</td>
<td>- No issues</td>
<td>- Property acquisition necessary at end of Daws Lea</td>
<td>- Potential land acquisition associated with access point at Daws Hill Lane</td>
<td>- Potential land acquisition associated with access point at Daws Hill Lane</td>
<td>- No known land acquisition requirements</td>
<td>- No issues</td>
</tr>
<tr>
<td>Environmental impact</td>
<td>- Overall traffic improvement to area by delivering long term financially viable service</td>
<td>- Overall traffic improvement to area by delivering long term financially viable service</td>
<td>- Overall traffic improvement to area by delivering long term financially viable service</td>
<td>- Overall traffic improvement to area by delivering long term financially viable service</td>
<td>- Lower prospect of financial viability in long term, therefore limited traffic benefit</td>
<td>- Overall traffic improvement to area by delivering long term financially viable service</td>
</tr>
<tr>
<td>Traffic growth and congestion</td>
<td>- Increased emissions resulting from higher volumes of traffic and congestion</td>
<td>- Overall traffic improvement to area by delivering long term financially viable service</td>
<td>- increased traffic volumes past the Sports Centre and Fair Ridge area</td>
<td>- Increased traffic volumes past the Sports Centre and Fair Ridge area</td>
<td>- Lower prospect of financial viability in long term, therefore limited traffic benefit</td>
<td>- Increased traffic volumes past the Sports Centre and Fair Ridge area</td>
</tr>
<tr>
<td>Traffic impact</td>
<td>- Increased Traffic growth and congestion without long term viable service</td>
<td>- Removal of buses from from Daws Hill Lane and Marlow Hill will provide marginal benefit</td>
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<td>- Right turn slip likely to reduce delay at this junction</td>
<td>- Queueing likely to be relocated to A404 SB on Marlow Hill, traffic not held back at Daws Hill Lane junction</td>
</tr>
<tr>
<td>Pedestrian and cyclist impact</td>
<td>- Lack of connectivity between new development areas</td>
<td>- Provision of pedestrian and cyclist route connecting Daws Hill Lane near Daws Lea with Handy Cross Hub</td>
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<td>- Potential to add ped crossing facility as part of A404 bus priority (NB)</td>
<td>- Unclear how pedestrian access is affected across Daws Hill Lane</td>
</tr>
</tbody>
</table>
Option 2 - Daws Lea transport link

Route to and from High Wycombe Town Centre

Daws Hill Lane

Improved junction required to enable bus turning movements.

St Bernard's Catholic School

 Handy Cross Hub site (buses via Coachway park and ride)

Park and Ride

Marlow Hill

Fair Ridge

M40

Marlow Hill

Daws Lea

Bus gate - no through route via Daws Lea for traffic

Bus route along Marlow Hill

Proposed cycle / walking route

Proposed bus route from Daws Lea

School drop off locations

Improved junction

Excess buses

Produced by Anna Hemman, P8D
Place Service August 2012

Scale: 1:5,000

Kilometers

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