AQUIND Limited

AQUIND INTERCONNECTOR

Road Safety Technical Note – Hampshire County Council

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1. INTRODUCTION

1.1. INTRODUCTION

1.1.1.1. This Technical Note has been produced by WSP on behalf of AQUIND Limited (the 'Applicant') following the submission of the application for a Development Consent Order (DCO) in respect of the UK elements of AQUIND Interconnector (the 'Proposed Development') in November 2019 (the 'Application', APP-004).

1.1.1.2. This document has been produced in response to post-application discussions held with Hampshire County Council (HCC), Portsmouth City Council (PCC) and Highways England (HE) at a meeting dated 8/12/20 to discuss the Statement of Common Ground (SOCG). This highlighted that although the impacts of traffic redistribution and increased queueing on road safety had been assessed for the PCC network, there was a residual concern over the safety impact on the HCC highway network.

1.1.1.3. This Technical Note seeks to address the concerns made by HCC with regard to the temporary road safety implications of traffic reassignment due to the traffic management measures required to facilitate construction of the Onshore Cable Route and resultant traffic reassignment through further detailed analysis of traffic flow increases across the HCC highway network.

1.1.1.4. The structure of this Technical Note is as follows:

- Section 1.2 of this Section provides a summary of the work completed to date;
- Section 2 assesses the impact of temporary increased traffic flows on links in the study area which are anticipated to experience an increase in traffic flows as a result of vehicles redistributing away from the proposed construction works on the Onshore Cable Corridor;
- Section 3 provides a summary of the Technical Note and sets out the conclusions drawn.

1.2. BACKGROUND AND CONTEXT

1.2.1.1. This Section will provide a summary of the work which has been completed to date on the topic of road safety in respect to the construction of the Onshore Cable Route.

1.2.2. TRANSPORT ASSESSMENT AND SUPPLEMENTARY TRANSPORT ASSESSMENT

1.2.2.1. The temporary highway safety implications on both links and at junctions which are associated with the construction of the Onshore Cable Route were initially assessed within Section 1.7 of the submitted Transport Assessment (TA) (APP-448) and have since been updated in Section 4 of the STA (REP1-142). The updated analysis submitted in Section 4 of the STA (REP1-142) was taken to supersede that which had previously been submitted in the TA (APP-448).

1.2.2.2. Section 4 of the STA (REP1-142) assesses the temporary highway safety implications of the proposed construction of the Onshore Cable Route through a review of recorded collision data obtained from Hampshire Constabulary for the study area for the period between 1st October 2014 – 30th September 2019.

1.2.2.3. Analysis of recorded collisions was undertaken for the on-highway extents of the Onshore Cable Corridor, the construction traffic route between the proposed Converter Station Area and the A3 (M), as well as for any links within the wider study area which were identified as being likely to be utilised by traffic redistributing away from the works. The methodology for identifying links taken forward for assessment on the basis that they would likely be used by redistributing traffic is set out in paragraph 4.1.1.5. of the STA (REP1-142).

1.2.2.4. The STA (REP1-142) provided an overview of collisions previously recorded on assessed links, with particular focus on any identifiable patterns or clusters which were present. This assessment found no clear repetitions of causation factors for recorded collisions on any assessed links. Furthermore, it was noted that the severity and frequency of the collisions reviewed were typical for the road types and traffic volumes of the assessed links. The STA (REP1-142) therefore concluded that the temporary impacts of the proposed works would likely have a neutral impact upon highway safety, and that there were no locations which raised concern about a worsening impact due to the temporary works.

The Solent Transport Sub-Regional-Transport-Model (SRTM)

1.2.2.5. The Solent Transport Sub-Regional-Transport-Model (SRTM) has been used to assess the temporary impact of the traffic management proposals associated with the installation of the Onshore Cable Route, which will be constructed in 100m sections at up to six locations simultaneously on the highway.

1.2.2.6. To assess this scenario, it was agreed with HCC and PCC during pre-application scoping discussions for the TA that the following six areas of Traffic Management tested together would be a robust assessment:

- Shuttle working traffic signals on the B2150 Hambledon Road between Soake Road and Closewood Road;
- Temporary traffic signal operation of the B2150 Hambledon Road / A3 Maurepas Way / Houghton Avenue roundabout in Waterlooville;
- Shuttle working traffic signals on the A3 London Road between Poppy Fields and the roundabout with Ladybridge Road;
- Single lane closure on Havant Road between Farlington Avenue and the A2030 Eastern Road;
- Single lane closure on the A2030 Eastern Road between Airport Service Road and Burrfields Road; and
- Shuttle working traffic signals on Henderson Road between Bransbury Road and Fort Cumberland Road.

1.2.2.7. The SRTM modelled the impacts of the proposed traffic management across the following scenarios:

- **2026 Do Minimum (DM) Scenario**: the future baseline without the Proposed Development;
- **2026 Do Something 1 (DS1) Scenario**: traffic management to facilitate the construction of the Onshore Cable Route is in place at the six specified locations but on the A2030 Eastern Road lane closures apply to the southbound carriageway only; and
- **2026 Do Something 2 (DS2) Scenario**: traffic management is in place at the six specified locations but with lane closures applied to the A2030 Eastern Road northbound carriageway only

1.2.2.8. Further details regarding the SRTM modelling undertaken can be found in the Section 1.10 '*Traffic Assessment Methodology'* in the originally submitted TA (APP-448). The SRTM model has been used to inform all assessment work contained within the TA, STA, Environmental Statement (ES) and ES Addendum.

1.2.3. ENVIRONMENTAL STATEMENT AND ENVIRONMENTAL STATEMENT ADDENDUM

1.2.3.1. Further to the analysis undertaken in both the TA (APP-448) and the STA (REP1-142), an assessment of road safety was also included in the Traffic and Transport Chapter of both the 2019 Environmental Statement (ES) and within the 2020 ES Addendum. The information included in Section 15.5.9. of the ES Addendum supersedes that which is included in the 2019 ES in respect to assessment of accident and safety impacts both on links and at junctions.

1.2.3.2. The assessments undertaken of the predicted impacts of accidents and safety presented in the ES Addendum are broadly aligned with the more detailed analysis which is presented in Section 4 of the STA (REP1-142). As with the assessment in the STA (REP1-142), the assessment of predicted impacts in the ES Addendum includes both links of the Onshore Cable Corridor and across the wider study area. The predicted impacts set out in the ES Addendum present negligible impacts only, with no significant effects reported.

1.2.3.3. The temporary impact of increased traffic flows upon the safety of pedestrians and cyclists has also been assessed within the ES Addendum, through the assessment of the predicted impacts of the proposed works on pedestrian and cycle amenity. The assessment of pedestrian and cycle amenity undertaken within the ES takes into account factors including increased traffic flows, or HGV percentage of traffic flows, as well as a variety of other magnitude of change descriptors which can be seen in Table 22.3 of the Chapter 22 of the ES (APP-137).

1.2.3.4. The temporary impact of the redistribution of traffic and increased congestion on road safety was also assessed within the ES (APP-137) with respect to severance. The severance assessments undertaken within the ES (APP-137) identified links that were anticipated to see increases in traffic flow or heavy goods vehicle (HGV) traffic flows, to an extent which would materially impact upon the ability of pedestrians to cross the road. The analysis undertaken with the ES (APP-137) also took into account a variety of local factors which may heighten or lessen the level of severance experienced by pedestrians, for example the presence of signalised pedestrian crossings.

1.2.4. FRAMEWORK CONSTRUCTION TRAFFIC MANAGEMENT PLAN

1.2.4.1. Section 7 of the Framework CTMP (APP-450 Rev002) details the strategy and measures that will be taken to ensure road safety is maintained during the Construction Stage.

1.2.4.2. The Framework CTMP (REP1-070) includes details regarding the liaison and monitoring which is to be undertaken and the mitigation measures which are associated with the Construction Stage of the proposals. This includes details regarding the provision for a road safety officer, who will be responsible for the continual monitoring of the road works for the Onshore Cable Route to ensure the proactive management of road safety. The appointed road safety officer will ensure there is sufficient road signage to warn the public as to when the works will take place and inform construction related traffic to ensure compliance and route choice.

1.2.5. FRAMEWORK TRAFFIC MANAGEMENT STRATEGY

1.2.5.1. Section 2 of the FTMS (REP1-068) sets out the overarching traffic management principles which are to govern the Construction of the Onshore Cable Corridor. Section 2.5 of the FTMS (REP1-068) sets out the Traffic Management Methodology for the construction of the Onshore Cable Route, including all provisions for road safety. In all cases, the proposed traffic management methodology put forward within the FTMS (REP1-068) aligns with the relevant road safety guidance as set out in the following:

- Traffic Signs Manual Chapter 8: Traffic Safety Measures and Signs for Roadworks and Temporary Situations (Department for Transport, 2009);
- Safety at Streetworks and Roadworks: A Code of Practice (Department for Transport, 2013); and
- New Roads and Street Works Act 1991: Code of Practice of Co-ordination of Street Works and Works for Road Purposes and Related Matters (Fourth Edition) (Department for Transport, 2012).

1.2.5.2. Specifically, with regards to road safety implications of streetworks, the ‘Safety at Street Works and Roadworks’ document states the following:

“under the Health and Safety at Work etc. Act 1974, employers have duties to protect their employees from dangers to their health and safety and to protect others who might be affected by the work activity (for example pedestrians, cyclists, equestrians and motorists). These include proper arrangements for design (including planning and risk assessment) and management (including supervision) of the works. Under the Equality Act 2010, works promoters also have a duty to have regard for the needs of disabled people and older people in the planning and execution of works. This guidance places onus upon workers at traffic management locations to ensure that works are carried out safely, in a way which does not place either the workers themselves, or the public at risk.”

1.2.5.3. It is therefore noted by the Applicant that all streetworks required during installation of the Onshore Cable Route will be completed under this guidance, which places a duty on the contractors to manage road safety risks of construction works to all members of the traveling public and specifically have regard to the needs of the elderly and those with disabilities.

1.2.5.4. The FTMS also includes details of programme restrictions for all sections of the Onshore Cable Corridor, which mitigate the impacts associated with traffic management through avoiding construction works at certain times (e.g. during major events or school term time) and at multiple locations in the same area.

1.2.5.5. Furthermore, Section 2.13 of the FTMS (REP1-068) provides details regarding the protocol for providing a responsive traffic management strategy as secured in the draft Development Consent Order (dDCO) by Paragraph 10 of the protective provisions. These protective provisions secure the ability of the highway authority to provide directions in the relation to the following:

- Where an emergency occurs or where necessary to secure the safety of the public;
- Where works are being carried out in any manner which constitutes or is likely to constitute a danger to any person or class of persons or to affect the stability or integrity of any structures or apparatus including the public highway; and
- Where, as a consequence of unforeseen circumstances, in the reasonable opinion of the relevant highway authority any part of the works being carried out or to be carried out within the public highway are causing or are likely to cause serious disruption to traffic that will endanger the safety of the public; and

1.2.5.6. In relation to this, Paragraph 4(2) of the protective provisions for the protection of the highway provides for any detailed traffic management strategy to be revised where necessary in the event of unforeseen circumstances.

1.2.6. FTMS SIGNING STRATEGY

1.2.6.1. An overall signage strategy has been developed, forming an important part of the Framework Traffic Management Strategy (FTMS) and Communication Strategy during the phased construction period by informing the traveling public of the works and associated Traffic Management required to facilitate this construction.

1.2.6.2. The strategy will allow drivers to make informed choices related to route choice and the location of works at a particular time, as well as helping to mitigate the impacts associated of such.

1.2.6.3. The strategy will also help to communicate proposals to road users who may otherwise be unaware of the construction works and associated traffic management.

1.2.6.4. The strategy considers the following key topics:

- The location of strategic signage across the wider strategic highway network which informs drivers of the construction works and allows them to re-route well before reaching the Onshore Cable Corridor;
- The location of additional signage in the vicinity of or on the Onshore Cable Corridor which allows drivers to re-route in close proximity of the works;
- Signage to direct and encourage use of appropriate alternative routes to avoid the construction works; and
- Signage to discourage use of routes which are considered to be inappropriate for reassignment of traffic away from the works.

1.2.6.5. This strategy provides an overall approach to use and proposed locations of highway signage. A high-level approach is necessary given the transient nature of the construction programme of the Onshore Cable Route and restrictions presented in the FTMS that prevent works in close proximity to each other.

1.2.6.6. The signage will comprise of fixed signs or mobile variable message signs ('VMS') as below:

- Fixed signs are proposed in various locations to display 'Advanced Warning' of the construction works, the start-dates and periods of works.
- Mobile VMS Signs and fixed signs that will be placed at appropriate locations, for the duration of particular construction phases. When works are completed in all locations accessible by a particular location (i.e. when the critical decision point location moves), the sign can be moved to another location as needed. Text can also be updated as needed on the VMS units, including live traffic updates if appropriate.
- Fixed signs providing 'positive' directional messages that provide information on appropriate alternative routes that avoid the Onshore Cable Corridor. This could include on appropriate routes directional signs for 'Waterlooville town centre' and / or 'A3(M)' around the A3 London Road area.
- Fixed signs to discourage use of certain routes that are deemed unsuitable routs for the reassignment of traffic. This will primarily be through the of 'Access Only' signage to prevent use of residential streets but should also consider 'Unsuitable for HGVs' and 'Roads Unsuitable for Diverted Traffic' where appropriate on rural/country lane routes.

1.2.6.7. The use of mobile VMS signs is proposed as these are considered more conspicuous than standard Advance Warning' signs and can be easily updated to reflect the intended programme of works. Other uses of mobile VMS signage could be to provide live traffic updates, information on known/likely congestion hotspots, or guidance relating to upcoming temporary traffic management.

1.2.6.8. Other aspects of the signage strategy include the provision of temporary signs (such as white on red or black on yellow) to encourage positive user behaviour to mitigate possible safety problems. Examples include 'Keep Clear', 'Do Not Block Junction', 'Merge in Turn' and Do Not Overtake Cyclists'.

2. ROAD SAFETY ON LINKS

2.1. BACKGROUND

2.1.1. PURPOSE OF LINK ASSESSMENT

2.1.1.1. This chapter considers the road safety implications of traffic reassignment on the highway network.

2.1.1.2. This additional approach to assessment has been completed to provide give greater confidence that the road safety issues have been carefully considered across the entirety of the study area. As a result, this note should be read in conjunction with the TA (APP-448) and STA (REP1-142).

2.1.2. TA ASSESSMENT OF LINKS

2.1.2.1. This chapter builds upon the work already undertaken in Chapter 11 of the TA (APP-448), which provided an overview of the results of the SRTM scenarios (as described in Section 0) used to assess the impacts of construction of the Onshore Cable Route. The results provide a forecast of the routes and links where traffic will reassign away from areas of traffic management and an assessment of the relative impacts of the reassigned traffic during the temporary works.

2.1.2.2. In the TA (APP-448) all links in the study area that could be subject to traffic reassignment were identified.

2.1.2.3. This list was then refined using a sifting process based on traffic flow outputs from the SRTM for the two Do-Something Scenarios, to highlight those links that would be subject to the greatest impact from traffic distribution. Links that warranted further assessment were identified if they satisfied the following criteria:

- **Stage 1** – The percentage change in traffic flow on a link increased by 10% or more; and
- **Stage 2** – The increase in hourly passenger car unit (PCU) numbers was greater than 60 (one per minute).

2.1.2.4. The stages specified above, were applied sequentially to the sifting process. If a link failed to satisfy the criteria for a stage, it was immediately discounted from further analysis. Where links met all three stages in either the DS1 or DS2 scenarios (AM or PM peak), they were included for further analysis of potential impacts.

2.1.2.5. The staged analysis was defined on the following basis:

- A 10% increase in traffic flow (as specified in Stage 1) was considered significant as such a measure aligns with guidance within the IEMA document entitled "*Guidelines for the Environmental Assessment of Road Traffic*" ('GEART') for links that contain sensitive receptors; and

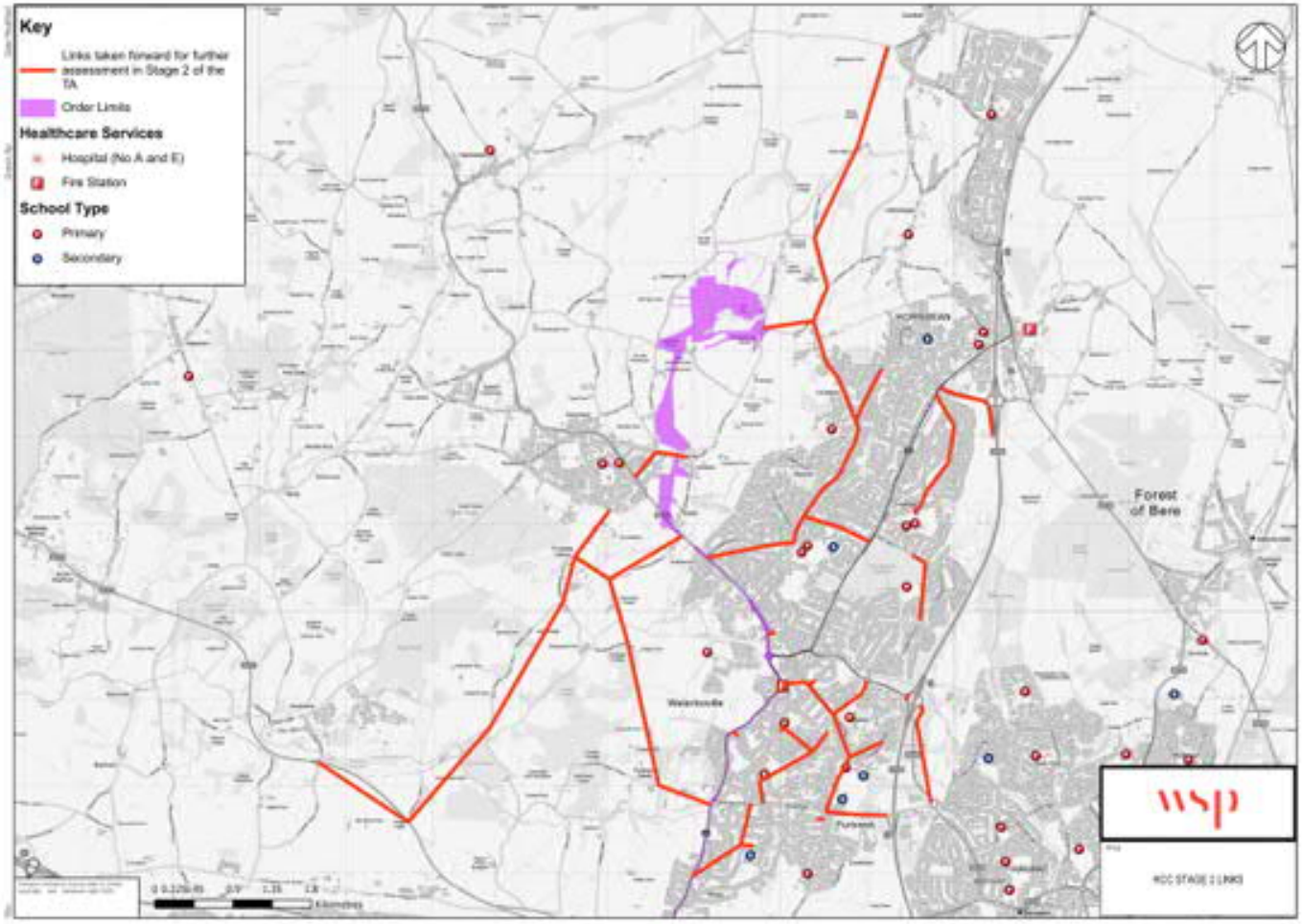
- An hourly increase of 60 PCUs or more (Stage 2) was deemed appropriate as this amounts to an increase in traffic flow of one per minute. This rule was devised to take account of lower utilised roads where traffic volumes are typically lower and where spare capacity resides.

2.1.2.6. This criteria has been used to identify the links that an assessment of traffic flow increases and potential associated road safety implications as part of this Technical Note.

2.1.2.7. This has been completed specifically in response to HCC's concerns that the road safety implications of traffic reassignment and increased congestion have not been fully considered.

2.1.2.8. Following the selection processes detailed above, 32 roads are to be assessed. The roads to be assessed are summarised in **Figure 1** and which is also provided to the rear of this document.

Figure 1: Roads Taken Forward for Assessment



2.2. ASSESSMENT OF IMPACTS

2.2.1.1. This additional assessment provides an assessment of the impacts of forecast increased traffic volumes on road safety. In doing so, the assessment considers the following quantitative and qualitative factors that influence road safety:

- Traffic flow changes, absolute and proportional, in each of four scenarios: Do-something 1 (DS1) AM; Do-something 1 (DS1) PM; Do-something 2 (DS2) AM; and/or Do-something 2 (DS2) PM;
- Capacity constraints, such as on-street parking that hinders two-way traffic;
- Pedestrian and/or cycle facilities;
- Nurseries / schools; and
- Shops / other community facilities.

2.2.2. GENERIC ASSESSMENT – ALL ROADS

2.2.2.1. A few general points can be made regarding the above factors:

- The highest increase is forecast to be 4 vehicles per minute on Mill Road (AM Peak) and Stakes Hill Road (PM Peak); while this may be an increased volume, it will still leave more than four seconds headway between vehicles on Stakes Hill Road and more than 12 seconds between vehicles on Mill Road.
- It is likely that some of the impacted roads may have on-street parking. On these roads, it is likely that there is either sufficient width to allow two-way traffic to pass with one vehicle stopping and waiting or there are spaces so that one vehicle could pull over to allow another one past.
- On rural routes the forecast increases are against low baseline traffic flows, meaning that a significant percentage increase may relate to a relatively low level of additional traffic using a route.
- All impacts will be temporary.

Signage Strategy

2.2.2.2. As outlined in Section 1 of this note, the signage strategy outlines how, where, and what signage is proposed to help inform the traveling public of the works, and to allow drivers to make informed route choices based on the location of works at a particular time. Further details are available in the Framework Signing Strategy (Appendix 3 of the FTMS).

2.2.2.3. Strategic signing is proposed on key strategic routes to provide suitable warning to drivers to reassign onto appropriate alternative routes before reaching the Onshore Cable Corridor.

2.2.2.4. Strategic signing for work taking place on the A3 London Road will be signed on Highways England VMS signs located on the A3(M), A27 and M27. Use of messages such as “A3 London Road Works” will allow drivers to divert away from such routes whilst still on the Strategic Road Network thereby limiting the use of inappropriate routes on the local highway network.

2.2.2.5. Local network signing is proposed to complement the strategic signing, providing more information on specific works locations/phases and suitable diversion routes. This covers parts of the network directly impacted by the construction works and also routes that may see a resultant impact. Further detail on the locations and routes is included in the Signing Strategy.

2.2.2.6. The strategy also outlines the approach to signage for specific construction locations such as B2150 Hambledon Road and A3 London Road where the nature of the location, the nature of the construction programme and the restrictions presented in the FTMS that prevent works in close proximity to each other require a specific strategy that can be adapted as required in response to the changing phase of works.

2.2.2.7. In the HCC area, these areas are the B2150 Hambledon Road (Section 3.2 to 4.2 of the FTMS) and A3 London Road (Section 4.3 and 4.4 of the FTMS).

2.2.2.8. In addition to the strategic and local signage, the area specific strategies also cover:

- The location of additional signage in the vicinity of or on the Onshore Cable Corridor which allows drivers to re-route in close proximity of the works;
- Signage to direct and encourage use of appropriate alternative routes in avoidance of the construction works; and
- Signage to discourage use of routes which are sensitive to increases in traffic flow associated reassignment of traffic away from the works.

2.2.2.9. Through the provision of regular signage and information for traffic, as well as wider publicly available information identifying works areas, likely congestion hotspots and live traffic information, drivers will be able to make strategic decisions on route choice and react to changing traffic patterns and works areas.

2.2.2.10. It is acknowledged that such roads may still be used, but this is more likely to be by local traffic, who will be more familiar with the route. More strategic traffic is likely to continue on the signed diversion routes.

2.2.2.11. Additional mitigation is secured as part of the Framework Traffic Management Strategy (FTMS, REP1-068).

General Points

2.2.2.12. The majority of impacted roads will experience only minor proportional changes in volumes, which in some cases could be expected to be within the usual day-to-day variation of traffic volumes. . Generally, increases by more than usual day-to-day variation occur on distributor roads (particularly A Roads) which are intended for the movement of relatively large volumes of traffic. On many such distributor roads, the buildings are set back from the road which further reinforces the impression of a road intended for high-volume traffic movement.

2.2.2.13. Many routes are well provided with formal pedestrian crossing points – many of which are controlled crossings. In such cases, an increase in traffic volumes is not expected to alter road safety significantly, if at all.

2.2.2.14. Where non-motorised routes cross or run alongside an impacted road, there could be increased conflict between road-user groups, or pedestrians and cyclists may take greater risks when attempting to cross at uncontrolled crossings. Such impacts are not readily monitored or identifiable through traffic and collision data. Through liaising with the community, project reporting and feedback channels, social media and designated community liaison officers, the road safety officer may be able to introduce more immediate mitigation measures, identify common problems and identify suitable mitigation for implementation at future locations. When combined with a broader signing and information strategy, such risks are mitigated as far as practicably possible, and systems are in place to ensure continuous improvement.

2.2.2.15. The majority of increases on routes designated as ‘low traffic routes’ are forecast to be 1-2 vehicles per minute, which is not considered to have a significant impact on road safety. Many of the affected roads have straight alignments allowing good forward visibility between traffic, pedestrians and cyclists.

Model Limitations – Rural and local connections

2.2.2.16. Across the HCC area of the scheme, there are a number of minor roads and country lanes which do not form part of the SRTM used to assess the impact of the construction works on the highway network. These routes however are generally those which are unlikely to be used by traffic diverting away from the Onshore Cable Corridor due to their nature and availability of more appropriate routes.

2.2.2.17. The provisions within the signage strategy outlined earlier will help to mitigate against high traffic volumes using these routes or discourage strategic trips and larger vehicles from using less suitable routes.

Residential Area Feeder Roads

2.2.2.18. Throughout the HCC area, there are a number of roads which connect residential roads with distributor roads. Examples of this include Elizabeth Road, Park Avenue, Tempest Avenue and Hazleton Way. The traffic flow assessment identifies some of these roads as having a significant change in flow. The nature and phasing of the temporary traffic management means that there will be changes in access to the residential areas for residents and visitors.

2.2.2.19. This is to be expected, but through the use of advanced notice and signing, communication and supplementary signage as outlined in the signage strategy and FTMS, the impact of the traffic management on the network will be minimised as far as practicably possible.

2.2.2.20. All impacts are anticipated to be temporary, lasting for the duration of the particular phase of works.

2.2.3. ROAD-SPECIFIC ASSESSMENT

2.2.3.1. These quantitative and qualitative factors have been summarised in a Table in Appendix C below for all roads meeting the defined assessment criteria. For clarity each assessed road in Appendix B has two rows of data. The first row gives the traffic increases in different times and scenarios, in absolute values and percentage changes; the second row of each road entry gives the qualitative factors listed above.

2.2.3.2. It should also be noted that some roads appear as more than one entry in the original traffic volume increase data. In Appendix B, only the highest changes of each scenario are shown, which in some cases are different sections of roads in different scenarios; they may also be different sections of roads in the percentage changes compared with the absolute changes. In each case, the highest increase is shown so the data is robust.

2.2.3.3. Some traffic 'increases' are negative, i.e. decreases, as the SRTM predicts reassignment of traffic, in some cases causing reductions on some links.

2.2.3.4. While the full details are in Appendix B, a brief summary of the key points of the Road-Specific Assessment are set out below. Overall the appraisal of links has shown that temporary increases in traffic will generally not significantly alter the road environment.

Roads where Mitigation is Proposed in the Signage Strategy

2.2.3.5. Within the signage strategy, two works sections have been identified in the HCC area where the strategy will be adapted to respond to works being undertaken on key routes/sections. These are on the B2150 Hambledon Road and A3 London Road.

2.2.3.6. These specific sections are discussed next.

B2150 Hambledon Road between Denmead and Waterlooville

2.2.3.7. During construction work on the B2150 Hambledon Road, in combination with the overall strategic signage, additional signage is proposed to improve traffic flow and mitigate road safety impacts. The additional signage includes:

- Directing drivers away from B2150 Hambledon Road when approaching from Denmead or Waterlooville;
- Providing repeater signs of works at key junctions such as Sunnymead Drive and Milton Road, depending upon the location that construction works are being completed; and
- Discouraging use of routes which may be sensitive to traffic flows increases associated with reassigned traffic, including:
    - Closewood Road, Furzeley Road and Newlands lane;
    - Soake Road (as a route to Anmore Road);
    - Mill Road (as a route to Anmore Road)
    - Martyn Avenue (as a route to Anmore Road);
    - Darnell Road, Sickle Way and Houghton Avenue (location of Berewood Primary School); and
    - Hart Plain Avenue (Cowplain Infant School and Community School).

A3 London Road between Waterlooville and Portsdown Hill Road

2.2.3.8. During construction work on the A3 London Road, in combination with the overall strategic signage, additional signage is proposed to improve traffic flow and mitigate road safety impacts. The additional signage includes:

- Directing drivers away from the A3 London Road primarily onto the A3(M) rather than routing down other less suitable routes;
- Directing local traffic to use Stakes Hill Road / Frenstaple Road and College Road rather than other less suitable routes;
- Providing repeater signs of works at key junctions such as Sunnymead Drive and Milton Road, depending upon the location that construction works are being completed; and
- Discouraging use of routes which may be sensitive to traffic flow increases associated with reassigned traffic, including:

- Mill Road (location of Mill Hill Primary School);
- Westbrook Grove, Elizabeth Road and Phillip Road (residential roads and location of Purbrook Infant and Junior School);
- Park Avenue (residential road and location of Purbrook Park School);
- Crookhorn Lane (Moorlands Primary School and Crookhorn centre)
- Darnell Road, Sickle Way and Houghton Avenue (location of Berewood Primary School); and
- Closewood Road, Furzeley Road, Purbrook Heath Road, New Down Lane, Widley Walk and Pigeon House Lane (rural lanes with limited carriageway width in places.

2.2.3.9. The mitigation measures identified for the specific construction works areas will help to improve traffic flow, keep local and strategic/longer distance traffic separate, and mitigate road safety impacts by discouraging the use of rural or local connecting roads by large or long vehicles.

Roads where Additional Mitigation may be Required

Milton Road / Mill Road / Park Avenue / Westbrook Grove

2.2.3.10. Milton Road, Mill Road, Park Avenue and Westbrook Grove are forecast to experience increases in traffic flow as a result of construction of the Onshore Cable Route. This is anticipated to result in a maximum increase of 3-4 vehicles per minute across each of these routes and scenarios assessed.

2.2.3.11. Each of these roads primarily serves residential areas and provide access to one or more schools and therefore increased traffic flow may lead to greater chance of conflict and road safety risks at the start and end of the school day. It is therefore proposed that school marshalling could be provided as set-out in section 2.13 of the FTMS if required. The situation will be monitored and assessed by the designated road safety officer in coordination with the schools and local authorities.

2.2.3.12. The traffic marshals will help direct and manage traffic flow in the vicinity of the school at the start and end of the school day and mitigate potential safety impact associated with increases in traffic flow on this link.

2.2.3.13. Regular/responsive communication between the traffic marshals and the designated road safety officer will ensure any issues can be identified and resolved as they arise,

with any lessons learned are captured, enabling continuous improvement throughout the duration of the works.

2.3. SUMMARY OF LINK ASSESSMENT

2.3.1.1. This chapter has considered road safety impact of the construction works on the highway network in the HCC area. This assessment has covered a high level review of the impact in light of the FTMS and signage strategy and a model-based assessment , using a wide variety of criteria. This is considered a robust approach as the wide variety of criteria helps to ensure that any critical roads are included.

2.3.1.2. Qualitative assessments were made of the impact of increased traffic on pedestrian and cycle routes/facilities; schools, nurseries, shops and community facilities; and roads where two-way traffic is hindered by on-street parking. These qualitative assessments, together with the quantitative assessments of Do-something (DS) link volumes and volume increases, demonstrate that the temporary increases in traffic will generally not significantly alter the road environment. This is shown to be mainly because of these factors:

- The characteristics of the affected roads and the existing infrastructure available for users of these routes that mitigates impacts associated with increases in traffic flow;
- The availability of alternative roads, many of which were not modelled in the SRTM. As such, the SRTM may over-estimate the traffic impact on the roads that are included in the model as reassignment is only modelled over a limited number of links. In practice, traffic will be dispersed over more different roads if one parallel road experiences significant traffic increases; and
- The headway between vehicles even in the DS scenarios.

2.3.1.3. The provisions made in the Signage Strategy and FTMS will help guide and inform drivers about the proposed works, diversion routes and areas to avoid. This includes identifying routes that may be unsuitable for higher traffic volumes or use by large/long vehicles.

2.3.1.4. Where additional mitigation is required of potential road safety implications, these will be secured as part of the Framework Traffic Management Strategy (FTMS, REP1-068).

3. SUMMARY AND CONCLUSIONS

3.1. SUMMARY

3.1.1.1. This technical note has provided an assessment of the safety implications of the increased traffic flows anticipated on links due to the construction stage of the Onshore Cable Route.

3.1.1.2. The measures to mitigate any road safety implications arising from the proposed works are contained in the Framework Construction Traffic Management Plan (CTMP) and Framework Traffic Management Strategy (FTMS), and the overall signing strategy.

3.1.1.3. The Framework CTMP (REP1-070) includes details regarding the liaison and monitoring which is to be undertaken, and the mitigation measures which are associated with the Construction Stage of the proposals. This includes details regarding the provision for a road safety liaison officer.

3.1.1.4. The FTMS (REP1-068) sets out the overarching principles and methodology to be used during the construction, with the aim of minimising disruption to all road-users, including pedestrians, cyclists, public transport users and car drivers.

3.1.1.5. The Signage Strategy (Appendix 3 of the FTMS) identifies how strategic route signage, local route signage and how static and variable information signs could be used to mitigate the impact of the construction works.

3.2. CONCLUSIONS

3.2.1.1. This Technical Note seeks to address the concerns regarding the road safety impact of traffic redistribution and increased queueing on along the cable route or identified diversion routes.

3.2.1.2. This Technical Note has built upon the assessment work undertaken in the TA (APP-448) and the STA (REP1-142).

3.2.1.3. This Technical Note has assessed the safety implications of increased traffic on links impacted by traffic reassignment away from the Onshore Cable Route. It has been demonstrated that while there will be temporary impacts on various receptors, these will be manageable and not significantly different from normal conditions. Furthermore, the Framework Traffic Management Strategy (FTMS, REP1-068) and Signage Strategy (Appendix 3 of the FTMS) provide for further mitigation as needed.

REFERENCES

There are no sources in the current document.

Appendix A – Stage 2 Transport Assessment links

Date Modified:

Drawn By:

Key

Links taken forward for further assessment in Stage 2 of the TA

Order Limits

Healthcare Services

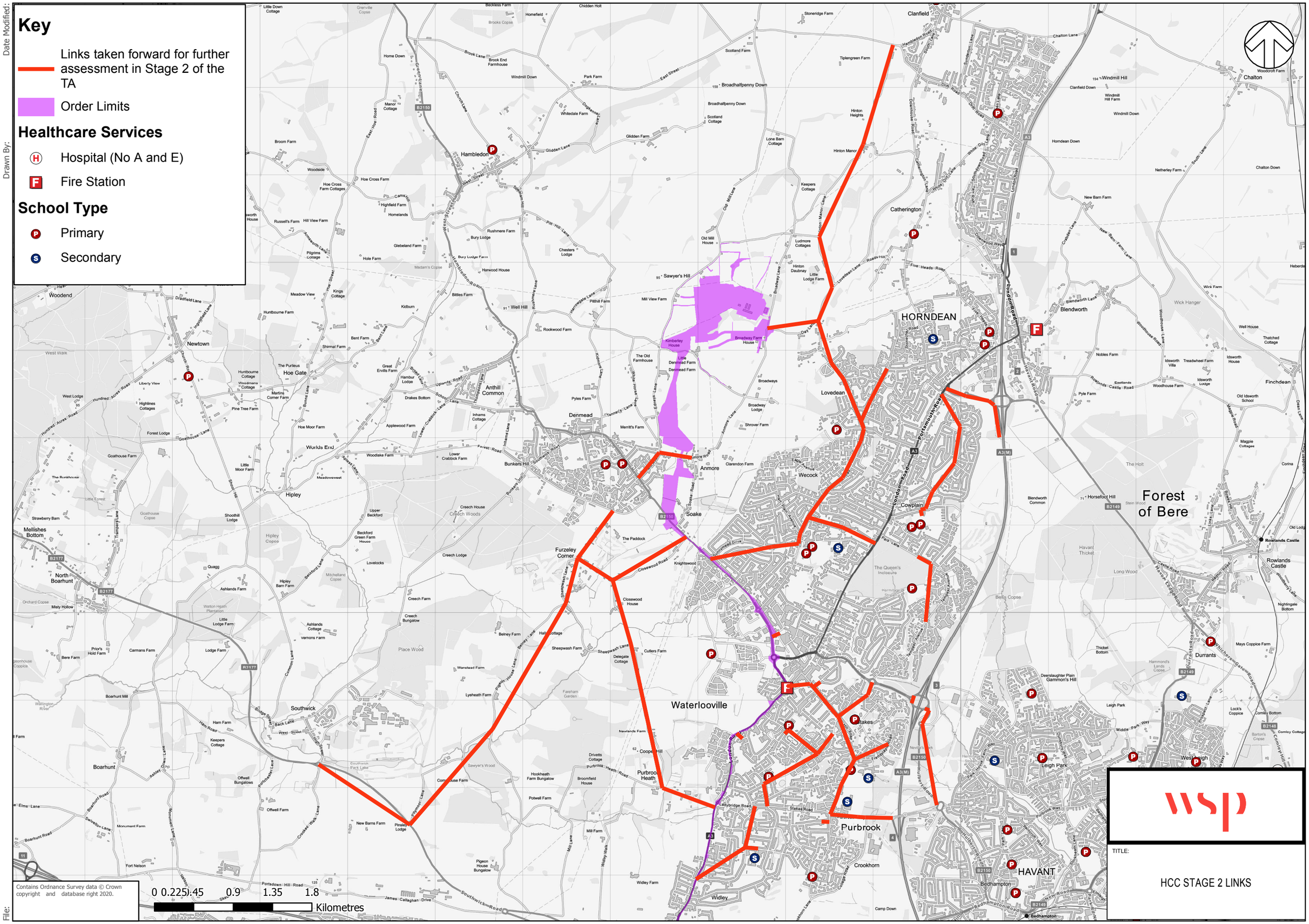
(H) Hospital (No A and E)

F Fire Station

School Type

(P) Primary

(S) Secondary



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HCC STAGE 2 LINKS

Appendix B – Assessment of roads

Appendix B – Assessment of Roads

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
Anmore Road, between Mill Road and Soake Road	41	112	42	110	24%	61%	25%	60%
	Single carriageway, non-residential urban distributor road. 30 mph	No obvious capacity constraints to two-way traffic flow	No cycle facilities provided. Narrow footway on one side only, no controlled crossing facilities.	No direct connection. May be a route from the north to Denmead Infants/Juniors School	No direct connection	Minor. Low proportional increases in traffic. Single carriageway connecting to Anmore Lane and Broadway Lane to the north. Unlikely to be used by strategic traffic and large vehicles. Limited impact felt by local traffic only who will be familiar with the route. Signage strategy will discourage use of Anmore Road from Mill Road and Martin Avenue		
B2149 Dell Piece West	23	140	22	138	2%	16%	2%	15%
	Wide single carriageway distributor road between the A3(M) and A3. Non-residential, access to retail areas. National Speed Limit (Eastern section) 40 mph speed limit (western section)	No obvious capacity constraints to two-way traffic flow	No cycle facilities. Footway provided on one side only, no crossing facilities except at A3 London Road junction.	No direct connection	Link to Morrisons Supermarket on Lakesmere Road	Minor. Slight increase in the number of vehicles per minute in the PM peak only, minimal change in headways. No pedestrian accessibility. Whilst designated as an B road the layout is intended to carry large traffic volumes.		
Closewood Road, between B2150 Hambledon Road and Newlands	208	116	197	119	461%	399%	472%	410%
	Single carriageway, narrow rural road with passing	Narrow carriageway with	None provided	No direct connection	No direct connection	Increase in traffic in the AM peak, with 5 vehicles per minute anticipated (rising by 3). Due to the low flow, this is not		

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
Lane	places. Signed as unsuitable for HGVs 30 mph	passing places				anticipated to be have a significant impact on road safety. Provides a local connection, unlikely to be used by strategic / non-local traffic. HGVs currently signed to avoid. Only likely to be used when traffic management is located on B2150 Hambledon Road north of Closewood Road (3-4 weeks per circuit). Signage Strategy will discourage use of this route as appropriate.		
	153	106	152	107	156%	208%	156%	211%
Elizabeth Road, between Stakes Hill Road and Westbrook Grove	Single carriageway residential distributor road, some residential frontages, other residential roads connect to it. 30 mph.	No obvious capacity constraints to two-way traffic flow. Some on-street parking, carriageway width may permit two-way traffic past parked vehicles.	Footways on both sides, uncontrolled pedestrian crossings provided	May be used as a route to nearby schools due to its distributor function including Purbrook Infant School and Purbrook Junior School.	Some community facilities along the section	Increase in traffic in the AM peak, vehicles increasing to approximately 4/min and by a maximum of 2-3 vehicles per minute.. Residential frontages set back from the carriageway, and provision of footways mitigate the impact to pedestrians. Discouragement signing proposed in the Signing Strategy. Would also benefit from the proposed provision of traffic marshalling on Westbrook Grove as detailed below.		
Frendstaple Road, between Springwood Avenue and Stakes Hill Road	198	105	197	104	79%	42%	79%	43%
	Single carriageway distributor road, providing access to residential roads. No residential properties. 30 mph.	No obvious capacity constraints to two-way traffic flow	No cycle provision. Footways provided on one side. Uncontrolled crossings or underpasses provided to facilitate crossing.	May be used as a route to nearby schools due to its distributor function.	May be used as a route to nearby facilities due to its distributor function.	Minor. Slight increase in traffic flows in the AM Peak, within capacity of the road and equivlent of 2-3 vehicle per minute. It is intended to operate as a distributor road for the residential roads in the area, connecting with strategic routes at both ends. Identified as a preferred route for local traffic on the Signing Strategy.		

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
Frogmore Lane, between Lovedean Lane and Victory Avenue	1	87	1	86	0%	37%	0%	37%
	Residential single carriageway road with frontages. 30mph.	No obvious capacity constraints to two-way traffic flow. Some on-street parking, carriageway width may permit two-way traffic past parked vehicles.	Footways provided on both sides	No	Some retail premises and facilities, with on-street parking or laybys provided	Negligible. Few receptors identified that are likely to impacted by increases in traffic flow. Minimal change in flow across both peaks.		
Furzeley Corner, between Furzeley Road and Closewood Road	119	164	120	168	72%	99%	74%	101%
	Single carriageway, narrow rural road with passing places. Some residential frontages along the route. 30 mph	Reasonably narrow carriageway with passing places. Possible on-carriageway short-term parking.	None provided	No direct connection	No direct connection	Slight increase in traffic across both peaks, rising to 6 vehicles per minute and an increase of 2-3 vehicles per minute Due to the low flow, this is not anticipated to be have a significant impact on road safety. Provides a local connection, unlikely to be used by strategic / non-local traffic. No pedestrian or cycle connectivity. Signage Strategy will discourage use of this route as appropriate.		
Furzeley Road, between Forest Road and Sheepwash Lane	52	119	53	119	23%	58%	25%	58%
	Single carriageway, narrow rural road with passing places. Some residential	Reasonably narrow carriageway with passing places. Possible on-carriageway short-	None provided	No direct connection	No direct connection	Slight increase in traffic across both peaks, up to 6 vehicles per minute and an increase of 1-2 vehicles per minute. Due to the low flow, this is not anticipated to be have a significant impact on road safety. Provides a local connection, unlikely to be used by strategic /		

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
	drives along the route. 30 mph	term parking.				non-local traffic. No pedestrian or cycle connectivity. Signage Strategy will discourage use of this route as appropriate.		
Hazleton Way	4	96	4	98	2%	51%	2%	52%
	Single carriageway residential road with a distributor function also. 30 mph.	Some on-street parking	Not a cycle route. Footways on both sides. An uncontrolled pedestrian crossing is provided.	Padnell Infant / Junior Schools, Cowplain Day Nursey	Yes, shops and community facilities	Minor. Slight increase in traffic across both peaks, up to 6 vehicles per minute anticipated. Due to the low flow, this is not anticipated to be have a significant impact on road safety. Provides a local connection, unlikely to be used by strategic / non-local traffic.		
Hinton Manor Lane, between Hambledon Road and Lovedean Lane	14	117	12	117	4%	52%	3%	52%
	Single carriageway narrow country lane. National Speed Limit	Narrow country lane, with passing places.	None provided	No direct connection	No direct connection	Negligible. Few receptors identified that are likely to impacted by increases in traffic flow. Minimal change in flow across both peaks, unlikely to be used for strategic trips or large vehicles.		
Hulbert Road, between A3(M) and Purbrook Way	43	62	43	56	6%	10%	6%	9%
	Two-lane dual carriageway connecting the A3(M) with the A3. 40mph speed limit	No obvious capacity constraints to two-way traffic flow	Footways on both sides (western half only).	No direct connection	No direct connection	Negligible change in traffic flow. Existing high-standard dual carriageway catering for high traffic volumes.		

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
Hurstville Drive, between Stakes Hill Road and Hulbert Road	202	165	201	166	197%	86%	197%	87%
	Single carriageway residential road with speed cushions. 30 mph.	On-street parking can hinder two-way traffic	Footways provided on both sides	No direct connection	No direct connection	Increase of approximately 3 vehicles per minute. Residential area with speed cushions, may be unsuitable for large vehicles, though these are not anticipated. Dwellings in proximity to the road means there may be a minor impact even though the change is low.		
Lovedean Lane, between Milton Road and Hilton Manor Lane	57	189	55	188	29%	64%	29%	66%
	Single carriageway residential road becoming a narrow country lane to the north. 30mph – South National Speed Limit - North	South – May be some on-street parking, limited impact North - Narrow country lane, with passing places.	Footways on both sides to the south	No direct connection	Shops and community facilities to the south	Negligible. Increases of around 1 vehicle per minute in the AM peak and 3 vehicles per minute in the PM peak Minimal change in flow across both peaks, unlikely to be used for strategic trips or large vehicles.		
Mill Road, between A3 London Road and Elizabeth Road	212	144	211	147	258%	241%	258%	229%
	Residential single carriageway road with frontages. 30mph.	On-street parking, carriageway width may permit two-way traffic past parked vehicles.	Footways provided on both sides	Mill Hill School	Some retail premises and facilities, with on-street parking or laybys provided	Increase in traffic in the AM peak, vehicles increasing to approximately 5 per minute. Residential frontages set back from the carriageway, and provision of footways mitigate the impact to a degree but this will be used by children accessing Mill Hill Primary School. Discouragement signing proposed in the Signing Strategy. Consideration of traffic marshalling around Purbrook Park School during school hours to manage traffic flow and ensure safe access is provided for school children.		

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
Milton Road, between Lovedean Road and Sunnymead Drive	79	213	78	214	16%	28%	16%	79%
	Residential single carriageway road with frontages and drives. 30mph.	No obvious capacity constraints. Off-carriageway parking available	Footways provided on both sides. Shared use footway on one side.	No direct connection, but likely to be used to access local schools such as Hart Plain Infant School, Hart Plain Junior School and Cowplain Community School	No direct access to facilities, but likely to be used to access local facilities	Increase in traffic flow of up to 4 vehicles per minute PM peak. slight increase in volume in the PM peak Consideration of traffic marshalling around the Milton Road / Sunnymead Drive during school hours to manage traffic flow and ensure safe access is provided for school children.		
Newlands Lane, between Closewood Road and Purbrook Heath Road	156	96	150	97	125%	53%	120%	57%
	Single carriageway narrow country lane. National Speed Limit	Narrow country lane, with passing places.	None provided	No direct connection	No direct connection	Minor, may be used as an alternative route during works on B2150 Hambleton Road and A3 London Road. Increased flows meaning an additional 2-3 vehicles per minute. Few receptors identified that are likely to impacted by increases in traffic flow. Discouragement signing proposed in the Signing Strategy.		
Padnell Road	-31	72	-30	72	-11%	58%	-10%	-31
	Residential single carriageway road with frontages. 30mph.	On-street parking, carriageway width may permit two-way traffic past parked vehicles.	Footways provided on both sides	Padnell Infant / Junior Schools, Cowplain Day Nursey	Yes, shops and community facilities	Positive impact due to reassignment of traffic in the AM peak and an increase of approximately 1 vehicle per minute in the PM Peak. This is not anticipated to have a significant impact on road safety.		
Park Avenue, between A3 London Road and	138	210	143	220	2336%	2479%	2440%	2576%
	Single carriageway	On-street parking	Footways on both	Purbrook Park	No direct	Alternative north-south road parallel to the A3 London Road.		

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
Stakes Road	residential road 30mph	can hinder two-way traffic	sides.	School	connection	Anticipated increase of 2-4 vehicles per minute. Discouragement signing proposed in the Signing Strategy. Consideration of traffic marshalling around Purbrook Park School during school hours to manage traffic flow and ensure safe access is provided for school children.		
Park Lane	30	65	29	69	17%	56%	17%	59%
	Single carriageway partly residential partly distributor road.	No obvious capacity constraints.	Footways on both sides.	Close to Queens Inclosure Primary School	No direct connection	Negligible impact as traffic reassigns/re-routes away from the A3 closure. Typical residential road, likely to be within normal day-to-day traffic variations.		
Pigeon House Lane, between Pitymoor Lane and Sheepwash Lane	104	56	100	61	148%	49%	148%	53%
	Single carriageway narrow country lane. National Speed Limit	Narrow country lane, with passing places.	None provided	No direct connection	No direct connection	Minor, may be used as an alternative route during works on B2150 Hambleton Road and A3 London Road. Increased flows meaning an additional 1-2 vehicles per minute. Few receptors identified that are likely to impacted by increases in traffic flow. Discouragement signing proposed in the Signing Strategy.		
Pitymoor Lane, between Pigeon House Lane and B2177 Southwick Road	87	56	84	60	148%	74%	148%	61%
	Single carriageway narrow country lane. National Speed Limit	Narrow country lane, with passing places.	None provided	No direct connection	No direct connection	Minor, may be used as an alternative route during works on B2150 Hambleton Road and A3 London Road. Increased flows meaning an additional 1-2 vehicles per minute. Few receptors identified that are likely to impacted by increases in traffic flow.		

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
						Discouragement signing proposed in the Signing Strategy. Also refer to the “Generic Assessment – All Roads” in Section		
Purbrook Heath Road, between London Road and Newlands Lane	155	108	149	107	143%	59%	137%	59%
	Single carriageway narrow country lane. National Speed Limit	Narrow country lane, with passing places.	None provided	No direct connection	No direct connection	Minor, may be used as an alternative route during works on B2150 Hambleton Road and A3 London Road. Increased flows meaning an additional 2-3 vehicles per minute. Few receptors identified that are likely to impacted by increases in traffic flow. Discouragement signing proposed in the Signing Strategy. Also refer to the “Generic Assessment – All Roads” in Section		
Purbrook Way, between A3(M) and Stakes Hill Road	-10	109	-19	120	-1%	13%	-1%	14%
	Eastern section - Two-lane dual carriageway connecting with the A3(M) Western section – Wide single carriageway distributor road 40mph speed limit	No obvious capacity constraints to two-way traffic flow	Footway on one side only	No direct connection, likely to provide access to schools	No direct connection, likely to provide access to community facilities	Slight change in traffic flow (2 vehicles/min in PM Peak). Existing high-standard road catering for high traffic volumes.		
Rockville Drive, between Stakes Hill Road and London Road	55	26	61	30	66%	12%	72%	14%
	Single carriageway distributor road, serving local and passing traffic.	Accesses and junctions in close proximity	Footway on one side only, except for the western end	No direct connection, likely to provide access to schools	No direct connection, likely to provide access to community facilities	Minimal impact due to increase of 1 vehicle/minute in AM Peak only, likely to be within normal day-to-day traffic variations.		

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
	30 mph							
Sheepwash Lane, between Newlands Lane and Pigeon House Lane	104	56	100	61	148%	49%	148%	53%
	Single carriageway narrow country lane. National Speed Limit	Narrow country lane, with passing places.	None provided	No direct connection	No direct connection	Minor, may be used as an alternative route during works on B2150 Hambleton Road. Increased flows meaning 1-2 additional vehicles per minute. Few receptors identified that are likely to impacted by increases in traffic flow. Discouragement signing proposed in the Signing Strategy. Also refer to the “Generic Assessment – All Roads” in Section		
Silvester Road, between A3 London Road and Milton Road	100	160	101	162	53%	50%	52%	51%
	Single carriageway residential road with residential frontages,	On-street parking can hinder two-way traffic, double yellow lines in places	Footways on both sides	No direct connection	No direct connection	Minimal impact due to increase of 2-3 vehicles/minute, likely to be within normal day-to-day traffic variations.		
Stakes Hill Road, between Purbrook Way and Rockville Drive	147	230	140	228	51%	35%	56%	35%
	Wide single carriageway distributor road, providing access to residential roads. No residential properties. 30 mph.	No obvious capacity constraints to two-way traffic flow	Footways on both sides	May be used as a route to nearby schools due to its distributor function.	May be used as a route to nearby facilities due to its distributor function.	Minor. Increase in traffic flows primarily in the PM Peak, within capacity of the road. It is intended to operate as a distributor road for the residential roads in the area, connecting with strategic routes at both ends. Identified as a preferred route for local traffic on the Signing Strategy.		
Sunnymead Drive, between	51	133	54	136	26%	38%	27%	39%
	Single carriageway	No obvious	Footways on both	No direct	No direct	Minor, may be used as an alternative route during works on		

	Max Hourly PCU Increase, DS1 AM (busiest single direction)	Max Hourly PCU Increase, DS1 PM (busiest single direction)	Max Hourly PCU Increase, DS2 AM (busiest single direction)	Max Hourly PCU Increase, DS2 PM (busiest single direction)	Max PCU % Increase, DS1 AM (busiest single direction)	Max PCU % Increase, DS1 PM (busiest single direction)	Max PCU % Increase, DS2 AM (busiest single direction)	Max PCU % Increase, DS2 PM (busiest single direction)
Road	**Link description**	**Capacity constraints**	**Ped / cycle facilities**	**Nursery / Schools, including access routes**	**Shops / other Community facilities**	**Predicted impact on road safety**		
Hambledon Road and Milton Road	residential road. 30mph	capacity constraints to two-way traffic flow	sides	connection	connection	B2150 Hambleton Road. Increased flows meaning up to 8 vehicles per minute and an increase of 1-2 vehicles per minute. Identified in the Signing Strategy. Also refer to the “Generic Assessment – All Roads” in Section		
Tempest Avenue, between Park Lane and Hulbert Road	56	74	54	80	25%	31%	24%	34%
	Single carriageway partly residential partly distributor road.	No obvious capacity constraints.	Footways on both sides.	Close to Queens Inclosure Primary School	No direct connection	Negligible impact as traffic reassigns/re-routes away from the A3 closure. Typical residential road, likely to be within normal day-to-day traffic variations.		
	191	134	186	135	172%	213%	167%	215%
Westbrook Grove, between Stakes Road and Elizabeth Road	Single carriageway residential distributor road, some residential frontages, other residential roads connect to it. 30 mph.	Some on-street parking, carriageway width may permit two-way traffic past parked vehicles.	Footways on both sides, uncontrolled pedestrian crossings provided	May be used as a route to nearby schools due to its distributor function including Purbrook Infant School and Purbrook Junior School..	May be used as a route to nearby facilities due to its distributor function.	Increase in traffic to approximately 5/min and an increase of 2-3 vehicles per minute. Residential frontages set back from the carriageway, and provision of footways mitigate the impact to a degree but this will be used by children accessing Purbrook Infant School and Purbrook Junior School. Discouragement signing proposed in the Signing Strategy. Also refer to the “Generic Assessment – All Roads” in Section 2.		