

MID SUSSEX DISTRICT COUNCIL DRAFT SITE ALLOCATIONS DPD PUBLIC CONSULTATION

HIGHWAYS AND TRANSPORT TECHNICAL NOTE 02

IN RESPECT OF LAND NORTH OF THE A2300, GODDARDS GREEN, BURGESS HILL, WEST SUSSEX

16TH JANUARY 2020

1.0 Executive Summary

- 1.1 Project Newton is the proposed Science and Technology Park (S&TP) to the north of the A2300, identified by MSDC as the preferred location, which benefits from a deliverable vehicular access via an existing junction, and from the existing roads already extending north-south through the site.
- 1.2 The Project Newton team commissioned SYSTRA to undertake an additional round of modelling using MSDC's Mid Sussex Transport Study (MSTS) model, to compare the Project Newton S&TP site and the south S&TP site on a like-for-like basis.
- 1.3 The detailed comparison of the performance metrics clearly demonstrates that the Project Newton S&TP site north of the A2300 has notably less traffic impact than the south S&TP site, which demonstrably supports the MSDC decision to allocate the Project Newton site for the S&TP within the emerging DPD.
- 1.4 The proposed Project Newton A2300 'hamburger' roundabout, which has been the subject of pre-application discussions with West Sussex County Council Highways, has been tested using the AM and PM peak hour traffic flows extracted from the MSTS model. In doing so, the proposed junction is shown to operate within capacity in MSDC's envisaged 2031 traffic scenario, without demand management mitigation.
- 1.5 It is shown that the A2300 / Cuckfield Road roundabout will be significantly over capacity in the scenario with the S&TP south site. There is limited scope within the available highway land to increase the junction's capacity; the deliverability of further improvements exists only with the Project Newton (north) S&TP site.
- 1.6 The S&TP south site access comprises a new, additional junction on the A2300. In a scenario with the S&TP south site, the flow of traffic on the A2300 will be disrupted by both the new junction and the significant delays at the Cuckfield Road roundabout.
- 1.7 In order to provide evidence for Project Newton's anticipated scale of travel mode shift away from the motorcar, Connect Consultants has referred to local Census data and has considered potential bus service improvements which could be delivered via the emerging Project Newton Sustainable Access Strategy and the Burgess Hill Public Transport Strategy. This also has regard to the Northern Arc Sustainable Transport Strategy.
- 1.8 A 10% mode shift is wholly realistic in view of the potential bus service improvements, the emerging Project Newton Sustainable Access Strategy, the proximity of Project Newton to the future Northern Arc residential areas, Bolney Grange Business Park, and The Hub employment site, and the synergies between the respective public/sustainable transport strategies.



1.9 This document summarises our findings of the additional traffic modelling and further justifies the LPA identification of the Project Newton site north of the A2300 as the preferred site for the S&TP in the emerging Site Allocation DPD by MSDC.

2.0 Introduction

- 2.1 Connect Consultants Limited is a firm of transport planning and highway design consultants that have been instructed by Glenbeigh Developments Ltd and Wortleford Trading Company Ltd in relation to the promotion of their land to the north of the A2300 at Goddards Green, West Sussex, for a future Science & Technology Park, known as Project Newton.
- 2.2 This is in the context of the Mid Sussex District Council Draft Site Allocations DPD (Regulation 18) Public Consultation, in which Mid Sussex District Council (MSDC) has identified the Project Newton site, on the north of the A2300, as the preferred location for a Science & Technology Park (S&TP).
- 2.3 A Technical Note (TN), dated 14th November 2019 by Connect Consultants, was submitted in response to the highways and transport evidence base published by MSDC alongside the Draft DPD, which refers to strategic traffic modelling undertaken on behalf of MSDC by SYSTRA.
- 2.4 Additional strategic traffic modelling has subsequently been completed by SYSTRA on behalf of Project Newton, to further inform the Regulation 18 consultation representation.
- 2.5 This TN sets out the details and outputs of the additional modelling, which further supports the allocation of Project Newton as the preferred S&TP location.
- 2.6 This TN also considers the proposed Project Newton vehicular access strategy, which is shown to be preferable to that of the S&TP south site, in the context of the future traffic scenario as envisaged by MSDC.
- 2.7 Finally, this TN considers the potential travel-mode shift that could be realised through the emerging Project Newton Sustainable Access Strategy.
- 2.8 This should be read in conjunction with the 14th November 2019 TN.

3.0 Mid Sussex Transport Study

3.1 To support the Site Allocations DPD, Mid Sussex District Council commissioned SYSTRA to run a strategic highway model to inform and update the Mid Sussex Transport Study (MSTS).

Selection of S&TP North Site compared to South Site

3.2 Scenarios 2 and 3 of the MSTS were used for the comparative assessment of the northern and southern sites for the S&TP allocation, whereby the Project Newton site to the north of the A2300 is included in Scenario 2, and the site to the south of the A2300 is included in Scenario 3.



- 3.3 The MSTS focussed on Scenario 2c, which includes the upgrading of the A2300/Cuckfield Road roundabout to a 'hamburger' roundabout, which is one of the three proposed vehicular access options suggested in pre-application discussions between the Project Newton team and WSCC.
- 3.4 The scale and mix of uses of the S&TP differs between Scenario 2c and Scenario 3; the south site was assessed with c.35-40% less traffic than the north site.
- 3.5 Despite the significant difference in scale, the two site options were compared in terms of 'traffic impact', which in this instance is defined by the number of junctions at which the modelling predicts a 'severe' or 'significant' impact.
- 3.6 A 'severe' impact is defined in the MSDC methodology as a junction with any approach arm experiencing either of the following:
 - a junction with an increase in ratio of flow to capacity (RFC) of 10% or more to an RFC of 95% or more in any period in any Scenario; or
 - an increase in average delay of one minute or more to an average delay of two minutes or more in any period in any Scenario.
- 3.7 A 'significant' impact is defined by the MSDC methodology as a junction with any approach arm experiencing the following:
 - a junction with an increase in ratio of flow to capacity (RFC) of 5% or more to an RFC of 85% or more in any period in any Scenario.
- 3.8 Despite the Project Newton site being assessed at a significantly larger scale with significantly more traffic than the south site, the MSTS Scenarios 2c and 3 show that the Project Newton (north) site (Scenario 2c) will have less traffic impact than the south site.
- 3.9 The overarching conclusion is that while Scenario 2c results in 9 'significant' impacts compared to 7 in Scenario 3, Scenario 2c has only 11 'severe' impacts compared 12 'severe' impacts in Scenario 3. This distinction contributed to the selection of the northern site as the preferred site.
- 3.10 As the north and south site options were not assessed on a like-for-like basis, the Project Newton team commissioned SYSTRA to undertake an additional round of strategic traffic modelling to include a more realistic like-for-like assessment, in which the two potential locations of the S&TP are compared using the same scale and mix of uses in both locations; the only difference being the sites' access arrangements and the associated difference in traffic distribution.
- 3.11 The additional modelling is set out in the next section.

4.0 Additional Strategic Traffic Modelling.

4.1 The Project Newton team commissioned SYSTRA to undertake an additional round of modelling using MSDC's Mid Sussex Transport Study model, to compare the two S&TP site options on a like-for-like basis.



- 4.2 The modelling tested two new scenarios, 8 and 8b, which both include the same set of future developments across the district, as per MSDC's most up-to-date assumptions, both including a S&TP comprising 2,500 jobs.
- 4.3 The only difference between the two is that Scenario 8 has the S&TP on the Project Newton site north of the A2300 accessed via the proposed hamburger roundabout, while Scenario 8b has the S&TP on the south site accessed via a new three-arm standard roundabout on the A2300, located approximately half way between Pookbourne Lane and Bishopstone Lane.

Detailed Comparison of the S&TP North and South Sites – Methodology

- 4.4 The methodology used by MSDC for the high-level comparison of the traffic impacts of various future development scenarios is, by necessity, a relatively crude method with only three categories; 'OK', 'significant' and 'severe'.
- 4.5 Scenario 8 shows the Project Newton site to have eight severe and nine significant impacts, while Scenario 8b shows the south site to have nine severe and nine significant impacts.
- 4.6 This is shown in the table provided in Appendix 1, "*Mid Sussex Transport Study: Scenario 8 results Summary*".
- 4.7 Due to the high level, strategic nature of the comparison methodology, there is no immediate visibility of how 'significant' or how 'severe' each site option's impacts are.
- 4.8 While the MSDC methodology is appropriate for comparing district-wide variations in strategic development options, it does not provide enough detail for the purposes of comparing two identical developments which are geographically very close.
- 4.9 In order to comprehensively compare the traffic impacts of the two S&TP site options, Connect Consultants has undertaken a more detailed analysis of the key junction performance metrics which comprise the outputs of the strategic modelling.
- 4.10 The MSTS results are reported in terms of four metrics which are used as indicators of the traffic impact on each approach arm to each junction:
 - Demand (number of vehicles)
 - RFC (ratio of traffic flow to capacity, in percentage terms)
 - Delay (seconds)
 - Average Queues (in PCUs, passenger car units, a proxy for vehicles)
- 4.11 The table "*Mid Sussex Transport Study: Junction approach arm statistics for identified locations*", provided in Appendix 2, shows these four metrics for each approach arm to each of the key junctions within the traffic model.
- 4.12 It shows the four metrics in four modelled scenarios; the 2017 baseline, the 2031 Reference Case (without the S&TP), 2031 Scenario 8 (Project Newton S&TP scenario) and 2031 Scenario 8b (the S&TP south site scenario).
- 4.13 Colour-coding within the table identifies 'significant' and 'severe' impacts, as defined by the MSDC methodology.



- 4.14 Using the detailed statistics from the table "*Mid Sussex Transport Study: Junction approach arm statistics for identified locations*" (in Appendix 2), Connect Consultants has compiled a table which quantifies (rather than categorises) the scale of impact at each junction, and from which a more comprehensive comparison has been made between the two S&TP site options.
- 4.15 This table, provided at Appendix 3, includes the 22 junctions which are shown to have either 'significant' or 'severe' impacts in either or both the AM and PM peaks in either Scenario 8 (with the Project Newton S&TP site) or Scenario 8b (with the south S&TP site).
- 4.16 In this table, each of the four metrics are amalgamated to produce a 'whole junction' total for each metric for each of the 22 junctions; the number of vehicles (demand) on each approach arm are summed to produce each junction's total demand; the average RFC for each junction is calculated as the mean of the RFC on each approach arm; the delay on each arm is summed to produce each junction's total delay; and the average queue length on each approach arm is summed to produce the total average queue for each junction.
- 4.17 In this way, the impact at each junction is quantified rather than being allocated to a broad classification.
- 4.18 For all four metrics, a lower value equates to a better junction performance.

Detailed Comparison of the S&TP North and South Sites – Results

- 4.19 The detailed comparison table described above is provided in Appendix 3, from which there are two outputs.
- 4.20 One is a points-based comparison between Scenario 8 and Scenario 8b in terms of the count of 'better performances' across the four metrics. In instances where the two scenarios have equal values for the same metric, no count is applied as their performance is equal.
- 4.21 The Project Newton site (Scenario 8) scores 65 'better' performances against the south site (Scenario 8b), while the south site scores only 46 'better' performances against the Project Newton site.
- 4.22 The second output is the sum of the delay at all of the junctions, on the basis that delay is the most readily recognised indicator of performance out of the four metrics. The lowest resultant value represents the best overall performance across all of the 22 junctions as it equates to less overall delay.
- 4.23 The Project Newton site totals 6,167 seconds of delay, approximately 27% less (better) that the south site's total of 8,466 seconds of delay.
- 4.24 It is worth noting that Scenario 8 includes the proposed upgrade of the A2300/Cuckfield Road roundabout to a 'hamburger' roundabout junction, which forms part of the Project Newton access strategy. The 'hamburger' link provides a through-route for non-S&TP traffic travelling east/west on the A2300; a benefit which is not included in Scenario 8b.



- 4.25 While it can be argued that the 'hamburger' junction forms part of the Project Newton access and is therefore a valid component of Scenario 8, the site comparison calculations have also been undertaken excluding the junction of the A2300 / Cuckfield Road.
- 4.26 If the A2300/Cuckfield Road junction is excluded from the calculation, the Project Newton site scores 59 'better' performances against the south site, while the south site scores 44 'better' performances against the Project Newton site, and the Project Newton site totals 5,891 seconds of delay, approximately 15% less (better) than the south site's total of 6,897 seconds.
- 4.27 This detailed comparison of the performance metrics clearly demonstrates that the Project Newton S&TP site has notably less traffic impact than the south S&TP site, which demonstrably supports the MSDC decision to allocate the Project Newton site for the S&TP within the emerging DPD.

5.0 Junction Capacity Analysis

- 5.1 The strategic traffic modelling of Scenario 8 includes a 'hamburger' roundabout at the junction of the A2300 and Cuckfield Road, as proposed as part of the Project Newton access strategy.
- 5.2 The outputs shown in the table in Appendix 2 show that without any physical mitigation or demand-management measures the junction will operate within capacity in the Scenario 8 AM peak hour, however it shows that the Cuckfield Road (S) and A2300 (W) approaches are slightly over capacity in the PM peak hour.
- 5.3 The strategic nature of the MSTS modelling is such that it is not an appropriate tool for the detailed assessment of junction operation and capacity.
- 5.4 As such, in order to provide confidence that the proposed 'hamburger' roundabout will be able to accommodate the future traffic scenario envisaged by MSDC, Connect Consultants has tested the proposed junction using industry-standard LinSig3 software.
- 5.5 LinSig3 is a specialist computer software for modelling and assessing the operation of signal-controlled junctions and networks of junctions. It takes into account the geometric parameters of the junction layout, traffic flows and speeds, and the detailed signal timings.
- 5.6 A LinSig model of the initial design of the 'hamburger' roundabout has been built and tested using the AM and PM peak hour traffic flows extracted from the MSTS Scenario 8. In doing so, the proposed junction is assessed against the 2031 traffic scenario as envisaged by MSDC, without any physical mitigation or demand-management measures.
- 5.7 The detailed modelling results demonstrate that the proposed junction will accommodate the future, unmitigated traffic levels within the junction's capacity.
- 5.8 Further design work and detailed traffic modelling, including demand management measures, will be undertaken as the Project Newton development proposal progresses, via continued liaison with WSCC Highways and Highways England.



- 5.9 It is worth noting that in Scenario 8b (S&TP south site) the layout and design of the A2300 / Cuckfield Road roundabout is as per WSCC's planned A2300 Improvement Scheme. The MSTS modelling outputs (in Appendix 2) show that in Scenario 8b the A2300 / Cuckfield Road roundabout will be significantly over capacity in both the AM and PM peak hours.
- 5.10 Beyond the A2300 Improvement Scheme, there is very limited scope within the available highway land to increase the junction's capacity to accommodate the S&TP (south site) traffic.
- 5.11 The land surrounding the A2300 / Cuckfield Road junction is owned by the Project Newton team, and therefore the deliverability of further improvements exists only with the Project Newton (north) S&TP site.
- 5.12 In addition to this, the south S&TP site access comprises a new, additional junction on the A2300, located between the A2300 / Cuckfield Road roundabout and the A2300 / Pookbourne Lane junction. As such, in a scenario with the south S&TP site, the flow of traffic on the A2300 will be disrupted by both the new junction and the significant delays at the Cuckfield Road roundabout.

6.0 Potential Travel Mode Shift

- 6.1 A key element of the Project Newton S&TP is that it will incorporate a comprehensive sustainable access strategy which will ensure that sustainable travel is at the centre of the development's ethos. The emerging Project Newton Sustainable Access Strategy will be developed with regard to the Burgess Hill Public Transport Strategy (BHPTS) (2016), and also the Public Transport Strategy of the adjacent Northern Arc strategic development site.
- 6.2 The BHPTS has a range of objectives to increase the use of public transport in and around Burgess Hill, with a focus on new developments in the area. Its aim is to "provide a vision for how Burgess Hill can be best served by public transport and how the proposed developments across the town can contribute towards sustainable transportation".
- 6.3 The BHPTS seeks to, "*knit together a more integrated public transport network as multiple development sites (new and existing) and destinations are connected together*", as well as, "*by introducing travel and parking demand management measures to complement and enhance an integrated public transport network*".
- 6.4 The BHPTS recommends that, "*New developments should be required to consider and support public transport solutions which not only considers mitigation of impacts for their individual sites but rather to provide comprehensive solutions that considers impacts on the entire network in tandem with other potential new or existing developments.*"
- 6.5 A number of key public transport routes are identified in the BHPTS, which anticipate the delivery of the S&TP by connecting the S&TP site with the Northern Arc and other parts of Burgess Hill, including the town centre and rail station.
- 6.6 In the MSTS and the Regulation 18 evidence base, sustainable travel forms the basis of the future traffic mitigation envisaged by MSDC.



- 6.7 A package of sustainable travel measures is assumed to reduce car trips to/from the S&TP site by 3%, via three measures identified as:
 - Improved PT interchange Burgess Hill
 - Bus Shelters within development with RTI (Real Time Information)
 - Bus Services to Burgess Hill and station
- 6.8 As set out in the Connect Consultants 14th November 2019 TN, the emerging Project Newton Sustainable Access Strategy is far broader and more comprehensive than the three measures assumed in the modelling, and is likely to achieve a significantly greater mode shift towards sustainable travel than the 3% assumed in the SYSTRA modelling. It is envisaged at mode-shift of at least 10% will be realised.
- 6.9 In order to provide evidence for the anticipated scale of travel mode shift, Connect Consultants has referred to Census data to understand more about the likely travel patterns that will be associated with Project Newton, and subsequently to identify the potential for travel mode shift. This is outlined in the following section.

Likely Home Locations of Future Workforce

- 6.10 A broad indication of the likely home locations of the future S&TP workforce can be gained by referring to Burgess Hill's Victoria Business Park; a large employment zone located at the southwestern side of Burgess Hill, which can be used as an analogue site to the Project Newton site.
- 6.11 While the types of employment use will differ between Victoria Business Park and the Project Newton S&TP, Census data for the Victoria Business Park area provides a useful geographical indication of the future Project Newton journey origins, irrespective of whether the mix and scale of uses within Project Newton change as the development plans progress.
- 6.12 Census 2011 dataset *WF01BEW Location of usual residence and place of work* provides information about the origins and destinations of commuting journeys. For the purposes of this analysis, the workplace destination is taken to be an amalgamation of the three Census Output Areas which cover the Victoria Business Park employment zone (Mid Sussex 012D, Mid Sussex 014F, and Mid Sussex 015D).
- 6.13 The Census dataset has been analysed to identify the home locations, in the form of Census Output Areas, of all people who work within this amalgamated Victoria Business Park 'destination zone'.
- 6.14 The most common home locations of people working at Victoria Business Park are shown in Table 1, by absolute number and percentage of the total number working within the destination zone.
- 6.15 As would be expected, there are distinct clusters of home locations in the surrounding towns, notably; 28% from Burgess Hill, 13% from Brighton and Hove, 7% from Haywards Heath, 5% from Lewes, 5% from Horsham, and 4% from Crawley.



- 6.16 The proportions of Victoria Business Park employees living in these key geographical areas can be used to indicate the potential geographical spread of the future Project Newton site workforce. This can then be quantified by applying these proportions (percentages) to the number of AM and PM peak vehicle trips associated with the S&TP as assumed in the MSTS. This is shown in Table 2.
- 6.17 Table 2 shows that potentially 488 vehicles will travel from Burgess Hill in the AM peak, 223 from Brighton and Hove, and 72 from Crawley.

Origin / home location	Number of people	Percentage of total population employed within the destination zone
Burgess Hill	1519	28%
Brighton and Hove	695	13%
Elsewhere in Mid Sussex	465	9%
Haywards Heath	398	7%
Lewes	292	5%
Horsham	276	5%
Crawley	225	4%
Wealden	188	4%
Worthing	171	3%
Adur	170	3%
Arun	71	1%
Eastbourne	52	1%
Reigate and Banstead	51	1%

Table 1 – Origins of population working within Burgess Hill's southwest employment zone

Workforce Orig	Peak Hour Vehicle Trips							
Percentage of total v	workforce	AM: 1720	PM: 1528					
Burgess Hill	28%	488	434					
Brighton and Hove	13%	223	198					
Elsewhere in Mid Sussex	9%	149	133					
Haywards Heath	7%	128	114					
Lewes	5%	94	83					
Horsham	5%	89	79					
Crawley	4%	72	64					
Wealden	4%	60	54					
Worthing	3%	55	49					
Adur	3%	55	49					
Arun	1%	23	20					
Eastbourne	1%	17	15					
Reigate and Banstead	1%	16	15					

Table 2 – Potential origins of future workforce at Project Newton

Public Transport Improvements

- 6.18 Connect Consultants is engaged in ongoing discussions with Metrobus, one of the local bus operators, to explore opportunities to expand on the BHPTS and to provide an exemplar 'superhub' immediately adjacent to the Project Newton site's junction with the A2300, which would include bus facilities along with flexible working space, a café/restaurant, cycle shop/repair facility, taxi pickup/drop off point etc.
- 6.19 The Project Newton site also has the benefit of being adjacent to the Northern Arc strategic development site. The 'superhub' would be close enough to the Northern Arc development for there to be a synergy between the public transport strategies for the two developments, thereby satisfying one of the key objectives of the BHPTS.
- 6.20 As part of the emerging Project Newton Sustainable Access Strategy, and in accordance with the BHPTS, there is the potential to improve and enhance the existing bus services in the vicinity of the site, as well as the opportunity to introduce new bus services.
- 6.21 Some potential service improvements that could be delivered via the Project Newton S&TP are set out below.

Service 273 Crawley – Brighton (Metrobus)

- 6.22 There are currently two buses in each of the AM and PM peak periods. This could be improved to provide an hourly service, with a minor diversion off the A2300 to the Project Newton 'superhub'.
- 6.23 If it is assumed that there is capacity for 30 S&TP passengers on each of the existing two peak-hour buses, plus capacity for 60 passengers on an additional service in each peak, there is potentially the ability to accommodate 120 S&TP passengers from Crawley and 120 from Brighton in each peak.

Service 100 Burgess Hill – Horsham (Compass Travel)

- 6.24 There are currently three buses from Burgess Hill in the AM peak and three buses to Burgess Hill in the PM peak, passing the Project Newton site. This could be improved to provide 4 buses in each peak.
- 6.25 If it is assumed that there is capacity for 30 S&TP passengers on each of the existing three peak-hour buses, plus capacity for 60 passengers on an additional service in each peak, there is potentially the ability to accommodate 150 S&TP passengers from/to Burgess Hill in each peak.

Service 35A/C Burgess Hill circular (Compass Travel)

- 6.26 This is currently an hourly service in each direction (clockwise and anticlockwise). The routes could potentially be extended to serve the Project Newton 'superhub', thereby connecting the site with Burgess Hill and the train station, and potentially the Northern Arc development.
- 6.27 If it is assumed that there is capacity for 30 S&TP passengers on each directional service, there is potentially the ability to accommodate 60 S&TP passengers from/to Burgess Hill in each peak.

Potential new Fastway service: Gatwick, Crawley, Burgess Hill and Brighton (Metrobus)

- 6.28 A new Fastway service could potentially provide four 60-seater buses per hour during the peak periods, equating to 240 S&TP passengers in each peak hour.
- 6.29 This could accommodate 240 S&TP passengers from/to Gatwick and Crawley in each peak, and 240 from/to Brighton and/or Burgess Hill.

Potential Travel Mode Shift to Bus

6.30 The combined potential capacity associated with the improvements listed above represents a total of 930 bus passengers in each peak hour, which equates to approximately 50%-60% of the total S&TP vehicle trips in the peak hours. This is summarised in Table 3.

Workforce Origins		our Vehicle rips	Potentia Capao	
	AM	PM	AM	PM
Burgess Hill	488	434	330	330
Brighton and Hove	223	198	240	240
Crawley	72	64	360	360
Total S&TP trips	1720	1528	930	930

Table 3 – Pote	ential Travel	Mode Shi	ft to Bus
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6.31 It is acknowledged that the 'potential bus capacity' figures shown above represent a pool of passengers which could be served by the public transport improvements, and are subject to ongoing dialogue and support from the bus operators. Nonetheless, the scale of the potential pool demonstrates that it is entirely feasible that a travel mode shift of 10% can be achieved.

Potential Travel Mode Shift to Other Sustainable Modes

- 6.32 In addition to the significant potential mode-shift to bus travel, the emerging Project Newton Sustainable Access Strategy provides many opportunities for the future workforce to travel by non-car modes. These are set out in the 14th November 2019 TN (by Connect Consultants), and are repeated below for ease of reference.
- 6.33 The western parts of the adjacent Northern Arc development site, in particular its residential area, are within walking distance of the Project Newton site, and the Project Newton masterplan includes numerous links and connections, which means that a significant area of residential land, as well as bus stops within the Northern Arc development, will be within walking distance.
- 6.34 There are also links to the adjoining Bolney Grange Business Park, providing additional non-car permeability with the surrounding land uses, helping to reduce the overall number of vehicle trips.
- 6.35 As part of the A2300 Corridor Improvement Scheme, a footway / cycleway will be provided along the route's northern side between the A2300 / A23 interchange and Burgess Hill. The route passes the Project Newton site's southern boundary, thereby providing the site with a good quality, attractive, local and longer-distance pedestrian/cycle route.
- 6.36 The Project Newton site is located within walking distance of the nearby Hub employment development and its associated sustainable transport links, including a pedestrian and cycle route to Burgess Hill via Gatehouse Lane, and the provision of a signal-controlled pedestrian and cycle crossing over Jane Murray Way in Burgess Hill, where it intersects with Gate House Lane.
- 6.37 The Project Newton access strategy incorporates pedestrian and cycle crossings over Cuckfield Road and the A2300, thereby providing a safe and attractive connection between the Project Newton site and the existing residential areas of Burgess Hill via a low-trafficked route.
- 6.38 Furthermore, the residential parcels of the Northern Arc development lie on the northern side of the A2300; meaning that future Northern Arc residents will be able to walk to the Project Newton site without the need to cross the A2300.
- 6.39 There is a significant local population located within cycling distance of the site including most of Burgess Hill, Hurstpierpoint, Sayers Common, Ansty, and Goddards Green. The entire Northern Arc site is also within cycling distance, and its residential areas are on the same side of the A2300 as the Project Newton site, meaning that future Northern Arc residents will be able to cycle to the Project Newton site without the need to cross the A2300.
- 6.40 The Project Newton masterplan includes five EcoCycle stores with accommodation for more than 1000 cycles, along with a cycle shop and cycle repair facility.



- 6.41 In this way, the emerging Project Newton Sustainable Access Strategy will provide additional benefits to the wider population which would achieve a wider-reaching regional mode-shift than just the S&TP users.
- 6.42 As such, on the basis of the emerging Project Newton Sustainable Access Strategy, and the sustainable ethos throughout the Project Newton masterplan, there is good evidence to indicate that a 10% mode shift away from the motorcar will be achieved.

7.0 Conclusions

- 7.1 The Project Newton team commissioned SYSTRA to undertake an additional round of modelling using MSDC's Mid Sussex Transport Study model, to compare the Project Newton S&TP site and the south S&TP site on a like-for-like basis.
- 7.2 The modelling tested two new scenarios which both include the same set of future developments across the district, as per MSDC's most up-to-date assumptions, both including a S&TP comprising 2,500 jobs.
- 7.3 In order to comprehensively compare the traffic impacts of the two S&TP site options, Connect Consultants has undertaken a more detailed analysis and comparison of the four key junction performance metrics which comprise the outputs of the strategic modelling.
- 7.4 A points-based comparison is made between Scenario 8 (with the Project Newton site) and Scenario 8b (with the S&TP site site) in terms of the count of 'better performances' across the four metrics.
- 7.5 The Project Newton site (Scenario 8) scores 65 'better' performances against the south site (Scenario 8b), while the south site scores only 46 'better' performances against the Project Newton site.
- 7.6 Secondly, the sum of the delay at all of the junctions is calculated, on the basis that delay is the most readily recognised indicator of performance.
- 7.7 The Project Newton site totals 6,167 seconds of delay, approximately 27% less (better) that the south site's total of 8,466 seconds of delay.
- 7.8 Even if the A2300/Cuckfield Road junction is excluded from the calculation, the Project Newton site scores 59 'better' performances against the south site, while the south site scores 44 'better' performances against the Project Newton site, and the Project Newton site totals 5,891 seconds of delay, approximately 15% less (better) than the south site's total of 6,897 seconds.
- 7.9 This detailed comparison of the performance metrics clearly demonstrates that the Project Newton S&TP site has notably less traffic impact than the south S&TP site, which demonstrably supports the MSDC decision to allocate the Project Newton site for the S&TP within the emerging DPD.
- 7.10 A LinSig model of the initial design of the 'hamburger' roundabout has been built and tested using the AM and PM peak hour traffic flows extracted from the MSTS Scenario 8. In doing so, the proposed junction is assessed against the 2031 traffic scenario (without mitigation) as envisaged by MSDC.
- 7.11 The detailed modelling results demonstrate that the proposed junction will accommodate the future traffic levels within the junction's capacity.



- 7.12 It is shown that the A2300 / Cuckfield Road roundabout will be significantly over capacity in the scenario with the S&TP south site. There is limited scope within the available highway land to increase the junction's capacity; the deliverability of further improvements exists only with the Project Newton (north) S&TP site.
- 7.13 The S&TP south site access comprises a new, additional junction on the A2300. In a scenario with the S&TP south site, the flow of traffic on the A2300 will be disrupted by both the new junction and the significant delays at the Cuckfield Road roundabout.
- 7.14 The assumption made by MSDC and SYSTRA in the DPD evidence base is that a specific package of sustainable travel measures will reduce car trips to/from the S&TP site by 3%. That 3% is assumed to be achieved via the following three measures:
 - Improved PT interchange Burgess Hill
 - Bus Shelters within development with RTI (Real Time Information)
 - Bus Services to Burgess Hill and station
- 7.15 Project Newton considers that a travel mode shift of 10% is realistically achievable. In order to provide further evidence for the anticipated scale of travel mode shift away from the motorcar, Connect Consultants has referred to Census data and potential bus service improvements which could be delivered via the emerging Project Newton Sustainable Access Strategy and the Burgess Hill Public Transport Strategy to identify the potential for travel mode shift.
- 7.16 At this early stage the potential travel mode shift figures are subject to ongoing dialogue and support from the bus operators, nonetheless, the combined capacity associated with potential bus service improvements represents a total of 930 bus passengers in each peak hour, which equates to approximately 50%-60% of the total S&TP vehicle trips in the peak hours.
- 7.17 While this represents a pool of passengers which could be served by the public transport improvements, the scale of the potential pool demonstrates that it is entirely feasible that a travel mode shift of 10% can be achieved
- 7.18 As MSDC believes that 3% can be achieved by the three measures listed above, an additional 7% mode shift is wholly realistic in view of the potential bus service improvements, the extensive emerging Project Newton Sustainable Access Strategy, the proximity of Project Newton to the Northern Arc and Bolney Grange Business Park, and the associated synergies between the respective public transport strategies.
- 7.19 It is therefore entirely feasible that a 10% mode shift away from the motorcar will be achieved.

APPENDIX 1 – MID SUSSEX TRANSPORT STUDY: SCENARIO 8 RESULTS SUMMARY

Mid Sussex Transport Study: Scenario 8 Results Summary

Note: Results in Grey Italics are comparisons of Reference Cases to 2017 (for context)

Junction Analysis

Note: List includes junctions identified in previous MSTS

Junctions with SIGNIFICANT or SEVERE impact in either AM or PM Peak Hour

ID	ID	Area	Junction
1	N1	Copthorne	A264 / A2220 Copthorne
2	N2	Copthorne	A264 / B2028 Copthorne
3	N4	Copthorne	B2028 / B2037 Copthorne
4	N6	East Grinstead	A22 / Imberhorne Lane
5	N7	Crawley Down	B2028 Turners Hill Road / Wallage Lane
6	N8	Turners Hill	B2110 / B2028 Turners Hill
25	N9	Felbridge	A264 / A22 Felbridge
26	N10	West Hoathly	Selsfield Road / Vowels Lane
7	C1	Handcross	B2114 Junction, Handcross
8	C2	Lower Beeding	B2110 / B2115 Leechpond Hill
9	C3	Slough Green	B2115 Junction, Slough Green
10	C4	Haywards Heath	Borde Hill Lane / Copyhold Lane
11	C5	Haywards Heath	B2114 / B2036 Whitemans Green
12	C6	Haywards Heath	B2036 / Ardingly Road, Whitemans Green
13	C7	Haywards Heath	A272 / B2036
14	C8	Cowfold	A281 North Junction, Cowfold
15	C9	Cowfold	A281 South Junction, Cowfold
27	C10	Bolney	A23 / A272 Bolney Road
28	C11	North Chailey	A272 / A275 North Chailey
29	C12	Haywards Heath	A273 / Isaac's Lane / Traustein Way
16	S1	Burgess Hill	A23 / A2300 Southbound On-Slip
10	S2	Burgess Hill	A23 / A2300 Eastern Roundabout
18	S3	Burgess Hill	A2300 / Cuckfield Road
18 19	S4	Burgess Hill	Cuckfield Road / THE HUB
20	S5	Burgess Hill	A2300 / Northern Arc Spine Road
20	S6	Burgess Hill	Junction Road / B2113, Burgess Hill
21	S7	Hurstpierpoint	B2117 / B2116 Hurstpierpoint
22	58	Hassocks	A273 / B2116 Hassocks (Stonepound)
25 24	S9	Pyecombe	A275 / B2116 Hassocks (stonepound) A23 / A281 Eastbound On-Slip
24 30	S10	Ditchling	B2112 / B2116 Ditchling
31	S11	Burgess Hill	A2300 / Bishopstone Lane
32	S12	Burgess Hill	Bishopstone Ln / Science & Tech Park Access (N)
33	S13	Burgess Hill	Cuckfield Rd / Science & Tech Park Access (N)
34	S14	Burgess Hill	A2300 / Science & Tech Park Access (S)
35	S15	Burgess Hill	A272 Bolney Road / Bishopstone Lane
36	S16	Burgess Hill	A2300 / Stairbridge Lane / Pookbourne Lane
37	S17	Burgess Hill	Bishopstone Lane / Job's Lane
38	S18	Hassocks	A273 / B2112
39	S19	Hassocks	B2112 / Lodge Lane
40	S20	Burgess Hill	Janes Lane / Manor Road
41	S21	Burgess Hill	B2112 / Green Road
42	S22	Burgess Hill	Valebridge Road / Junction Road / Leylands Road
43	S23	Burgess Hill	A273 / B2036 / Marchants Way
44	S24	Burgess Hill	A273 / Sussex Way
45	S25	Burgess Hill	West Street / Fairfield Road
46	S26	Burgess Hill	A273 / York Road

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2031 Scenario 8

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2031 Scenario 8b

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SEVERE= Increase in RFC of 10% or more to 95% or more

or increase in delay of 1 min or more to 2 mins or more

SIGNIFICANT= Increase in RFC of 5% or more to 85% or more

APPENDIX 2 – MID SUSSEX TRANSPORT STUDY: JUNCTION APPROACH ARM STATISTICS FOR IDENTIFIED LOCATIONS

ID	20	Junction	s for identified locations	Junction Type Notes	MSTS Stage 3		RFC De	elay Avg		RFC	Delay	PM AM A	RFC Dela	AM Avg Q		RFC D	elay Av	PM /		AM AN FC Dela	iy Avg C	Dem		Delay	PM Avg Q	AM	RFC I	AM A Delay A		'M Pf em RF 'eh) (%	FC Del	M Pl elay Avg s) (po	gQ
N1 Co	orth othorne	A264 / A2220 Copthorne	Brookhill Road (N) A264 (E)	Roundabout 2031 Scheme	AM Del.	344 781	36 61	15 13	0 525	6 44 8 85		0 421 1 574	41 1 43 1	4 0	856 1105	73	16 16		425	41 49	14 (0 849		16 15	1	425	41	14 12	0	851 105	76 86	17 15	1
N1 N1 N1			Copthorne Hotel Access A2220 (S) A264 Copthorne Way (W)	capacity increase	PM Del.	43 872 1376	1 65 97	10 12 18	0 60 0 508 3 1173	39	10 12 10	0 62 0 1129 0 1408	1 1 75 1 109 19	0 0 2 0 0 70	69 781 1230	1 62 79	10 12 11		62 1141 1393	1 77 109 1	10 (12 : 92 7(0 69 883 0 1262	68	10 13 11	0 1 1	62 1134 1406	1 76 109	10 12 183	0 1 67 1	69 928 276	72	10 13 12	0 1 1
N2 Co N2 N2	othorne	A264 / B2028 Copthorne	B2028 Turners Hill Road (N) A264 Snow Hill (E) B2028 Turners Hill Road (S)	Roundabout 2031 Scheme capacity increase	AM Del.	171 504 384	25 58 51	5 4 5	0 447 0 461 0 369	77 58	12 7	0 255 1 251 0 617	13 12 29	3 0 3 0 3 0	715 395 345	35 20 17	4 4 4	0	277 285 649	14 13 30	4 (3 (3 () 736) 384) 363	20	4	0	274 296 636	14 14 30	4 3 3	0	363	36 20 18	4 4 4	0 0 0
N2 N4 Co N4	othorne	B2028 / B2037 Copthorne	A264 Copthorne Common Road (W) B2028 West Park Road (N) B2037 Snow Hill (E)	Roundabout In Surrey	AM Del.	917 249 449	102 23 43	64 1 3 4	5 845 0 374 0 101	39	4	0 965 0 375 0 494	46 34 49	4 0 3 0 4 0	1149 456 95	54 52 13	5	0	968 385 494	46 35 49	4 (3 (5 () 1282) 444) 73	52 10	5	0	955 416 488	45 37 49	4 3 5	0	443 72	63 52 10	5 5	0
N4 N4 N6 Ea	st Grinstead	A22 / Imberhorne Lane	B2028 West Park Road (S) B2037 Effingham Road (W) A22 (W)	Signalled T-Junction		515 176 723	56 19 46	5 4 9	0 237 0 655 1 856	61		0 770 0 245 2 719	89 1 25 45	2 2 4 0 8 1	332 913 933	29 81 62	3 5 11	0	753 258 736	86 26 47	11 : 4 (5 :	1 334 949 1 974	84		0	760 256 736	89 26 47	12 4 5	0		29 84 63	3 5 11	0
N6 N6			A22 (E) Imberhorne Lane (S)	near 770 Imberhorne Lane		714 366	80	27 18	3 792 1 183	2 75		3 716 1 369	100 8 49 1	8 1	840 326	86 55	26 24	3	669 457	101 65	20 2	8 833	8 83		3	668 455	101 64	64 20	6	836 358	84 60	25 25	3
N7 Cro N7 N7	wley Down	B2028 Turners Hill Road / Wallage Lane	B2028 Turners Hill Road (N) B2028 Turners Hill Road (S) Wallage Lane	Priority Junction near 852 Old Vicarage Field		318 268 352	16 13 57	1 1 24	0 561 0 195 0 178	10	1 1 12	0 345 0 493 0 544	17 23 100 7	1 0 1 0 3 5	996 224 387	49 11 88	2 1 43	0	381 521 533	19 24 100		0 1121 0 247 5 387	12		0	373 509 539	19 23 100	1 1 74		249	57 12 99	2 1 78	0
N8 Tu N8 N8 N8	mers Hill	B2110 / B2028 Turners Hill	B2028 North Street (N) (priority) B2110 East Street (E) B2028 Selsfield Road (S) (priority) B2110 Paddockhurst Road (W)	Crossroads near 852 Old Vicarage Field also Ref 116, 492, 553	AM Del.	556 387 803 563	32 92 41 108		0 704 3 387 0 688 7 535	7 101 3 36	2	0 1063	48 115 32 50 110 23	2 0	1348 312 765 453	38	3 195 2 203	16 0 1	1074	50	2 (54 30 2 (74 34	805	40	2	0	900 426 1104 488	50 118 51 110	2 384 2 241	39 0	797	39	4 200 2 237	0 15 0 25
N9 Fei N9	bridge	A264 / A22 Felbridge	B2110 Paddockhurst Road (W) A264 Copthorne Road (W) A22 Eastbourne Road (N)			676 384	61 68	15 28	2 609 2 504	65	21 20	3 578 2 492	105 19 56 1	4 17 3 1	585 599	102 64	131 14	8	605 496	107 2 56	27 23 13 3	3 595 L 632	103 67	145 14	11 2	603 496	107 56	218 13	22	597 1 622	103 1 66	150 14	11
N9 N10 Wa N10	est Hoathly	Selsfield Road / Vowels Lane	A22 London Road (S) Selsfield Road (N) Vowels Lane (E)			1326 597 183	73 30 37	70 1 1 7	4 1112 0 801 0 177	. 39	2	4 1376 0 650 0 308	108 24 32 54	1 60 1 0 6 0	1267 1074 286	100 52 80	100 2 23	0	1414 653 341	108 2 31 61	1 60 7 0) 1278) 1101) 302	. 53	113 2 24	15 0 2	1409 654 327	108 32 59	241 1 7		109	101 1 53 84	.17 2 26	17 0 2
N10	NTRAL		Selsfield Road (S)			664	36	2	0 593	34	2	0 779	43	2 0	692	46	3		765	43	2 (0 705		3	0	757	42	2	0	701	47	3	0
C1 Ha C1 C1	ndcross	B2114 Junction, Handcross	B2110 High Street (N) (priority) B2114 (S) (priority) B2110 (W)	Priority Junction (B2114)	PM RFC	558 332 453	35 17 63	3 1 4	0 761 0 130 0 320) 7	1	0 714 0 398 0 603	45 20 83	3 0 1 0 5 0	889 139 486	51 7 67	3 1 4		735 394 625	46 20 87	3 (1 (5 () 867) 139) 495) 7	1	0	752 395 610	46 20 84	3 1 5		139	48 7 71	3 1 4	0 0
C2 Lo C2 C2	wer Beeding	B2110 / B2115 Leechpond Hill	B2110 (E) B2110 Leechpond Hill (S) B2115 (W)	Priority Junction In Horsham	AM Del.	491 253 269	32 13 39	3 1 4	0 530 0 162 0 270		2	0 569 0 186 0 516	35 9 72	3 0 1 0 4 0	718 251 337	40 12 49	2	0	582 181 530	36 9 74	3 (1 (4 () 722) 258) 334	13		0	515 184 544	32 9 76	3	0	699 262 331	39 13 49	2 1 4	0
C3 Slo C3	ugh Green	B2115 Junction, Slough Green	B2114 Cuckfield Road (N) (priority) B2114 (E) (priority)	T-Junction	AM RFC	153 639	8 30	1	0 71 0 477	4	1	0 95 0 788	5 34	1 0 1 0	80 569	4 27	1	0	94 787	5 34	1 () 78) 604	8 4 4 29	1	0	94 832	5	1	0	74 603	4 29	1	0
C3 C4 Ha C4	ywards Heath	Borde Hill Lane / Copyhold Lane	B2115 Sloughgreen Lane (W) Borde Hill Lane (N) Copyhold Lane (E)	Priority Junction near 503 HH Golf Course		388 465 148	24 27	4 1 5	0 492 0 651 0 204	. 33	4	0 582 0 532 0 180	83 27 33	6 0 1 0 6 0	620 799 141	84 38 28	5 1 6	0	568 523 235	81 26 41	5 (1 (6 (0 611 0 818 0 104	39	5 1 6	0	589 557 198	28 37	5 1 6	0	838	94 39 24	2 6	0
C4 C5 Ha	ywards Heath	B2114 / B2036 Whitemans Green	Borde Hill Lane (S) B2036 (N) B2036 (S)	Roundabout near 479 Hanlye Lane	AM RFC	707 266 922	40 38 105	2 4 101 2	0 368 0 291 5 648	42		0 901 0 262 0 1023	47 39 108 15	2 0 5 0 9 40		25 39 84	2	0	869 267 1024	44 40 108 1	2 (5 (58 40) 463) 252) 835	2 37		0	932 272 1043	47 41 110	2 5 191	0		28 36 90	3	0
C5 C6 Ha	ywards Heath	B2036 / Ardingly Road, Whitemans Green	B2114 Staplefield Road (W) B2036 Whitemans Green (N)	near 503 HH Golf Course Mini-roundabout		540 711	70	5	0 562	e 68	6	0 677 1 828	105 10 84 105 10	2 23	699 895	84 106	5 131	0	662 820	82	5 (2 873	8 85 108	5 157	0	683 828	84 105	103	23	766 929 1	93 110 1	7 195	1 48
C6 C6 C7 Ha	ywards Heath	A272 / B2036	Ardingly Road (E) B2036 London Road (S) A272 (E)	near 479 Hanlye Lane near 503 HH Golf Course Mini-roundabout	AM Del.	431 795 708	56 103 92	4 67 1 8	0 451 5 467 1 811	59	4		33 108 17 103 7		676 523 881	33 64 105	1 5 112	0				0 697 L 682	85		0 1 25	721 835 894	34 108 104	1 170 95	36	558	34 68 106 1	1 5 123	0
C7 C7			B2036 (S) A272 (W)			620 651 183	89 93 27	10 12 5	1 384 2 658 0 471	55 8 83	5		105 / 106 13 93			38 104 80	4 96	0 22	756 767 146	104 99	96 19 16 3	731 731 781	. 100 . 108	31	5	779	104 107 98	153 11 5	31	763 830 1	93 111 2 85	13	2 49
C8 Co C8 C8	wjoła	A281 North Junction, Cowfold	A281 (N) A281 (S) A272 Station Road (W)	(Double) Mini-roundabout In Horsham		771 770	92 102	4 52 1	0 795	5 101 0 87	38	8 856 0 771	98 102 5		773 837	99	8 41 10	8	826 776	96 102		2 840	8 101 0 100	11	2	861 777	99 102	5 7 58	1 12	790 1 806	101 96	46 6	9
C9 <i>Co</i> C9 C9	wfold	A281 South Junction, Cowfold	A281 (N) A272 Bolney Road (E) A281 (S)	(Double) Mini-roundabout In Horsham	AM RFC	792 818 288	94 97 45	4 6 5	0 845 1 859 0 236	100	36 11 5	8 850 2 894 0 349	100 2 101 3 55	0 4 7 9 6 0	822 860 326	102 95 49	44 4 5	10 0 0	845 876 372	101 101 58	31 36 8 6 0	7 833 8 858 9 285	101 96 43	5	9 0 0	861 896 347	101 101 54	23 28 6	6	847 1 875 235	101 98 35	38 7 5	8 1 0
C10 <i>Bo</i> C10 C10	Iney	A23 / A272 Bolney Road	A23 Southbound Off-Slip A272 (E) A272 (W)			386 782 661	56 97 68	6 21 3	0 324 3 756 0 786	i 94		0 356 2 1133 0 1015	30 104 10 102 3		570 648 1028	44 59 101	5 6 25	0 1	426 1065 992	35 97 100	5 (0 23 4 3 (0	0 567 957 964	89			397 1157 1031	33 105 103	5 121 55	33 1		43 90 77	4 10 3	0 2 0
C11	rth Chailey	A272 / A275 North Chailey	A272 (W) A275 (N) A272 (E)			426 143 852	64 24 99	6 5 11	0 570 0 219 2 687		5 9 5	0 630 0 110 0 889	79 22 99	5 0 6 0 9 1	809 201 850	92 46 98	4 10 9		624 108 892	78 21 100	5 (6 (11 2	0 819 0 200 2 837	47	4 10 7	0	609 109 891	77 22 100	5 6 11			92 47 95	4 10 6	0
C11 C11 C12 Ha C12	ywards Heath	A273 / Isaac's Lane / Traustein Way	A275 (S) A273 (W)	Roundabout		478 578 769	73 69	6	1 300 1 529 0 941	54	4	0 423 0 892 0 836	106 13	1 8 1 31	101 904 1085	34 82 103	14 6	0		102 106 1	35 9 39 34	9 103 956 1090	31 90	12	0 1 24	462 922 836	99 107	43	36	983	87	11 7 83	0
C12 C12			Isaac's Lane Parkfield Way (zone access) Traunstein Way			307 761	5 81	4 3 6	0 83 1 501	1	4	0 368	6 102 6	3 0		2 70	3		368	6 105 1	3 (0	92	2 2	3	0		6 103	4 3 84	0 1 21	92	2 71	3	0
	UTH rgess Hill	A23 / A2300 Southbound On-Slip	A23 Southbound On-Slip A23 Southbound	Merge		214 1996	16	4	0 388 0 3000			0 564 0 2308	33 69	4 0	770	53 99	5	0	802	49 75) 625) 3592		182		473 2323	29 67	4	0		110 2	233	28
S2 Bu S2	rgess Hill	A23 / A2300 Eastern Roundabout	A23 Southbound Off-Slip A2300 (E)	Roundabout		637 946	40	4	0 817 0 881	46	3	0 1226 0 1654	77 73	5 1 3 0	1147 1925	65 84	4	0 1	1415 2001	108 1 98	70 6: 5 (1125 1954	60 94	3		1580 1503	98 66	19	5 0 1	733 908	37 88	3	0
S3	rgess Hill	A2300 / Cuckfield Road	A2300 (W) Cuckfield Road (N) A2300 (E)	Roundabout		367 132 1161	37 16 108	3 4 161 5	0 282 0 199 2 1076) 24 5 104	5	24 1551	40 101 7 118 34	8 10 1 132	1665	32 38 103	3 9 60		762 510 2698	64	19 2	2 1153 1551	59	11	3	467 568 1623	45 110 122	240 426	165 1	180 726	10 28 97	3 7 5	0
53 53 54 <i>Bu</i>	rgess Hill	Cuckfield Road / THE HUB	Cuckfield Road (S) A2330 (W) Cuckfield Road (N)	Priority Junction		174 988	24 92	5	0 172				103 9 107 13		1176 1749 561	104 111 22	113 214	95 2	753 2185 1062	39 52 21		2 1027 0 1539	101			684 1669 863	104 109	105 188 0	20 1 83 1		104 1 126 4 24	102 496 :	21 194
S4 S4			THE HUB Cuckfield Road (S)									448 433	6 19	3 0 1 0	1179 146	188 1 88	1 602 66	278 0	448 400	7 18	3 () 1174	27	8	63 0	448 451	6 18 47	3	0 1	174 1 182	97 1	126 2	227
S5 Bu S5 S5 S5	rgess Hill	A2300 / Northern Arc Spine Road	N Arc (N) A2300 (E) N Arc (S) A2300 (W)	Roundabout 2031 New	AM Del.							489 843 1001 1698	41 56 68 79	5 0 5 0 5 1 4 1	246 825 1398 2213	20 53 92 84	5 5 10 5	3 1	1020 1326 1066 2004	90 83 69 95	14 3 9 3 7 3 7 3	2 233 2 833 1435 2 2230	54 54	5 11	0 0 3 42	559 926 969 1709	47 60 65 77	6 5 5 4	1 1	862 414	24 55 92 84	5 5 10 5	0 3 1
	rgess Hill	Junction Road / B2113, Burgess Hill	Junction Road (N) Silverdale Road B2113 Keymer Road (S)	Roundabout 2031 Scheme	PM Del.	323 112 779	47 20 103	5	0 31 0 41 5 661		5	0 426 0 0 0 503	99 12 0 12 106 22	6 7 2 0	135 0 480		38 122 115	1			78 13	3 131) (0 7 484	9	38 122 118	1 0 6	433 0	102 0	160 122 296	11 0	131 0 484 1		38 122 124	1
56 57 Hu	rstpierpoint	B2117 / B2116 Hurstpierpoint	B2113 Station Road (W) Cuckfield Road (N)	Mini-roundabout	PM Del.	765	94 41	6	1 852 0 526	2 102 6 67	4	9 522 0 599	104 19 76	1 15 5 0	551 815	108 99		26 3	531 453	105 2 105 2 58	4 (3 584 0 827	115	393 110	44 24	724	105 106 92	235	22	588 1 851 1	114 3 106 1	381	42
57 57 57			B2116 Hassocks Road (E) B2117 Brighton Road (S) B2116 Albourne Road (W)		AM Del.	313 286 153	29 37 15	3 4 3	0 360 0 105 0 251	5 13	3	0 405 0 344 0 153	41 51 16	4 0 5 0 4 0	252 288 250	32 37 25	5 4 4		392 272 140	36 38 14	4 () 4 () 4 ()	261 348 252	8 45	5 4 4	0	479 402 188	52 63 20	5 7 4	0	389	36 49 44	5 4 4	0
58 Ha 58 58 58	ssocks	A273 / B2116 Hassocks (Stonepound)	A273 London Road (N) B2116 Keymer Road (E) A27 Brighton Road (S) B2116 Keymer Road (S)	Signalled Crossroads 2031 Scheme small capacity increase	AM Del.	471 369 389	102 102	135 179 160	7 387 9 373 9 402	99 99		5 442 4 422	109 27 107 26 104 19	2 20 8 14	462 424	101 95	146 137 92	4	456 424		40 20 26 28 17 17	3 465 7 429	5 101 9 96	93	75	576 455 434	113 110 106	347 314 237	26 19	466 1 427	60	141 49	33 7 5
59 Py	ecombe	A23 / A281 Eastbound On-Slip	B2116 Hurst Road (W) A23 Southbound A281 Southbound on-Slip	Merge	AW Del.	492 2366 310	68 67 26	49 11 4	6 300 0 3994 0 118	100		4 435 0 2961 4 351	90 8 82 1 34		376 4299 30	102 100 100	63 250	8 2	439 2957 323	83 34	18 (0 5 (0	395 4267 31	100	64	9	384 3022 365	84 36	18		314 1	100	208 63 302	8
S10 Dit S10 S10	chling	B2112 / B2116 Ditchling	B2116 (W) B2112 (N) B2116 (E)			323 825 229	53 105 39		0 287 4 852 0 355			0 454 29 869 0 374	74 112 23 66		156 957 270	24 110 44	5 201 6	50	420 881 364	67 112 2 64	8 36 54	171 960 273	111		0 51 0		81 112 75	11 239 11	1 53 1		27 111 2 45	5 206 6	0 51 0
S10 S11 Bu	rgess Hill	A2300 / Bishopstone Lane	B2112 (S) A2300 (W)	Priority Junction		785 964 68	96 50	6 2	1 542 0 1070	53	2	0 792 0 1593	97 38	7 1	772	92 41	5		759	93 51	5	1 792 1539	93	5		813 1669	99 40	11 0	2	812	96 41	6	1
S11 S11 S12 Bu	rgess Hill	Bishopstone Ln / Science & Tech Park Access (Priority Junction		1037	19 51	2	0 948		2	0 1654	36 0	0 0	1925	40	0	0 2	2001	48	0 0	0 1954	46	0	0	1931	39 0	0	0 1	318	28	0	0
S12 S12 S13 Bu	rgess Hill	Cuckfield Rd / Science & Tech Park Access (N)	Science & Tech Park Access (E) Bishopstone Lane (S) Cuckfield Rd (N)	Roundabout								39	2	0 0	36	2	0		23	1 63	0 (0 44	. 21	0	0	40	2	0	0	47	2	0	0
S13 S13		A2300 / Science & Tech Park Access (S)	Science & Tech Park Access (W) Cuckfield Rd (S) A2300 (W)	Roundabout		964	50	0	0 1070) 53	0	0 1593	6	0 0	206	2	0		473 303	5 28	3 () 1391) 126	. 17	3	0	1978	52	3	0 1	053	32	3	0
S14 S14			A2300 (E) Science & Tech Park Access (S)			1040	50	0	0 944	46		0 1654	36	0 0	1925	40	0	0								1931	48	3	0 1	318	29	3	0
S15 S15		A272 Bolney Road / Bishopstone Lane	A272 Bolney Road (W) A272 Bolney Road (E) Bishopstone Lane	Priority Junction		590 676 49	31 34 12	1 8	0 606 0 639 0 35	31	1 1 7	0 684 0 1114 0 39	35 52 13 1	2 0 1 0	821 555 36	40 25 8	2 1 6	0 1	724 1043 23	37 48 6	2 () 9 ()	0 741 0 800 0 44	37		0	736 1140 40	37 52 13	1 2 11	0	47	39 37 11	2 1 7	0
516 Bu 516 516 516	rgess Hill	A2300 / Stairbridge Lane / Pookbourne Lane	A2300 (W) Stairbridge Lane A2300 (E) Pookbourne Lane	Priority Junction		963 18 1040	35 2 25	1 5 1	0 1053 0 87 0 944 0 20	11 23	1 7 1	0 1749 0 140 0 1654	34 10 27	3 0	1478 343 1925	26 21 31	0 3 0	0 2	2315 164 2001	45 14 38	4 (1337 273 1954	16	03	0	2135 137 1503	42 11 24	1 4 0	0	858 268 916	15 15 34	0 3 1 4	0 0 0
S17 Bu S17	rgess Hill	Bishopstone Lane / Job's Lane	Bishopstone Lane (N) Bishopstone Lane (S)	Priority		23 68 41	4	4 1 1	0 67	3	1 1	0 44	2	0 0		2	0	0	59	3	0 () 39		0	0	43	2	0	0	36	2	0	0
517 518 Ha 518	ssocks	A273 / B2112	Job's Lane A273 (N) B2112 (E)	Priority		1 514 630	0 26 103	3 1 81 1	0 0 0 226 3 392		3	0 15 0 554 0 659	1 26 106 13	0 0 1 0 1 22	21 469 436	1 23 62	0	0	15 582 649	1 28 106 1	0 (1 (34 2)	21 0 573 2 450	26	0	0	14 467 695	1 21 106	0 1 141	0		1 24 66	0	0
S18 S19 Ha	ssocks	B2112 / Lodge Lane	A273 (S) Lodge Lane (N)	Priority		956 321	40 60		0 678	8 23 2 19	2	0 941 0 479	38 84 1	3 0	927	35 31	3	0	918 482	37 83	3 (11 :	0 1008	8 40 4 32	3		1005 500	42 89	141 3 14	0 1	151	41 32	3 7 3	0
519 519 520 Bu	rgess Hill	Janes Lane / Manor Road	B2112 (E) B2112 (W) Janes Lane (E)	Priority		352 598 196		1	0 316 0 428 0 184	8 22 9	1	0 231 0 566 0 190	12 29 10	1 0	304 849 325	16	1 2 1	0	208 555 223	10 28 11	1 () 353) 938) 340	3 46) 17	2	0	222 614 217	12 31 11	1	0	968 337	19 47 17	2	0
520 520 521 Bu		B2112 / Green Road	Manor Road Janes Lane (W) B2112 (N)	Priority			21 17 84	4 2	0 83	8 12 0 20	2	0 311 0 583		4 0 2 0	181 705 848	28 42	4 3 21	0	314 564 691		4 () 198) 770	3 30 45	4	0		44 34 85	4	0	195 784	30 46	4 3 23	0
S21 S21			Green Road (E) B2112 (S)			346 800	52		0 277	45	6	0 396 0 831	60 108 17	6 0 0 38	414 684	63 85	7	0	453 822	68 109 1	7 (0 405	62 88	76	0	419 833	64 109	7 176	0 39	392 736	59 89	6	0
S22 S22		Valebridge Road / Junction Road / Leylands Ro	Junction Road (S) Leylands Road (W)	Priority		691 430 532	83 65 70		0 599 0 207 0 846	31	5			3 4	653 263 1042	55 50 107	66 33 197	2 37 1	1049				5 50 5 111	33	2	659 519 1062	56 99 101	76 104 85	4 8 1	264 057 1	50	66 33 255	5 2 51
S23 S23	rgess Hill	A273 / B2036 / Marchants Way	A273 (N) Marchants Way (E) B2036 (S) A273 (W)	Roundabout		790 15 444 674	97 3 57 88	8 5 4	1 813 0 22 0 466	60		0 16 0 783	100 2 0 95 73		729 23 764	84 0 92 86	6 3 6	0		98 0 100 55	9 : 3 () 18 : 5 ()	1 724 2 23 3 795	0 97		1 0 1	854 16 840 508	100 0 100 70	25 3 14	0		92 0 96	8 3 9	1 0 1
S24	rgess Hill	A273 / Sussex Way	A273 (W) A273 (E) Sussex Way (S)	Roundabout		674 393 576	88 51 75	4 5	1 573 0 500 0 487	0 60 7 65	4	0 523	69 66	8 1 4 0	650 457 726	50 71	8 5 4	0	383 458 866	55 63 82	8 :	0 618 457 0 730	7 59) 70	7	0		75 70	10 5	0	530 732	86 58 71	9 5 4	1 0 0
S24 S25 Bu	rgess Hill	West Street / Fairfield Road	A273 (W) Fairfield Road (N) West Street (E)	Priority		761 46 110	70 2 16	4	0 526 0 21 0 49	6 47 1	3	0 1190 0 23 0 137		4 0 1 0 4 0	1153 12 48	76 1 6	4	0 1	1059 41 249	78 2 35	4 0	0 1318 0 11 0 11	8 92	5	0	1182 42 145	86 2 20	4	0 1	219 18 47	77 1 6	4	0
S25 S25 S25			Fairfield Road (S) West Street (W) A273 (N)	Roundabout		142 257	7 35		0 116	6 30	2	0 203 0 691	10 91		157 599	8 75	1 3	0	232 730	11 96	1 () 146 L 726	5 7 5 93		0	217 738	11 97	1 9	1	176 658	9 81	1 4	0
S26 Bu	raoss 1111	A273 / York Road		Roundabout	1	945	103		7 775 0 600 0 462	79	3	0 922	105 10	26	983 616 551	104 91	82		921 305 690	104 40	76 19	958		127	32	933	106 68	115		972 1 567	102 83	56	13

Key: Increase in RFC of 5% or more to 85% or more are highlighted in orange Increase in RFC of 10% or more to 95% or more are highlighted in red Increase in Delay of 1 minute or more to 2 minutes or more are in red

APPENDIX 3 – DETAILED COMPARISON OF THE S&TP NORTH AND SOUTH SITES

_		Junctions at which there are 'significant' and 'severe' impacts in either Scenario 8 (Project Newton site) or Scenario 8b (S&TP south site)					n Demand (Veh)	Average	of RFC (%)	<u>Total of</u>	Delay (s)	<u>Total of A</u>	Average Q		'better' mances
unction ID	Area	Name Scenario 8 Impact Scenario 8b Impact Hour North Site South Site		<u>North Site</u>	South Site	<u>North Site</u>	South Site	<u>North Site</u>	South Site	North Site	South Site				
N7	Crawley Down	B2028 Turners Hill Road / Wallage Lane	Significant	Severe	PM	1755	1792	55	56	77	81	5	5	3	
C3	Slough Green	B2115 Junction, Slough Green	ОК	Significant	PM	1293	1370	39	42	7	9	0	1	4	
C5	Haywards Heath	B2114/B2036 Whitemans Green	Significant	Significant	PM	1775	1826	71	73	14	16	0	1	4	
C6	Haywards Heath	B2036/Ardingly Rd, Whitemans Green	Significant	Severe	PM	2252	2202	75	71	165	201	37	48	2	2
C7	Haywards Heath	A272/B2036	Severe	Severe	AM PM	2437	2469	104	103	285 314	259 364	62 66	55 77	1	3
C10	Bolney	A23/A272 Bolney Road	Significant	Significant	PM	2478	2402	76	70	19	17	2	2		3
C12	, Haywards Heath	A273/Isaacs Lane/Traustein Way	Significant	Significant	PM	2887	2863	67	66	104	98	25	22		4
S1	Burgess Hill	A23/A2300 southbound on-slip	Severe	Severe	PM	4217	4255	104	105	218	269	27	28	4	
S2	Burgess Hill	A23/A2300 eastern roundabout	Severe	Severe	AM	4178	3550	96	70	179	25	61	5		4
					AM	6146	4544	50	111	30	959	4	302	3	1
S3	Burgess Hill	A2300/Cuckfield Road	ОК	Severe	PM	5270	4730	76	89	246	610	39	216	3	1
S4	Burgess Hill	Cuckfield Road / The Hub	ОК	Significant	PM	1927	1954	56	94	226	1236	63	227	4	
					AM	5416	4163	84	62	37	20	8	3		4
S5	Burgess Hill	A2300 / Northern Arc Spine Road	Severe	ОК	PM	4731	4874	68	64	99	25	45	4	1	3
					AM	1485	1495	79	79	793	813	58	61	3	
S6	Burgess Hill	Junction Road/B2113, Burgess Hill	Severe	Severe	PM	1199	1203	56	56	671	665	51	49	1	2
67		D2117/D2116 Uumbriger sint	Clauificant	Course	AM	1257	1793	37	57	16	24	0	1	4	
S7	Hurstpierpoint	B2117/B2116 Hurstpierpoint	Significant	Severe	PM	1688	1963	53	59	123	144	24	27	4	
S8	Hassacks	A273/B2116 Hassocks (Stonepound)	Savara	Fouriero	AM	1927	1849	104	106	869	996	77	88	3	1
30	Hassocks	A2757B2110 Hassocks (Stonepound)	Severe	Severe	PM	2038	2070	103	93	725	652	62	60	1	3
S9	Pyecombe	A23/A281 eastbound on-slip	Severe	ОК	PM	4298	4345	102	102	377	365	12	10	1	2
S19	Hassocks	B2112 / Lodge Lane	ОК	Significant	AM	1245	1336	40	44	13	16	1	2	4	
S22	Burgess Hill	Valebridge Rd / Junction Rd / Leylands Rd	Severe	ОК	PM	1950	1964	72	71	370	354	62	58	1	3
S23	Burgess Hill	A273 / B2036 / Marchants Way	Significant	Significant	AM	2102	2218	63	68	35	47	4	8	4	
525	Durgess min		oiginicant	Significant	PM	2160	2285	67	69	27	29	3	3	3	
S24	Burgess Hill	A273 / Sussex Way	Significant	ОК	PM	2505	2481	74	69	16	13	1	0		4
S25	Burgess Hill	West Street / Fairfield Road	Significant	Significant	AM	1252	1142	36	33	15	15	1	1		2
- 10					PM	930	899	27	24	10	9	0	0		3
S26	Burgess Hill	A273 / York Road	ОК	Significant	AM	1916	2122	78	90	87	135	20	31	4	
		Sever		9							delay 8466				'better' 46
		Significa	nt 9	9						<u>6167</u>	<u>8466</u>	1		<u>65</u>	<u>46</u>