

WEST SUSSEX COUNTY COUNCIL CONSULTATION

TO:	Arun District Council FAO: Mr. D. Easton
FROM:	WSCC - Highway Authority
DATE:	28 March 2024
LOCATION:	Land East of Westergate Westergate
SUBJECT:	AL/11/24/OUT Hybrid application consisting of: 1) Outline permission for all matters reserved (except access) for up to 400 No dwellings and associated works and 2) Full planning permission for alterations to site access off Westergate Street and through Pine Close and east-west link road including a bridge over the Lidsey Rife. This application also lies within the parish of Barnham, falls within Strategic Site SD5, CIL Zone 1 (Zero Rated), affects the setting of listed buildings, affects the character and appearance of the Eastergate Church Lane Conservation Area, affects public rights of way. This application is the subject of an Environmental Statement.
DATE OF SITE VISIT:	1 st March 2024
RECOMMENDATION:	More Information Required
S106 CONTRIBUTION TOTAL:	£ See below for breakdown of highway-related contributions.

This is the second WSCC Highway Authority response to the above hybrid planning application consisting of: 1) Outline permission for all matters reserved (except access) for up to 400 No dwellings and associated works and 2) Full planning permission for alterations to site access off Westergate Street and through Pine Close and east-west link road including a bridge over the Lidsey Rife. This application also lies within the parish of Barnham, falls within Strategic Site SD5, CIL Zone 1 (Zero Rated), affects the setting of listed buildings, affects the character and appearance of the Eastergate Church Lane Conservation Area, affects public rights of way. This application is the subject of an Environmental Statement.

Site location, surroundings and access.

The site is located on land to the east of the A29 Westergate Street, accessed via a new traffic signal junction at Meadow Way and Pine Close. The proposed development is for 400 dwellings with associated internal road layouts and car parking. The site is bordered by existing residential development to the west and agricultural land to the east. It forms part of the Barnham-Eastergate-Westergate (BEW) strategic development site.

The BEW strategic development includes the realignment of the A29 to the east of the application site which will by-pass the existing railway level crossing at Woodgate, instead providing a bridge crossing of the E-W south coast railway further to the east of the application site which, when complete, should reduce vehicle queues associated with the level crossing and traffic flows on the existing A29. The realignment of the A29 will run from A29 Fontwell Avenue (just south of Eastergate Lane) through to the existing A29 alignment to the south, connecting just south of the Lidsey bends and just north of

Sack Lane. The realigned A29 will connect - via an E-W link road - with the Cala Homes site and existing A29 alignment. To mitigate its impact on the locality, the site will be expected to make a proportional financial contribution to the new A29 realignment, as well as other key items of infrastructure – both highway and non-highway related.

Westergate Street is classified as the A29 and provides a link from Fontwell into Bognor Regis to the south. The road has a number of junctions along its length providing access to mainly residential developments. It is predominantly single-carriageway until just north of Bognor Regis where a short section of dual carriageway is provided. There are generally no parking restrictions along the road. There are some instances of parking occurring in front of residential properties at various locations, morseo to the north of the application site junction. Westergate Street has a posted speed limit of 30mph. Street lighting is also present. Approximately 75 metres south of the site access, there is a 20mph school zone for Aldingbourne Primary School.

A29 Westergate Street has a level railway crossing to the south of Hook Lane, approximately 550 metres from the site entrance. The level crossing provides a signal-controlled crossing for the West Coastway Railway line for services between Barnham and Chichester stations. The level crossing is a barrier protected crossing that contains controlled barriers operated via CCTV. Barrier closure times are variable and are based on predetermined safety clearance times. Further information on closure times is provided in Table 3.1 taken directly from the Transport Assessment (TA), found below.

Meadow Way, found opposite Pine Close (the latter found north of the proposed point of access to the development site, the subject of this planning application), is a residential estate road providing access to circa 79 dwellings. A further 89 dwellings are proposed, or have been consented, which will also be served off the road. Meadow Way is cul-de-sac with no through route for vehicular traffic. However, a footpath is available to residents linking to Hook Lane to the west. There are no parking restrictions along the road.

Pine Close is a residential cul-de-sac providing access to approximately 10 dwellings. Pine Close is a no-through-road but does provide access to Public Footpath 297. Like Meadow Way opposite, there are no parking restrictions in place along the road.

Both Meadow Way and Pine Close junctions are priority-controlled T-junctions with line-markings where they meet/interface with A29 Westergate Street. There are junction approach warning signs south along A29 Westergate Street. There are no parking restrictions at the junctions. Pine Close is located immediately to the north of the proposed site access.

Appendix 'A' in the Scoping Report and email provided by the applicant's transport consultants WSP contains (at page 67 of the PDF) a drawing titled "Site Access Arrangement Option 3". It has been noted that annotations on this drawing either side of the access road state "*Wilson House Plot/Land to be regraded to suit detailed design of road*".

This drawing implies that third party land might be needed to facilitate the construction of the main site access road into the proposed development. If this is the case, then the landowner/s of the land in question would need to give permission to the applicant to use the land and, additionally, would need to be party to any highways works agreement to allow such works to take place.

A29 Woodgate railway level crossing.

The railway level crossing of the A29 at Westergate Street, found approximately 550m south of the site entrance, has been considered in the future year traffic scenarios. The

applicant has made the assumption that train times would remain the same and as such, has assumed that occurrences of the closure of the crossing should be the same in future years as the observed base year.

It is recommended that the applicant liaises with Network Rail to verify the above. If closure times are proposed to change, these should be considered in any transport modelling undertaken.

The applicant explains that the Office of Rail Regulation's "Level Crossings: A guide for managers, designers and operators Railway Safety Publication 7" (December 2011), provides guidance on the operation of level railway crossings and assessing the suitability of level crossing types. They state that the guide specifies criteria on the design and level of protection that should be provided at a level crossing, which is based on traffic volumes, number of train lines and train speeds. They say that the guide does not require/recommend any upgrade of the existing level crossing facility (barrier crossings operated by railway staff) based on the estimated increase in vehicle traffic or pedestrian numbers at this location. As such, the applicants consider that the existing level crossing is suitable for the estimated increase in traffic associated with the development. Therefore, no changes are proposed by the applicant to the operation of the level railway crossing or the closure time / sequences that occur.

It is recommended that the case officer consults Network Rail for a response to the statement made above.

A29 Traffic volume.

The development will result in an increase in the arrival rate of vehicles that approach the level railway crossing per-hour but the service rate of the level railway crossing (that is, the amount of traffic that can pass through the level railway crossing in any given hour) will remain the same given the assumption above. As such, vehicle queues associated with closure times at the level railway crossing are expected to increase as traffic volumes increase on A29 Westergate Street.

The applicant states that a survey was completed at the A29 level crossing on the 1st March 2022 which recorded the barrier closure time and associated queue length between 07:00-10:00 and 16:00-19:00. The operation of the barrier is a manual process and such the amount of time the barrier down is variable. Additionally, the barrier can be closed for longer periods when there are trains approaching from each direction, as the time taken to initiate the raising and lowering sequence between trains may not meet the minimum requirements for safe operation. A summary of the observed closing times is shown in Table 3-1 below (taken directly from the TA) along with a comparison of how this date compares to a survey completed in 2016.

Time Period	Average Closure Time	Maximum Closure Time	Total Time Closed During Time Period	Comparison of Total Closure Time to 2016 Survey
07:00-10:00	00:02:31	00:06:27	1:10:23	+0:17:20
08:00-09:00	00:02:53	00:06:27	0:28:54	+0:16:36
16:00-19:00	00:02:09	00:03:48	0:53:47	+0:12:31
17:00-18:00	00:02:24	00:03:48	0:19:08	+0:02:45

Table 3.1

Table 3-1 shows that on average, the level crossing is closed for between 2-3 minutes during peak periods but with a maximum closure time of six-and-half-minutes in the morning and nearly four minutes in the evening. The surveys recorded a longer closure time than recorded in 2016 although this was a result of there being four additional barrier closures across each of the AM and PM peak periods. These barrier closures resulted in the A29 southbound queue lengths shown on Figure 3-2 and Figure 3-3 found in the TA. To summarise, in the AM peak period, the longest queue within the hour was approximately 550m at 08:05am, with the longest queue in the PM peak period being 750m at 17:04pm.

Figures 3-2 and 3-3 in the TA show that recorded queue lengths vary across each peak period but generally correlate with the length of the time the level crossing barrier is closed, with longer closures resulting in longer queue lengths. In the AM peak period, the queue length reaches the location of the proposed site access once (550m). This was a result of a six-and-a-half-minute barrier closure. This is one-and-a-half-minutes longer than any other closure time recorded and nearly four minutes longer than the average for the AM peak period. In the PM peak the recorded queue length extends beyond the proposed access junction location on two occasions as a result of multiple barrier closures over a short space of time (three times in seven minutes at worst).

Overall closures of the level crossing result in average of queue lengths as follows:

- 07:00-10:00 - 200m;
- 08:00-09:00 - 328m;
- 16:00-19:00 - 287m; and
- 17:00-18:00 - 388m.

An assessment of the impact of the development proposals on queue lengths at the level crossing is provided elsewhere in this response under the heading 'Transport modelling and associated traffic impact'.

Planning policy considerations.

Section 2 of the Transport Assessment (TA) - paragraphs 2.1 through to 2.9.6 – makes reference to both National and Local Planning Policy. Some of this includes reference to design guidance, including parking. Comments about both of the latter will follow elsewhere in this response to the planning application.

Walking and cycling.

Walking - A29 Westergate Street has footways on both sides of the road. These footways extend north and south along the length of A29 Westergate Street providing links to Aldingbourne tennis club, Aldingbourne Primary School and Aldingbourne Village Stores.

There is a pedestrian refuge island allowing for the crossing of A29 Westergate Street 120 metres to the south of the access point and there is a signalised pedestrian crossing allowing for controlled crossing of A29 Westergate Street approximately 400 metres to the north of the access point. There is also a signalised crossing located approximately 280m to the south of the site access, outside Aldingbourne Primary School.

The existing Public Rights of Way (PRoW) network in the vicinity of the proposed development is shown in Figure 3-4 found in the TA. A number of footpaths run through the site proving connections to the north and west. These include:

- Footpath 297: routes from A29 Westergate Street, along Pine Close and connects into St Richards Road and ends at the eastern end of Ivy Lane;
- Footpath 298: provides a continuation of Footpath 297 on an east-west alignment connecting on Footpath 296;

- Footpath 300: routes from A29 Westergate Street and along Elmcroft Place and through the site on an east-west alignment also connecting into Footpath 296;
- Footpath 296: runs on a north-south alignment through the site and around the southern and eastern boundary of Eastergate Church of England Primary School before connecting into Church Lane; and
- Footpath 317: connects with Footpath 296 and provides a route out of the site via the northern boundary and existing shared use path that runs between Ivy Lane and Church Lane.

There are also a number of permissive paths that pass-through the site in a north-south and east-west direction connecting into the PRow network.

A further description of these routes to and from the site is provided in paragraphs 3.4.7 to 3.4.17, found in the TA.

In addition, the PRow network provides a number of off-site connections:

- Footpath 299: routes from the A29 Westergate Street opposite Elmcroft Place on an east-west alignment and provides a connection to Hook Lane;
- Footpath 306: routes from the A29 Westergate Street opposite Ivy lane on an east-west alignment and provides a connection to Aldingbourne;
- Footpath 303: Elm Road, Lime Avenue and A29 Nyton Road;
- Footpath 321: Connects Church Lane to St Phillip Howard Roman Catholic High School and Barnham centre via Barnham Road.

Figure 3.4 in the TA shows the above routes and the TA also explains the various routes in detail.

Detailed comments in response to the PRow network, including any specific requirements of the PRow team, will be made separately by WSCC PRow officer.

Cycling - There is no existing dedicated cycle network in the vicinity of the development. The nearest cycle routes are found along A259 linking Chichester to Bognor Regis. This comprises the National Cycle Network Route 2 which is a long-distance cycle route and, when complete, will link Dover with St Austell via the South Coast of England. The provision along the A259 includes an off-carriageway cycle route providing a safe and suitable cycling connection.

Although there are no dedicated cycle routes located in the immediate vicinity of the site, A29 Westergate Street has sufficient width to allow for on-road cycling. Additionally, the B2233 Barnham Road provides sufficient width to enable on-carriageway cycling to occur, providing a connection from the site to Barnham Rail Station. Both of these roads are subject to a 30mph speed limit.

With regard to the signalised junction (the means of access to and from the development), no bespoke facilities (e.g. advanced stop lines) appear to have been provided to cater for cyclists. Applicant to respond to this.

Public transport.

Buses – The nearest bus stop is 150 metres to the south of the access point along A29 Westergate Street. There are both northbound and southbound bus stops in this location. A bus stop flag is provided on both sides of the street. The stops are located on the footpath and a level surface is provided at the stop location.

The stops are served by bus Route 66 provided by Compass Bus. Route 66 travels from Bognor Regis to Yapton via Barnham as a loop service. Northbound services travel onto Barnham Station and southbound services travel towards Bognor Regis. Services are

provided Monday to Saturday, with no Sunday service. The applicant states that bus times have been sourced from the Compass Bus website and as shown in Table 3-2, below (taken directly from the TA):

Direction	Times					
Southbound	0754	0906	1106	1324	1542	1720
Northbound	0831	1031	1250	1505	1648	1753

Table 3.2

Bus stops within a 15-minute walk north of the site also provide access to services 85 and 500. The number 85 operates between Chichester and Arundel, whilst the 500 bus runs between Littlehampton and Chichester. The route 85 and route 500 bus services are summarised in Table 3- 3 and Table 3-4, respectively:

Direction	Times				
Westbound	0816	1016	1216	1416	1616
Eastbound	0928	1110	1310	1517	1659

Table 3.3

Direction	Start time	End time	Buses per Day	Frequency
Westbound	05:55	00:24	32	30 minutes
Eastbound	05:35	23:43	33	30 minutes

Table 3.4

The Highway Authority has produced a Public Transport Strategy for BEW and should planning permission be granted for this proposal, the applicant would be expected to make a proportional contribution to local bus services and infrastructure, as informed by the document. Copies can be made available on request.

Trains - The nearest rail station is Barnham Station which is located two miles along the road network from the site (A29 and Barnham Road). The station is accessible on foot, by bicycle, car or via bus Route 66 as above. The station is serviced by the West Coastway line which runs between Southampton and Brighton, and a branch line to Bognor Regis. Services are provided to Southampton, Portsmouth, Bognor Regis, Brighton and London Victoria.

Station facilities include the provision of bicycle parking, car park (pay and display spaces), step-free access and refreshment facilities. Car parking (125 spaces) is provided for general vehicles, parking for people with disabilities, and vehicles with electric car charging.

Train services are provided by Great Western and Southern Rail with details of destinations available shown in Table 3-5 below (again taken directly from the TA):

Destination	Number per hour
Brighton	2
London Victoria	4
Littlehampton	2
Bognor Regis	4
Southampton Central	2
Portsmouth and Southsea	3
Portsmouth Harbour	1

Table 3.5

Travel Plan.

A Framework Travel Plan has been submitted as part of the planning application. It sets out trip rate reduction target over a five-year period plus key measures and attributes of the Plan to promote and encourage use of greener travel modes, such as walking, cycling and increased use of public transport. With regard to measures, it is noted that £50 travel vouchers are to be offered to households. However, latest WSCC Travel Plan policy requires £150 vouchers. Additionally, 'penalty' measures should also be included in any action plan should trip rate reduction levels not be met during the plan period. SAM surveys must also form part of any final Plan. It is also recommended that the Travel Plan attempts to align with those for other sites within the BEW Strategic Location, including reference to (and inclusion of) the BEW Public Transport Strategy. List of measures should not be considered exhaustive (applicant to look at WSCC Travel Plan Guidance for all measures that should be considered).

Given the above, the applicant is asked to review the guidance and update the current Framework Travel Plan accordingly.

And finally, a Travel Plan monitoring fee (£3,815) is also required.

Both the FINAL Travel Plan and monitoring fee to be secured by S106 Agreement.

Transport modelling, trip distribution, associated traffic impact and transport mode share.

Existing mode share and trip distribution – The applicant has looked at the existing modal split of people residing locally to the proposed site using Method of Travel to Work data from the 2011 Census. They have decided not to use 2021 Census Data due to the impacts of the UK COVID lockdowns on working patterns (i.e. remote working). Therefore, they consider the use of 2011 Census Data is considered to be more representative. The proposed development is located within the Barnham ward and any development in this area may reflect existing data trends before the introduction of travel plans. The modal split for this area is shown in Table 3-6, below:

Mode	Barnham Average share	West Sussex	England
Working from Home	8.05%	6.69%	5.36%
Train	8.28%	7.69%	9.42%
Bus, Minibus, Coach	0.50%	3.60%	7.50%
Taxi	0.11%	0.33%	0.52%
Motorcycle, Scooter, Moped	0.76%	0.78%	0.82%
Driving a Car	69.5%	61.54%	57.01%
Passenger in Car	4.33%	4.81%	5.03%
Bicycle	2.16%	3.04%	2.95%
On Foot	5.76%	10.93%	10.74%
Others	0.60%	0.59%	0.65%

Table 3.6

In terms of the overall modal share, Table 3-6 above shows that the Barnham ward has a higher car driver mode share compared to that of West Sussex and England but has a higher rail mode share than West Sussex. The cycle and walking mode share is lower in Barnham than West Sussex and the national average.

Walking and Cycling Accessibility to Local Facilities.

The routes to village and to local facilities can be seen in Figures 3-7 and 3-8 found in the TA. These figures show approximate walking and cycling times from the site to facilities including schools, shops and Barnham Railway Station.

Accessible Facilities.

The applicant considers that a number of facilities are accessible on foot or by bicycle from the site within acceptable distances as shown in Figures 3-7 and 3-8. A primary school and secondary school can be walked to in under 10 minutes (based on an assumed walking speed of 4.8kph) and cycled to in less than five minutes (based on an assumed cycling speed of 16kph). Barnham town centre is approximately 3.1km away and offers a range of shops and services.

Table 3-8, taken directly from the TA (overleaf), lists the nearest examples of facilities within 2.4km of the site, a distance which can be covered in approximately 30 minutes on foot or ten minutes by bicycle. These facilities are within the two-mile walking distance stated in Manual for Streets as being easily walked by the majority of people.

Facility Name	Location	Facility Type	Distance from Site Access on foot/ by bicycle
Aldingbourne Primary School	A29 Westergate Street	Primary School	400m
Aldingbourne Community Sports Centre	Olivers Meadow	Sports Centre	530m
Eastergate CE Primary School	Church Lane	Primary School	600m
Ormiston Six Villages Academy	Lime Avenue	Secondary School	680m
Six Villages Sports Centre	Lime Avenue	Sports Centre	680m
Hirange Supermarket	A29 Westergate Street	Convenience Store	700m
Westergate Day Nursery	Lime Avenue	Nursery	900m
Eastergate Pre School	Barnham Road	Nursery	1,300m
The Croft Pharmacy, Eastergate	Barnham Road	Pharmacy	1,500m
Croft Surgery, Eastergate	Barnham Road	GP Practice	1,500m
Mr N Tsohis, Barnham	Downview Road	Dentist	1,900m

Table 3.8

Baseline Traffic Data – A29 Automatic Traffic Count (ATC).

The applicant advises that an Automatic Traffic Count (ATC) was undertaken on A29 Westergate Street for a 7-day period W/C 28th February 2022 between Pine Close (South) and Oaks Close (North). The ATC survey recorded vehicle speeds and volume. Table 3-11 below, taken directly from the TA, summarises the seven-day and five-day average traffic volumes recorded:

	Northbound	Southbound
5-day Average – AM Peak	668	486
5-day Average – PM Peak	385	686
7-day Average – AM Peak	568	423
7-day Average – PM Peak	361	595
5-day Average – 24 hours	6,809	6,758
7-day Average – 24 hours	6,404	6,347

Table 3.11

Reviewing the data in Table 3-11 has identified a seven-day average AM peak flow of 568 and 423 vehicles northbound and southbound respectively. In the PM peak, this was recorded as 361 and 595 vehicles northbound and southbound respectively. The ATC recorded an average 85th percentile speed of 33mph northbound and 36mph southbound.

Baseline Junction Capacity Assessments.

The applicant has undertaken junction assessments for the 2019 baseline AM and PM peak periods. Traffic data for these assessments has been obtained from the Chichester Area Transport Model (CATM) as agreed with WSCC and National Highways during pre-application scoping discussions. This provides a consistent approach to assessment as it uses the same traffic flows as the Transport Assessment for nearby planning application BN/11/22/OUT for BEW Parcel SC1.

Junction assessments have been carried out using the ARCADY and PICADY computer modelling software modules which assess traffic capacity, queues and delays at roundabouts and priority junctions. Signalised junctions have been assessed using the program LinSig 3.

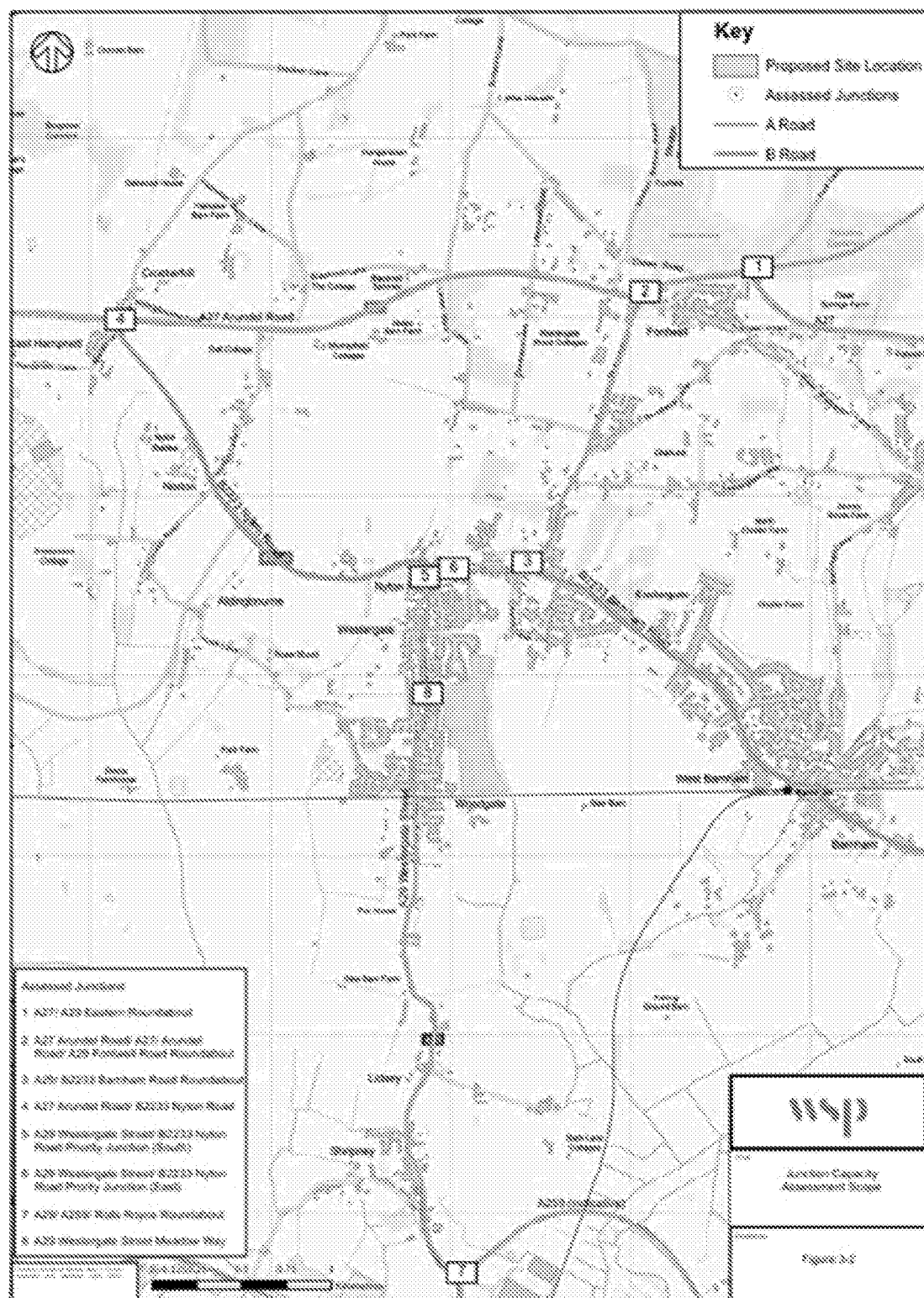
The applicant states that junction geometries have been measured against Ordnance Survey data and aerial photography. The theoretical queue lengths contained within the base model junction assessments have been validated against observed queue length data that was recorded as part of the Manual Classified Counts (MCCs) conducted in 2016 as part of the Transport Assessment produced in support of the previous planning application for the site (AL/15/17/PL). Given that the layout of the junction assessed has not changed since 2016, they state that this ensures that the assessments have produced an accurate representation of the existing operation of the junction.

However, what is not known at this stage is whether the additional residential development off Meadow Close for 89 units has been factored into the junction capacity and traffic signals assessments. Applicant to confirm this.

The scope of junction assessments completed is as follows:

- ☐ A27/A29 Eastern Roundabout
- ☐ A27 Arundel Road/A27/Arundel Road/A29 Fontwell Roundabout
- ☐ A29/B2233 Barnham Road Roundabout
- ☐ A27 Arundel Road/B2233 Nyton Road
- ☐ A29 Westergate Street/B2233 Nyton Road Priority Junction (south)
- ☐ A29 Westergate Street/B2233 Nyton Road Priority Junction (east)
- ☐ A29/A259 Rolls Royce Roundabout; and
- ☐ A29 Westergate Street/Meadow Way

The location of these junctions is shown in Figure 3-10 overleaf, taken directly from the TA. Full outputs from all junction capacity assessments are included in Appendix B found in the TA. However, the Highway Authority has observed that the plan and the description of some of the junctions (that follow the plan) don't appear to align and/or get mixed up. And, site access '8' does not appear to be included. The site locations where these errors appear to have crept in are highlighted with *red italic* text in the headers. Applicant to amend.



3.10

Site 1: A27 – A29.

The junction of A27/A29 is a three-arm roundabout providing access to Arundel to the east and Chichester to the west. There are two lanes on the approach from A29 and A27 (west) and three lanes from the A27 (east). All approaches are subject to the national speed limit.

Table 3-12, below, summarises the baseline modelling results:

Arm	Approach	AM Peak			PM Peak		
		RFC	Total Delay	Modelled Queue	RFC	Total Delay	Modelled Queue
A	A29	0.67	11	2	0.70	11	2
B	A27 (East)	0.62	3	2	0.50	3	1
C	A27 (West)	0.60	3	2	0.54	2	1

3.12

The baseline modelling results produced by the applicant indicate that the junction operates within theoretical capacity in the AM and PM peak periods. The maximum Ratio of Flow to Capacity (RFC) of 0.70 is recorded on the approach from the A29 in the PM peak with an associated queue of three vehicles and delay of 11 seconds suggests the junction arm is near capacity. An RFC of 0.85 or above would suggest that any junction is approaching capacity.

Site 2: A27 – Arundel Road – A29 Fontwell Avenue.

The junction of the A27/Arundel Road/A29 Fontwell Avenue is a 4-arm roundabout which provides access to Fontwell village to the east. There is a single lane on the approach from Arundel Road, two lanes on the approach from the A29 Fontwell Avenue and A27 (North) and three lanes on the approach from the A27 (West). All arms are subject to a national speed limit.

The baseline modelling results for the roundabout are presented in Table 3-13, below:

Arm	Approach	AM Peak			PM Peak		
		RFC	Total Delay	Modelled Queue	RFC	Total Delay	Modelled Queue
A	A27 Arundel Road	0.71	6	3	0.75	5	3
B	A27 (East)	0.78	6	4	0.75	6	3
C	Arundel Road	0.67	29	2	0.47	24	1
D	A29 Fontwell Avenue	0.83	34	5	0.47	10	1

3.13

The results summarised in the table above show that the A27/A29 Fontwell Avenue roundabout is approaching capacity in the AM and PM peaks. In the AM peak the A29 Fontwell Avenue has the highest RFC of 0.83, leading to a delay 34 seconds and queue of five vehicles. In the PM peak both A27 approaches have RFC values of 0.75 leading to a queue of three vehicles.

Site 3: A29 – Barnham Road (known locally as the 'War Memorial Roundabout').

The A29/B2233 Barnham Road junction is a 3-arm roundabout providing access to Westergate to the west and Barnham train station to the east. All the arms are subject to a 30mph speed limit, with a single lane approach from B2233 Barnham Road and A29 (North) and two lanes on the approach from A29 (West). The base modelling results are shown in Table 3-14, below:

Arm	Approach	AM Peak			PM Peak		
		RFC	Total Delay	Modelled Queue	RFC	Total Delay	Modelled Queue
A	B2233 Barnham Road	0.58	7	1	0.48	7	1
B	A29 Nyton Road	0.46	3	1	0.39	3	1
C	A29 Eastwell Avenue	0.50	7	1	0.76	14	3

3.14

The A29/B2233 Barnham Road modelling indicates the junction is operating within capacity in the AM and PM peak during the period modelled. The maximum RFC of 0.58 occurs on the approach from Barnham Road with an associated delay of seven seconds and a queue of one vehicle.

Site 4: A27 – Nyton Road.

A27/Nyton Road is a 3-arm priority junction providing access to the A27 Trunk Road. All the approaches are subject to the national speed limit with a right turn lane provided for vehicles entering Nyton Road with queuing for up to 16 vehicles. The baseline modelling results are presented in Table 3-15, below:

Arm	Approach	AM Peak			PM Peak		
		RFC	Total Delay	Modelled Queue	RFC	Total Delay	Modelled Queue
B	Nyton Road B2233	0.60	16	2	0.15	7	0
C	A27	0.12	9	0	0.30	9	0

3.15

The modelling results summarised above indicates the junction operates within capacity in the AM and PM peaks. In the period modelled. The highest RFC of 0.60 occurs on the

approach from the A27 Arundel Road (west) with an associated delay of 16 seconds and a queue of two vehicles.

Site 5: Westergate Street – Nyton Road (east junction) – SHOULD THIS BE 'WEST' or 'SOUTH'? – applicant to confirm

Westergate Street/Nyton Road (east junction) is a 3-arm priority junction in the centre of Westergate. All the approaches are subject to a 30mph speed limit with a right turn lane provided for vehicles turning from Nyton Road (east) to Nyton Road (west). The baseline modelling results are shown in Table 3-16, below:

Arm	Approach	AM Peak			PM Peak		
		RFC	Total Delay	Modelled Queue	RFC	Total Delay	Modelled Queue
B	Nyton Road B2233	0.14	1	1	0.04	1	1
C	Nyton Road A29	0.68	51	3	0.92	82	8

3.16

The baseline modelling results indicates the priority junction currently operates within capacity in the AM peak and at capacity in the PM peak in the period modelled. The maximum RFC of 0.92 occurs on the approach from A29 Nyton Road in the AM peak with a total delay of 82 seconds and an associated queue of eight vehicles.

Site 6: Westergate Street – Nyton Road (south junction) – SHOULD THIS BE 'EAST'? – applicant to confirm

Westergate Street/Nyton Road (south junction) is a 3-arm priority junction in the centre of Westergate. All the approaches are subject to a 30mph speed limit. The baseline modelling results are shown in Table 3-17, below:

Arm	Approach	AM Peak			PM Peak		
		RFC	Total Delay	Modelled Queue	RFC	Total Delay	Modelled Queue
B	Nyton Road B2233	0.18	14	0	0.49	21	1
C	Nyton Road A29	0.00	0	0	0.00	0	0

3.17

The baseline modelling results indicates the priority junction operates well within at capacity in the AM and PM peak.

Site 7: Westergate Street – Nyton Road (north junction) – AS-PER THE PLAN, No 7 IS THE A259/A29 'SALTBOX ROUNDABOUT'. – applicant to confirm

Westergate Street/Nyton Road (north junction) is a 3-arm priority junction in the centre of Westergate. All the approaches are subject to a 30mph speed limit. The baseline modelling results are shown in Table 3-18, below:

Arm	Approach	AM Peak			PM Peak		
		RFC	Total Delay	Modelled Queue	RFC	Total Delay	Modelled Queue
B	Nyton Road B2233	0.60	16	2	0.15	7	0
C	Nyton Road A29	0.12	9	0	0.30	9	0

3.18

The modelling results indicates the junction currently operates within capacity. The maximum RFC of 0.60 occurs on the approach from Nyton Road B2233 with a total delay of 16 seconds and a queue of two vehicles.

Site 8: A29/A259 Felpham Relief Road/Industrial estate. THE PLAN FLAGS THIS AS THE SITE ACCESS (OR LOCATION THEREOF). – applicant to check this

The junction of A29/A259 Felpham Relief Road/Industrial Estate is a 5-arm roundabout providing access to Bognor Regis to the south. There are two lanes on all of the approaches. The approaches are subject to a 40mph speed limit.

Table 3-19, below, summarises the baseline modelling results:

Arm	Approach	AM Peak			PM Peak		
		RFC	Total Delay	Modelled Queue	RFC	Total Delay	Modelled Queue
A	A259	0.59	6	2	0.50	5	1
B	Rolls Royce Access	0.02	6	0	0.05	5	0
C	A29 (South)	0.51	3	1	0.52	3	1
D	Saltbox Road	0.00	0	0	0.00	0	0
E	A29 (North)	0.24	2	0	0.39	3	1

3.19

The results of the junction assessment indicate that the existing junction is operating within its theoretical capacity in the AM and PM peak for the period modelled. The maximum RFC of 0.59 occurs on the approach from the A259 approach in the AM peak, leading to a delay of six seconds and queue length of two vehicles.

2019 Baseline Junction Assessment Summary.

The junction capacity assessments appear to show that all junctions surveyed operate within capacity in the base year of 2019, although the A27/A29 Fontwell roundabout

(Site 2) and the A29/Nyton Road priority are approaching capacity. The A27/ A29 Fontwell roundabout was subject to a committed improvement scheme as part of the Arun District Council Transport Study – Stage 3(2016) where the existing junction is to be signalised, which has now been completed. This layout has been incorporated into forecast scenario junction capacity assessments included in Section 7.

However, the above cannot be verified by the Highway Authority at this moment in time given the confusion over some of the locations and omission of one location (A259/A29 Rowan Way). Applicant to attend to this and re-submit the amended information.

Development Trip Generation, Distribution and Assignment.

This section summarises the trip generation, distribution and assignment for the proposed development.

Trip Generation.

An estimate of vehicle trip generation for the development has been calculated using residential trip rates derived from a traffic survey of Meadow Way, opposite the proposed site access. This approach was agreed with WSCC and National Highways as part of pre-application scoping discussions. The traffic flow recorded was divided by the number of properties located within the Meadow Way cul-de-sac to determine the trip rates recorded in Table 6-1, found below. This is deemed to be a more representative method than using the TRICS database due to the close-proximity of Meadow Way to the proposed site.

Time Period	Arrival	Departure	Two-way
AM	0.151	0.382	0.533
PM	0.290	0.142	0.432

6.1

Person trip rates have been based upon the trip rates shown in Table 5-4 of the Pell Frischmann TA as calculated using 2011 Census data. These trip rates are shown in Table 6-2 below:

Time Period	Arrival	Departure	Two-way
AM	0.163	0.427	0.590
PM	0.411	0.212	0.623

6.2

The Vehicle and Person Trip Rates illustrated in Table 6-1 and Table 6-2 have been factored by the proposed 400-unit development to calculate the Vehicle and Person Trip Generation associated with the proposed development. These are shown in Table 6-3 and Table 6-4, below:

Time Period	Arrival	Departure	Two-way
AM	60	153	213
PM	116	57	173

6.3

Time Period	Arrival	Departure	Two-way
AM	85	171	236
PM	164	85	249

6.4

Trip Distribution.

To calculate the trip distribution for the proposed development trips, that applicant has used the previously agreed methodology with WSCC as part of the AL/15/17/PL planning application.

They state that the residential trip distribution has been calculated using three different journey types; the first being travel to work using 2011 census data and Google map directions from the site illustrating the quickest route to any destination; the second and third relate to education and other trips (inclusive of shopping, leisure and visiting family/friend). The percentage split of each type of trip has been derived from National Travel Survey Table NTS0502.

They continue by saying that the distribution of education trips has been calculated by the location of nearby primary and secondary schools and colleges in relation to the proposed development site. The shopping trips as part of the 'other' category has been split evenly north and south from the site as Chichester and Bognor Regis retail parks are a similar distance from the site. The trips to see friends and family has been split 50:50 from the site and then split evenly in each direction. The leisure trip distribution is based on residents going to The Six Villages Sports Centre and Aldingbourne Tennis Club.

The trip distribution from the proposed development site has been calculated as shown in Table 6-5, below:

	AM Peak		PM Peak	
	Arrival	Departure	Arrival	Departure
A29 (North)	3.1%	3.1%	4.9%	4.9%
A27 (East)	6.1%	6.1%	9.7%	9.7%
A27 (West)	21.4%	21.4%	39.1%	39.1%
Britten's Lane (to A285)	1.0%	1.0%	1.5%	1.5%
B2233 Barnham Road	19.8%	19.8%	5.2%	5.2%
A259 Felpham Relief Road	4.4%	4.4%	8.3%	8.3%
A29 (South)	17.6%	17.6%	19.6%	19.6%
Around the Six Villages	27.6%	27.6%	11.7%	11.7%

6.5

Based upon the overall trip distribution from the proposed development site, the following split has been calculated by the applicant for vehicles departing and arriving at the site access junction across the AM and PM peaks:

- AM - Departures turning right (northbound) - 70.2%; Departures turning left (southbound) - 29.8%; and
- PM - Arrivals turning right (northbound) - 29.8%; and Arrivals turning left (southbound) - 70.2%.

All vehicle trips (other than buses and emergency vehicles) will access the site via the proposed A29 site access junction given that the East-West Link Road will operate as a pedestrian, cycle and bus link until the full A29 realignment is complete.

Traffic Growth and Committed Development.

All forecast year assessments use traffic flows derived from the WSCC Chichester Area Transport Model (CATM). The CATM SATURN model has been developed using the following series of inputs to account for background growth, infrastructure changes and committed development growth as detailed below.

The background growth consists of predicted traffic growth as a result of general increase in driving over time, calculated by taking account of NTEM-adjusted TEMPRO growth, known committed developments, and the allocated sites within adopted local plans.

Scope Of Junction Assessments.

Following Scoping discussions with WSCC, it was agreed that the same scope of junction capacity assessments undertaken for the Transport Assessment for the previous 2017 Planning Application for 350 units be used for this planning application, now seeking planning permission for 400 units. This scope includes the following junctions:

- A27/A29 Eastern Roundabout
- A27 Arundel Road/A27/Arundel Road/A29 Fontwell Roundabout
- A29/B2233 Barnham Road Roundabout
- A27 Arundel Road/B2233 Nyton Road
- A29 Westergate Street/B2233 Nyton Road Priority Junction (South)
- A29 Westergate Street/B2233 Nyton Road Priority Junction (East)
- A29/A259 Rolls Royce Roundabout; and
- A29 Westergate Street/Meadow Way site access junction

The applicant has undertaken junction assessments using ARCADY and PICADY computer modelling software which assess the traffic capacity, queues and delays at roundabouts and priority junctions. Traffic Signal junctions have been assessed using the program LinSig 3. LinSig provides an assessment of the impact of traffic signals on traffic capacity, queues and delays at a junction specifically for these types of junctions.

Assessment Scenarios.

All assessments have used the following peak hours:

- AM Peak: 08:00-09:00; and
- PM Peak: 17:00-18:00.

The following Scenario assessments have been undertaken for each of the junction models:

1. Scenario 1 - 2031 Do-Minimum (using "2031 do minimum No Cala" scenario from Pell Frischmann TA). This scenario provides an assessment of how the highway network will operate in 2031 without the Cala Homes development or Parcel SC1;
2. Scenario 2 - 2031 Do-Something without BEW Parcel SC1 (using "2031 do minimum" scenario from Pell Frischmann TA). This scenario provides an

assessment of how the highway network will operate in 2031 with the Cala Homes development but without BEW Parcel SC1 (1250 homes – BN/11/22);

3. Scenario 3 - 2031 Do-Something with Phase 1 of BEW Parcel SC1 but without the East-West link road connection between the Cala Homes site and Parcel SC1. This scenario provides an assessment of how the highway network will operate with the Cala Homes and Parcel SC1 developments with E-W link road bridge operating as a pedestrian, cycle and bus link only; and
4. Scenario 4 - 2038 Do Something (using "2038 do something" scenario from Pell Frischmann TA). This provides an assessment of the highway network with the Cala Homes development (400 units), Phase 1 (1,250 units) and 2 (2000 units) of BEW Parcel SC1, full East-West link road and A29 realignment. (Total 3,650 units).

The Highway Authority has observed that the Barratt-David Wilson site (circa 600 homes) does not appear to have been included in the 2038 'Do Something' assessment. Applicant to reply to this.

Table 6-6, below, shows what is included within each of the assessment scenarios, breaking down each of the elements of development and infrastructure improvements likely to occur in the local area:

	Background Growth	Committed Developments	Infrastructure Improvements	Cala Development Traffic	BEW Parcel SC1 Phase 1	East-West Link Road	BEW Parcel SC1 Phase 2
Scenario 1	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Scenario 2	Yes	Yes	Yes	Yes			
Scenario 3	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Scenario 4	Yes	Yes	Yes	Yes	Yes	Yes	Yes

6.6

(*Parcel SC1 Phase 1: 1,200 homes, 61 C2 care home units, 3FE primary school and A29 realignment north of Chichester-Barnham railway line.

**Parcel SC2 Phase 2: Phase 1 + 2,000 homes and full realignment of A29).

It is noted that the applicant refers to 1200 homes for Parcel SC1 – NOT 1250. This should be corrected in the supporting information and any changes to traffic figures also adjusted.

The applicant states that traffic flows for Scenario 3 (including BEW Parcel SC1 without East-West Link Road) have been extrapolated using the following scenarios included within the Pell Frischmann TA used for BN/11/22:

- 2031 Do Something No Cala: background growth+ committed developments+ wider infrastructure changes + other local plan developments and associated

infrastructure + BEW development + BEW infrastructure - no Cala and no East-West Link Road; and

- 2031 Do Minimum: background growth+ committed developments + wider infrastructure changes + other local plan developments and associated infrastructure.

The applicant has said that using a combination of these scenarios will allow an estimate to be made of development traffic flows associated with a scenario whereby the proposed development and BEW parcel SC1 phase 1 are complete but are accessed independently (i.e. without the East-West Link Road providing a connection between the two sites).

The traffic flows outputs from the CATM have been input into Junctions 10/LinSig models to provide a 'Do Minimum' assessment of the junction performance. The trip generation from the proposed Cala development then provides a 'Do Something' scenario. Traffic flow diagrams for all scenarios are provided in Appendix E found in the TA.

Junction Capacity Assessments.

Junction assessments have been carried out using ARCADY and PICADY for uncontrolled roundabouts and junctions respectively, while LINSig has been used for traffic signal controlled junctions to provide an assessment of the impact of traffic signals on traffic capacity, queues and delays at a junction.

The junction assessments produce an estimate of the maximum queue lengths for each arm. Queue lengths are expressed in the number of vehicles or Passenger Car Units (PCU).

The applicant has said that where junctions were found to be operating at-capacity or over-capacity in the forecast scenarios these have been assessed using DIRECT traffic flow inputs with a flat profile across the peak hour. This is to reflect how junctions operate in congested conditions and applies a consistent approach to the junction capacity assessments by applying the same methodology as Pell Frischmann Transport Assessment completed for BEW Parcel SC1 (BN/11/22/OUT).

A27 Junction Improvements.

As part of evidence base for the adopted Arun Local Plan, a number of transport studies were completed to confirm highway network improvements that would be needed to support planned growth in the region. These included the 2016 Arun Transport Study, 2017 Enterprise Bognor Regis Transport Review and the WSCC/ADC Local Plan Transport Mitigation Apportionment Study (2020). The first two of these studies identified and refined a transport mitigation package that would support the Local Plan whilst the Apportionment Study detailed how development across the District should contribute towards the cost of such mitigation.

The 2017 Enterprise Bognor Regis Transport Review identified mitigation measures for the following junctions included within the scope of this TA:

- A27/A29 Eastern Roundabout (site 1 in the TA);
- A27/A29 Western Roundabout (site 2 in the TA);
- A27/B3322 Nyton Road priority junction (site 4 in the TA); and,
- A29/A259 Felpham/Bognor Regis Relief Road Roundabout (site 7 in the TA).

A27/A29 Eastern Roundabout.

The applicant has identified that the proposals identified for this junction involve the widening and signalisation of the A27 approaches as shown in the TA. As this scheme is yet to be implemented, the junction capacity assessments for the A27/A29 junction have

been completed in Section 7.4 to 7.6 of the TA with the improvement only where the existing layout is forecast to operate close to capacity or over capacity.

A27/A29 Western Roundabout.

The committed scheme to convert the A27/Arundel Road/A29 Fontwell Avenue roundabout into a signalised roundabout was completed in summer 2023. The improvement scheme was delivered through the Land East of Fontwell Avenue Planning application and is designed to accommodate the developments in the Arun Local Plan and the realignment of the A29.

The applicant states that for modelling purposes, the scheme has been used within all junction capacity assessments in the TA for the A27/Arundel Road/ A29 Fontwell Avenue roundabout, with and without the improvements? Applicant to explain why this is.

A27/B2233 Nyton Road Priority Junction.

The 2017 Enterprise Bognor Regis Transport Review considered mitigation for this junction that including lengthening the acceleration/auxiliary lane for the left turn from the Nyton Road and removing the A27 eastbound right turn from Nyton Road. However, it was noted that this scheme was unable to mitigate 'severe' impacts at this junction and therefore the preferred approach was to close the right the right turn from the A27 without implementing any changes to Nyton Road.

This was confirmed during pre-determination discussions with National Highways as part of planning application AL/15/17/PL. However, as a timeframe for this closure has not been confirmed all junction capacity assessments included assuming that the right turn remains open.

A29/A259 Felpham/Bognor Regis Relief Road Roundabout.

The identified mitigation scheme for this junction involves the widening of the northbound, westbound and southbound approaches to the roundabout to increase traffic flow through the junction.

The applicant has stated that because the scheme is yet to be implemented, junction capacity assessments for the A29/A259 junction have been completed using the improvement scheme only where the junction is forecast to operate close to capacity or over capacity. Applicant to explain why this is.

Scenario 1 - 2031 Do Minimum.

Site 1: A27 - A29 - Table 7-1 in the TA summarises the Scenario 1 modelling results for the A27/A29 roundabout for Scenario 1. This scenario provides an assessment of how the highway network will operate in 2031 without the Cala Homes development or Parcel SC1. Full junction capacity outputs are provided in Appendix F found in the TA.

The modelling results show that the junction will operate within theoretical capacity in the AM peak and PM peak period. The maximum RFC of 0.73 is recorded on the approach from the A29 in the PM peak with an associated queue of 4 vehicles and delay of 18 seconds suggests the junction arm is at capacity.

Site 2: A27-Arundel Road-A29 Fontwell Avenue.

The 2031 Scenario 2 modelling results for the roundabout are presented in Table 7-2 in the TA.

The modelling results for the signalised roundabout forecasts that the junction will operate at capacity in both the AM and PM peak. The maximum Degree of Saturation is 94% on the approach from the A27 Arundel Road in the PM peak, this equates to a delay of 17 seconds with a mean max queue of 15PCUs and 4PCUs at the back of a uniform queue at the end of a red phase.

Site 3: A29 - Barnham Road.

The modelling results from the A29/Barnham Road roundabout for Scenario 1 is presented in Table 7-3, found in the TA.

The A29/B2233 Barnham Road modelling results indicates that the junction will operate within capacity in the AM and PM peak. The maximum RFC of 0.65 occurs on the approach from Barnham Road with an associated delay of ten seconds and a queue of two vehicles.

Site 4: A27 - Nyton Road.

Table 7-4 in the TA shows the modelling results from Scenario 1 for the A27/ Nyton Road priority junction.

The modelling results indicate that the junction will operate within capacity in the AM peak and PM peak. The maximum RFC of 0.43 occurs in the PM peak on the approach from the A27 (west) with an associated delay of 19 seconds and a queue of two vehicles, which highlights that the arm is at capacity.

Site 5: Westergate Street- Nyton Road (East Junction).

The modelling results from Westergate Street/ Nyton Road (East Junction) priority junction for Scenario 1 is presented in Table 7-5, found in the TA.

The modelling results forecasts the priority junction operates within capacity in the AM and PM peaks. The maximum RFC of 0.80 occurs on the approach from A29 Nyton Road in the AM peak with a total delay of 36 seconds and an associated queue of four vehicles.

Site 6: Westergate Street-Nyton Road (South Junction).

Table 7-6 in the TA shows the modelling results from Scenario 1 for Westergate Street/Nyton Road (South Junction) priority junction.

The modelling results indicates the priority junction will operate within capacity in the AM and PM peaks. The maximum RFC of 0.53 occurs on the approach from B2233 Nyton Road in the PM peak with a total delay of 23 seconds and an associated queue of two vehicles.

Site 7: Westergate Street - Nyton Road (North Junction).

Westergate Street/Nyton Road (North Junction) modelling results for Scenario 1 are presented in Table 7-7, found in the TA.

The modelling results forecasts the junction operates within capacity in the AM and PM peaks. The maximum RFC of 0.48 is forecast on the approach from the B2233 Nyton Road in the AM peak with an associated delay 13 seconds and a queue of a single vehicle.

Site 8: A29/A259 Felpham Relief/Industrial Estate.

The junction modelling for Scenario 1 of A29/A259 Felpham Relief Road/ Industrial Estate is presented in Table 7-8 in the TA.

The modelling results forecasts the five-arm roundabout operates within capacity in the AM and PM peaks. The maximum RFC of 0.84 occurs on the approach from A259 in the AM peak with a total delay of 20 seconds and an associated queue of six vehicles.

Scenario 1 Junction Assessment Summary.

The junction capacity assessments highlights that the following junction is forecast to operate at capacity in Scenario 1:

- Site 2: A27/Arundel Road/A29 Fontwell Signalised Roundabout.

The TA suggests that none of the junctions are forecast to go over their theoretical capacity in the 2031 Do-Minimum scenario.

However, in-line with the comments made above about the baseline position and junction locations and descriptions, the applicant should review the information provided for Scenario 1 to ensure that it is correct and that the site locations, descriptions and outputs align. Again, sites where the descriptions don't appear to align are highlighted in *red italic text*.

Scenario 2 - 2031 Do Something.

The applicant explains that the results from the junctions are shown below with Scenario 2 being 2038 do minimum AM and PM peaks. This scenario provides an assessment of how the highway network will operate in 2031 with the Cala Homes development but without BEW Parcel SC1. Full junction capacity outputs are provided in Appendix G found in the TA.

Site 1: A27 - A29.

Table 7-9, found in the TA, summarises the Scenario 2 modelling results for the A27/A29 roundabout for Scenario 2.

The modelling results indicate that the junction will operate within theoretical capacity in the AM peak and PM peak period. The maximum RFC of 0.78 is recorded on the approach from the A29 in the PM peak with an associated queue of four vehicles on the A29 approach. The development proposals increase traffic delay by a maximum of one second in comparison with the 2031 Do Minimum scenario.

Site 2: A27-Arundel Road-A29 Fontwell Avenue.

The junction modelling for Scenario 2 of A27/Arundel Road/A29 Fontwell Avenue signalised roundabout is presented in Table 7-10, found in the TA.

The modelling results for the signalised roundabout forecasts that the junction will operate at capacity in both the AM and PM peak. The results show that the development traffic will have a negligible impact on the operation of the signalised roundabout in the AM and PM peak.

Site 3: A29 - Barnham Road.

The modelling results from the A29/Barnham Road roundabout for Scenario 2 is presented in Table 7-11 found in the TA.

The A29/B2233 Barnham Road modelling results for Scenario 2 shows the junction is operating within capacity in the AM and PM peak. The maximum RFC of 0.68 occurs on the approach from Barnham Road with an associated delay of 11 seconds and a queue of three vehicles.

Site 4: A27 - Nyton Road.

Table 7-12 in the TA shows the modelling results from Scenario 2 for the A27/ Nyton Road priority junction.

The modelling results show that the junction will operate within capacity in the AM and PM peak. The maximum RFC of 0.66 occurs in the PM peak on the approach from the A27 (west) with an associated delay of 23 seconds and a queue of two vehicles. Whilst

traffic associated with the proposed development is forecast to increase delay by four seconds the queue length remains at two vehicles.

Site 5: Westergate Street- Nyton Road (East Junction).

The modelling results from Westergate Street/Nyton Road (East Junction) priority junction for Scenario 2 is presented in Table 7-13, found in the TA.

The modelling results forecasts the priority junction operates within capacity in the AM and PM peaks. The maximum RFC of 0.83 occurs on the approach from A29 Nyton Road in the AM peak with a total delay of 43 seconds and an associated queue of five vehicles. In comparison with the 2031 Do Minimum scenario, the development traffic is predicted to increase delay by seven seconds with a queue length increase by a single vehicle.

Site 6: Westergate Street-Nyton Road (South Junction).

Table 7-14 in the TA shows the modelling results from Scenario 2 for Westergate Street/Nyton Road (South Junction) priority junction.

The modelling results indicates the priority junction operates well within capacity in the AM and PM peak. The maximum RFC of 0.71 occurs on the approach from the B2233 Nyton Road with a total delay of 38 seconds and a queue of three vehicles. The proposed development is forecast to have a negligible impact on the operation of this junction.

Site 7: Westergate Street - Nyton Road (North Junction).

Westergate Street/Nyton Road (North Junction) modelling results for Scenario 2 are presented in Table 7-15 in the TA.

The modelling indicates the junction operates within capacity in the AM and PM Peaks. The maximum RFC of 0.54 occurs on the approach from the B2233 Nyton Road with a total delay of 14 seconds and a queue of two vehicles. The proposed development is forecast to have a negligible impact on the operation of this junction.

Site 8: A29 - A259 Felpham Relief/Industrial Estate.

The junction modelling for Scenario 2 of A29/A259 Felpham Relief Road/ Industrial Estate is presented in Table 7-16 in the TA.

The modelling indicates the five-arm roundabout is approaching capacity in the AM peak and operates within capacity in the PM peaks. The maximum RFC of 0.86 occurs on the approach from A259 in the AM peak with a total delay of 22 seconds which is an increase two seconds compared to Scenario 1 and an associated queue of six vehicles which does not increase compared to Scenario 1.

Site 9: A29 Westergate Street/Meadow Way/Access Road (Access Junction).

The modelling results for the Site Access junction are presented in Table 7-17 in the TA.

The junction modelling forecasts that the site access junction will operate within capacity in the AM and PM peak. The maximum Degree of Saturation is 86% on the approach from the A29 Westergate Street (North) in the PM peak, this equates to a delay of 41 seconds with a mean max queue of 26PCUs. The applicant states that the forecast queue lengths will not block back to the A29 level crossing.

Scenario 2 Junction Assessment Summary.

The junction capacity assessments highlight that all of the junctions operate either within or at capacity with the proposed development traffic included.

However, in-line with the comments made above about the baseline position and junction locations and descriptions, the applicant should review the information provided

for Scenario 2 to ensure that it is correct and that the site locations, descriptions and outputs align. Again, sites where the descriptions don't appear to align are highlighted in *red italic* text.

Scenario 3 - 2031 Do Something + BEW Development.

The results from the junctions are shown in the TA for Scenario 3 - 2031 Do Something with the BEW Development for the AM and PM peaks. This scenario provides an assessment of how the highway network will operate with the Cala Homes and Parcel SC1 developments with E-W link road bridge operating as a pedestrian, cycle and bus link only. Full junction capacity outputs are provided in Appendix H, found in the TA.

Site 1: A27 - A29.

Table 7-18 in the TA summarises the Scenario 3 modelling results for the A27 A29 roundabout for Scenario 3.

The modelling shows that the junction will operate within theoretical capacity in the AM peak and is approaching capacity in the PM peak period. The maximum RFC of 0.82 is recorded on the approach from the A29 in the PM peak with an associated queue of five which is an increase of one vehicle compared to Scenario 2 and delay of 22 seconds which is an increase of four seconds compared to Scenario 2.

Site 2: A27-Arundel Road-A29 Fontwell Avenue.

The junction modelling for Scenario 3 of A27/Arundel Road/A29 Fontwell Avenue signalised roundabout is presented in Table 7-19, found in the TA.

The modelling for the signalised roundabout forecasts that the junction will operate at capacity in both the AM and PM peak. The results show that the addition of the BEW development traffic will have slight negative impact on the roundabout operation in the AM peak and a negligible impact in the PM peak. The approach that operates with the highest Degree of Saturation in the A29 Fontwell Avenue with a DoS of 96% in Scenario 2 during the AM peak, with associated delay of 40 seconds and a MMQ of 18PCUs. This means that queuing built up during the red stage will not fully disperse during the greens stage for A29 Fontwell Avenue.

Site 3: A29 - Barnham Road.

The modelling results from the A29/Barnham Road roundabout for Scenario 3 is presented in Table 7-20 in the TA.

The A29/B2233 Barnham Road modelling forecasts the junction is operating within capacity in the AM and PM peak. The maximum RFC of 0.70 occurs on the approach from the A29 Fontwell Avenue with an associated delay of 13 seconds and a queue of three vehicles. However, it is not clear whether this assumes that Phase 1 of the new A29 is open to traffic. Applicant to confirm.

Site 4: A27 - Nyton Road.

Table 7-21 in the TA shows the modelling results from Scenario 3 for the A27/ Nyton Road priority junction.

The modelling results indicates that the junction will operate within capacity in the AM and PM peak. The maximum RFC of 0.70 occurs in the PM peak on the approach from the A27 (west) with an associated delay of 26 seconds and a queue of three vehicles.

Site 5: Westergate Street-Nyton Road (East Junction).

The modelling results from Westergate Street/Nyton Road (East Junction) priority junction for Scenario 3 is presented in Table 7-22, found in the TA.

The modelling indicates the priority junction operates over-capacity in the AM peak and within capacity in the PM peak. The maximum RFC of 1.03 occurs on the approach from A29 Nyton Road for the right turn movement into the B2233 Nyton Road in the AM peak with a total delay of 229 seconds and an associated queue of 32 vehicles. This is a significant increase in comparison with 2031 Do-Minimum scenario. The applicant states that this reflects the additional traffic associated with Parcel SC1 using the A29 to access the A27 (departures) but also the traffic that now has to route past this junction as a result of the East-West Link Road being closed to through traffic between the Cala site and Parcel SC1. However, it is not clear whether this scenario includes Phase 1 of the A29 being open to traffic. Applicant to confirm.

Site 6: Westergate Street-Nyton Road (South Junction).

Table 7-23 in the TA presents the modelling results from Scenario 3 for Westergate Street/Nyton Road (South Junction) priority junction.

The modelling results indicates the priority junction operates well within capacity in the AM and PM peak.

Site 7: Westergate Street ~ Nyton Road (North Junction).

Westergate Street/Nyton Road (North Junction) modelling results for Scenario 3 are presented in Table 7-24 in the TA.

The modelling forecasts the junction operates within capacity in the AM and PM Peaks. The maximum RFC of 0.52 occurs on the approach from the B2233 Nyton Road with a total delay of 14 seconds and a queue of two vehicles.

Site 8: A29/A259 Felpham Relief/Industrial Estate.

The junction modelling for A29/A259 Felpham Relief Road/Industrial Estate is presented in Table 7-25 in the TA.

The modelling results forecasts the five-arm roundabout is approaching capacity in the AM and PM peaks. The maximum RFC of 0.90 occurs on the approach from A259 in the AM peak with a total delay of 57 seconds which is an increase 40 seconds compared to Scenario 1 and an associated queue of eight vehicles which is an increase five vehicles compared to Scenario 1.

Site 9: A29 Westergate Street/Meadow Way/Access Road (Access Junction).

The modelling results for the Site Access junction are presented in Table 7-26 in the TA.

The junction modelling forecasts that the site access junction will operate within capacity in the AM and at capacity in the PM peak.

Scenario 3 Junction Assessment Summary.

The junction capacity assessments within Scenario 3 highlight that several of the junctions operate close to capacity or are at capacity with the proposed development traffic and the phase one of Parcel SC1. The A29/Nyton Road (East) junction also operates just over capacity in this scenario. This highlights the impact of Phase 1 of the BEW development on the local highway network. It is also noted that Scenario 3 provides an interim assessment as it represents a position before the full A29 is complete and before the East-West Link Road is open to all traffic. Does the interim assessment include Phase 1 of the new A29? Applicant to confirm.

Additionally, in-line with the comments made above about the baseline position and junction locations and descriptions, the applicant should review the information provided for Scenario 3 to ensure that it is correct and that the site locations, descriptions and outputs align. Again, sites where the descriptions don't appear to align are highlighted in *red italic text*.

SCENARIO 4 - 2038 DO SOMETHING.

The results from the junctions with Scenario 4 - 2038 Do Something AM and PM peaks – are found below. This provides an assessment of the highway network with the Cala Homes development, Phase 1 and 2 of BEW Parcel SC1, full East-West link road and A29 realignment. Full junction capacity outputs are provided in Appendix I found in the TA.

Site 1: A27 - A29.

Table 7-27 in the TA summarises the Scenario 4 modelling results for the A27 A29 roundabout for Scenario 4.

The modelling indicates that the junction will operate within theoretical capacity in the AM peak and approaching capacity in the PM peak period. The maximum RFC of 0.92 is recorded on the approach from the A29 in the PM peak with an associated queue of 11 vehicles which is an increase of six vehicles compared to Scenario 3 and delay of 48 seconds which is an increase of 26 seconds compared to Scenario 3.

The applicant, taking account of these results, has undertaken a further junction capacity assessment using the identified improvement scheme discussed in Section 7.2 of the TA. Table 7-28 in the TA summarises the results of the LinSig assessment completed for the junction.

The results show that with the mitigation in place, the junction will operate within capacity in the AM peak and at capacity in the PM peak. The approach with the highest degree of saturation is the A29 uncontrolled approach with an associated delay of 47 seconds and a MMQ of 11 vehicles in the PM peak.

Site 2: A27-Arundel Road-A29 Fontwell Avenue.

The junction modelling for Scenario 4 of A27/Arundel Road/A29 Fontwell Avenue signalised roundabout is presented in Table 7-29, found in the TA. This provides an assessment of the highway network with the Cala Homes development, Phase 1 and 2 of BEW Parcel SC1, full East-West link road and A29 realignment.

The results show that in 2038 (following the completion of the entire BEW development and the realignment of the A29), that the signalised roundabout is forecast to operate within capacity in the AM peak and at capacity in the PM peak.

Site 3: A29 - Barnham Road.

The modelling results from the A29/Barnham Road roundabout for Scenario 4 is presented in Table 7-30, found in the TA.

The A29/B2233 Barnham Road modelling indicates the junction is operating within capacity in the AM and PM peak. The maximum RFC of 0.51 occurs on the approach from the B2233 Barnham Road with an associated delay of six seconds and a queue of two vehicles.

Site 4: A27 - Nyton Road.

Table 7-31 in the TA shows the modelling results from Scenario 4 for the A27/Nyton Road priority junction.

The modelling shows that the junction operates within capacity in the AM and PM peak. The maximum RFC of 0.70 occurs in the PM peak on the approach from the A27 (west) with an associated delay of 27 seconds and a queue of three vehicles.

Site 5: Westergate Street- Nyton Road (East Junction).

The modelling from Westergate Street/ Nyton Road (East Junction) priority junction for Scenario 4 is in Table 7-32, found in the TA.

The modelling indicates the priority junction operates at capacity in the AM peak and within capacity in the PM peak. The maximum RFC of 0.97 occurs on the approach from A29 Nyton Road in the AM peak with a total delay of 111 seconds a decrease of 118 seconds compared to Scenario 3 and an associated queue of 18 vehicles which is a decrease of 15 vehicles compared to Scenario 3.

Site 6: Westergate Street-Nyton Road (South Junction).

Table 7-33, found in the TA, shows the modelling results from Scenario 4 for the Westergate Street/Nyton Road (South Junction) priority junction.

The modelling shows the priority junction operates well within at capacity in the AM and PM peak.

Site 7: Westergate Street - Nyton Road (North Junction).

Westergate Street/Nyton Road (North Junction) modelling results for Scenario 4 are presented in Table 7-34, found in the TA.

The modelling forecasts the junction operates within capacity in the AM and PM Peaks. The maximum RFC of 0.66 occurs on the approach from the B2233 Nyton Road with a total delay of 21 seconds and a queue of two vehicles.

Site 8: A29/A259 Felpham Relief/Industrial Estate.

The junction modelling for Scenario 4 of A29/A259 Felpham Relief Road/ Industrial Estate is presented in Table 7-35, found in the TA.

The modelling forecasts the five-arm roundabout operates at capacity in the AM and PM peaks. The maximum RFC of 1.17 occurs on the approach from Rolls Royce Access in the PM peak with a total delay of 252 seconds which is an increase 213 seconds compared to Scenario 3 and an associated queue of 46 vehicles which is an increase 40 vehicles compared to Scenario 3.

Taking account of these results, the applicant has undertaken a further junction capacity assessment using the identified improvement scheme discussed in Section 7.2 of the TA. Table 7-36 of the TA summarises the results of the LinSig assessment completed for the junction.

The table shows that the mitigation scheme forecasts a significant improvement to the roundabout operation. The roundabout will operate within capacity in the AM and PM peaks. The maximum RFC of 0.82 occurs on the approach from Rolls Royce in the PM peak with an associated delay of 31 seconds and a queue of five vehicles. This demonstrates a reduction of delay of 221 seconds and the queue reduces by 41 vehicles.

Site 9: A29 Westergate Street/Meadow Way/Access Road (Access Junction).

The modelling results for the Site Access junction are presented in Table 7-37 below found in the TA.

The junction modelling forecasts that the site access junction will operate well within capacity in the AM and PM peaks. The maximum Degree of Saturation is 59% on the approach from the A29 Westergate Street (South) in the AM peak, this equates to a delay of 37 seconds, with a mean max queue of 12PCUs. These results show a significant improvement in junction capacity. This is a result of the reduction in traffic flows on the A29 associated with completion of the full A29 realignment.

Scenario 4 Junction Assessment Summary.

The junction capacity assessments within Scenario 4 highlight that that several of the junctions operate close to capacity or at capacity with the proposed development traffic

and the completed BEW development and associated infrastructure, in either the AM or PM peak. Improvements schemes identified to accommodate development associated with the Local Plan mitigate these impacts. However, applicant to state how many dwellings have been factored into the modelling scenario for all of BEW.

The applicant considers that the site access junction to the Cala Homes development will operate well within capacity.

However, in-line with the comments made above about the baseline position and junction locations and descriptions, the applicant should review the information provided for Scenario 4 to ensure that it is correct and that the site locations, descriptions and outputs align. Again, sites where the descriptions don't appear to align are highlighted in *red italic* text.

Interim Scenarios.

The applicant has undertaken an interim assessment to try to demonstrate how many units could be occupied on the Cala Homes site prior to completion of the first phase of the A29 realignment (between A29 Fontwell Avenue and B2233 Barnham Road). Phase 1 of the A29 realignment will provide a route that by-passes the A29/Barnham Road (War Memorial) roundabout and also having the potential to remove traffic from the A29/Nyton Road priority junctions due to it offering a more direct route to the A27.

Taking this into account and Cala Homes' anticipated build rate, interim junction capacity assessments have been completed for the A29/Barnham Road (War Memorial) roundabout and A29/Nyton Road priority junctions for the following scenarios:

- 2026 with 200 units occupied on the Cala Homes development; and 2028 with 300 units occupied on the Cala Homes development.

A29 Realignment - Phases 1 and 2.

The 2026 and 2028 traffic flows have been generated by providing a TEMPRO growth factor to the 2019 baseline and adding a 50% and 75% of the development trip generation calculated in Section 6. The applicant considers that the use of TEMPRO is deemed appropriate as it will account for all the forecast local plan development in the vicinity of the site. Table 7-38 and Table 7-39 in the TA presents the 2026 baseline and 2026 baseline with 50% development modelling results respectively. Full junction capacity outputs are provided in Appendix J, also found in the TA.

2026 Assessment (200 Units).

Table 7-38 in the TA shows how the A29/Barnham Road roundabout will operate in 2026 with 200 units occupied on the proposed development site.

The A29/B2233 Barnham Road interim scenario modelling results indicates the junction is operating within capacity in the AM peak and at capacity in the PM peak with the development. The maximum RFC of 0.87 occurs on the approach from the A29 Fontwell Avenue with an associated delay of 27 seconds. This demonstrates that the junction can accommodate the traffic generated from half of the development in 2026 alongside the baseline traffic growth.

Tables 7-39 and Table 7-40 in the TA show how the A29/Nyton Road (East) junction would operate in 2026 with and without 200 units occupied on the proposed development site.

Tables 7-39 and Table 7-40 forecasts that in the AM peak the junction is at its theoretical capacity with and with development traffic and in the PM peak the junction is within capacity. The development traffic is forecast to increase the total delay by 28 seconds

and increase the queue by four vehicles. The applicant states that the development traffic flows through the junction only increase the overall flow by just under 2.5%.

2028 Assessment (300 Units).

Table 7-41 in the TA shows how the A29/Barnham Road roundabout will operate in 2026 with 300 units occupied on the proposed development site.

The A29/B2233 Barnham Road 2028 interim scenario modelling results forecasts the roundabout to operate within capacity in the AM peak and at capacity in the PM peak with the development. The maximum RFC of 0.90 occurs on the approach from the A29 Fontwell Avenue with an associated delay of 42 seconds. The applicant states that this demonstrates the occupation of 300 units can be completed without the leading to the junction operating over capacity.

Tables 7-42 and 7-43 in the TA shows how the A29/Nyton Road (East) junction would operate in 2026 with and without 300 units occupied on the proposed development site.

The tables shows that the priority junction will operate at capacity in the AM peak without the development and over capacity with the development traffic, whilst in the PM peak the junction will operate within capacity with and without the development. The development traffic is forecast to increase the total delay by 50 seconds and increase the queue by seven vehicles.

Summary Of Interim Scenario.

The capacity assessments from the interim scenario present that the A29/Barnham Road roundabout accommodates 200 and 300 units of the development in 2026 and 2028. the A29/Nyton road junction is forecast to operate over capacity with 300 units, before the realignment of phase 1 of the a29, but the applicant considers that the impact of the additional traffic is not significant when considered against the 2028 baseline position.

A29 Level Crossing Assessment.

A key component needing consideration within the TA is the nearby railway level crossing, found approximately 550m south of the proposed development site access. Alongside the assessment of the impact of the proposed development on traffic flows on the highway network surrounding the development, the applicant has also provided an assessment of the operation of the Woodgate level crossing with associated traffic and traffic levels on the A29 (including impact of their development and associated signalised road junction).

As stated above, the railway level crossing of the A29 at Westergate Street is approximately 550m south of the site entrance. The applicant has assessed it for the future year scenarios when the development is operational. They have made the assumption that train times remain the same and as such occurrences of the closure of the road will be the same in future years as the observed base year.

Impact on queuing.

Taking account of the survey described above, this applicant provides in this section an assessment of the impact of the proposed development in relation to queue lengths associated with the A29 level crossing.

Development Traffic Impact.

The applicant shows that the proposed development will result in an increase in the arrival rate of vehicles that approach the level railway crossing per-hour. However, they state that the service rate of the level railway crossing (the amount of traffic that can pass through the level railway crossing in any given hour) will remain the same given the assumptions above about existing timings. As such, vehicle queues associated with

closure times at the level railway crossing are expected to increase as traffic volumes increase on A29 Westergate Street.

The applicants, in their TA, include a traffic queue survey of the level crossing that was undertaken on the 1st March 2022 to establish a baseline operation of the crossing. The survey identified a maximum queue of 96 PCUs in the AM peak at the crossing, and a maximum queue of 127 PCUs in the PM peak during the period when the barriers were closed.

For the proposed development, the results of the survey shows that in the worst-case, an additional 55 vehicles would arrive in the *southbound* direction during the AM peak period.

For the *northbound* direction approach to the level crossing, the applicant states that the street function/appearance is different to the southbound direction being more rural in nature with fewer junctions and access points. As such, they have considered that no assessment is required for the northbound direction (south of the level railway crossing) as there is adequate capacity for queueing vehicles, albeit that queues, as a result of the development, would increase.

Impact on A29 Southbound Level Crossing Queueing.

In the *southbound* direction, existing queues created by the level crossing barrier closure that do not extend past the proposed access junction (less than 550 metres) will increase only as a result of southbound traffic leaving the site. Existing queues that extend past the access junction will increase by a larger amount as a result of the additional traffic which is accessing the development from the north as well as the traffic leaving the site heading south.

To assess the impact of the proposed development an assumption has been made by the applicant that development traffic will depart or arrive on a uniform basis across the peak hour based upon the additional vehicles presented in Table 8-2 found in the TA.

Table 8-2 shows that during the average closure times experienced during the AM and PM peak hours, the proposed development will increase queue lengths by 6-18m. This assumes that during an 'average' barrier closure queue lengths do not extend past the site access junction as is the case the vast majority of barrier closures surveyed. For the maximum barrier closures recorded, it is predicated that the proposed development would increase queue lengths by 24m during the AM and 30m during the PM peak hour, this is based on development traffic travelling southbound north of the site access. This represents a 4.2% increase in the maximum queue length recorded in the AM peak and a 3.9% increase in the PM peak.

However, what isn't clear are the queue lengths by direction as a result of the development? And what queues arise for *northbound* traffic as a result of the new signals, particularly if they are at red when a 'platoon' of traffic previously held at the railway crossing arrives at it?

Impact of the A29/Meadow Way Site Access (traffic signals) Junction.

In part reply to the previous question, the applicant states that to deal effectively with the potential for a large platoon of traffic approaching the junction from the upstream level crossing, they propose that a MOVA control system is provided for the signalised site access junction. Once MOVA control has been set up successfully, the system will generate its own signal timings cycle-by-cycle, varying continuously with traffic conditions to offer full flexibility in traffic management. The timings under this system are optimised both in the short term (hour-to-hour, day-to-day for events like level crossing releases) and in the long-term following annual trends and longer-term traffic growth.

They continue by saying that MOVA can deal with both uncongested conditions and with situations when the junction becomes overloaded/congested with large queues on one or more approaches. MOVA determines which mode is appropriate and which approach(es), if any, are overloaded.

The applicant considers that using MOVA, a queue clearing sequence will include additional green time signal phase for A29 Westergate Street northbound traffic to reduce the instances of stopping twice at the level crossing and at the signalised access junction. In addition, they state that the assessment of the operation of the traffic signals in future years does not predict a queue length for northbound vehicles that would extend to the level railway crossing.

The introduction of an additional queue clearing sequence at the signalised access point will result in the skipping of the east-west phase, which will reduce the ability for traffic exiting the site to clear the junction. Whilst queues may extend past the junction of the access road with Pine Close, the applicant proposes to provide line-marking Diagram 1026 'KEEP CLEAR' across this junction to assist with side road access.

With regard to the site access junction, the applicant should show what turning capacity is available and how will it work alongside MOVA, particularly as the right-hand turn pockets seem small. And, is the phasing to be designed for straight ahead and right turns only as one of the phases? Applicant to respond.

WSSC Signals Team has looked through the Road Safety Audit (RSA) as well as the Departure from Standard application drawing previously sent over and consider that comments provided in May 2017 for the previous planning application still remain and recommend they are reviewed again, as it seems the General Arrangement drawing included within the RSA document has not considered some of the points raised, such as the positioning of signal poles within the north east corner, and potential crossing position/length on the eastern arm.

In addition, WSSC has concerns regarding the queues southbound generated by the nearby level crossing. Consideration will need to be given to southbound queue detection and the staging that enables restricted movements to prevent vehicles turning southbound and adding to this queue. Unfortunately, this will mean there will need to be dedicated left & right turning lanes for each of the side road exits. This has the potential to increase the crossing length on the eastern arm to over 20m, which might not be acceptable in design terms.

As a point of information, the applicant should state whether the yellow hatched box, shown on the departure application, has been approved in-principle by Sussex Police.

With regard to LINSIG calculations as currently submitted, WSSC is still reviewing this to enable the Highway Authority to clearly see the proposed staging. It is appreciated the above comment regarding southbound queues might result in an updated model being produced. Once the review has been concluded, further comments will be issued.

Site access junction design – A29 Westergate Street/Pine Close/Meadow Way. Several Departures from Standard have been submitted and approved for the site access junction as currently designed. Should changes be required to the junction as a result of other comments in this response or other points and/or issues identified, then a fresh submission for approval of departures might be required.

With regard to one specific consideration, the yellow 'box' marking, this might require a Traffic Regulation Order (TRO). As such, the applicant will need to consult the Traffic

Signs Regulations and General Directions (TSRGD) to see what it says about TROs to support it.

And finally, the applicant should provide drawings showing the swept-path analysis of the junction for buses and other large vehicles likely to use it.

Structures (bridge over Rife).

Noting that the design of the traffic and cycling routes on top of the structure has yet to be fully agreed, in broad terms the design principles are of an acceptable format. The only significant comment is the inadequate spacing between the beams. A minimum 400mm gap should be provided. It is noted that there is a bold note box defining that the beam selection is subject to detailed design and may change. However, the 400mm gap should form part of any final design.

To achieve the spacing, WSCC recommend that the depth of beams will need to increase (affecting the drawn elevation/appearance) and therefore so would the elevation of the road. The Applicant is requested to reply to this and to show how the structure will meet WSCC requirements.

The applicant should also state when they intend to construct the bridge.

And finally, WSCC has given the bridge a reference of: 'WSCC ref: 1809 - Westergate Link Road'. This number should now feature in all ongoing/future documents, drawings and associated correspondence about it.

Road safety considerations.

Road safety audit - Alongside the design, a Stage 1 Road Safety Audit accompanies the highways works proposals. Six 'Problems' were identified by the Road Safety Audit Team. The applicant has accepted the recommendations, as has WSCC as Highway Authority. The completed 'Decision Log' will be sent to the applicant and LPA for their files separately to this response.

With regard to the extent of the audit, it does not appear to have considered the E-W link road running eastwards (including the bridge). If this forms part of the detailed component of the scheme, this should form part of the Stage 1 process. Applicant to address, please.

Additionally, if changes are made to the current design, then these should be placed before the Audit Team for comment (with comments provided in the form of an updated Decision Log for the Highway Authority to consider).

Personal Injury Collision (PIC) data – The applicant has provided records from Sussex Police for the previous five years (1st May 2018 to 30th April 2023). As the final date mentioned is approaching a year ago, the applicant is requested to provide any further records between April 2023 to the present day. The full accident reports, including detailed information and a map showing accident location for each collision, are found within Appendix A. Figure 3-9, found in the TA. It also shows the extent of the study area PIC data was obtained for.

The data shows a total of 112 collisions have occurred over the five years interrogated, of which one collision was classed as 'Fatal', 33 collisions were classified as 'Serious' and the remaining 78 were classified as 'Slight' in terms of severity. In total, seven accidents involved pedestrians, nine involved cyclists and 18 involved a motor cyclist.

Personal injury collisions at junctions.

Table 3.9 in the TA provides a summary of the PIC data at specific junctions, including type of collision, severity and where they occurred.

A27 Arundel Road/A29 Fontwell Avenue roundabout.

There were 13 recorded accidents at the roundabout junction of A27/ Arundel Road/ Fontwell Avenue. Of the recorded accidents, four involved motor cyclists. Three of these motorcycle accidents were classed as 'Serious' in terms of severity, whilst the four was classified as 'Slight'.

The remaining nine accidents were subject to collision between two or more vehicles, of which eight were classified as 'Slight' in terms of severity and one classed as 'Serious'.

A27/Nyton Road priority junction.

There were three recorded accidents at the priority junction of A27/ Nyton Road. Out of these, one was classified as 'Serious' in terms of severity and the remaining two as 'Slight'.

A29/Barnham Road roundabout.

Four accidents were recorded at the roundabout junction of A29/ Barnham Road. One was classified as 'Serious' in terms of severity involving pedal cyclist.

A second accident involving a pedal cyclist was classified as 'Slight' in terms of severity. The remaining two incidents involved the collision of two or more vehicles. None of these accidents appear to have involved a vulnerable road user.

Westergate Street/B2233 Nyton Road priority junction.

There were six recorded accidents in the vicinity of the Westergate Street/ B2233 Nyton Road priority junction, three of which involved a vulnerable road user. One of these, an incident involving a pedal cycle, was classed as 'Slight' in terms of severity.

Fontwell East roundabout.

A total of four collisions were recorded at Fontwell East Roundabout, three of which were classified as 'Slight' in terms of severity, and one has been classified as 'Serious'.

Personal injury collisions on road links.

Table 3.10 in the TA provides a summary of the PIC data at specific road links, including type of collision, severity and where they occurred.

A29 Westergate Street/A29 Lidsey Road/A29 Shripney Road.

There were 23 personal injury accidents recorded on the A29 Westergate Street. Out of these, 16 were classified 'Slight' in terms of severity and seven were classified as 'Serious'. Of these 23 accidents, five involved motor cyclists, two involved a pedestrian and two involved a pedal cycles.

A29 Fontwell Avenue.

The link connecting A27/Arundel Road/ Fontwell Avenue Roundabout and B2233 Nyton Road/ Barnham Road has had seven accidents recorded; two of them were classified as 'Serious' in terms of severity, and five classified as 'Slight'.

One of the seven PICs involved a pedal cycle, and one involved a pedestrian. Both of these were classified as 'Slight' in terms of severity.

B2233 Nyton Road.

The B2233 Nyton Road links the A27 to A29 Westergate Street. Five personal injury accidents were recorded on the Nyton Road link located west of the Westergate Street/ B2233 Nyton Road Priority junction. There was one accident classified as 'Serious' in terms of severity and four accidents classified as 'Slight' in terms of severity.

The remaining collisions were all classified as 'Slight' in terms of severity.

Nyton Road link between Westergate and Eastergate.

There were six accidents recorded on the short link joining Westergate and Eastergate, all classified as 'Slight' in terms of severity. One of these six accidents involved a pedestrian and one involved a motor cyclist.

Barnham Road.

There were 10 recorded accidents on the Barnham Road link, two of which are classified as 'Serious' in terms of severity.

Of the remaining eight accidents, all were classified as 'Slight' in terms of severity.

Arundel Road (west of A27/Arundel Road/Fontwell Avenue roundabout).

There were 22 recorded accidents on the Barnham Road link, 11 classified as 'Slight' in terms of severity, 10 as 'Serious' and one as 'Fatal'. Of these 22 collisions, two involved vulnerable road users.

Arundel Road (east of A27/Arundel Road/Fontwell Avenue roundabout).

The Arundel Road link east of the A27/ Arundel Road/ Fontwell Avenue roundabout, recorded 5 PICs over the 5-year period covered. There was one accident classified as 'Serious' in terms of severity and four accidents classified as 'Slight' in terms of severity.

No accidents appeared to involve vulnerable road users.

PIC summary.

Overall, there were three clusters where PICs have occurred over the five-year period; at A27/Arundel Road / Fontwell Avenue junction, Fontwell East Roundabout and Nyton Road link between Westergate and Eastergate.

Internal layout.

Other than the access works at the junction with Meadow Way and the site and the bridge forming part of the E-W link into Parcel SC1, the rest of the internal layout does not form part of the detailed consideration of this planning application. As such, details will be considered at any reserved matters and/or discharge of condition planning application stages. WSCC as Highway Authority recommends that any layout follows the principles contained in Manual for Streets. Additionally, the Highway Authority recommends that the applicant gives consideration to provision of a footway along the northern side of the access road, taken from the junction with the existing A29 and then running eastwards. Consideration to inclusion of further cycle facilities at this point (plus the junction itself) should also be given.

With regard to the bridge design, there is some confusion about the detail of the cycle route proposed to run alongside it. The bridge design shown in/on 'Overall Sketch Layout Drg. No. OSKL-01 Rev. P3', shows routes on both sides of the bridge, whereas on the detailed drawings it only shows it on one side. Also, if buses are to use the road in future, any road width chosen should ensure that it is wide enough to cater for the movement and width of buses.

For BN/11/22, the current planning drawings show shared facilities running along both sides of the E-W road link. In its response to the planning application, the Highway Authority is recommending that these routes be provided as segregated links given that they will provide a key link through parts of the BEW development, including existing development on and adjacent to the existing A29. As such, it recommends that the routes on the bridge and approached thereto are also provided as segregated routes as they would then feed into that being recommended for BN/11/22. Any final design must be LTN/20 compliant.

Parking.

Car parking - Parking for the development should follow the Arun District Council SPD, found on their website. EV parking should also adhere to this and/or Building Regulations, as appropriate.

Cycle parking - *On-site cycle parking (for communal bike parking/storage areas)* – The following should be incorporated in any final design:

- LTN 1/20 advises at least 5% of communal cycle spaces should be provided for adapted and larger bikes to accommodate people with mobility impairments (see paragraph 11.3.2).
- Alongside any EV charging points for cars, provision for E-bike charging should be included as well as space for cycle maintenance, including a pump and tool station. This accords with WSCC Cycle Design Guide para 2.4.4.
https://www.westsussex.gov.uk/media/13164/cycling_design_guide.pdf.
- The development should avoid use of vertical or raised level cycle stands. Unfortunately, these are less usable for people with mobility issues or larger and adapted cycles that are difficult to lift. Children's bikes may also be too small to fit into the hangers and be left without space to park, thus being vulnerable to theft or having to be taken inside. A covered and secure set of 'Sheffield' stands is recommended.

Cycle parking for individual houses/properties should either be in garages (with MfS dimensions) or in bespoke sheds and/or storage areas. Again, vertical stands should be avoided.

And, secure and covered visitor cycle parking areas should be provided around the development.

Access for emergency and refuse vehicles.

The applicant should provide evidence of discussions with the emergency services in order to establish suitability of the development for access by the emergency services.

Public Transport.

A Public Transport Strategy for the BEW developments was published in 2023. This sets out expected levels of contributions towards services and other key components that should be incorporated in and around sites forming part of the BEW Strategic Location. This site will be expected to provide a proportional financial contribution towards bus services and bus service infrastructure. The Strategy should also be referenced in the Travel Plan and where relevant, measures to promote its use and bus services as a whole, included in any updated text in the Travel Plan.

Section 106 Agreement (S106).

As for all sites within the BEW Strategic Allocation, this site should pay contributions as informed by the approved Apportionment Study (AS) and Infrastructure Delivery Plan (IDP), proportional to its impact.

The following is a list of schemes taken from the aforementioned documents with current costs alongside, appropriate to this development:

1. A29 realignment - **£7,362,976.74**
2. A27 Fontwell East RBT improvements - **£101,395.35** - (Amount, and how this is used and/or how works are to be delivered, to be agreed with National Highways)
3. A27 Fontwell West RBT improvements - **£143,441.86** - (Amount, and how this is used and/or how works are to be delivered, to be agreed with National Highways)
4. A27/B2233 Nyton Road – **£30,511.63** - (Amount, and how this is used and/or how works are to be delivered, to be agreed with National Highways)
5. Barnham Village Centre improvements - **£33,209.30**
6. East-west link plus bridge etc. (scheme cost - applicant to provide)
7. Regular bus services linking the BEW site with Bognor Regis & local facilities and employment - **£158,000.00** (Please note that bus waiting infrastructure – i.e. shelters, stops, real time passenger information would be in addition to this and is yet to be agreed – applicant to determine where improvements could be implemented – i.e. real-time passenger information, shelters etc.)
8. Additional car parking at, or for, Barnham Rail Station - (scheme cost - applicant to provide)
9. A29-A259 Rowan Way Junction - **£141,953.49**
10. A29-A259 Felpham Relief Road Junction - **£75,348.84**
11. Cycle links BEW to SDNP - **£493,023.26**
12. Barnham - Tangmere cycle route - **£330,232.56**
13. Barnham to Bognor Regis cycle route - **£293,023.26**
14. B2233 - Pedestrian improvement measures - **£139,534.88**
15. Additional cycle parking at Barnham Station - £current cost estimate unknown
16. Creation of dedicated NMU grade-separated railway crossings to provide safe connections for pedestrians and cyclists between sections of the proposed Rife Valley Park (west of the new A29 alignment) and to the east of the new A29 (the latter possibly utilising PROW), - (scheme cost - applicant to provide)
17. Creation of a dedicated NMU grade separated railway crossing to provide a safe crossing of the Barnham-Bognor branch line for pedestrians and cyclists, including alterations to adjoining PROW – (scheme cost - applicant to provide)
18. Creation of dedicated grade-separated crossings of the new A29 link road for NMU's in order to deliver a sustainable and safe long-term connection within the future community – (scheme cost - applicant to provide)
19. A restriction of the opening of the E-W link road to all traffic (other than for pedestrians, cyclists and buses) at the point it meets the Cala Homes land until the full new A29 is open to traffic
20. Car club – (scheme cost – applicant to provide details)
21. FINAL Travel Plan (including details of car club) and Travel Plan monitoring fee of **£3,815***

*(*The Travel Plan auditing fees reflects the amount of local authority officer time required to evaluate the initial plan, assess the monitoring data and participate in on-going review and agreement to any amended plans in the future, including post planning once the development is built out and occupied. The costs have been benchmarked against fees charged by other Local Authorities and are considered to proportionate and reflective of the costs incurred).*

(Please also note that costs above are subject to change up to the point any S106 is signed).

Additional to the above would be any PRow upgrades as documented in PRow response, made separately to this response.

Conclusion.

Additional information is required to enable WSCC as Highway Authority to consider the proposal further. Summary as follows (full details found in the text above):

1. Clarification from the applicant about the junction locations modelled (baseline and future scenarios).
2. Under 'Assessment Scenarios', the Highway Authority has observed that the Barratt-David Wilson site (circa 600 homes) does not appear to have been included in the 2038 'Do Something' assessment (this would bring the overall BEW scheme to 4,250). Additionally, Parcel SC1 (BN/11/22) is referred to as having 1,200 homes, whereas 1,250 homes are being promoted as part of that planning application (adding the additional 50 AND the BDW site would bring the overall BEW figure to 4,300). Applicant to reply to this and, where necessary, adjust modelling accordingly.
3. Under modelling scenarios, for A27/A29 Western Roundabout, the applicant states that for modelling purposes, the scheme has been used within all junction capacity assessments in the TA for the A27/Arundel Road/ A29 Fontwell Avenue roundabout, with and without the improvements? Why is this?
4. For A29/A259 Felpham/Bognor Regis Relief Road Roundabout, the applicant has stated that because the scheme is yet to be implemented, junction capacity assessments for the A29/A259 junction have been completed using the improvement scheme only where the junction is forecast to operate close to capacity or over capacity. Why is this?
5. For Site 3: A29 - Barnham Road under 'Scenario 3' of the future scenario modelling. Do the results assume Phase 1 of the new A29 is constructed and open to traffic?
6. For Site 5: Westergate Street-Nyton Road (East Junction) under 'Scenario 3'. Do the results assume that Phase 1 of the new A29 is constructed and open to traffic?
7. Does the mentioned interim scenario in the summary of Scenario 3 include Phase 1 of the new A29 being open to traffic. Applicant to respond.
8. Under 'Scenario 4' Junction Assessment Summary, applicant to confirm how many dwellings have been included in the modelling.
9. Applicant to provide details of timing and delivery of bridge on E-W Link.
10. Applicant to state whether additional residential development off Meadow Close for 89 units has been factored into the junction capacity and traffic signals assessments. If not, modelling will need to be updated.
11. Applicant to consider cycle facilities at site access junction (e.g. advance stop lines, cycles paths etc) plus extension of footway (or possibly cycleway) on the north side of the new access and then eastwards.
12. What are the queue lengths by direction as a result of the development as a consequence of the new signals at the site access? And what queues arise for *northbound* traffic as a result of the new signals being at red?*
13. What is turning capacity of the new site access junction and how will it work (as right-hand turn pockets seem small)? and does the phasing allow for (northbound) straight ahead and right turns only at the same time?*
14. Applicant to confirm whether approval, in-principle. Has been obtained from Sussex Police for the yellow box marking.
15. With regard to the extent of the audit, it does not appear to have considered the E-W link road running eastwards (including the bridge). If this forms part of the detailed component of the scheme, this should form part of the Stage 1 process. Applicant to address, please.
16. Bridge design to be amended as-per comments, including segregated cycle routes on both sides.

- 17.**Applicant to provide details of discussions with emergency services and refuse providers about the scheme and internal layout.
- 18.**Provision of swept-path analysis of site access junction for a selection of vehicles, including cars, buses and other large vehicles likely to use it
- 19.**Travel Plan to be updated.

*(*Please note that signal calculations and phasings as currently submitted are still being reviewed by the Highway Authority. However, applicant to still respond to the questions raised above).*

Please re-consult when the additional information, as set out above with details in the main body of this response, is made available.

Thank you.

Tim Townsend
West Sussex County Council – Planning Services

From: Nicola Oktay on behalf of Planning.Responses
Sent: 11 April 2024 09:51
To: Planning Scanning
Subject: FW: Application AL/11/24/OUT
Attachments: AL 11 24 OUT PDF.pdf

WSCC Highways response

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