ARDENT CONSULTING ENGINEERS

HARTMIRES INVESTMENTS LTD

PROPOSED CREMATORIUM AND NATURAL BURIAL GROUND, TURNERS HILL, WEST SUSSEX RH10 4PB

TRANSPORT ASSESSMENT (REPORT READ AND APPROVED BY ANDREW TABACHNIK QC OF 39 ESSEX CHAMBERS)

REPORT REF. 190561-01
PROJECT NO. 190561
AUGUST 2020

PROPOSED CREMATORIUM AND NATURAL BURIAL SITE
TURNERS HILL BURIAL GROUND, TURNERS HILL, WEST SUSSEX
RH10 4PB

Transport Assessment

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This report has been read and approved for submission to MSDC by Andrew Tabachnik QC of 39 Essex Chambers.

1.0 INTRODUCTION

1.1 Ardent Consulting Engineers (ACE) has been appointed by Hartmires Investments Ltd to advise on highways/transportation matters relating to the proposed development of a crematorium and natural burial facility at the Turners Hill Burial Ground site at Turners Hill Road, Turners Hill, near Crawley, West Sussex RH10 4PB. A major crematoria operator is working with Hartmires to bring forward the provision of a crematorium and burial ground as an alternative to the part- implemented natural burial ground.

1.2 The proposed crematorium and natural burial site is intended to meet existing and projected additional demand in the wider local area in Mid Sussex and also the surrounding Tandridge, Wealden and Lewes Districts. It will relieve pressure on existing crematoria in the wider local area at Crawley (Surrey & Sussex), Tunbridge Wells (Kent & Sussex), Heathfield (Wealden), Brighton (Woodvale) and Worthing. These have been operating above the desirable practical capacity in recent years, and so the proposed scheme would act to help reduce delays between deaths occurring and subsequent funerals.

1.3 This Transport Assessment (TA) has been prepared to accompany an outline planning application submission, with all matters reserved for future determination except access, to the local planning authority, Mid Sussex District Council (MSDC), for a single 'chapel' crematorium with a single abated cremator and natural burial site with associated access, car parking, landscaping and drainage.

1.4 The local highway authority is West Sussex County Council (WSCC), which is responsible for all roads in the vicinity of the application site.

1.5 Pre-application consultation has been held with WSCC, which is attached at **Appendix A**.

Site Planning History

Burial Ground application

1.6 The site has an extant consent for change of use to a natural burial ground with reception building, accessed from Turners Hill Road by means of a simple priority T-junction, granted by MSDC (under DM/15/1035) and is now part implemented. That application was accompanied by a Transport Statement (TS) prepared by consultants Sanderson. This scheme involved the provision of a new pedestrian route on private land via the church grounds and then across the road to run behind the hedge; the footpath from the site to opposite St Leonards Church has now been implemented. The part-implemented natural burial site has 45 approved car parking spaces, of which the majority have been set out to base course.

1.7 The proposal would use the same simple priority T-junction access layout as that which was previously approved to serve the approved burial ground, albeit relocated slightly to the west (see **section 3.0**).

Residential application

1.8 An application (DM/16/1877) to provide 22 houses on the site was refused by MSDC in 2016 on grounds unrelated to highways. That application was accompanied by a TS prepared by consultant Dermot McCaffery (Highway Planning), and no objection was raised by WSCC in relation to highway matters. The refusal was upheld by the Planning Inspectorate on Appeal.

1.9 In her consultation response to the application, the then highways officer at WSCC (Mrs Emma Waters) required the existing footway on the south side of Turners Hill Road to be extended alongside the church to a new crossing point, with the existing layby opposite infilled. The route would then continue on the north side of the road

behind the hedge. In addition, the consultation response stated that the approved burial ground access was satisfactory to serve both that scheme and the proposed housing.

Chapel

1.10 A subsequent application was submitted for a chapel on the site (ref DM/17/1167) to serve the burial ground. In her consultation response, the highways officer at WSCC (Mrs Waters) again required the pedestrian link to be improved, as previously requested for the residential application. This application was refused by MSDC on grounds unrelated to highways but allowed on appeal. The Inspector added a condition for the footpath details to be secured prior to commencement.

Chapel re-siting

1.11 The consented chapel was then re-sited with consent granted under a further application (DM/18/0677) to which there was again no highways objection, with the pedestrian route to be improved as in the residential scheme application. The relevant planning condition was discharged on 18th December 2018. The WSCC consultation response also stated that the applicant should enter into a Section 278 Agreement to formalise the access arrangements.

Report Structure

1.12 Following this introduction, this report is structured as follows: -

- **Section 2.0** considers the existing situation;
- **Section 3.0** outlines the proposed development;
- **Section 4.0** considers the relevant planning policy context;

- **Section 5.0** sets out the expected trip attraction; and
- **Section 6.0** provides a summary and conclusion.

2.0 EXISTING SITUATION

Site Location

2.1 The application site is located to the east of Turners Hill, about 750m from the village centre. The site fronts Turner Hills Road to the south for about 220m and is bordered by arable ground to the north, east and west, as well as wood belt along eastern site boundary. The site location is shown at **Plates 2.1, 2.2 and 2.3.**

Plate 2.1: Location Plan

Plate 2.2: Site Location

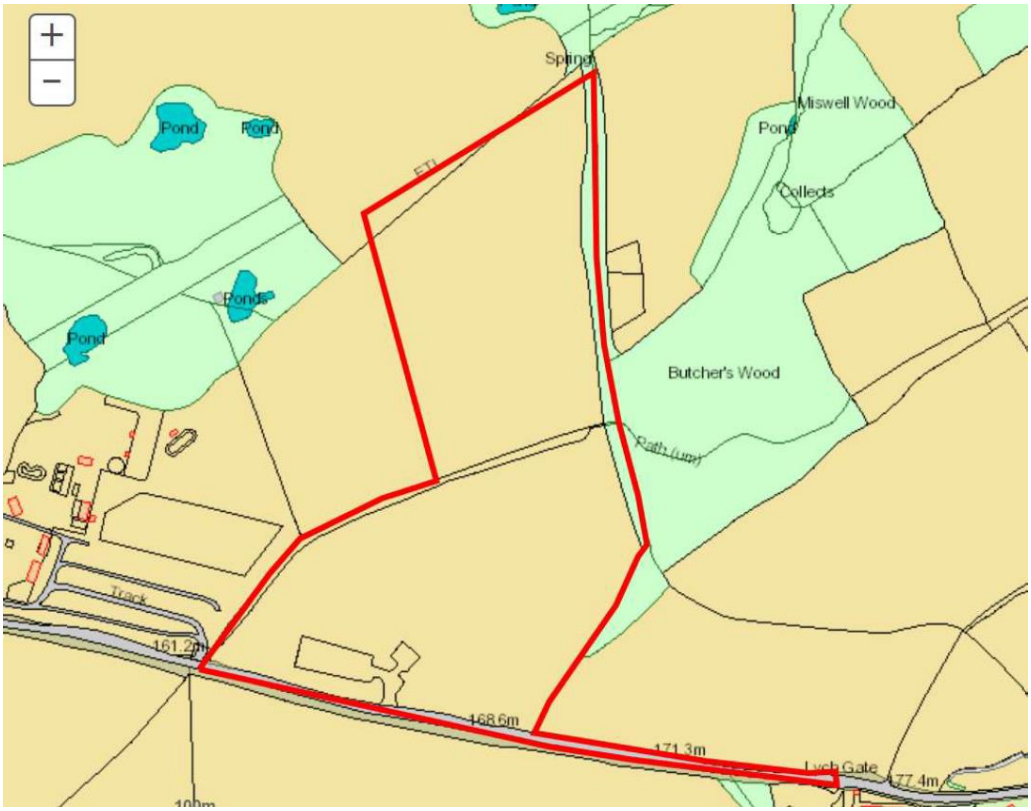


Plate 2.3: The Site

Existing Site Operation

2.4 The site has been part implemented as a natural burial ground, as confirmed by MSDC planning and legal departments, and also the Planning Inspectorate, and so is currently in commercial use. An access to the car parking for the burial ground has been implemented, see **Plate 2.4**.

Plate 2.4: Site access (source: Google Streetview, May 2019)

Local Highway Network

2.5 The site is located by Turners Hill Road which is a "C" class road subject to the national speed limit of 60mph. The road alignment runs south east to north west along the site frontage. The speed limit is reduced to 30mph on the approach to the B2110 Paddockhurst Road junction located approximately 170m to the east.

2.6 Turners Hill Road is 6m wide with verges on both sides but no footways at present and is unlit. There is a hedgerow along the northern side (site frontage) and trees along the southern site.

2.7 Turners Hill Road is a bus route with bus stops located to the west of the site access (see below at **Plate 2.5**).

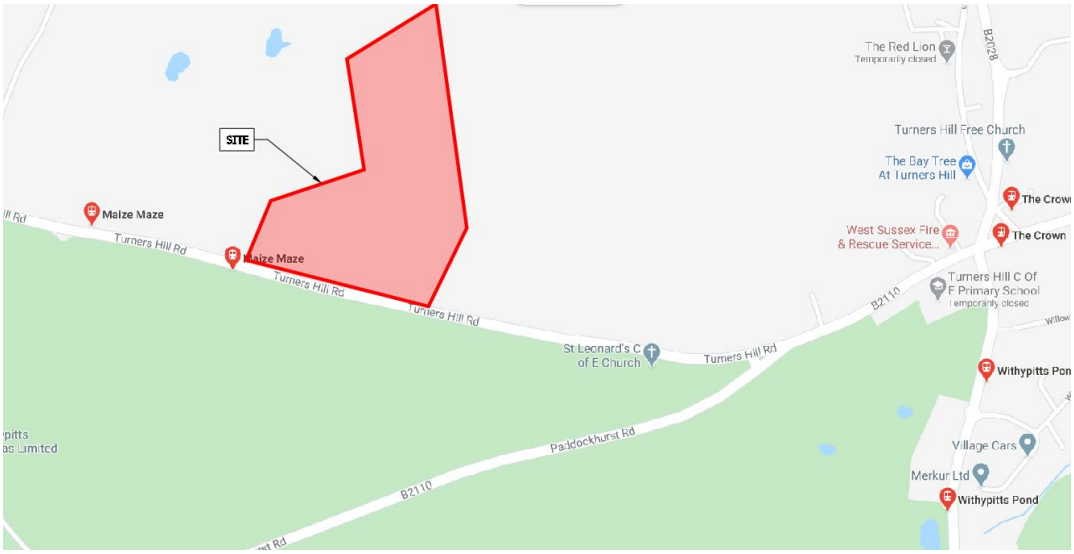


Plate 2.5: Bus Stops (source: Google Maps)

2.8 Approximately 400m to the east Turner Hills Road forms the minor arm of a triangular "Bennett" priority junction with the B2110 Paddockhurst Road.

2.9 Approximately 3.5km northwest, Turner Hills Road crosses the M23 motorway, and approximately 4km away it connects to B206 Balcombe Road roundabout in Crawley, which provides access to the M23.

Traffic Flow and Speed Survey

2.10 An Automatic Traffic Count (ATC) was installed by Sanderson to record vehicle flows and speeds on Turners Hill Road over a two-week period in August/September 2013; the results of this survey are attached at **Appendix B**. These showed average two-way flows of around 5,000 vehicles per day, and 85th%ile speeds of 42mph northwest bound and 48mph southeast bound.

2.11 Due to the ongoing Covid-19 pandemic and resultant closure of all schools and government advice for people to work from home if possible and only to travel for essential purposes, it has not been possible to undertake new traffic surveys since conditions during spring/summer 2020 are atypical. Whilst restrictions are now starting to ease, surveys undertaken even now would not be representative of "normal" conditions.

Accident Data

2.12 Accident data has been obtained from the Crashmap database for the most recent 3-year period available (2017-2019) for Turners Hill Road in the vicinity of site, as shown at **Plate 2.6.**

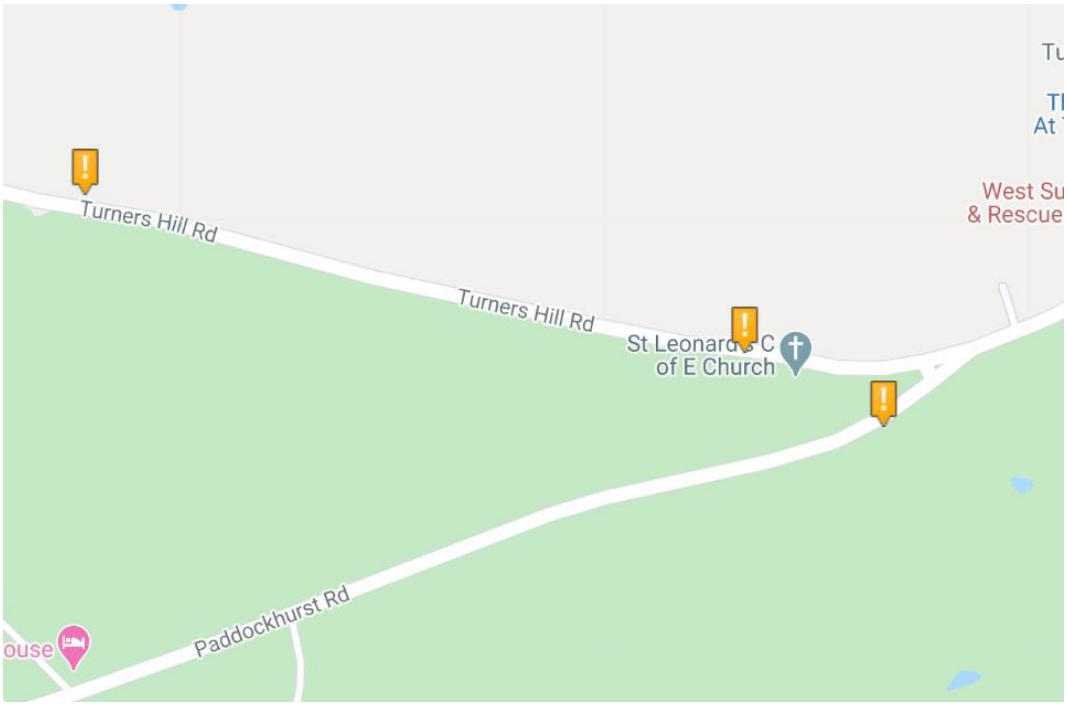


Plate 2.6: Accident Data 2017-19 (source: Crashmap)

2.13 A total of 3 Personal Injury Accidents (PIAs) have occurred in the vicinity of the site over this three-year period, all "slight" in severity. Of these, one was in the vicinity of St Leonards Church and one in the vicinity of the bus stops to the west of the site, with the third on

Paddockhurst Road to the west of the Turners Hill Road junction. None of them occurred close to the site access.

2.14 WSCC's criterion for investigating accidents and establishing whether remedial measures are justifies involves considering accidents over a 3-year period and breaking down the number of casualties and factoring them by 3 for "fatal", 2 for "serious", and 1 for "slight". It is unlikely a significant reduction in accidents and casualties can be achieved unless the route is above the county average, which is currently 6.6 weighted casualties per kilometre over the 3-year period.

2.15 From the above data there is no recent accident problem in the site vicinity (as agreed by WSCC in their pre-application consultation response in **Appendix A**).

Cycle Routes

2.16 Approximately 2.5km to the northwest Turner Hills Road forms part of National Cycle Route no. 21 (Worth Way), which provides connections to East Grinstead (5km) and Crawley (3km).

2.17 The location of National Cycle Route no. 21 (red) as well as local cycle routes (blue) in a vicinity of the site are shown at **Plate 2.7.**

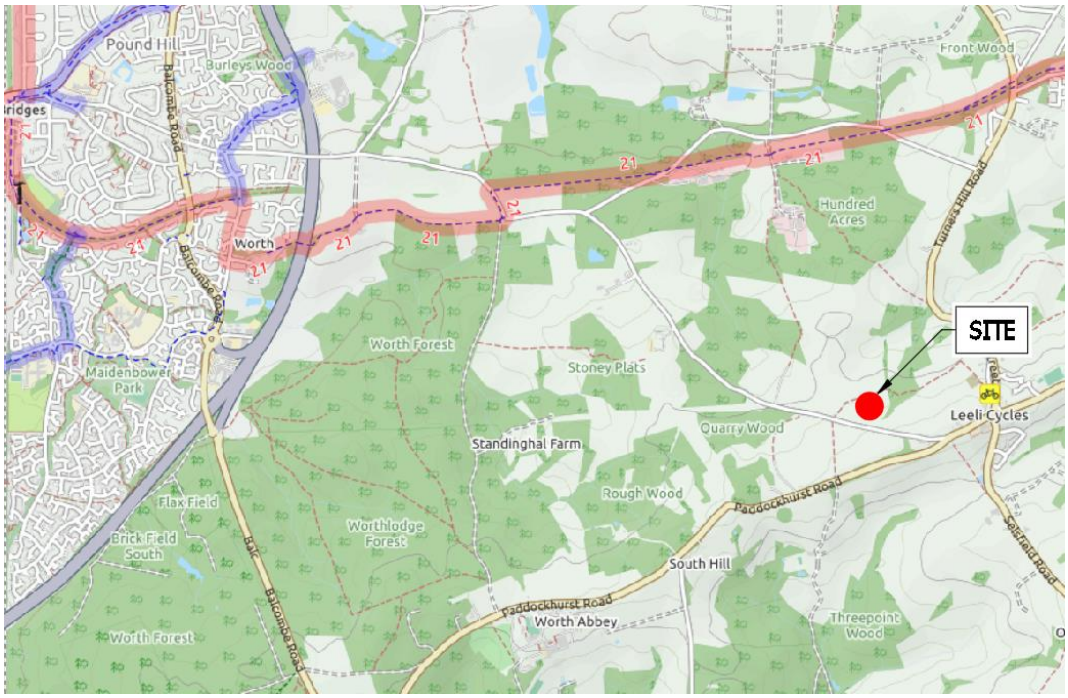


Plate 2.7: Cycle Routes (source: Opencyclemap)

Local Area - Facilities

2.18 The site is located approximately 750m (a 9-minute walk at the standard assumed speed of 80m/minute, or a 3-minute cycle ride) from Turners Hill village. There is a dedicated off-road permissive footpath to St Leonards Church to the east of the site.

Public Transport

Buses

2.19 The nearest bus stops to the site are located on Turners Hill Road, to the west of the access. These are served by bus route 84 which operates between Crawley and East Grinstead 5 times eastbound and 6 times westbound per day on weekdays. The first bus of the day from Crawley currently arrives at around 07:30, with the first from East Grinstead at 08:00, with the last departing towards East Grinstead at 16:25 and towards Crawley at 17:45.

2.20 In addition, the 272 bus route serves stops within the village, with 6 northbound and 9 southbound services per day on weekdays between Crawley and Brighton via Haywards Heath, running approximately every 2 hours. These are within a 750m (9-minute) walk of the site. Services currently arrive from Crawley at around 07:15, 08:05 and 09:15, and depart to Crawley at 16:40 and 18:50.

Trains

2.21 The closest railway station is in Crawley town centre, approximately 8km away and accessible by the 84 and 272 bus routes. It is served by Southern Railway and Thameslink trains and provides connections to London Victoria and London Bridge, as well as to the south to Horsham, Portsmouth and Bognor Regis.

Conclusion

2.22 As demonstrated above, the site is accessible on foot from Turners Hill village by the permissive pedestrian route from St Leonards Church which has been implemented. It is accessible by cycle and bus, with nearby bus stops served by a route linking Crawley with East Grinstead and the mainline railway stations in those towns.

3.0 THE PROPOSED DEVELOPMENT

3.1 The outline application which this TA supports seeks consent to construct a crematorium with a single chapel with a natural burial area in the northern part of the site. It is intended that it would be operational on weekdays only, with up to a maximum of eight services held per day between 09:00-17:00 at one-hour intervals. The core times for services are between 10:00 and 16:00.

3.2 An indicative layout plan is attached, for illustrative purposes only, at **Appendix C**. This shows internal main and overspill car parking and servicing arrangements. Large vehicles, such as the MSDC refuse collection round, would be able to turn around within the site so that they could enter and egress in forward gear. An inwards-opening entrance gate would be provided, set back 12m from the carriageway edge in order to allow such a vehicle to wait outside without impeding the free flow of traffic on Turners Hill Road.

3.3 The illustrative layout shows a building of some 1,600m^2 and on-site parking for 82 visitors' cars, plus an overspill area to accommodate a further 26, in addition to 4 staff car parking spaces (so 112 in total).

Access

Vehicular

3.4 The simple priority T-junction vehicle access (as approved by WSCC) for the burial ground was designed by Sanderson (see drawing at **Appendix D**). This had a width of 5.5m, kerb radii of 6m, and visibility splays for egressing drivers of 2.4m x 160m (measured to the carriageway edge on the north side of the road) in both directions. This access was also accepted by WSCC as suitable to serve the proposed residential scheme in addition to the burial ground.

3.5 However, given the revised nature of the proposals from the previous part-implemented scheme, an amended bellmouth access arrangement is proposed, with 10m kerb radii with tapers and a carriageway width of 5.5m. This is relocated slightly to the west from the proposed position, at the location of the existing site access, as shown in **ACE Drawing no 190561-001F**. This also shows vehicle swept paths, produced using AutoTrack software, of a hearse and the MSDC refuse vehicle turning into and out of the access.

3.6 Again 2.4m x 160m visibility splays will be provided for egressing drivers in both directions, with the existing hedgerow managed to keep the splays clear. In addition, the banks within the verges will be regraded in order to provide the required visibility within the vertical plane (i.e. from a car driver eye height of 1.05m above the road surface to an object height of 0.26m, in accordance with the *Design Manual for Roads and Bridges* (*DMRB*) published by the Department for Transport (DfT), see below).

3.7 The existing trees on the north side of Turners Hill Road along the site frontage fall behind the splays and so can be retained. The splays will be offered for adoption by WSCC where they fall outside the existing highway boundary, and so maintenance of any vegetation within the verge will be undertaken by them as part of their regular programme as with the splays at all junctions within the County.

3.8 The existing burial ground access (see **Plate 2.3**) will be modified and formalised in accordance with the proposals shown in **Drawing 190561-001F**, and this revised layout arrangement implemented under a Section 278 Agreement with WSCC.

3.9 A 160m "Y" distance is commensurate with the forward driver visibility, or stopping sight distance (SSD), for a speed of 53mph in wet weather conditions using the onerous "Desirable Minimum" parameters set out in the *DMRB*, which is for trunk road design. These

are a driver perception/reaction time of 2 seconds and deceleration rate of 0.25g, which are suitable for use on rural roads. The 0.25g deceleration rate is a leisurely one, associated with a coefficient of friction associated with snow-covered roads.

3.10 In reality, even an HGV or bus can decelerate at a more rapid rate, with 0.375g being adopted by the *DMRB* as the "One Step Below" (formerly "Absolute Minimum") parameter for an emergency stop in wet weather. This rate is recommended by the *Manual for Streets 2*: *Wider Application of the Principles* (*MfS2*, published by the Chartered Institution of Highways and Transportation (CIHT) in 2010) for use on non-trunk roads where the proportion of the vehicle flow comprised of HGVs/buses is 5% or more (as is the case here).

3.11 The required 160m "Y" distance is well in excess of that required for the observed 85th%ile speeds recorded by the 2013 ATC of 42mph northwest bound and 48mph southeast bound (see **section 2.0** and **Appendix B**). These actual recorded speeds require SSDs of 109m and 137m respectively using the slower 0.25g deceleration rate, well below the 160m required by WSCC and which is to be provided. Applying the HGV wet weather emergency stop deceleration rate of 0.375g to these speeds gives "Y" distances of 85m and 105m respectively, so even further below the 160m.

3.12 The Highways England document *CD 123 Geometric design of at-grade priority and signal-controlled junctions*, which forms part of the *DMRB*, stipulates that for new priority roads, a right turn lane is required on the main road when Annual Average Daily Traffic (AADT) flows exceed either 13,000 vehicles on the main road or 300 on the minor arm.

3.13 As set out in **section 2.0**, the 2013 ATC results demonstrate that the average daily flow on Turners Hill Road is well below the former threshold, at around 5,000 vehicles.

3.14 **Section 5.0** demonstrates that the expected combined average daily flow on the minor arm associated with the burial ground and crematorium is below the latter threshold so the proposed simple T-junction layout is appropriate to serve the development.

Pedestrian

3.15 The improved pedestrian route to the Church will serve the proposed crematorium. .

Road Safety Audit

3.16 As requested by WSCC, since the proposed development will result in an increase of over 50 vehicle movements per day passing through the site access junction, a Stage 1 Road Safety Audit (RSA) of the revised proposed access has been undertaken by a firm of suitably qualified individuals (M&S Traffic). This is attached, together with our Designer's Response, at **Appendix E**. The RSA was undertaken by the same firm as undertook the audit of the previously-approved (Sanderson) burial ground access design for the residential development application. The junction layout was amended slightly, with tapers introduced, to address comments made by the safety auditors to ensure that hearses would be able to turn left into and out of the site without using the westbound lane on Turners Hill Road.

3.17 The RSA raised no further material issues of concern. Further information is to be provided at Stage 2 (detailed design).

Internal Layout

3.18 Since the application is outline with all matters apart from access reserved for future determination, details of internal layout, car parking provision etc, are not put forward for consideration at this time. Such details would be submitted by means of a Reserved

Matters application at a future date should the outline application be granted consent.

4.0 POLICY CONTEXT AND COMPLIANCE

Framework

Cremation Act 1902

4.1 The 1902 Act stipulates that crematoria must be located at least 183m (200 yards) from a residential dwelling and 46m (50 yards) of a public highway.

National Planning Policy Framework (NPPF, DCLG, February 2019)

4.2 Section 9 of the 2019 *NPPF* outlines planning policies for promoting sustainable transport. Paragraph 103 states: *''The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making.*

4.3 Paragraph 108, regarding considering development proposals, states that: *"In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:*

- *appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;*
- *safe and suitable access to the site can be achieved for all users; and*

- *any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree."*

4.4 Para 109 states: *Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe*.

WSCC *Guidance on Parking at New Developments* (June 2020)

4.5 MSDC has adopted WSCC's current parking standards (adopted June 2020) which set no level of provision for crematoria. However, with respect to non-residential development, they state, at para 6.2: *The move to a new planning system during 2006 further shifted the responsibility for determining parking standards to individual LPAs and indicates that local circumstances should be taken into account when setting such standards, including the accessibility of the site, the likely demand for parking, and the viability of the site*.

4.6 Para 6.3 states: *Therefore, although new guidance has been prepared, it should only be used as an initial guide for developers, who should undertake a site-specific assessment and seek to balance operational needs, space requirements, efficient use of land and cost attributed to providing parking and where relevant, attracting/retaining staff*.

4.7 Table 3 of the WSCC Guidance sets out initial guidance for vehicular parking and states that for land use D2 Assembly and Leisure, for larger scale places serving more than a local catchment, vehicle parking should be provided at the ratio of one space per $15m^2$.

Compliance

4.8 The current level of accessibility and provision is reflective of the rural location of the application site; by their nature crematoria cannot be located too close to existing houses and so tend to be in edge of town or stand-alone locations.

4.9 However, it is important to consider the actual nature of the operation of the proposed development on the implemented natural burial ground. Attendees are unlikely to reside close to the site and so will not be able to walk or cycle to the crematorium to attend a service. The immediate members of the family will usually be part of the funeral cortege and so share the same vehicle(s).

4.10 Other family and friends are likely to come together to attend a funeral service, and will tend to travel to the crematorium by means of private car or taxi (from surrounding towns or their railway stations), again with a very high likelihood of car sharing. This is likely to also be the case when they depart from the site to a reception function providing refreshments at an existing facility (e.g. pub or hotel) in the wider local area.

4.11 This means that access to the facility will be predominantly by vehicle but with car sharing, giving a high level of car occupancy, which will help to reduce the number of vehicle movements. With this in mind, and the specific locational requirements and the nature of the operation of crematoria, the accessibility of the site by public transport, on foot and by cycle is not as imperative as with a residential, retail or employment development.

4.12 There may be limited pedestrian activity from St Leonard's Church to the site. This will be catered for by the off-road permissive footpath that has been installed. This would allow mourners attending a funeral service in the Church to walk to the Crematorium if time allows. Given the distance and the grieving state of attendees, it will only appeal to

those who are fit and well. The numbers and frequency of those likely to use this route do not justify the installation of a crossing.

4.13 Trips by those wishing to visit the garden of remembrance are likely to be by car. However, the bus stops on Turners Hill Road would facilitate repeat trips by bus. The provision of a dedicated off-road footpath along the entire site frontage would allow easy access to the westbound bus stop.

4.14 The total level of car parking provision shown in the indicative layout, at 82 spaces for visitors plus 4 for staff and 26 overspill spaces (112 in total) is in accordance with the June 2020 WSCC Parking Guidance (which suggests one space per 15m^2 for such a facility, which for the 1600m^2 building, equates to 107 spaces). It allows for the anticipated highest level of demand that could be expected to occur from a service to ensure that this can be accommodated within the site without cars having to park on the internal roads, or overspill onto the public highway with an adverse impact on safety. Although this level of demand is not expected to occur frequently, it provides a level of comfort that should high levels of demand be generated by a cremation service, that they could be safely accommodated within the site without causing blocking, especially if the cremation coincided with a service at the adjacent burial ground.

5.0 TRIP ATTRACTION AND TRAFFIC IMPACT

Consented Burial Ground

5.1 The Sanderson TS predicted that the burial ground would attract an average of some 44 two-way vehicle trips (22 in and 22 out) per service during weekday inter-peak periods, with a maximum of one burial service in the morning and one in the afternoon. Assuming, to be very robust, that one such service was held every morning and every afternoon on 250 weekdays per year, this equates to an AADT of 60 movements for the burial ground. No capacity analysis of the access junction, nor any off-site junctions, was undertaken by Sanderson.

Residential Development

5.2 The refused residential scheme was predicted to generate some 10-11 two-way movements during the weekday peak hours. In its consultation response to the planning application, WSCC stated that the approved burial ground access was adequate to accommodate the traffic associated with both that consent and the proposed residential development. Again, no capacity analysis of the access junction, nor any off-site junctions, was undertaken in respect of the residential application.

Proposed Crematorium

5.3 The well attended cremation services would occur during the weekday inter-peak period, commencing between 10:00 and 16:00, with up to five in the Core period, but up to a maximum of eight services being held per day. The *Crematorium Need Report* prepared by Peter Mitchell Associates (PMA) for submission with the application refers to a total of 1,097 annual deaths occurring in 2018 within a 45-minute drivetime

catchment of the proposed facility in locations closer to Turners Hill than other existing crematoria.

5.4 With 81.8% of funerals involving cremation rather than burial, this equates to 897 per year within this catchment, which would in turn mean an average of 3.6 services per weekday, based on 250 weekdays per year. Of these, 80% would be of residents of Mid Sussex District, compared to 12% of Wealden, 5% of Lewes District and 3% of Tandridge.

5.5 There is no survey data for Crematoria in the TRICS database. We have therefore derived an estimate of the expected level of trip attraction from information within the public domain submitted with planning applications for proposed comparable facilities elsewhere in England, as set out below.

Grevatt's Lane, Yapton, West Sussex

5.6 The TS prepared by Paul Basham Associates submitted with the application for this Crematorium in Arun District (see extract at **Appendix F**) predicted it would generate 38 two-way vehicle movements per service during the weekday inter-peak period. This prediction was accepted by WSCC.

New Milton, Hampshire

5.7 The TS prepared by Entran submitted with the application for this Crematorium (see extract at **Appendix G**) predicted that, based on observations at an existing facility in Wiltshire, it would also generate 38 two-way vehicle movements per service, which was then revised to 40 following visual inspections at a number of such events there.

Beccles, Suffolk

5.8 The TS prepared by Bellamy Roberts submitted with the application for this Crematorium (see extract at **Appendix H**) predicted that, based on surveys at two existing facilities in Chichester and Guildford, it would attract 18 vehicles (i.e. 36 two-way movements) per service.

Fenland Crematorium, Cambridgeshire

5.9 Survey data for this site over one weekday (see **Appendix I**) recorded between 24 and 58 two-way vehicle movements per hour between 10:00 and 16:00, with an average of 38. The survey also recorded lower two-way vehicle flows associated with services held between 09:00-10:00 and 16:00-17:00, at four and 20 movements respectively.

Average

5.10 Taking the average for the four sites gives 19 arrivals and 19 departures per service during the most popular core (inter-peak) periods, which are assumed to occur within one hour. Assuming, again to be very robust, six services held every weekday during the inter-peak periods, on 250 weekdays per year, gives an AADT due to the proposed crematorium of 156. Adding these to the 60 associated with the burial ground gives a total of 216, so well below the CD123 threshold of 300 requiring a right turn lane on the main road (see **section 3.0**).

Impact on Turners Hill Road

5.11 To calculate the increase in traffic on Turners Hill for the proposed crematorium we have assumed a 50/50 directional split in traffic at the site access.

5.12 We have assumed a future assessment year of 2025 (i.e. 5 years after application submission).

5.13 We have used the DfT's Trip Ends Model Program (TEMPRO) to derive projected weekday inter-peak traffic growth from the ATC survey year (2013) to 2025. This was undertaken using the National Trips End Model (NTEM) v7.2 dataset for Mid Sussex Middle Super Output Area (MSOA) 002 with National Transport Model (NTM) RTF 2018 Scenario 1 – Reference projections for "Other Rural roads".

5.14 **Table 5.1** sets out the observed two-way flow in each weekday inter-peak hour, together with the average and the predicted future year Base flows plus the increase in absolute and percentage terms. To be robust, we have assumed the same average of 38 two-way movements during the 16:00-17:00 hour as for each daytime service, despite the Fenland Crematorium surveys showing lower flows associated with services at this time, it being a less popular slot.

Table 5.1: Predicted increase in traffic on Turners Hill Road

Weekday inter-peak hour	2013 observed flow	NTEM/NTM Growth factor 2013>2025	2025 predicted Base flow	Crematorium – predicted average hourly flow (assumed 50:50 directional split at access)	Total	Increase
	Two-way		*Two-way*	*Two-way*	*Two-way*	
0900-1000	473	1.1706	554	2	556	0%
1000-1100	315	1.2298	388	19	407	5%
1100-1200	299	1.2298	368	19	387	5%
1200-1300	293	1.2298	360	19	379	5%
1300-1400	292	1.2298	359	19	378	5%
1400-1500	303	1.2298	372	19	391	5%
1500-1600	312	1.2298	383	19	402	5%
1600-1700	338	1.1843	400	19	419	5%

5.15 *Guidance on Transport Assessments*, published by the Departments for Transport and Communities and Local Government in 2007 (which

is now withdrawn but as-yet unreplaced) states: *''Whilst there is no suggestion that 30 two-way peak hour vehicle trips would, in themselves, cause a detrimental impact, it is a useful point of reference from which to commence discussions.''*

5.16 The expected increase in two-way vehicle trips associated with the proposed crematorium is well below this threshold. Furthermore, it would be concentrated within weekday inter-peak periods, when flows are lower and there is less demand on the highway network, rather than during peak hours. The increase, at 5%, is also well within the normal expected day-to-day variation in traffic flows of +/-10%. The predicted increase is less than that expected for the burial ground, for which no capacity analysis of the site access nor any off-site junctions was required by WSCC.

5.17 In view of this, with traffic increases restricted to the weekday inter-peak periods and below 30 movements on Turners Hill Road (a 5% increase, based on a 50:50 directional split), we do not consider that the development could be considered to have a severe residual impact on highways.

Capacity analysis of site access junction

5.18 As requested by WSCC, we have undertaken capacity analysis of the Turners Hill Road/site access junction using the industry standard JUNCTIONS9 software with the PICADY module. We have taken the average flows recorded by the 2013 ATC for the busiest weekday inter-peak hour (15:00-16:00) and applied projected background traffic growth to an assumed future assessment year of 2025 (see above).

5.19 We have assumed, as a worst case, that a burial service (44 two-way movements) would coincide with a cremation service (38 two-way movements), assuming a 50:50 split of trips in both cases. The

predicted turning movements are shown in the diagrams included at **Appendix J**.

5.20 We have also adopted the robust *OneHour* (formerly *ODTab*) flow profile in the JUNCTIONS9/PICADY model, which models a 90-minute period (the peak hour itself plus 15 minutes either side). This assumes that 22.5% of the flow occurs in the first and fourth 15-minute time slice of the peak hour, and 27.5% in the second and third time slices.

5.21 The results of the junction capacity analysis are attached in **Appendix K** and summarised in **Table 5.2**, which sets out the maximum predicted Ratio of Flow to Capacity (RFC) value, queue length, delay and Level of Service associated with each manoeuvre.

Table 5.2: Summary of results of JUNCTIONS9/PICADY capacity assessment of access junction

Manoeuvre	2025 weekday inter-peak hour (15:00-16:00)			
	RFC	***Queue (vehs)***	***Delay (secs/veh)***	***Level of Service***
Left + right turn out of site (B-AC)	0.05	0.1	9.5	A
Turners Hill Road northwestbound ahead + right turn into site (C-AB)	0.04	0.1	5.0	A

5.22 **Table 5.2** shows that the junction would operate well within capacity with the predicted flows, with a maximum Ratio of Flow (RFC) value of just 0.05, which is well below the usual desirable upper limit of 0.85.

5.23 The predicted Level of Service is "A" for both give way manoeuvres (on a scale from the best at "A", which represents free flow conditions to the worst at "F" which represents forced or breakdown flow conditions).

6.0 SUMMARY AND CONCLUSIONS

6.1 Hartmires Investments Ltd has submitted an outline planning application, with all matters except access for future determination, to provide a Crematorium with single chapel and natural burial site at for the burial ground at Turners Hill Road, Turners Hill, near Crawley, West Sussex RH10 6BP.

6.2 Access to the proposed facility would be from Turners Hill Road at the same location as the existing access to the natural burial ground. This is in the form of a simple priority bellmouth T-junction, with larger kerb radii than the Sanderson-designed layout previously approved, which will be implemented under a Section 278 Agreement, and a Stage 1 Road Safety Audit has been undertaken of the revised proposed arrangement.

6.3 The proposed facility is within walking distance of Turners Hill village, and bus stops, with a new permissive pedestrian route provided, including the now implemented off-road footway adjacent to Turners Hill Road from the Site to St Leonard's church.

6.4 In the absence of any survey data on trip attraction of crematoria in the TRICS database, we have derived the expected level of trip attraction associated with the proposed development from surveys at other existing facilities within the public domain. These show an average of 17 inbound and 17 outbound movements per service, which would occur during the weekday inter-peak period (10:00-16:00), with up to 6 services in the core slots and a potential for a further two services, with lower attendance, per day.

6.5 Assuming a 50:50 directional split of crematorium traffic at the access, the increase in two-way flows on Turners Hill Road would be well below the suggested threshold of 30 movements cited in the 2007 DfT/DCLG TA Guidance, which applies to peak hours, rather than the

inter-peak period when the facility would be operational. The increase, at 5%, would also be below the normal expected day-to-day variation of 10%.

6.6 We have undertaken capacity analysis of the proposed access junction layout for the busiest weekday inter-peak hour in a future year of 2025, allowing for projected background traffic growth and assuming, to be robust, that a burial and cremation service occur at the same time. This established that the junction would operate well within capacity.

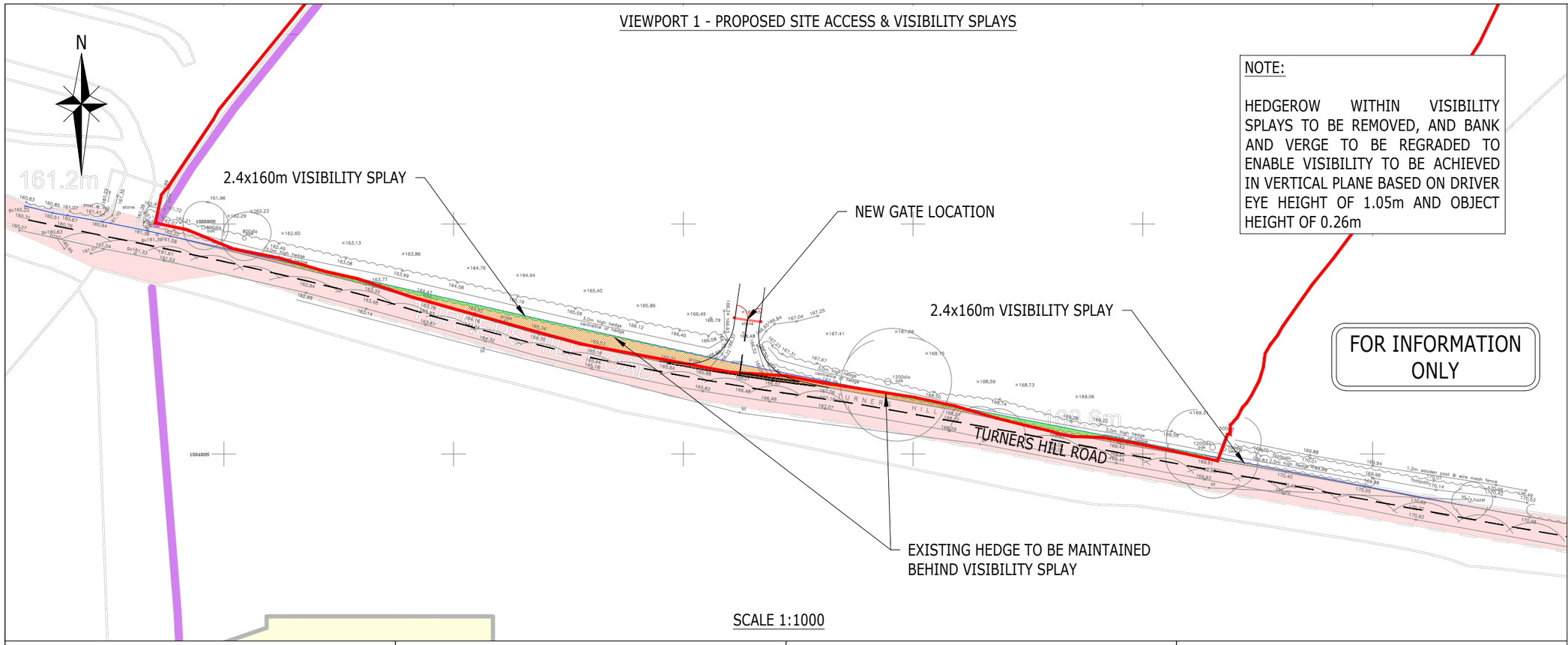
6.7 In view of this, with traffic increases restricted to the weekday inter-peak periods and below 5%, we do not consider that the development could be considered to have a "severe" residual impact, this being the key test for highways set out in the *NPPF*.

6.8 We therefore consider that there is no justification to object to the application for the crematorium on this site with an existing implemented burial ground consent, on highways and transportation grounds.

6.9 This report has been read and approved for submission to MSDC by Andrew Tabachnik QC of 39 Essex Chambers.

Drawings

VIEWPORT 1 - PROPOSED SITE ACCESS & VISIBILITY SPLAYS



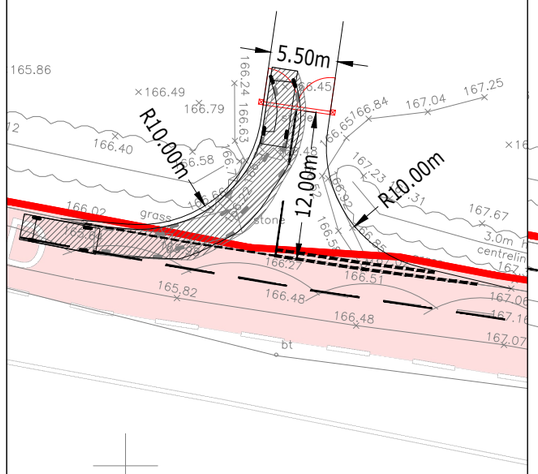
NOTE:

HEDGEROW WITHIN VISIBILITY SPLAYS TO BE REMOVED, AND BANK AND VERGE TO BE REGRADED TO ENABLE VISIBILITY TO BE ACHIEVED IN VERTICAL PLANE BASED ON DRIVER EYE HEIGHT OF 1.05m AND OBJECT HEIGHT OF 0.26m

FOR INFORMATION ONLY

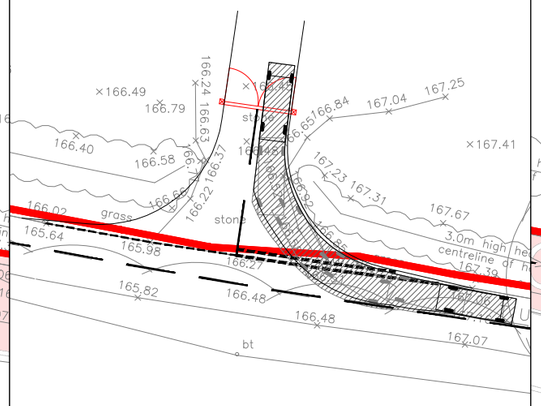
SCALE 1:1000

VIEWPORT 2 - HEARSE LEFT TURN IN



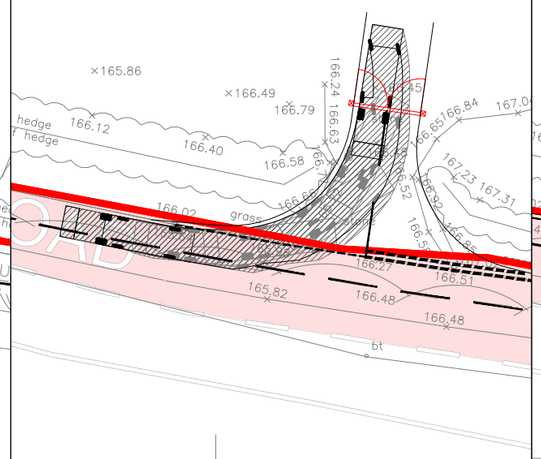
SCALE 1:500

VIEWPORT 3 - HEARSE LEFT TURN OUT



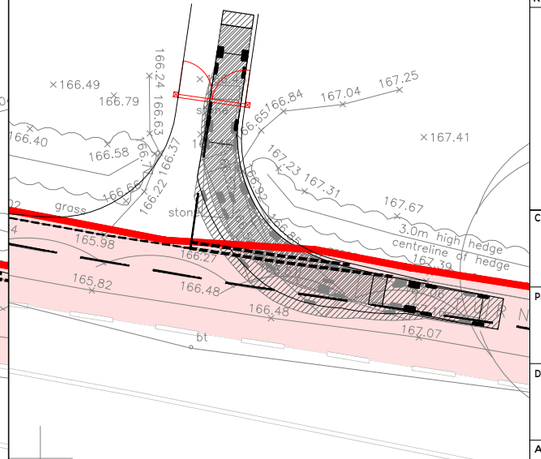
SCALE 1:500

VIEWPORT 4 - REFUSE VEHICLE LEFT TURN IN



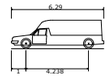
SCALE 1:500

VIEWPORT 5 - REFUSE VEHICLE LEFT TURN OUT

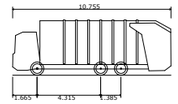


SCALE 1:500

VEHICLES USED:



Daimler Hearse	
Overall Length	6.290m
Overall Width	2.108m
Overall Body Height	1.950m
Min Body Ground Clearance	0.251m
Track Width	2.100m
Lock to lock time	6.00s
Wall to Wall Turning Radius	7.450m



Phoenix 2 Duo Recycler (P2-12W with Elite 6x2 MS chassis)	
Overall Length	10.755m
Overall Width	2.530m
Overall Body Height	3.756m
Min Body Ground Clearance	0.309m
Track Width	2.530m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	11.450m

KEY:

- SITE BOUNDARY
- HIGHWAY BOUNDARY TRANSCRIBED FROM WSCC RECORDS DATED 10/06/2020
- PUBLIC FOOTPATH
- SECTION OF HEDGE TO BE MAINTAINED BEHIND VISIBILITY SPLAY
- BANKS WITHIN VISIBILITY TO BE REGRADED TO <1.05m

Rev	Description	Drn	Chk	App	Date
F	AMENDED AFTER RSA1 COMMENTS	KI	KI	ML	15/07/20
E	SITE PLAN REMOVED, SITE BOUNDARY AMENDED	KI	KI	ML	02/07/20
D	SITE PLAN ADDED	KI	KI	ML	02/07/20
C	LABEL AMENDED	KI	KI	ML	02/07/20
B	SITE ACCESS RELOCATED	KI	KI	ML	01/07/20
A	TOPO UPDATED, HB ADDED	KI	KI	ML	01/07/20

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Client

HARTMIRES INVESTMENTS LTD

Project Title:

TURNERS HILL BURIAL GROUND, CRAWLEY

Drawing Title:

PROPOSED SITE ACCCESS SWEPT PATH ANALYSIS

A3 Scale	Date	Designed by
1:250	MAY 2020	KI
Drawn by	**Checked by**	**Approved by**
KI	KI	ML

Drawing Number: 190561-001 Rev: F

Appendix A

Pre-application consultation with WSCC

WEST SUSSEX COUNTY COUNCIL CONSULTATION

TO	Ardent Consulting Engineers Matthew Last
FROM	West Sussex Highway Authority Matthew Bartle
DATE	5 May 2020
LOCATION	Turners Hill Road RH10 4BP
SUBJECT	Pre-application advice (PRE-44-20): outline planning application for Crematorium with single chapel, with all matters reserved for future determination except access, which will be shared with implemented access to adjacent woodland burial plot granted consent under DM/15/1035
RECOMMENDATION	Advice

The advice below is given in response to a pre-application request. A planning application response may be different.

Overall, the *approach* to the assessment of transport impacts resulting from the use is acceptable, subject to the caveats outlined below.

The information supplied with the request does not give details of the size of the proposal, although basic details of the expected traffic attraction are provided. It is important that, at application stage, accurate details are given of the size and expected usage and that these are linked robustly to anticipated traffic figures.

Although we do not know these details, a transport statement appears to be appropriate as part of the planning pack.

Please note that, *if* the number of additional vehicle movements, over and above the current approved use, exceeds 50 per day, a road safety audit will be required covering the current access. There are currently no recorded road accidents associated with the current access; however, a brief review of safety nearby will be needed. The transport statement will need to confirm that the design of the access is appropriate for the estimated traffic levels.

A concern for the highway authority is the potential for vehicle movements between the churches, the public houses in the village and the site, especially from users who are not familiar with the road network. It is not clear whether events on the site will be linked with supporting events at the village churches or other local venues. The transport statement should give a brief overview of how events on the site are intended to be managed, with a view to reducing unnecessary vehicle movements.

The statement will need to confirm or otherwise the adequacy of parking on site.

Given the isolated nature of the site and the intended use, it is likely that usage will be car-dependent. There has been and is unlikely to be a suitable bus service giving access to the site, and pedestrian access will remain a concern. The applicant should at least address these issues within the transport statement, possibly as part of the event management overview.

If further explanation of the above is required, the author would be happy to oblige.

ENDS

Appendix B

2013 ATC Survey Results

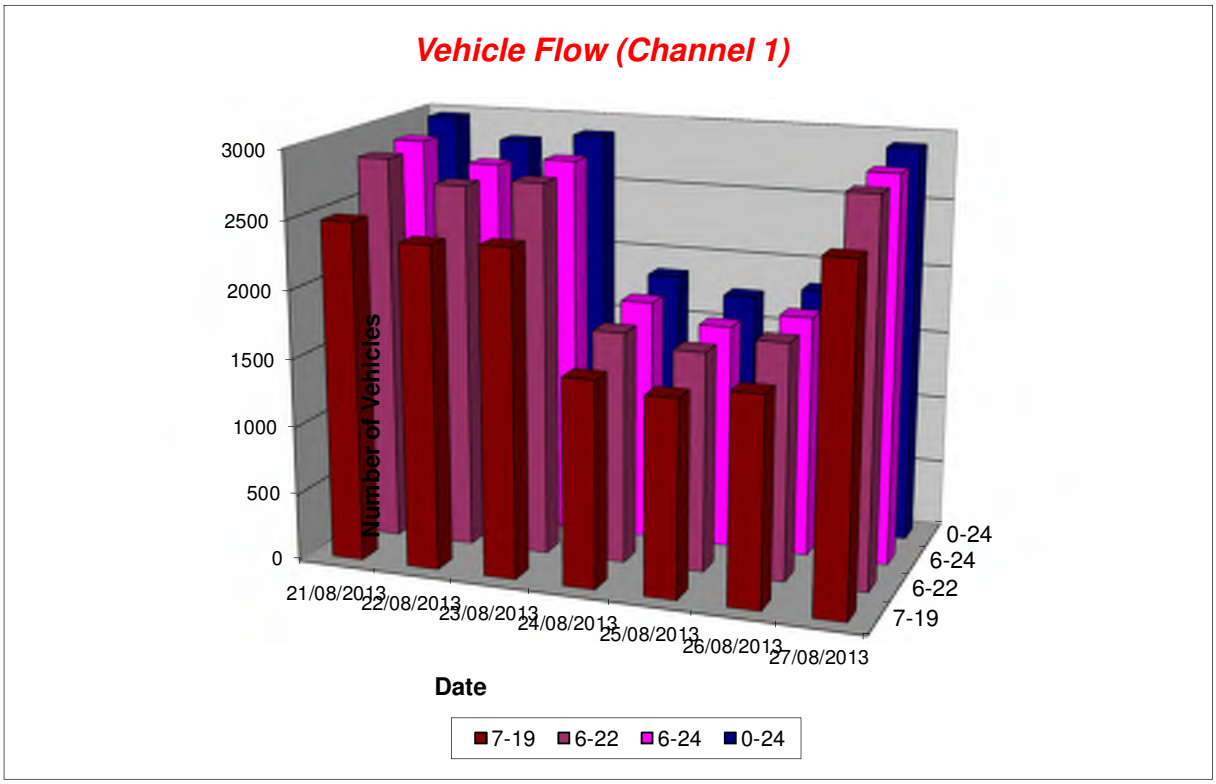
West Sussex ATC, Turners Hill Road

Produced by Road Data Services Ltd.

Channel 1 - Northwestbound **Vehicle Flow** **Week 1**

Hr Ending	21/08/2013 Wednesday	22/08/2013 Thursday	23/08/2013 Friday	24/08/2013 Saturday	25/08/2013 Sunday	26/08/2013 Monday	27/08/2013 Tuesday	5 Day Ave	7 Day Ave
1	4	4	6	9	27	12	6	6	10
2	5	1	4	7	10	5	3	4	5
3	3	4	4	4	6	1	2	3	3
4	6	14	10	9	12	7	10	9	10
5	20	20	23	16	13	15	22	20	18
6	56	45	49	25	21	19	37	41	36
7	115	110	120	41	16	24	115	97	77
8	346	332	314	58	27	25	340	271	206
9	355	333	309	86	50	48	347	278	218
10	175	196	196	113	79	99	192	172	150
11	161	165	180	160	133	129	174	162	157
12	153	177	152	164	174	158	157	159	162
13	160	145	165	180	158	148	148	153	158
14	171	132	149	146	150	162	170	157	154
15	165	159	192	147	147	163	162	168	162
16	159	139	171	130	158	153	174	159	155
17	212	193	201	120	145	156	205	193	176
18	248	236	216	132	125	180	238	224	196
19	178	157	144	81	100	110	179	154	136
20	127	99	108	66	61	85	85	101	90
21	63	57	78	44	63	69	68	67	63
22	45	43	33	35	30	26	46	39	37
23	24	38	39	44	23	27	30	32	32
24	16	18	23	41	18	13	10	16	20

7-19	2483	2364	2389	1517	1446	1531	2486	2251	2031
6-22	2833	2673	2728	1703	1616	1735	2800	2554	2298
6-24	2873	2729	2790	1788	1657	1775	2840	2601	2350
0-24	2967	2817	2886	1858	1746	1834	2920	2685	2433



West Sussex ATC, Turners Hill Road

Produced by Road Data Services Ltd.

Channel 1 - Northwestbound | **Average Speed** | **Week 1**

Hr Ending	21/08/2013 Wednesday	22/08/2013 Thursday	23/08/2013 Friday	24/08/2013 Saturday	25/08/2013 Sunday	26/08/2013 Monday	27/08/2013 Tuesday
1	45.5	45.5	48.0	36.1	37.4	42.2	43.4
2	43.0	53.0	50.5	42.3	40.5	46.5	49.7
3	44.7	46.8	46.8	46.8	37.6	53.0	43.0
4	41.3	42.6	41.5	43.0	45.7	46.6	47.8
5	47.8	46.5	44.7	43.3	42.6	47.0	47.1
6	45.7	42.9	45.7	44.8	46.8	50.6	46.5
7	47.1	45.6	45.2	44.6	43.3	44.8	46.8
8	44.4	44.4	45.3	42.6	43.3	50.5	43.3
9	43.4	43.8	43.4	44.3	43.6	45.9	42.5
10	42.4	43.5	41.4	43.0	43.5	45.2	42.4
11	41.3	40.3	33.4	41.2	41.1	41.3	40.8
12	42.1	41.3	25.1	40.9	41.7	39.1	41.1
13	41.6	42.2	28.1	40.9	42.4	41.9	41.9
14	42.6	40.5	28.8	41.2	41.0	40.9	41.7
15	40.8	39.8	40.8	40.6	43.1	40.1	40.9
16	41.5	42.5	42.9	41.1	42.5	41.2	38.3
17	43.1	44.2	43.2	41.5	42.0	41.0	42.1
18	41.9	44.1	43.3	41.4	43.0	41.4	43.0
19	44.2	45.1	44.4	44.5	46.2	42.8	43.7
20	43.4	43.4	44.1	42.5	43.0	43.4	45.5
21	44.3	44.3	41.1	39.0	41.6	41.9	43.5
22	44.1	43.7	42.5	38.8	42.4	39.7	42.8
23	40.4	41.2	40.0	39.0	41.6	43.0	43.8
24	43.8	44.8	41.0	37.8	42.7	42.6	44.0
10-12	41.6	40.9	29.6	41.1	41.4	40.1	40.9
14-16	41.1	41.0	41.8	40.8	42.8	40.6	39.5
0-24	43.0	43.1	40.1	41.5	42.5	41.9	42.5

7 Day Ave	42.1

85th Percentile

Hr Ending	21/08/2013 Wednesday	22/08/2013 Thursday	23/08/2013 Friday	24/08/2013 Saturday	25/08/2013 Sunday	26/08/2013 Monday	27/08/2013 Tuesday
1	53.7	53.6	59.0	43.7	43.9	48.7	65.7
2	58.5	-	58.4	48.9	43.7	66.4	53.5
3	58.6	53.3	53.3	48.8	53.5	-	48.3
4	48.3	48.8	43.2	48.0	53.4	53.1	58.3
5	53.3	53.8	58.2	48.5	48.1	58.8	58.0
6	53.8	48.6	58.6	53.9	53.8	58.4	58.5
7	53.0	54.0	53.4	53.4	48.5	53.5	53.2
8	48.8	48.9	48.4	48.7	48.8	58.5	48.9
9	48.8	48.2	48.7	48.5	53.6	53.2	48.6
10	48.7	53.7	48.3	48.5	48.8	53.3	53.8
11	48.0	49.0	43.6	48.5	48.0	48.1	48.9
12	48.4	48.2	25.7	48.4	48.2	48.6	48.3
13	48.9	48.5	33.2	48.4	48.1	53.2	48.5
14	48.8	48.1	33.6	53.3	48.1	48.9	48.1
15	48.4	49.0	48.1	48.1	48.3	48.1	48.6
16	49.0	48.7	48.5	48.2	48.1	48.4	48.4
17	48.9	53.0	48.9	49.0	53.0	48.3	49.0
18	48.1	53.6	53.3	53.1	53.5	48.9	48.1
19	53.9	53.1	53.8	53.4	53.7	48.8	53.9
20	53.4	48.1	53.4	48.4	53.5	53.3	53.6
21	53.5	53.8	48.3	48.5	48.8	48.7	48.3
22	58.8	53.3	53.9	48.2	53.1	48.3	53.1
23	48.1	48.0	48.6	48.5	48.2	53.1	53.5
24	48.6	53.3	48.6	43.3	53.7	53.0	53.2
10-12	48.5	48.4	38.4	48.6	48.5	48.3	49.0
14-16	48.3	48.3	48.1	48.5	48.4	48.8	48.1
0-24	48.6	48.9	48.6	48.2	48.1	48.3	48.0

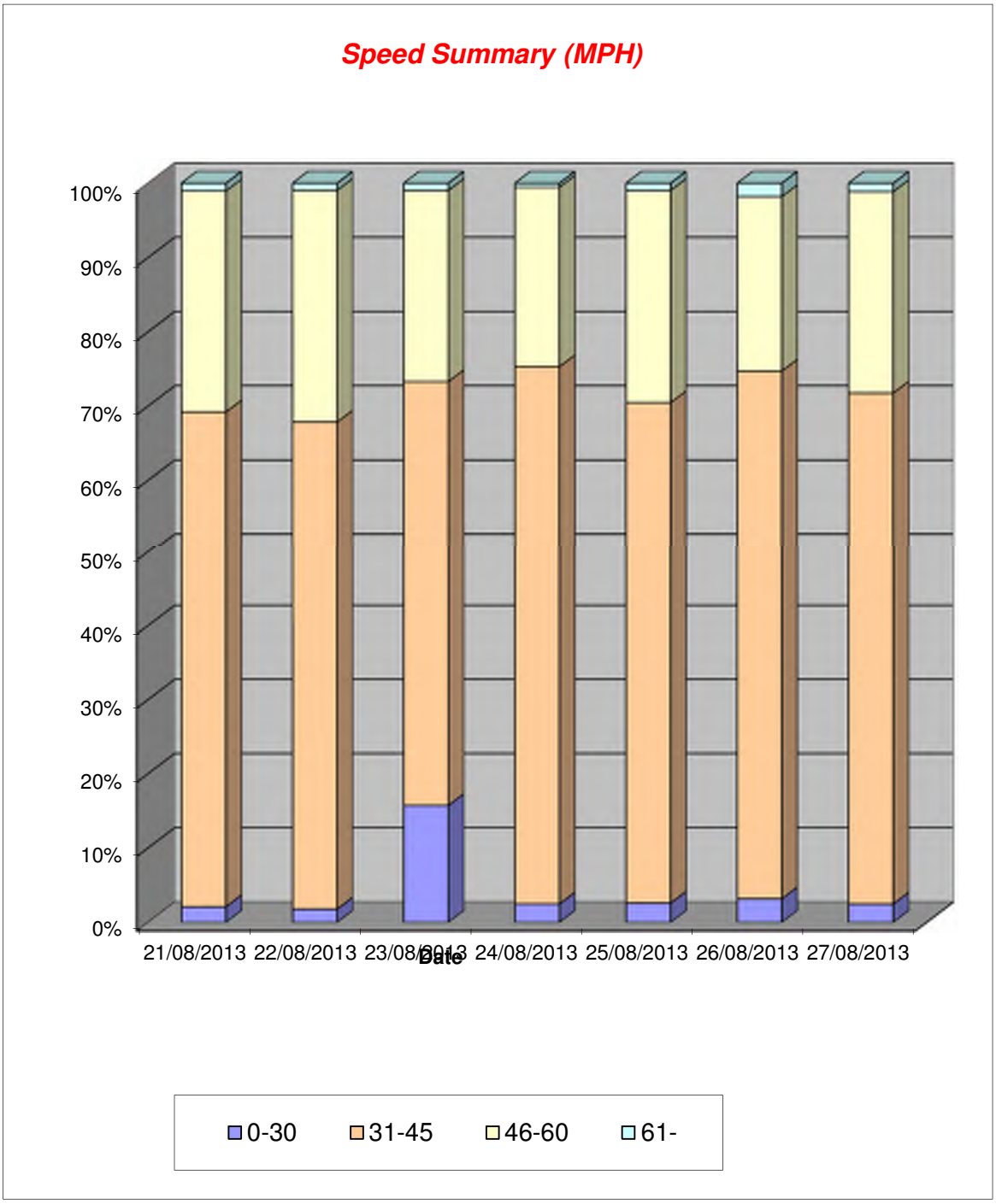
7 Day Ave	48.4

West Sussex ATC, Turners Hill Road

Produced by Road Data Services Ltd.

Channel 1 - Northwestbound | **Speed Summary** | **Week 1**

Speed (MPH)	21/08/2013 Wednesday	22/08/2013 Thursday	23/08/2013 Friday	24/08/2013 Saturday	25/08/2013 Sunday	26/08/2013 Monday	27/08/2013 Tuesday
0-30	62	50	453	46	45	58	72
31-45	1991	1861	1662	1353	1185	1312	2023
46-60	883	879	743	449	499	431	792
61-	31	27	28	10	17	33	33
TOTAL	**2967**	**2817**	**2886**	**1858**	**1746**	**1834**	**2920**



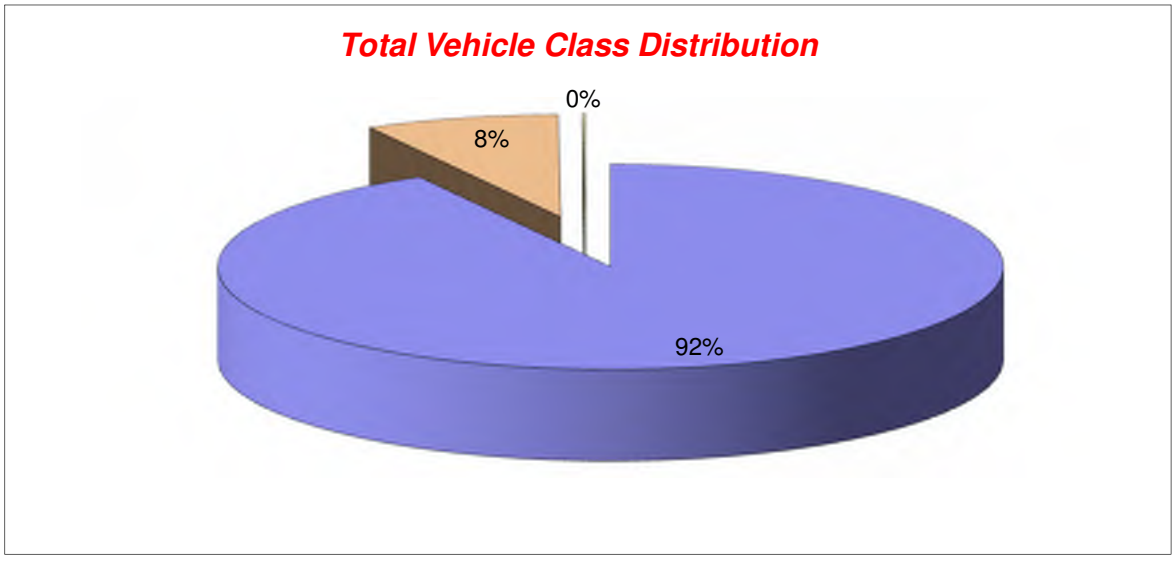
West Sussex ATC, Turners Hill Road

Produced by Road Data Services Ltd.

Channel 1 - Northwestbound | **Vehicle Class** | **Week 1**

Classes / Day / Time	Car / LGV / Caravan - 1	OGV1 / Bus - 2,3,5,6,7,12	OGV2 - 4,8,9,10,11,13	TOTAL - 1-13
21/08/2013				
7-19	2232	247	4	2483
6-22	2557	272	4	2833
6-24	2593	276	4	2873
0-24	2681	282	4	2967
22/08/2013				
7-19	2139	219	6	2364
6-22	2422	245	6	2673
6-24	2476	247	6	2729
0-24	2558	253	6	2817
23/08/2013				
7-19	2143	243	3	2389
6-22	2456	269	3	2728
6-24	2514	273	3	2790
0-24	2606	277	3	2886
24/08/2013				
7-19	1432	84	1	1517
6-22	1615	87	1	1703
6-24	1697	90	1	1788
0-24	1766	91	1	1858
25/08/2013				
7-19	1385	60	1	1446
6-22	1551	64	1	1616
6-24	1590	66	1	1657
0-24	1677	68	1	1746
26/08/2013				
7-19	1438	91	2	1531
6-22	1628	105	2	1735
6-24	1666	107	2	1775
0-24	1722	110	2	1834
27/08/2013				
7-19	2241	243	2	2486
6-22	2526	271	3	2800
6-24	2564	273	3	2840
0-24	2640	277	3	2920

Average				
7-19	1859	170	3	2031
6-22	2108	188	3	2298
6-24	2157	190	3	2350
0-24	2236	194	3	2433



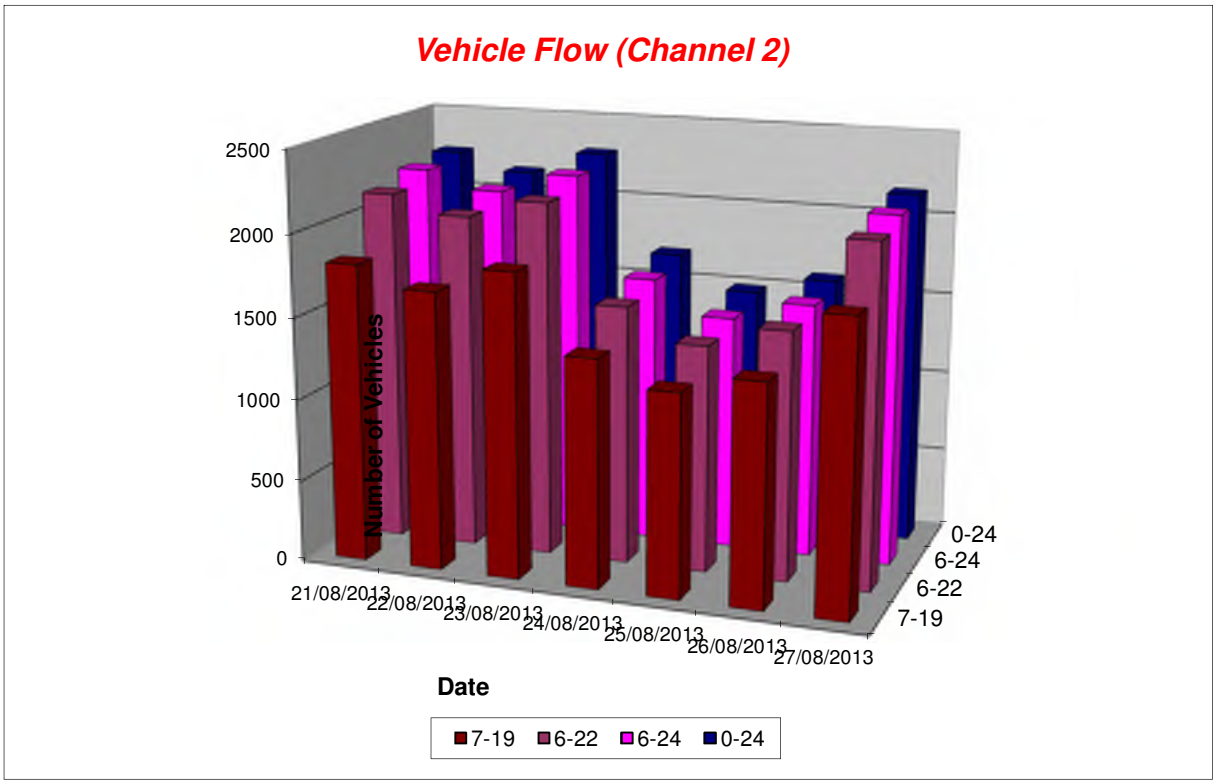
West Sussex ATC, Turners Hill Road

Produced by Road Data Services Ltd.

Channel 2 - Southeastbound | **Vehicle Flow** | **Week 1**

Hr Ending	21/08/2013 Wednesday	22/08/2013 Thursday	23/08/2013 Friday	24/08/2013 Saturday	25/08/2013 Sunday	26/08/2013 Monday	27/08/2013 Tuesday	5 Day Ave	7 Day Ave
1	6	9	15	16	23	15	6	10	13
2	7	5	10	11	13	9	2	7	8
3	1	2	4	7	6	4	0	2	3
4	1	5	4	4	2	0	3	3	3
5	9	6	10	6	3	5	8	8	7
6	11	9	13	9	7	8	12	11	10
7	56	63	51	24	19	29	49	50	42
8	106	98	100	42	23	29	101	87	71
9	130	124	125	68	44	46	115	108	93
10	127	98	110	78	58	69	113	103	93
11	105	114	137	100	94	113	120	118	112
12	125	115	152	160	121	147	121	132	134
13	136	127	152	148	136	163	137	143	143
14	125	141	155	160	148	160	141	144	147
15	152	123	134	122	162	156	152	143	143
16	171	162	200	132	128	143	159	167	156
17	229	203	186	138	122	121	197	187	171
18	205	197	192	128	108	106	200	180	162
19	206	192	205	111	93	93	203	180	158
20	141	159	148	72	63	71	156	135	116
21	92	70	61	50	35	42	67	66	60
22	40	56	49	41	30	26	40	42	40
23	37	30	43	32	27	25	37	34	33
24	32	38	35	26	21	14	17	27	26

7-19	1817	1694	1848	1387	1237	1346	1759	1693	1584
6-22	2146	2042	2157	1574	1384	1514	2071	1986	1841
6-24	2215	2110	2235	1632	1432	1553	2125	2048	1900
0-24	2250	2146	2291	1685	1486	1594	2156	2087	1944



West Sussex ATC, Turners Hill Road

Produced by Road Data Services Ltd.

Channel 2 - Southeastbound | **Average Speed** | **Week 1**

Hr Ending	21/08/2013 Wednesday	22/08/2013 Thursday	23/08/2013 Friday	24/08/2013 Saturday	25/08/2013 Sunday	26/08/2013 Monday	27/08/2013 Tuesday
1	50.9	43.3	45.8	44.1	42.9	45.2	43.8
2	45.9	48.5	48.8	42.8	44.9	45.2	45.5
3	53.0	45.5	47.4	47.3	44.7	49.2	-
4	48.0	46.0	45.5	45.5	45.5	-	41.3
5	46.3	43.0	51.2	41.3	43.0	45.0	44.6
6	51.6	47.4	49.0	44.1	45.1	45.2	46.5
7	48.5	44.7	47.3	47.5	44.6	50.2	45.9
8	44.3	43.4	44.1	47.2	47.2	50.2	45.5
9	42.5	43.7	42.3	44.6	45.9	45.8	44.2
10	42.1	43.0	40.8	42.8	43.1	44.1	42.5
11	40.8	40.7	34.2	43.2	42.4	41.8	41.1
12	40.6	42.0	26.9	40.1	43.1	39.9	41.2
13	42.5	42.0	26.8	39.9	42.3	40.7	41.4
14	41.5	41.9	28.5	42.2	42.4	40.8	41.3
15	40.8	40.5	39.9	42.0	40.8	41.7	39.4
16	42.1	43.9	42.2	44.6	42.5	40.7	38.0
17	42.6	43.3	42.3	41.9	43.5	41.3	41.3
18	42.3	44.2	43.9	42.1	42.9	42.0	43.1
19	43.5	45.8	45.2	44.2	43.8	44.3	44.6
20	44.8	44.7	44.4	43.8	44.9	46.5	45.1
21	43.5	43.0	42.3	40.8	44.6	42.2	44.9
22	45.1	43.9	43.5	39.3	43.0	44.4	46.3
23	45.7	44.7	42.1	39.4	45.6	44.6	44.1
24	47.5	47.6	44.9	43.2	47.0	43.5	49.8
10-12	40.7	41.3	30.3	41.3	42.8	40.7	41.2
14-16	41.5	42.4	41.3	43.4	41.6	41.2	38.7
0-24	42.9	43.4	39.5	42.4	43.1	42.4	42.6

7 Day Ave	42.3

85th Percentile

Hr Ending	21/08/2013 Wednesday	22/08/2013 Thursday	23/08/2013 Friday	24/08/2013 Saturday	25/08/2013 Sunday	26/08/2013 Monday	27/08/2013 Tuesday
1	65.8	48.3	53.7	53.6	48.2	53.6	53.7
2	58.5	65.8	58.5	53.3	53.2	58.8	48.8
3	-	48.2	66.1	58.1	53.3	53.5	-
4	-	58.5	53.2	58.2	53.8	-	43.3
5	53.4	58.2	53.5	58.1	48.1	53.2	53.7
6	66.3	58.6	53.7	48.4	58.5	48.9	58.4
7	53.8	53.4	53.8	54.0	53.8	53.4	53.8
8	53.7	53.9	53.4	53.5	58.8	65.8	53.7
9	48.7	53.5	48.9	53.5	53.3	53.8	53.4
10	49.0	48.2	48.7	49.0	49.0	53.2	53.1
11	48.3	48.7	43.1	48.2	53.8	48.4	48.4
12	43.5	48.7	33.6	43.4	48.7	48.2	48.3
13	48.4	48.6	33.7	48.4	48.9	48.9	48.7
14	48.7	48.8	33.0	48.3	48.9	48.6	48.3
15	48.2	48.2	48.4	48.5	48.4	48.4	48.8
16	48.4	48.8	48.4	48.1	48.1	48.4	43.2
17	48.5	48.2	48.3	48.5	49.0	48.9	48.6
18	48.8	49.0	49.0	49.0	48.8	48.6	49.0
19	48.5	53.1	53.8	53.6	48.7	53.9	53.2
20	53.4	48.1	53.7	48.9	53.4	53.5	53.9
21	53.5	48.8	48.4	48.7	53.0	48.3	53.1
22	53.2	48.4	53.7	43.4	48.2	48.9	54.0
23	53.6	48.5	53.3	43.7	53.2	48.3	53.6
24	53.5	53.1	53.4	53.1	58.5	53.3	58.6
10-12	48.7	48.1	38.4	48.8	48.4	48.2	48.9
14-16	48.9	48.2	48.9	48.7	48.1	48.3	48.6
0-24	48.4	48.0	48.1	48.5	48.3	48.0	48.2

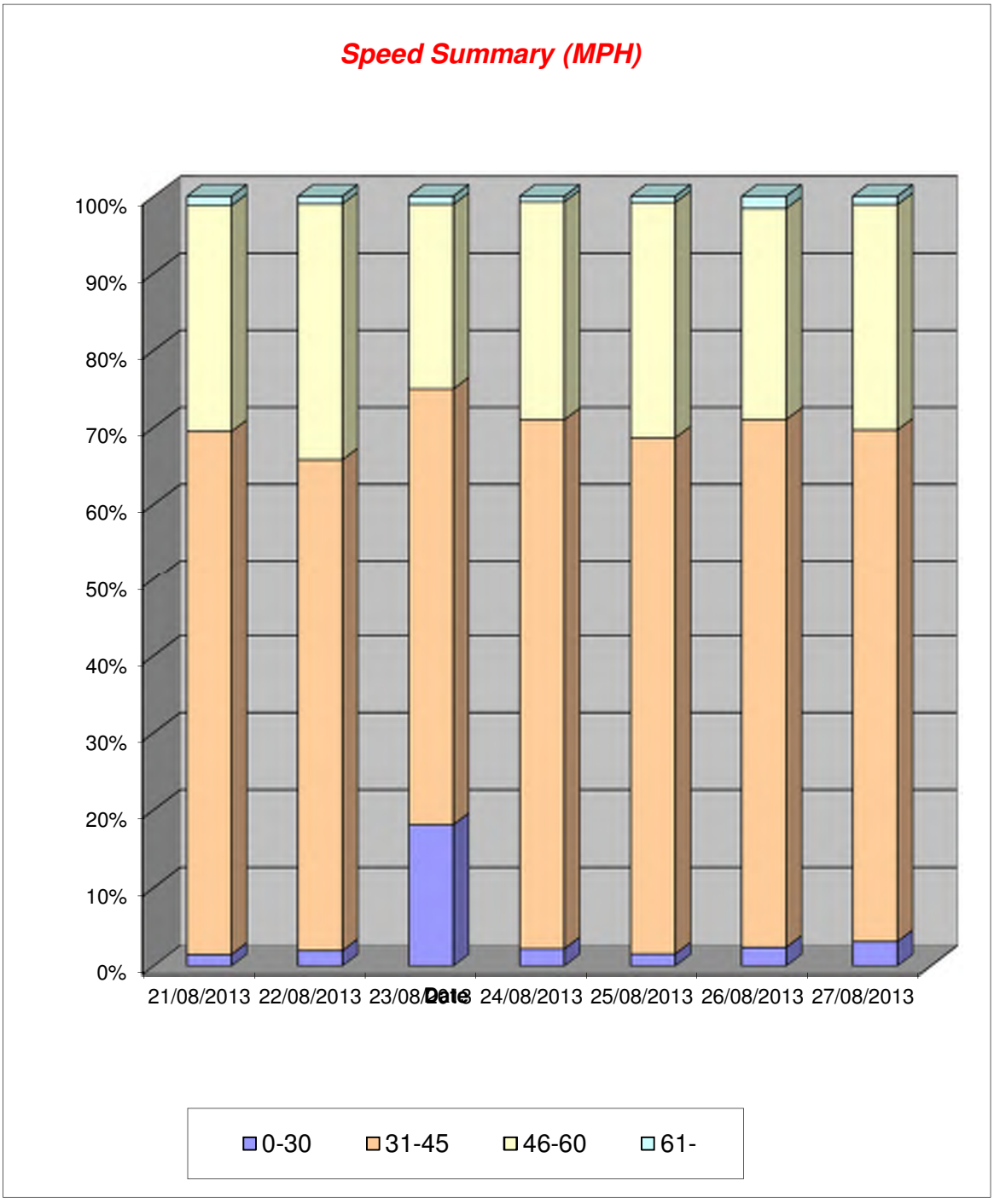
7 Day Ave	48.2

West Sussex ATC, Turners Hill Road

Produced by Road Data Services Ltd.

Channel 2 - Southeastbound | **Speed Summary** | **Week 1**

Speed (MPH)	21/08/2013 Wednesday	22/08/2013 Thursday	23/08/2013 Friday	24/08/2013 Saturday	25/08/2013 Sunday	26/08/2013 Monday	27/08/2013 Tuesday
0-30	33	42	414	37	23	38	67
31-45	1530	1370	1304	1159	997	1094	1435
46-60	660	713	549	477	454	437	631
61-	27	21	24	12	12	25	23
TOTAL	**2250**	**2146**	**2291**	**1685**	**1486**	**1594**	**2156**



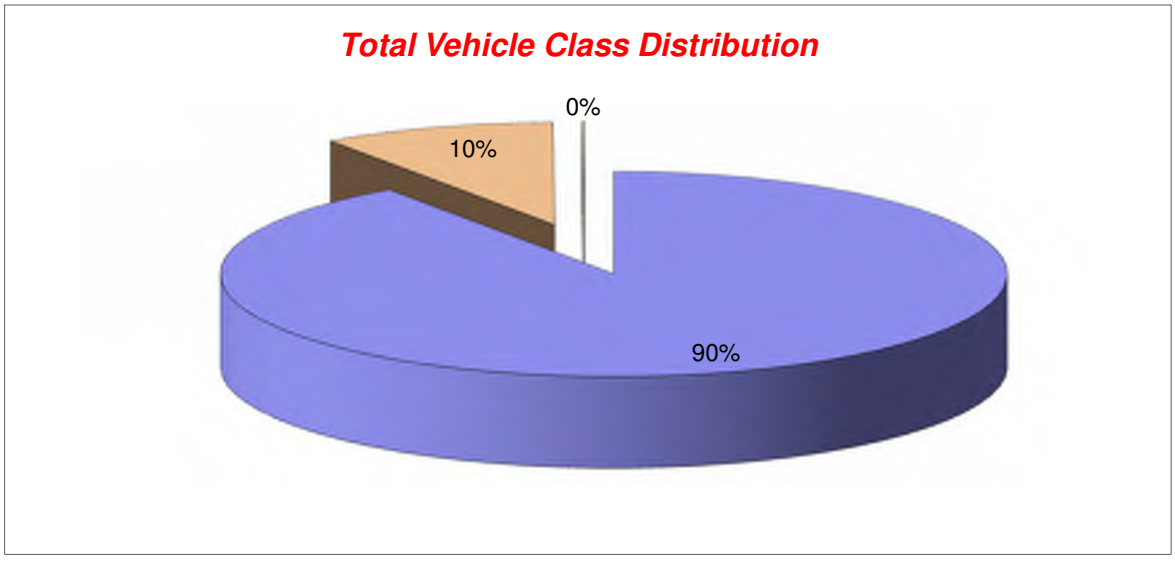
West Sussex ATC, Turners Hill Road

Produced by Road Data Services Ltd.

Channel 2 - Southeastbound | **Vehicle Class** | **Week 1**

Classes / Day / Time	Car / LGV / Caravan - 1	OGV1 / Bus - 2,3,5,6,7,12	OGV2 - 4,8,9,10,11,13	TOTAL - 1-13
21/08/2013				
7-19	1601	215	1	1817
6-22	1906	239	1	2146
6-24	1973	241	1	2215
0-24	2003	246	1	2250
22/08/2013				
7-19	1492	201	1	1694
6-22	1809	232	1	2042
6-24	1874	235	1	2110
0-24	1907	238	1	2146
23/08/2013				
7-19	1606	239	3	1848
6-22	1891	263	3	2157
6-24	1965	267	3	2235
0-24	2011	277	3	2291
24/08/2013				
7-19	1282	105	0	1387
6-22	1462	112	0	1574
6-24	1518	114	0	1632
0-24	1566	119	0	1685
25/08/2013				
7-19	1168	68	1	1237
6-22	1308	75	1	1384
6-24	1355	76	1	1432
0-24	1407	78	1	1486
26/08/2013				
7-19	1261	83	2	1346
6-22	1413	99	2	1514
6-24	1449	102	2	1553
0-24	1488	104	2	1594
27/08/2013				
7-19	1538	218	3	1759
6-22	1828	240	3	2071
6-24	1882	240	3	2125
0-24	1909	244	3	2156

Average				
7-19	1421	161	2	1584
6-22	1660	180	2	1841
6-24	1717	182	2	1900
0-24	1756	187	2	1944



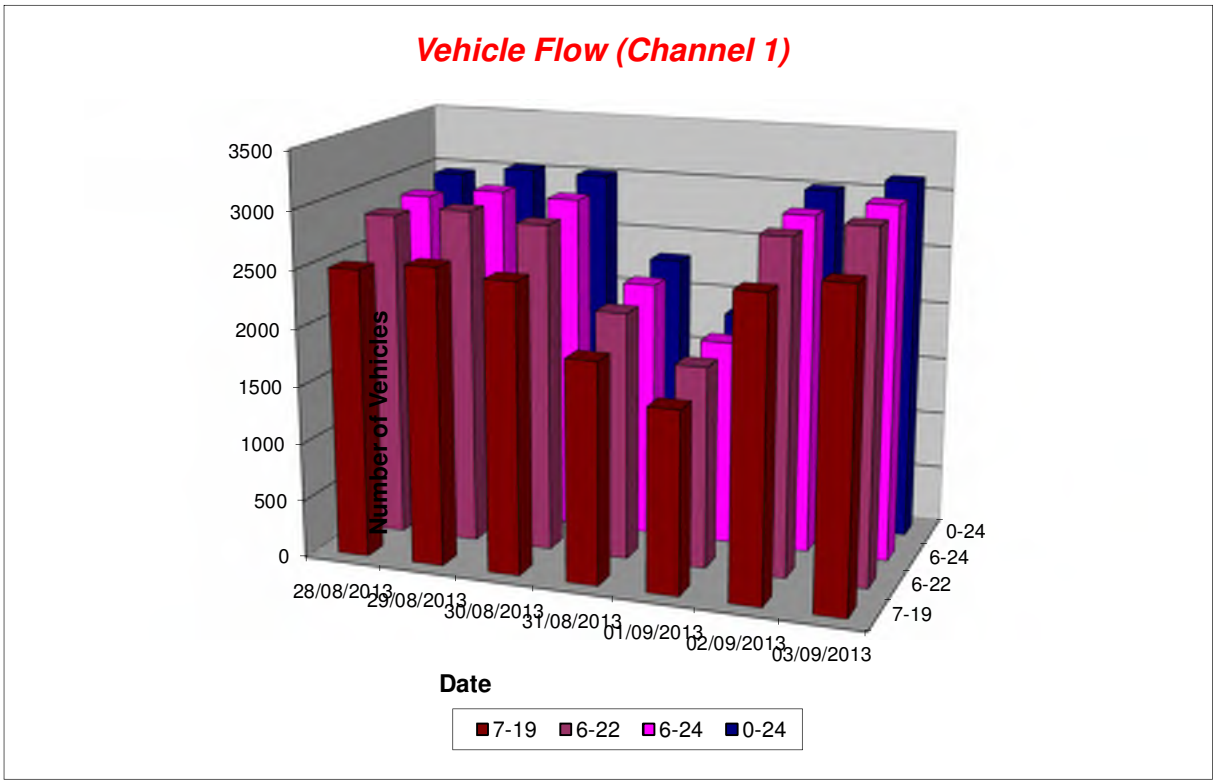
West Sussex ATC, Turners Hill Road

Produced by Road Data Services Ltd.

Channel 1 - Northwestbound | **Vehicle Flow** | **Week 2**

Hr Ending	28/08/2013 Wednesday	29/08/2013 Thursday	30/08/2013 Friday	31/08/2013 Saturday	01/09/2013 Sunday	02/09/2013 Monday	03/09/2013 Tuesday	5 Day Ave	7 Day Ave
1	4	5	5	10	20	3	3	4	7
2	3	1	12	5	13	2	1	4	5
3	4	1	4	4	4	5	2	3	3
4	9	9	11	9	8	8	8	9	9
5	16	20	12	11	16	18	12	16	15
6	48	43	49	31	15	48	48	47	40
7	118	111	127	45	25	124	121	120	96
8	334	347	315	66	51	363	384	349	266
9	343	335	304	108	59	393	369	349	273
10	179	198	207	127	113	195	285	213	186
11	183	197	183	208	162	198	168	186	186
12	154	186	199	183	195	162	147	170	175
13	156	137	165	205	170	160	155	155	164
14	168	177	168	194	160	173	158	169	171
15	159	164	159	209	159	150	154	157	165
16	167	181	178	161	148	160	167	171	166
17	193	216	226	153	126	188	239	212	192
18	268	245	240	172	136	272	277	260	230
19	190	184	159	119	93	164	199	179	158
20	96	101	109	89	61	83	93	96	90
21	68	76	55	67	54	61	57	63	63
22	45	49	39	33	32	34	38	41	39
23	36	32	42	60	24	37	30	35	37
24	11	16	49	31	13	8	14	20	20

7-19	2494	2567	2503	1905	1572	2578	2702	2569	2332
6-22	2821	2904	2833	2139	1744	2880	3011	2890	2619
6-24	2868	2952	2924	2230	1781	2925	3055	2945	2676
0-24	2952	3031	3017	2300	1857	3009	3129	3028	2756



West Sussex ATC, Turners Hill Road

Produced by Road Data Services Ltd.

Channel 1 - Northwestbound | **Average Speed** | **Week 2**

Hr Ending	28/08/2013 Wednesday	29/08/2013 Thursday	30/08/2013 Friday	31/08/2013 Saturday	01/09/2013 Sunday	02/09/2013 Monday	03/09/2013 Tuesday
1	36.1	45.0	34.0	43.5	42.9	44.7	44.7
2	50.5	38.0	40.5	41.0	44.2	40.5	48.0
3	39.2	58.0	45.5	44.2	46.8	43.0	50.5
4	45.2	46.1	46.4	41.9	45.5	45.8	44.9
5	43.0	49.5	47.0	48.7	49.2	49.1	47.6
6	46.3	45.6	46.0	47.2	45.2	45.8	46.5
7	46.5	46.0	45.8	44.8	45.2	45.1	47.2
8	41.7	44.6	44.3	45.9	45.2	44.2	44.8
9	42.2	44.6	42.6	43.1	43.7	43.3	44.2
10	40.0	43.0	42.9	41.1	43.9	42.1	43.3
11	41.4	40.9	42.5	40.9	41.4	40.3	42.4
12	41.7	40.7	41.6	40.7	41.4	40.9	42.5
13	40.9	40.8	41.6	41.0	42.2	41.5	42.7
14	40.2	42.6	41.0	41.2	39.8	41.1	42.8
15	39.8	43.1	41.8	40.3	43.2	41.8	42.2
16	32.7	42.3	41.0	41.4	42.2	42.1	42.0
17	41.6	43.6	42.4	42.0	42.3	43.0	42.8
18	41.9	43.0	43.3	43.4	42.3	42.7	42.6
19	43.2	44.5	44.3	42.9	43.1	43.4	43.8
20	44.6	42.8	43.8	42.6	41.8	44.2	43.8
21	43.8	43.0	43.5	42.1	40.9	41.7	43.9
22	41.7	40.6	44.0	42.5	45.1	41.7	41.2
23	40.5	44.8	42.3	42.8	44.5	40.5	44.6
24	44.8	43.6	40.8	42.2	44.2	47.4	43.4
10-12	41.5	40.8	42.0	40.8	41.4	40.6	42.4
14-16	36.2	42.7	41.4	40.8	42.7	42.0	42.1
0-24	41.4	43.2	42.8	41.9	42.4	42.7	43.5

7 Day Ave	42.6

85th Percentile

Hr Ending	28/08/2013 Wednesday	29/08/2013 Thursday	30/08/2013 Friday	31/08/2013 Saturday	01/09/2013 Sunday	02/09/2013 Monday	03/09/2013 Tuesday
1	43.9	53.2	53.0	48.3	48.7	49.0	48.1
2	65.6	-	48.8	48.2	48.5	43.6	-
3	48.4	-	58.8	48.7	53.9	48.5	53.8
4	53.8	53.2	58.8	43.0	48.3	48.6	49.0
5	53.2	58.7	48.3	53.3	53.7	53.1	58.3
6	53.4	53.5	53.5	58.7	58.9	53.2	53.7
7	53.4	53.2	53.6	53.1	53.3	53.3	53.8
8	48.5	54.0	48.8	53.1	53.4	53.0	48.0
9	48.3	48.5	48.6	53.3	53.0	48.2	48.8
10	48.6	48.0	48.2	48.4	48.3	48.4	48.5
11	48.2	43.4	48.2	48.6	49.0	48.5	48.2
12	48.1	48.3	48.4	48.3	48.8	48.6	48.6
13	48.9	48.8	48.6	48.3	48.6	48.8	48.9
14	48.1	53.9	48.3	48.8	48.6	48.0	48.9
15	48.7	48.8	53.5	48.3	48.3	48.4	48.7
16	43.9	48.2	48.4	48.4	48.5	48.1	48.0
17	48.2	53.1	48.6	48.4	48.8	53.3	48.7
18	53.9	48.0	48.1	53.8	48.9	48.6	49.0
19	48.8	53.2	53.5	48.4	48.1	53.5	53.0
20	48.4	53.4	48.2	48.7	48.5	53.6	54.0
21	53.5	53.2	54.0	53.7	48.4	48.3	53.1
22	53.8	49.0	53.9	53.4	53.1	53.9	48.3
23	48.8	58.9	54.0	54.0	53.5	48.8	48.6
24	58.4	58.6	48.8	48.6	48.7	53.6	48.8
10-12	48.2	48.7	48.4	48.5	48.5	48.4	48.0
14-16	43.3	48.1	48.8	48.2	48.4	48.7	48.1
0-24	48.4	48.3	49.0	48.6	48.9	48.2	48.6

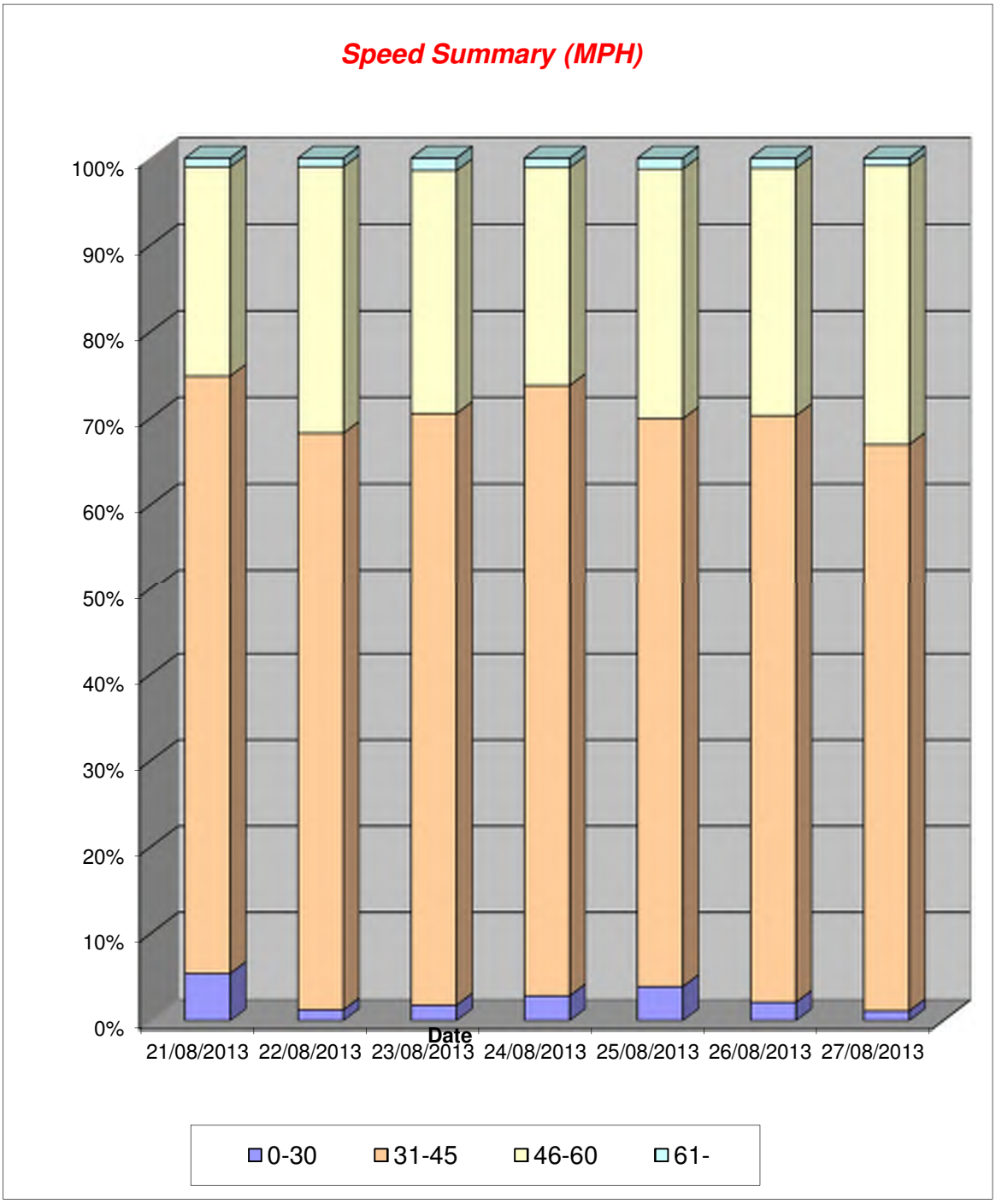
7 Day Ave	48.6

West Sussex ATC, Turners Hill Road

Produced by Road Data Services Ltd.

Channel 1 - Northwestbound | **Speed Summary** | **Week 2**

Speed (MPH)	28/08/2013 Wednesday	29/08/2013 Thursday	30/08/2013 Friday	31/08/2013 Saturday	01/09/2013 Sunday	02/09/2013 Monday	03/09/2013 Tuesday
0-30	159	37	53	65	72	63	35
31-45	2050	2031	2074	1631	1226	2051	2059
46-60	713	933	847	579	536	860	1008
61-	30	30	43	25	23	35	27
TOTAL	**2952**	**3031**	**3017**	**2300**	**1857**	**3009**	**3129**



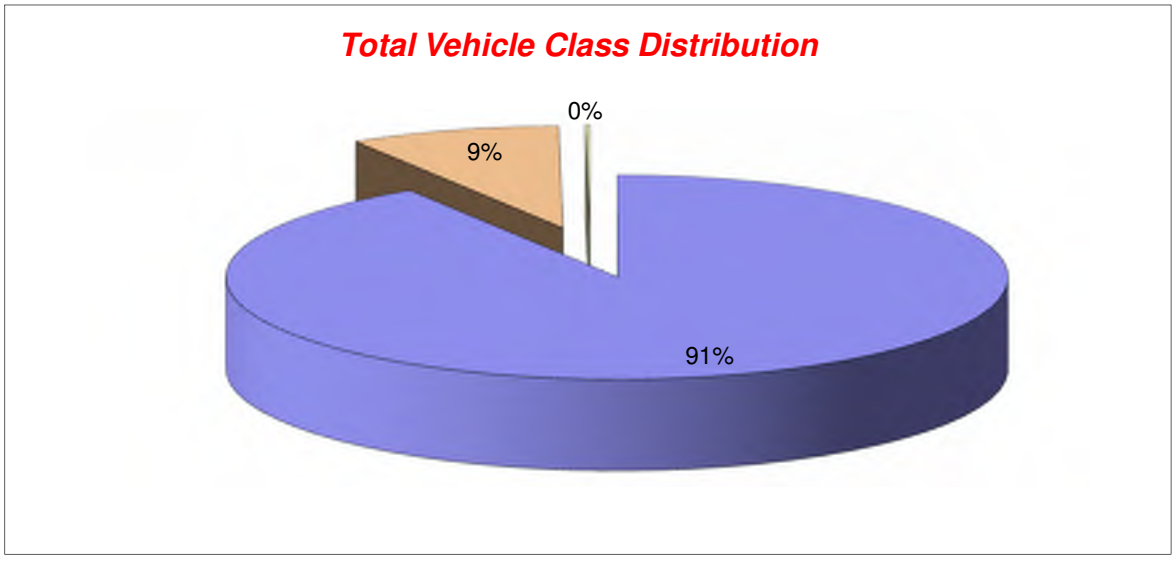
West Sussex ATC, Turners Hill Road

Produced by Road Data Services Ltd.

Channel 1 - Northwestbound | **Vehicle Class** | **Week 2**

Classes / Day / Time	Car / LGV / Caravan - 1	OGV1 / Bus - 2,3,5,6,7,12	OGV2 - 4,8,9,10,11,13	TOTAL - 1-13
28/08/2013				
7-19	2247	245	2	2494
6-22	2545	274	2	2821
6-24	2588	278	2	2868
0-24	2662	288	2	2952
29/08/2013				
7-19	2333	228	6	2567
6-22	2645	253	6	2904
6-24	2690	256	6	2952
0-24	2765	260	6	3031
30/08/2013				
7-19	2244	255	4	2503
6-22	2558	271	4	2833
6-24	2647	273	4	2924
0-24	2737	276	4	3017
31/08/2013				
7-19	1783	120	2	1905
6-22	2004	133	2	2139
6-24	2090	138	2	2230
0-24	2157	141	2	2300
01/09/2013				
7-19	1456	113	3	1572
6-22	1624	117	3	1744
6-24	1659	119	3	1781
0-24	1734	120	3	1857
02/09/2013				
7-19	2311	253	14	2578
6-22	2589	277	14	2880
6-24	2633	278	14	2925
0-24	2712	283	14	3009
03/09/2013				
7-19	2418	278	6	2702
6-22	2701	304	6	3011
6-24	2742	307	6	3055
0-24	2811	312	6	3129

Average				
7-19	2113	213	5	2332
6-22	2381	233	5	2619
6-24	2436	236	5	2676
0-24	2511	240	5	2756



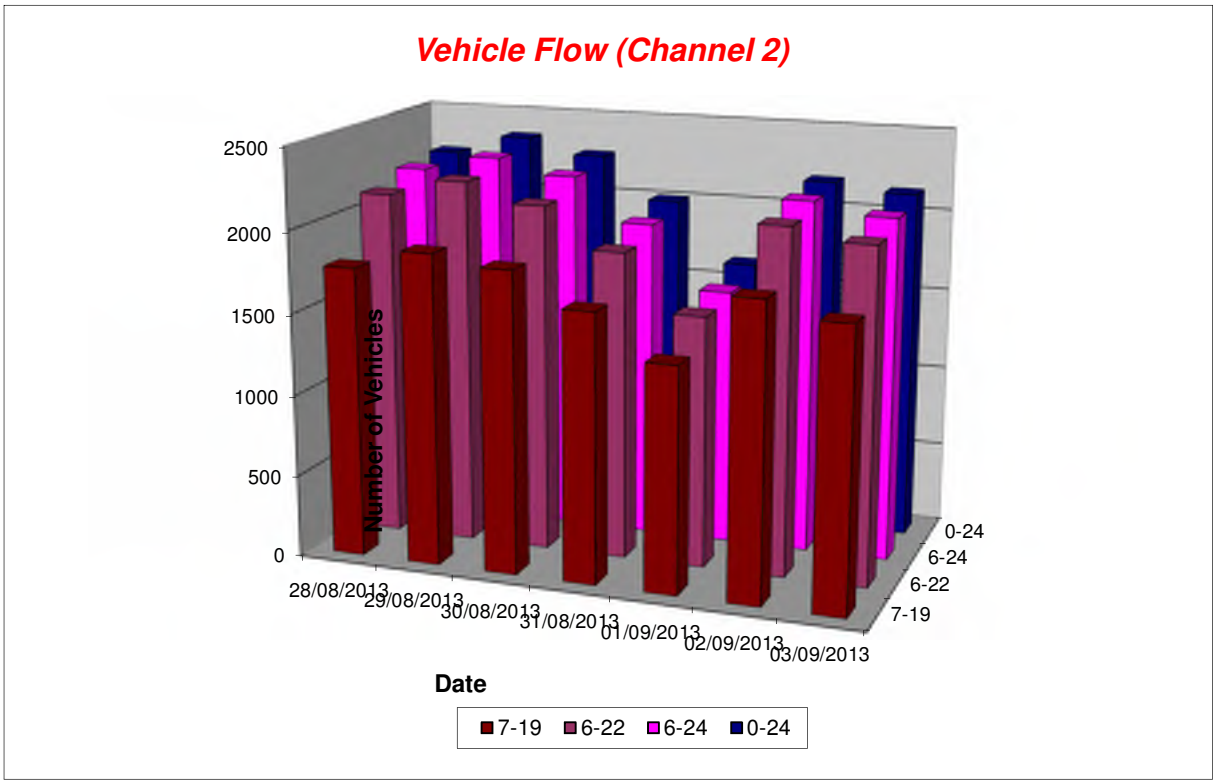
West Sussex ATC, Turners Hill Road

Produced by Road Data Services Ltd.

Channel 2 - Southeastbound **Vehicle Flow** **Week 2**

Hr Ending	28/08/2013 Wednesday	29/08/2013 Thursday	30/08/2013 Friday	31/08/2013 Saturday	01/09/2013 Sunday	02/09/2013 Monday	03/09/2013 Tuesday	5 Day Ave	7 Day Ave
1	6	11	9	15	20	3	8	7	10
2	5	11	11	6	14	5	2	7	8
3	3	5	5	12	9	3	1	3	5
4	2	6	5	1	6	4	3	4	4
5	10	8	6	7	7	4	15	9	8
6	7	12	13	13	10	9	23	13	12
7	63	57	50	30	18	57	64	58	48
8	90	97	95	59	32	112	113	101	85
9	130	143	137	68	46	137	138	137	114
10	114	110	103	87	77	116	121	113	104
11	117	119	115	153	120	131	122	121	125
12	114	142	125	163	151	123	130	127	135
13	131	157	152	170	148	127	114	136	143
14	153	139	149	174	165	137	116	139	148
15	162	185	180	164	163	148	114	158	159
16	163	196	175	158	155	165	149	170	166
17	217	217	201	153	137	208	204	209	191
18	203	193	193	156	83	181	173	189	169
19	179	198	211	128	90	202	197	197	172
20	143	137	111	111	68	126	153	134	121
21	88	98	78	57	49	79	72	83	74
22	58	44	44	43	29	50	46	48	45
23	49	39	62	41	15	41	38	46	41
24	25	26	30	33	21	15	23	24	25

7-19	1773	1896	1836	1633	1367	1787	1691	1797	1712
6-22	2125	2232	2119	1874	1531	2099	2026	2120	2001
6-24	2199	2297	2211	1948	1567	2155	2087	2190	2066
0-24	2232	2350	2260	2002	1633	2183	2139	2233	2114



West Sussex ATC, Turners Hill Road

Produced by Road Data Services Ltd.

Channel 2 - Southeastbound | **Average Speed** | **Week 2**

Hr Ending	28/08/2013 Wednesday	29/08/2013 Thursday	30/08/2013 Friday	31/08/2013 Saturday	01/09/2013 Sunday	02/09/2013 Monday	03/09/2013 Tuesday
1	46.8	49.1	46.6	43.2	45.2	46.3	45.2
2	51.0	47.1	48.2	48.8	45.1	48.0	50.5
3	44.7	46.0	46.0	50.7	50.8	48.0	53.0
4	43.0	46.3	48.0	38.0	50.1	49.2	48.0
5	47.5	41.8	44.7	41.6	48.0	49.2	46.7
6	53.7	49.0	46.5	47.0	46.5	48.3	46.2
7	46.5	47.5	47.4	45.7	45.6	47.0	46.0
8	42.8	44.6	43.1	47.0	48.1	43.6	44.7
9	41.6	44.0	41.3	46.3	47.8	42.9	45.0
10	42.5	42.6	42.9	41.1	44.9	43.4	41.7
11	42.4	41.6	42.0	42.4	42.6	41.0	41.3
12	40.7	39.4	41.2	42.1	40.9	40.7	42.6
13	38.8	39.9	42.7	40.9	40.7	41.3	43.0
14	41.3	42.2	42.0	41.3	41.1	41.4	43.6
15	39.8	41.3	41.6	40.5	41.9	40.5	41.9
16	37.7	41.0	40.4	41.5	43.2	41.9	40.1
17	40.0	42.0	41.5	42.3	42.7	43.8	42.4
18	42.5	43.8	42.2	42.5	46.1	44.4	42.0
19	44.6	44.0	43.3	44.4	43.8	43.1	43.4
20	45.1	42.2	44.3	41.7	44.0	44.6	44.9
21	42.9	42.7	43.9	42.6	42.3	44.4	43.5
22	44.8	46.4	45.5	43.1	45.7	44.8	45.2
23	44.8	46.0	41.4	38.7	44.3	44.7	47.0
24	44.6	45.0	45.2	39.0	46.6	49.5	48.8
10-12	41.6	40.4	41.6	42.2	41.6	40.9	41.9
14-16	38.8	41.1	41.0	41.0	42.5	41.2	40.9
0-24	42.0	42.6	42.5	42.3	43.1	43.0	43.2
						7 Day Ave	42.7

85th Percentile

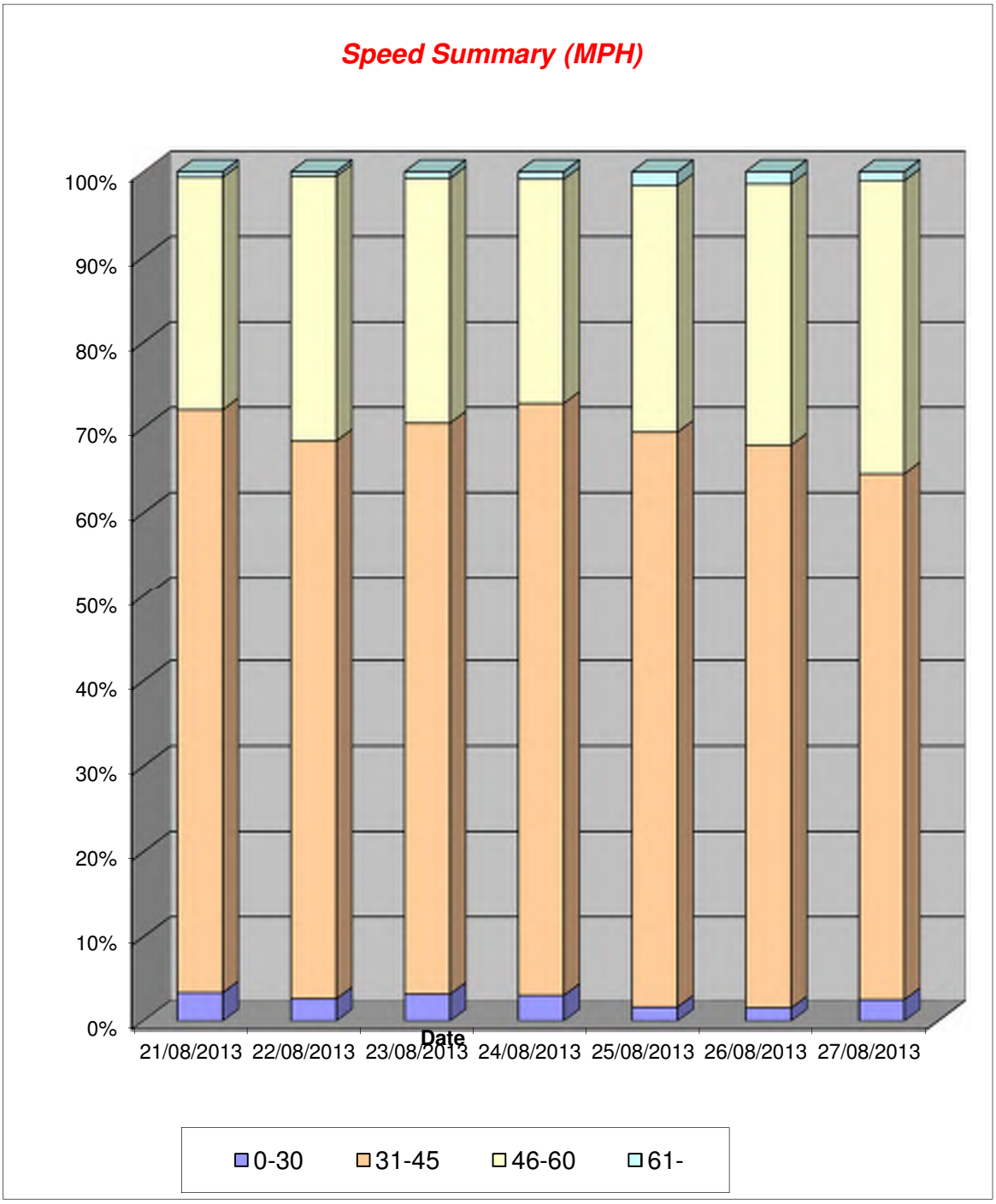
Hr Ending	28/08/2013 Wednesday	29/08/2013 Thursday	30/08/2013 Friday	31/08/2013 Saturday	01/09/2013 Sunday	02/09/2013 Monday	03/09/2013 Tuesday
1	58.3	58.9	53.8	48.8	53.5	53.0	53.3
2	58.4	53.3	48.4	58.2	58.5	53.5	53.2
3	53.5	53.3	53.5	58.3	66.1	53.7	-
4	43.7	53.7	48.5	-	65.8	53.8	58.4
5	53.5	48.7	48.7	48.5	58.4	53.8	53.6
6	65.8	53.8	58.0	58.5	53.4	53.2	53.2
7	53.1	53.8	53.6	48.6	54.0	53.5	53.7
8	48.4	53.3	48.9	53.0	66.0	53.9	53.6
9	48.6	48.8	48.3	53.3	53.6	48.8	53.6
10	48.8	48.7	48.1	48.1	53.5	48.4	48.1
11	48.6	48.9	48.4	48.3	48.0	48.5	48.0
12	48.7	48.2	48.8	48.8	48.4	48.3	48.2
13	43.8	48.4	48.4	48.6	48.1	48.2	48.2
14	48.4	48.6	48.4	49.0	48.7	48.8	48.4
15	43.8	48.4	48.7	48.8	48.2	48.5	48.6
16	43.7	48.2	48.4	48.6	48.2	48.5	48.3
17	48.7	48.6	48.7	48.6	53.4	53.6	48.8
18	48.7	48.6	48.5	48.2	48.1	53.1	48.9
19	53.2	48.1	48.2	48.9	48.6	48.7	48.5
20	53.8	48.1	48.3	48.3	53.7	53.3	53.4
21	48.1	48.6	53.1	48.6	48.4	53.1	53.0
22	53.2	53.8	54.0	48.6	58.4	53.3	53.3
23	54.0	53.6	53.3	48.8	53.3	54.0	53.2
24	53.8	53.4	53.6	48.7	53.7	53.3	58.6
10-12	48.2	48.2	48.3	48.7	48.2	48.6	49.0
14-16	43.2	48.5	48.9	48.8	48.0	48.4	48.3
0-24	48.2	49.0	48.3	48.3	48.9	48.4	48.2
						7 Day Ave	48.5

West Sussex ATC, Turners Hill Road

Produced by Road Data Services Ltd.

Channel 2 - Southeastbound **Speed Summary** **Week 2**

Speed (MPH)	28/08/2013 Wednesday	29/08/2013 Thursday	30/08/2013 Friday	31/08/2013 Saturday	01/09/2013 Sunday	02/09/2013 Monday	03/09/2013 Tuesday
0-30	75	62	72	61	27	34	54
31-45	1535	1547	1523	1398	1108	1450	1328
46-60	608	729	648	526	472	668	735
61-	14	12	17	17	26	31	22
TOTAL	**2232**	**2350**	**2260**	**2002**	**1633**	**2183**	**2139**



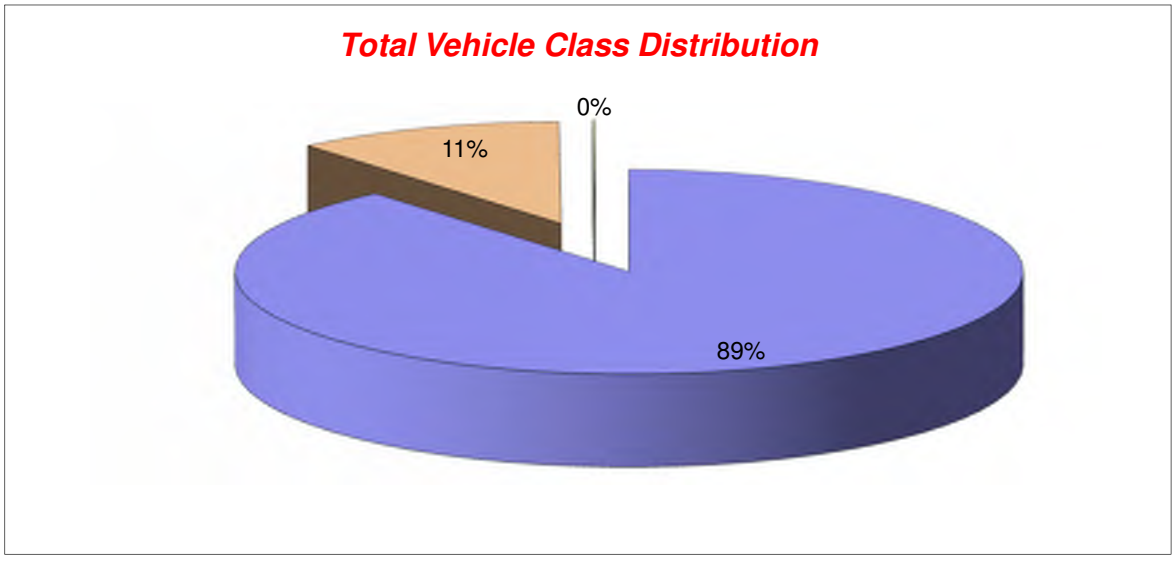
West Sussex ATC, Turners Hill Road

Produced by Road Data Services Ltd.

Channel 2 - Southeastbound | **Vehicle Class** | **Week 2**

Classes / Day / Time	Car / LGV / Caravan - 1	OGV1 / Bus - 2,3,5,6,7,12	OGV2 - 4,8,9,10,11,13	TOTAL - 1-13
28/08/2013				
7-19	1524	245	4	1773
6-22	1850	271	4	2125
6-24	1917	278	4	2199
0-24	1946	282	4	2232
29/08/2013				
7-19	1644	252	0	1896
6-22	1957	275	0	2232
6-24	2020	277	0	2297
0-24	2066	284	0	2350
30/08/2013				
7-19	1583	251	2	1836
6-22	1848	269	2	2119
6-24	1939	270	2	2211
0-24	1981	277	2	2260
31/08/2013				
7-19	1515	117	1	1633
6-22	1737	135	2	1874
6-24	1806	140	2	1948
0-24	1855	145	2	2002
01/09/2013				
7-19	1269	98	0	1367
6-22	1425	106	0	1531
6-24	1461	106	0	1567
0-24	1523	110	0	1633
02/09/2013				
7-19	1553	229	5	1787
6-22	1844	250	5	2099
6-24	1897	253	5	2155
0-24	1921	257	5	2183
03/09/2013				
7-19	1456	233	2	1691
6-22	1761	263	2	2026
6-24	1818	267	2	2087
0-24	1858	279	2	2139

Average				
7-19	1506	204	2	1712
6-22	1775	224	2	2001
6-24	1837	227	2	2066
0-24	1879	233	2	2114



Appendix C

Illustrative Scheme Layout Plan

South (Front) Elevation - Illustrative
Scale 1:250@A1

West (Side) Elevation - Illustrative
Scale 1:250@A1

Proposed Ground Floor - Illustrative
Scale 1:250@A1

GENERAL NOTES:
Layout is for illustrative purposes only.

INDIGO

KEY

- Application boundary
- Other land owned by the applicant
- Ex Footpath
- Ex Drainage ditch
- Existing contours (1m)

Setbacks

- 15m standoff to ancient woodland (Butcher's Wood)
- 45.72m (50yd) standoff to highways (Crematoria Act 1902)
- Natural burial 10m from drainage ditches (per DM/15/1035)

Proposed

- Woodland Planting
- Tree
- Hedge
- Informal footpath
- Reinforced grass track
- Scenic Views
- Visibility Splay

Maximum Height Parameters

Crematorium
Raised Skylights / Chimney: ±171.0 AOD
Roof line: ±168.5 AOD

SCALE 1:500@A1
0 5 10 20 30

NORTH

Layout is for illustrative purposes only.

rev	description	date	by	chk
H	Revised access layout	2020-07-03	MH	MG
G	Minor revisions	2020-06-29	MH	MG
F	Circulation adjusted	2020-06-17	ZH	MG
E	Notations / dimensions added	2020-06-08	ZH	MG
D	Minor revisions	2020-06-04	ZH	MG
C	Layout revised per team comments	2020-06-03	ZH	MG
B	Layout revised per team comments	2020-06-01	ZH	MG
A	General revisions	2020-05-27	ZH	MG

project
CREMATORIUM - LAND NORTH OF TURNERS HILL RD

client
HARTMIRES INVESTMENTS LTD

drawing title
ILLUSTRATIVE LAYOUT PLAN

drawing number	revision	status	scale
917-SK-01	H	INFORMATION	1:500@A1

TEL 01722 340140 ENQUIRIES@INDIGOLANDSCAPE.CO.UK WWW.INDIGOLANDSCAPE.CO.UK
INDIGO LANDSCAPE ARCHITECTS LIMITED

Appendix D

Approved Sanderson Access Junction Layout Design

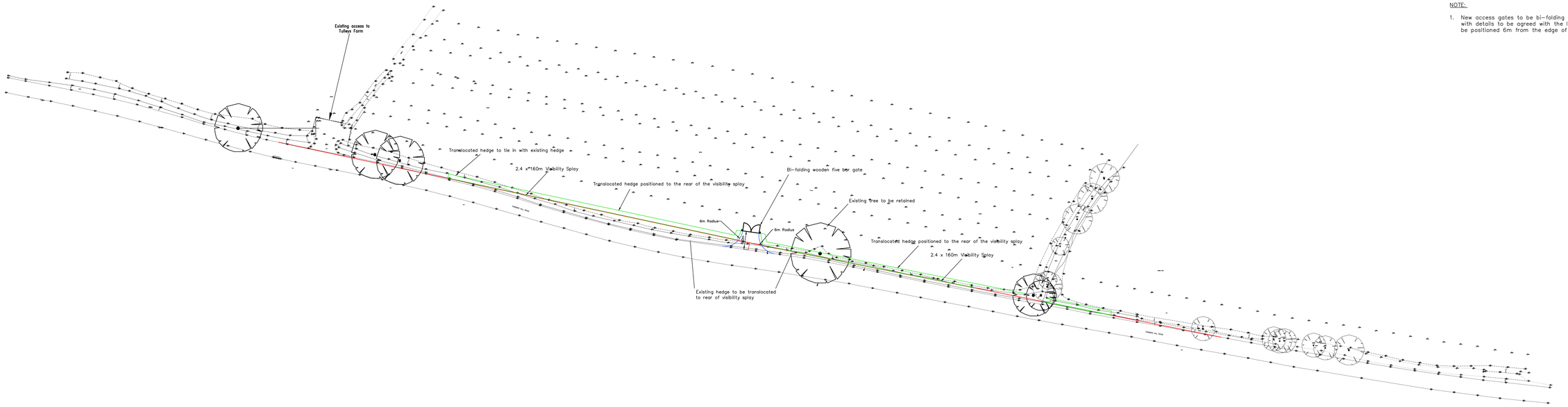
- Sanderson Associates (Consulting Engineers) Ltd ("the consultant"), has not checked or verified, and shall have no liability whatsoever for any inaccuracies which may be attributable to any data, reports, base plan(s) and drawings provided by the client, or purchased by the consultant on the client's behalf, that may have been utilised within this drawing.
- The consultant shall not be liable for the use by any person of any document for any purpose other than that for which the same were provided by the consultant.
- No liability whatsoever is accepted by the consultant for any error or omissions.
- The consultant accepts no liability for any vehicle specification errors within the vehicle track software used and / or it's vehicle libraries.
- The locations of utilities apparatus, if shown, is reproduced from plans supplied to the consultant, although care has been taken when duplicating this information. These locations are approximate only and no guarantee can be given for their accuracy. It is the client's or it's appointed agent/contractors responsibility to verify the exact locations on site by hand dug trial holes or other appropriate means prior to mechanical excavation.
- Service connections are not shown but their presence should be anticipated.
- Reference to any third party equipment shown on this drawing was only relevant at the time the drawing was prepared.
- It is the client's responsibility to ensure that any equipment ordered meets the design.

KEY

Translocated Hedge

NOTE:

1. New access gates to be bi-folding wooden five bar gates with details to be agreed with the local authority. Gates to be positioned 6m from the edge of Turners Hill Road.



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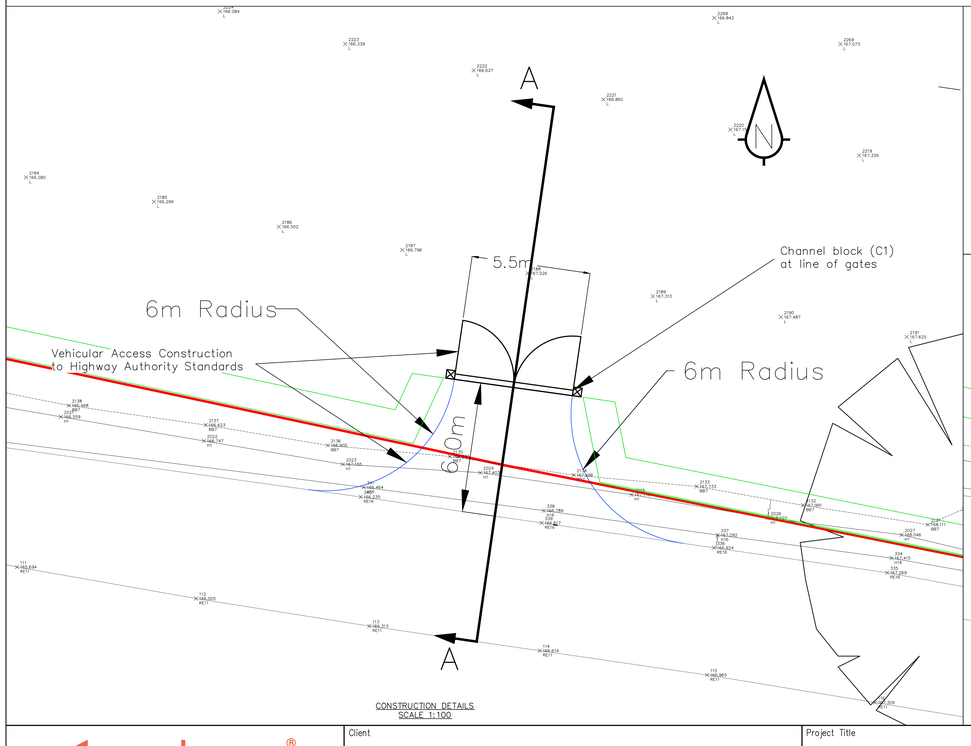
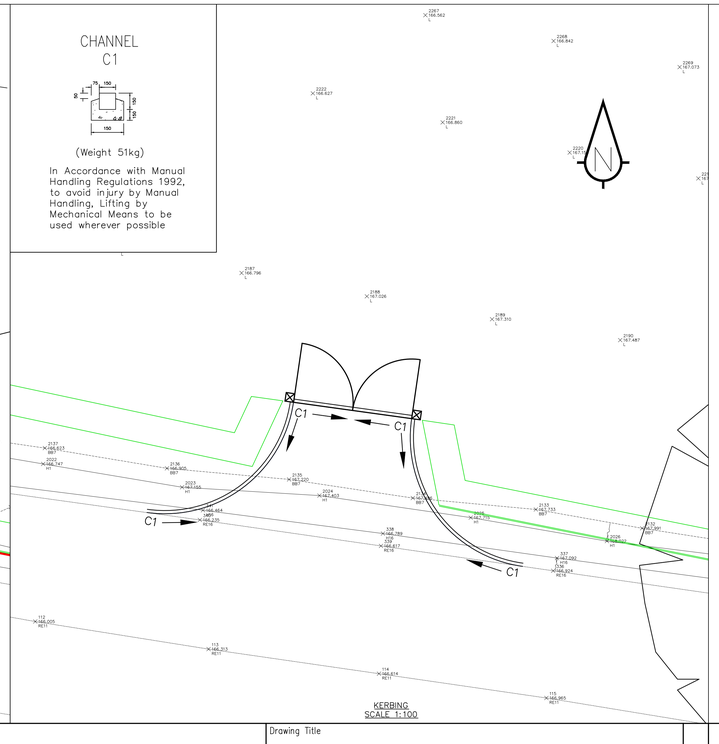


CONSTRUCTION DETAILS
SCALE 1:100

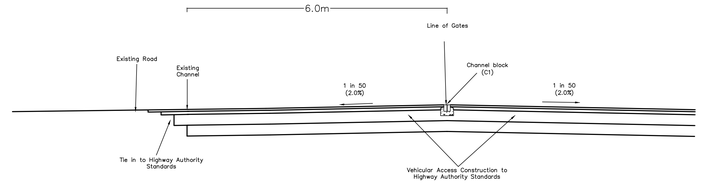
CHANNEL
C1

(Weight 51kg)

In Accordance with Manual Handling Regulations 1992, to avoid injury by Manual Handling, Lifting by Mechanical Means to be used wherever possible



KERBING
SCALE 1:100



SECTION A–A
SCALE 1:50

sanderson associates (consulting engineers) ltd
Highways | Traffic | Transportation | Water
T 01924 844080 mail@sandersonassociates.co.uk
F 01924 844081 www.sandersonassociates.co.uk

Client	Hartmires Investments Limited
Project Title	Turners Hill Road West Sussex
Drawing Title	Proposed New Access to Land off Turners Hill Road, West Sussex, RH10 4PD

Rev	Amendment	Drawn	Date	Checked

Scale: As Shown	Drawn By: BL
Drawing Size: A0	Checked By: IEL
Date: September 2014	Approved By: IEL
ISO 9001 REGISTERED FIRM	Drawing Number: 7837/03 Rev

FILE REF:

Appendix E

Road Safety Audit and Designer's Response

M & S Traffic

Road Safety Audit Stage 1

Proposed Section 278 Works

Turners Hill Road

Turners Hill

West Sussex

Date: 8th July 2020

Report produced for: Ardent Consulting Engineers

Report produced by: M & S Traffic

DOCUMENT CONTROL SHEET

M&S Traffic has prepared this report in accordance with the instructions from Ardent Consulting Engineers. M&S Traffic shall not be liable for the use of any information contained herein for any purpose other than the sole and specific use for which it was prepared.

Report Title:	Turners Hill Road, Turners Hill Road Safety Audit Stage 1
Date:	8th July 2020
Document reference and revision:	ARD/20/190561/1/MM
Prepared by:	M & S Traffic
On behalf of:	West Sussex County Council

Distribution

Organisation	Contact	Copies
Ardent Consulting Engineers	Matthew Last	-

CONTENTS

1 INTRODUCTION

1.1 This report describes a Stage 1 Road Safety Audit carried out on proposed Section 278 works at Turners Hill Road, Turners Hill associated with a burial plot and crematorium, as detailed below:

- Priority junction with gated access set 12m back from edge of carriageway.

The Audit was requested by the design organisation, Ardent Consulting Engineers, Third Floor, The Hallmark Building, 52-56 Leadenhall Street, London EC3M 5JE, on behalf of West Sussex County Council as the Highway Authority.

1.2 The Audit Team membership was as follows:

Martin Morris, PGD, MCIHT, MSoRSA – Audit Team Member
Highways England Approved RSA Certificate of Competency

Bryan Shawyer B.Eng. (Hons), MSc, MCIHT, MSoRSA – Audit Team Leader
Highways England Approved RSA Certificate of Competency

1.3 The audit was undertaken following the principles of GG119, The Design Manual for Roads and Bridges. The documents available at the time of the report are detailed in Appendix A.

1.4 The Audit took place at the Gillingham offices of M&S Traffic during July 2020 and comprised an examination of the documents provided as listed in Appendix A. A joint site visit and inspection was undertaken during the morning of the 6th July 2020 between 10:15 and 11:00 hours. Weather conditions at the time were overcast and the road surface was dry. Traffic flows were moderate and free flow speeds were moderate, there were no pedestrian or cycle movements; however, the audit was undertaken in the Covid-19 period.

1.5 The report has been compiled, only with regards to the safety implications for road users of the layout presented in the supplied drawings. It has not been examined or verified for compliance with any other standards or criteria. This safety audit does not perform any "Technical Check function on these proposals. It is assumed that the Project Sponsor is satisfied that such a Technical Check" has been successfully completed prior to requesting this safety audit.

1.6 The auditors have not been informed of any Departures from Standards in this scheme construction. No traffic flow was provided to the Audit Team.

1.7 All comments and recommendations are referenced to the detailed drawings and the locations have been detailed relating to the plans supplied with the audit brief, Appendix B.

2 ITEMS RAISED BY PREVIOUS AUDITS

2.1 Audits were undertaken on previous proposals; however, the access has been relocated where no previous Audits of this proposal were supplied for assessment.

3 ITEMS RAISED AT THE STAGE 1 AUDIT

3.1 General

3.1.1 PROBLEM

Location: Proposed access.

Summary: Insufficient construction details could lead to overshoot collisions.

Limited construction details were provided for assessment, which did not include details of Polished Stone Values (PSV). Surfacing with an insufficient PSV could lead to overshoot collisions at the junction particularly in the event of sudden braking manoeuvre, though it is recognised that vehicle speeds will likely be low.

RECOMMENDATION

It is recommended that PSV details should be checked to ensure they provide adequate grip resistance for the speed of road.

3.2 Local Alignment

3.2.1 No comment.

3.3 Junctions

3.3.1 PROBLEM

Location: Proposed access.

Summary: Movements of larger vehicles could lead to head on collisions.

Swept path information has been provided for assessment, where insufficient turning space may lead to larger vehicles entering the opposing carriageway leading to possible head on collisions, however in CD123 the Geometric design of at-grade priority and signal-controlled junctions it is stated that :

5.2 Allowance shall be made for the swept turning paths of the worst case design vehicle which is expected to use the priority junction, unless:

1} the design vehicle is expected to form only a very small percentage of the total number of vehicles that will use the junction; and
2) any swept path conflicts as a result of the design vehicle encroaching into other lanes will not occur on bends.

RECOMMENDATION

It is recommended that the junction should be eased to allow egress by the more frequent vehicle usage types such as hearses, which may be slow moving, without incursion into the opposing carriageway.

3.4 Non-Motorised User (NMU) Provision

3.4.1 No comment.

3.5 Road Signs, Carriageway Markings and Lighting

3.5.1 No comment.

4 ISSUES IDENTIFIED DURING THE ROAD SAFETY AUDIT THAT ARE OUTSIDE THE TERMS OF REFERENCE

4.1 Safety issues identified during the audit and site inspection that are outside the Terms of Reference, but which the Audit Team wishes to draw to the attention of the Client Organisation, are set out in this section. It is to be understood that, in raising these issues, the Audit Team in no way warrant that a full review of the highway environment has been undertaken beyond that necessary to undertake the Audit as commissioned.

4.2 The Audit Team had no issues to raise within this section.

5 AUDITOR TEAM STATEMENT

5.1 We certify that this audit has been carried out following the principles of GG 119.

Audit Team Leader

Martin Morris
PGD, MCIHT, MSoRSA
Highways England Approved RSA Certificate of Competency
M & S Traffic Ltd
Aeolus House
32 Hamelin Road
Gillingham
Kent ME7 3EX

Signed:

Date: 8/07/2020

Audit Team Member

Bryan Shawyer
BEng (Hons), MSc, MCIHT, MSoRSA
Highways England Approved RSA Certificate of Competency
M & S Traffic Ltd
Aeolus House
32 Hamelin Road
Gillingham
Kent ME7 3EX
Gillingham
Kent ME7 3EX

Signed:

Date: 8/07/2020

APPENDIX A

List of Drawings and other information submitted for auditing:

Drawing Number	Title
190561-001 E	Proposed Site Access Swept Path Analysis.

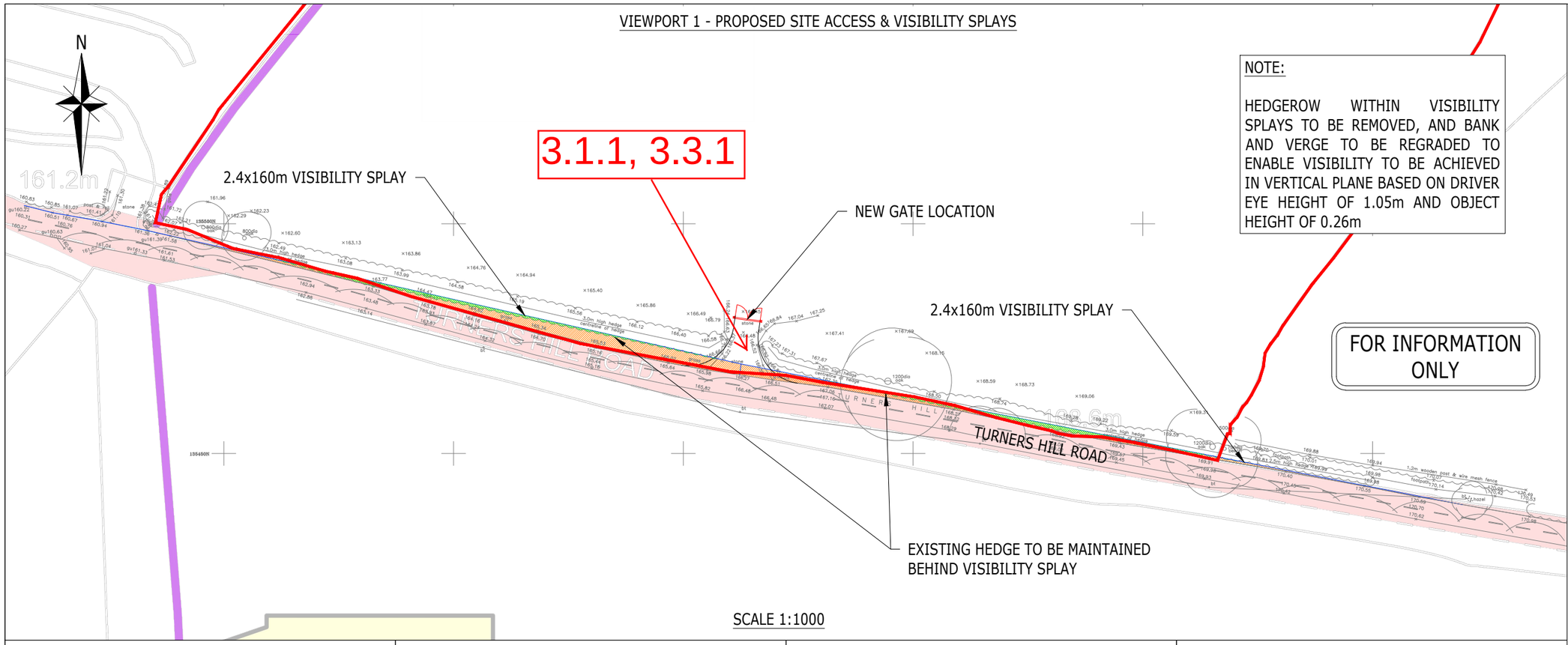
Supporting documentation:

- Transport Statement, Sanderson Associates, February 2015.
- Observed and Predicted Flows, Ardent Consulting Engineers, May 2020.
- Picady, Turners Hill, Ardent Consulting Engineers, April 2020

APPENDIX B

Plan attached showing the locations of the problems identified as part of this audit (location numbers refer to paragraph numbers in the report).

VIEWPORT 1 - PROPOSED SITE ACCESS & VISIBILITY SPLAYS



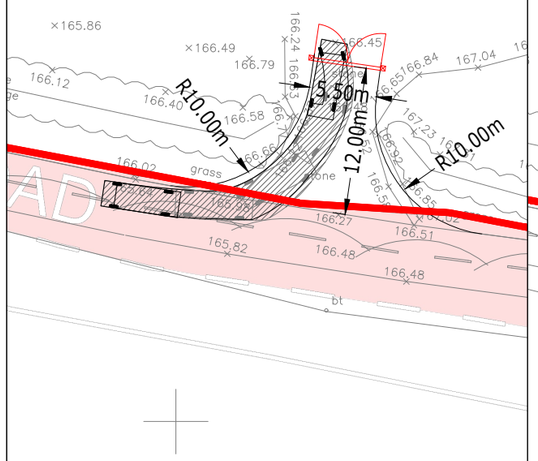
NOTE:

HEDGEROW WITHIN VISIBILITY SPLAYS TO BE REMOVED, AND BANK AND VERGE TO BE REGRADED TO ENABLE VISIBILITY TO BE ACHIEVED IN VERTICAL PLANE BASED ON DRIVER EYE HEIGHT OF 1.05m AND OBJECT HEIGHT OF 0.26m

FOR INFORMATION ONLY

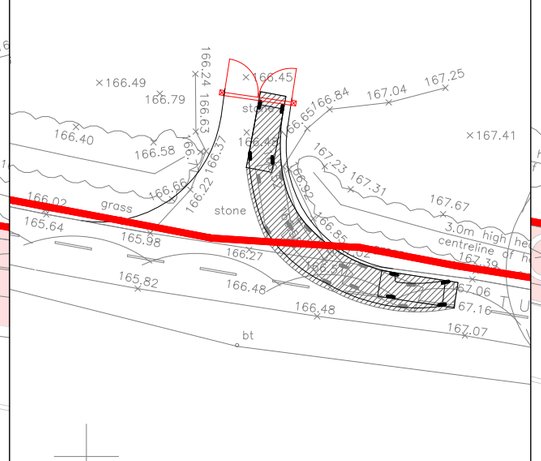
SCALE 1:1000

VIEWPORT 2 - HEARSE LEFT TURN IN



SCALE 1:500

VIEWPORT 3 - HEARSE LEFT TURN OUT



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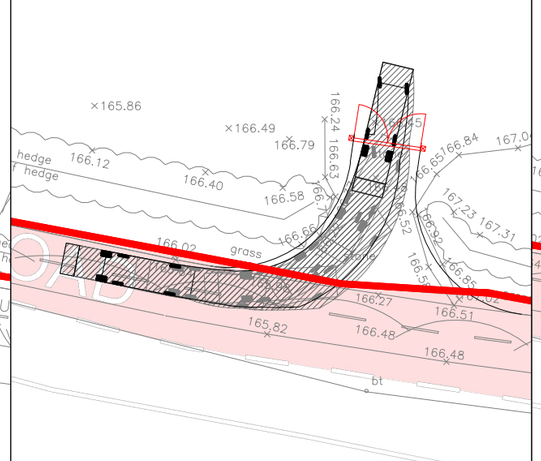
VIEWPORT 4 - REFUSE VEHICLE LEFT TURN IN



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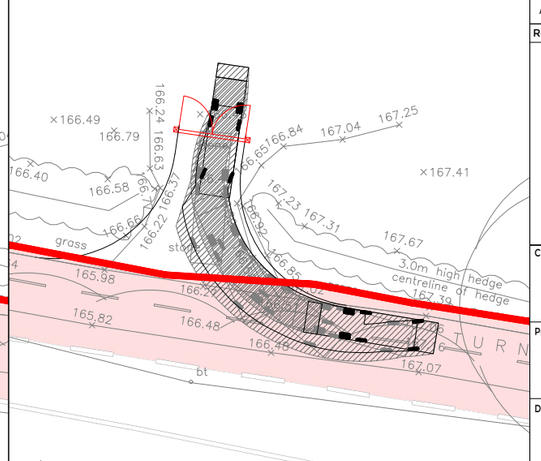
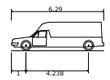
VIEWPORT 5 - REFUSE VEHICLE LEFT TURN OUT



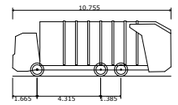
SCALE 1:500

VEHICLES USED:



Daimler Hearse

Overall Length	6.290m
Overall Width	2.108m
Overall Body Height	1.950m
Min Body Ground Clearance	0.251m
Track Width	2.100m
Lock to lock time	6.00s
Wall to Wall Turning Radius	7.450m



Phoenix 2 Duo Recycler (P2-12W with Elite 6x2 MS chassis)

Overall Length	10.755m
Overall Width	2.530m
Overall Body Height	3.756m
Min Body Ground Clearance	0.309m
Track Width	2.530m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	11.450m

KEY:

- SITE BOUNDARY
- HIGHWAY BOUNDARY TRANSCRIBED FROM WSCC RECORDS DATED 10/06/2020
- PUBLIC FOOTPATH
- SECTION OF HEDGE TO BE MAINTAINED BEHIND VISIBILITY SPLAY
- BANKS WITHIN VISIBILITY TO BE REGRADED TO <1.05m

Rev	Description	Drn	Chk	App	Date
E	SITE PLAN REMOVED, SITE BOUNDARY AMENDED	KI	KI	ML	02/07/20
D	SITE PLAN ADDED	KI	KI	ML	02/07/20
C	LABEL AMENDED	KI	KI	ML	02/07/20
B	SITE ACCESS RELOCATED	KI	KI	ML	01/07/20
A	TOPO UPDATED, HB ADDED	KI	KI	ML	01/07/20

ARDENT | CONSULTING ENGINEERS

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52-56 Leadenhall Street
London
EC3M 5JE

Tel: 020 7680 4088
Web: www.ardent-ce.co.uk
E-mail: enquiries@ardent-ce.co.uk

Client

HARTMIRES INVESTMENTS LTD

Project Title:

TURNERS HILL BURIAL GROUND, CRAWLEY

Drawing Title:

PROPOSED SITE ACCCESS SWEPT PATH ANALYSIS

A3 Scale	Date	Designed by
1:250	MAY 2020	KI
Drawn by	**Checked by**	**Approved by**
KI	KI	ML

Drawing Number: 190561-001 Rev: E

DOCUMENT CONTROL SHEET

REV	ISSUE PURPOSE	AUTHOR	CHECKED	APPROVED	DATE
	1st draft for M&S review	ML	KI	ML	15.07.20
	Final signed	ML	KI	ML	15/07/20

Audit Item No.	**Problem accepted? (Yes/No)**	**Recommended measure(s) accepted? (Yes/No)**	**Comments or Alternative Measures (describe)**	**Alternative measures accepted by Audit Team? (Yes/No)**
3.1.1	Yes	Yes	Requested information to be provided for Stage 2 RSA at detailed design stage.	Yes
3.3.1	Yes	Yes	Junction has been amended with taper to facilitate the left turn of hearses both into and out of the site, see Drawing 190561-001F.	Yes

On behalf of **M&S Traffic Ltd**

Signature……..

Name: **Martin Morris**

Audit Team Leader

Date…15th July 2020…….

On behalf of **Ardent Consulting Engineers Ltd**

Signature…… ……..

Name: **Matthew Last**

Project Director

Date……15/07/20……..

Appendix F

Extract from Paul Basham Associates TS – Grevatt's Lane, Yapton

3.22 Each service from the proposed development is anticipated to generate 38 two-way vehicle movements with each service lasting approximately 1 hour. Given the nature of the site it is likely that all trips would be arriving and leaving the site at the same time, with there likely to a minor number of trips undertaken whilst services are in progress (for visitors to the remembrance court and any staff members). It is therefore unlikely that there would be interaction between vehicles and cyclists/pedestrians over the day, given there would be periods where minimal trips are being generated by the site due to no services or whilst a service is in progress.

3.23 Following review of the survey results, it is considered to be unlikely that vehicles generated by the site and cyclists/pedestrians would interact, particularly as the results of the pedestrian and cycle surveys show that the existing footway/cycleway is relatively lightly trafficked, and that the development would operate outside the traditional AM peak (from 09:00-17:00 Monday to Friday). Furthermore, the site access proposes the implementation of a crossing point along the pedestrian/cycle desire line. This crossing point is facilitated by a refuge island and is suitable to accommodate the safe crossing of both pedestrians and cyclists. The proposals would therefore maintain safe access to the footway/cycleway for both pedestrians/cyclists.

3.24 The implementation of the site access onto the A259 is not considered to have a severe impact on the operation or safety of this route, particularly as a pedestrian/cycle crossing is proposed at the site access. It should also be noted that several crossing points are provided along the existing footway/cycleway including a similar arrangement at the Comet Corner junction to the west. It is therefore not considered to be impractical to provide a pedestrian/cycle crossing across the site access given that the site is not anticipated to generate a significant level of traffic, particularly across the AM and PM peaks when most pedestrians/cyclists are using this route.

Appendix G

Extract from Entran TS – New Milton

3.3 Trip Generation

3.3.1 In order to understand potential trip generation characteristics of a Crematorium, discussions were held with users of the West Wiltshire Crematorium outside Trowbridge in Wiltshire. The crematorium has seating for 96 mourners with services taking place between 0900 and 1700 and is therefore of a similar size and scale.

3.3.2 Discussions indicated that on average across a day it would not be unreasonable for each service to generate between 14 and 25 cars, taking an average of say 19 this would equate to a 38 two way trips per service. As visual inspection of number of services identified a slight increase on this figure

to an average of 20 or 40 two way trips per service

Appendix H

Extract from Bellamy Roberts TS – Beccles

4.3 For the purpose of the traffic assessment, the anticipated demand therefore averages at 4, increasing to 5 cremations per day (in 2033) and, in order to gain information on the numbers of vehicles likely to be attracted to each cremation service, surveys have been undertaken at similar Crematoria in Chichester and Guildford, although it should be recognised that these are different in a number of ways, and have greater capacity than the proposed facility. The Guildford Crematorium carried out 1,748 services while the Chichester facility undertook 2,517, far greater numbers than envisaged at the proposed facility.

4.4 The benefit of the survey information derived from these other facilities lies in the pattern of traffic movements in terms of numbers and time distribution, parking demand, presence or otherwise of corteges, car occupancy ratio, etc.

Chichester Survey

4.5 This survey was carried out on a Friday (Friday being the busiest day of the week), and there were thirteen cremations on that day. The survey results are set out in **Appendix C.**

4.6 Table 1 contained at Appendix C, shows that there were 183 vehicles carrying a total of 381 people for the thirteen cremations that day. That gives an average of 14 vehicles per cremation (this includes the hearse and any limousines) and an average car occupancy of 2.08. There were 206 vehicles attracted to the site over the day as a whole, the other 26 being staff, maintenance and visitors to the Gardens of Remembrance etc. Only three corteges occurred containing 3, 5 and 4 vehicles respectively (including the hearse in each case). All of the mourners arrived, not in convoys, and were generally spread throughout the 13 minutes preceding the cremation they were attending. There was little, if any, evidence of bunching of arrivals (or departures). As can be seen from Appendix C, the maximum parking demand recorded on what was a busy day was 60 vehicles in total.

Guildford Survey

4.7 This survey was carried out on a Thursday, and there were 6 cremations on that day. The results are set out in Appendix C. Table 2 shows that there were 97 vehicles in total, carrying 219 people attending the six cremations. That is an average of 16 vehicles per cremation, with an average occupancy of 2.26 people: the other 29 being staff, maintenance, and visitors to the Gardens of Remembrance.

4.8 There was only one cortege observed during this survey, containing a total of 7 vehicles (including the hearse). The maximum parking demand recorded throughout the day was 33 vehicles.

Combined Results

4.9 Combining the results of the Chichester and Guildford surveys, averaging over the 19 cremations observed, shows that 600 mourners attended in 280 vehicles (including the hearses). This is an average of 15 vehicles per cremation, with an average occupancy of 2.30 people. Only 22% of cremations gave rise to any sort of cortege, the average length of the cortege being 5 vehicles, including the hearse. As set out above, the remaining mourners in all cases arrived in a spread pattern during the 13 minutes preceding the service they were attending and there was little or no evidence of bunching shortly before or after the individual services (service period being 30 minutes at both crematoria).

4.10 Taking into account other vehicles attending the crematoria for visitation for the Gardens of Remembrance, staff and maintenance purposes, the total number of cars per day per cremation averaged out at 18 between the two sites. This figure obviously reflects to some degree the scale of the crematoria in question, because staff numbers, numbers of visitors etc. would be dependant upon the total level of activity. As both of these sites are larger than the proposal a figure of 18 vehicles per day, per cremation therefore represents very much an upper band for which is likely to occur at the application site, particularly when considering that the Garden of Remembrance will not be fully utilised for a number of years.

Appendix I

Fenland Crematorium Traffic Survey

	Inbound					Outbound					Two-way				
	LV	HV	PCL	PED	**TOT**	LV	HV	PCL	PED	**TOT**	LV	HV	PCL	PED	**TOT**
0700 - 0800	2	0	0	0	**2**	0	0	0	0	**0**	2	0	0	0	**2**
0800 - 0900	4	0	0	0	**4**	2	0	0	0	**2**	6	0	0	0	**6**
0900 - 1000	3	0	0	0	**3**	1	0	0	0	**1**	4	0	0	0	**4**
1000 - 1100	22	0	0	1	**23**	3	0	0	0	**3**	25	0	0	1	**26**
1100 - 1200	28	0	0	0	**28**	30	0	0	0	**30**	58	0	0	0	**58**
1200 - 1300	23	0	0	1	**24**	2	0	0	0	**2**	25	0	0	1	**26**
1300 - 1400	10	0	0	0	**10**	40	0	0	0	**40**	50	0	0	0	**50**
1400 - 1500	28	0	0	1	**29**	3	0	0	0	**3**	31	0	0	1	**32**
1500 - 1600	10	0	0	0	**10**	29	0	0	0	**29**	39	0	0	0	**39**
1600 - 1700	3	0	0	0	**3**	17	0	0	0	**17**	20	0	0	0	**20**
1700 - 1800	0	0	0	0	**0**	4	0	0	0	**4**	4	0	0	0	**4**
1800 - 1900	0	0	0	0	**0**	2	0	0	0	**2**	2	0	0	0	**2**

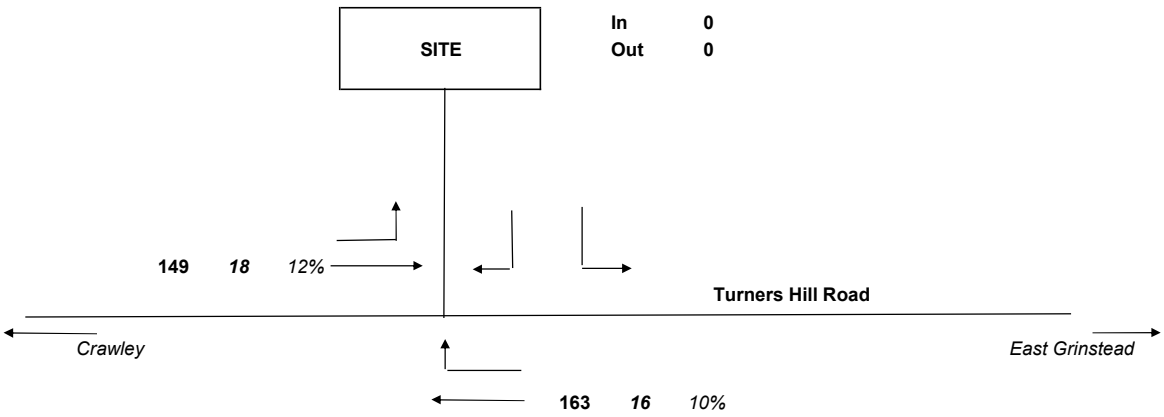
Thursday 26th July 2018: 5 funerals at 10.30, 11.30, 12.30, 2.30 and 3.30 Pedestrians are funeral directors walking in front of hearse

		0700 - 0800	0800 - 0900	0900 - 1000	1000 - 1100	1100 - 1200	1200 - 1300	1300 - 1400	1400 - 1500	1500 - 1600	1600 - 1700	1700 - 1800	1800 - 1900
Fenland	Arrive	2	4	3	23	28	24	10	29	10	3	0	0
	Depart	0	2	1	3	30	2	40	3	29	17	4	2
	Two-way	**2**	**6**	**4**	**26**	**58**	**26**	**50**	**32**	**39**	**20**	**4**	**2**

AVG TA	Arrive	2	4	12	54	83	74	103	70	52	32	5	2
	Depart	0	2	1	11	59	88	61	92	82	57	25	11
	Two-way	**2**	**6**	**13**	**65**	**142**	**162**	**164**	**162**	**134**	**89**	**30**	**13**

Appendix J

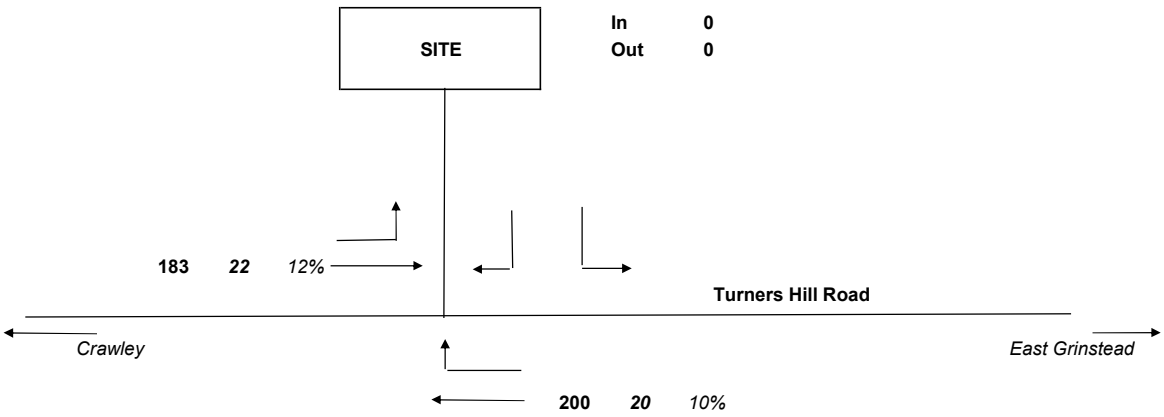
Traffic Flow Diagrams



Key

212 **All vehicles**
14 ***HGVs/PSVs***
7% *% HGVs/PSVs*

ARDENT CONSULTING ENGINEERS	Client: **Hartmires Investments Ltd**		
	Project: **Turners Hill Burial Ground, Crawley - Crematorium**		
Third Floor, The Hallmark Building 52-56 Leadenhall Street London EC3M 5JE Tel: 020 7680 4088 Email: enquiries@ardent-ce.co.uk	Date: **May 2020**	Job No: **190561**	Drawing No: **Flow Diagram 1**
	Title: **Observed traffic flows: 2013 weekday 15:00-16:00**		



Key

212 **All vehicles**
14 ***HGVs/PSVs***
7% *% HGVs/PSVs*

NTEM v6.2 Mid Sussex MSOA 002/NTM RTF 2015 Minor Rural Road weekday interpeak growth factor 2013>2025 **1.2298**

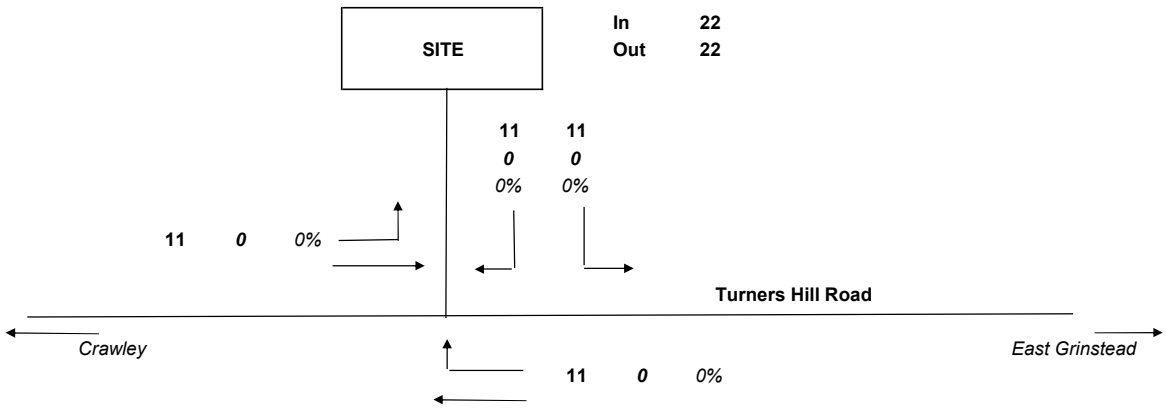
ARDENT
CONSULTING ENGINEERS
Third Floor, The Hallmark Building
52-56 Leadenhall Street
London EC3M 5JE
Tel: 020 7680 4088
Email: enquiries@ardent-ce.co.uk

Client: **Hartmires Investments Ltd**

Project: **Turners Hill Burial Ground, Crawley - Crematorium**

Date	Job No	Drawing No
May 2020	**190561**	**Flow Diagram 1**

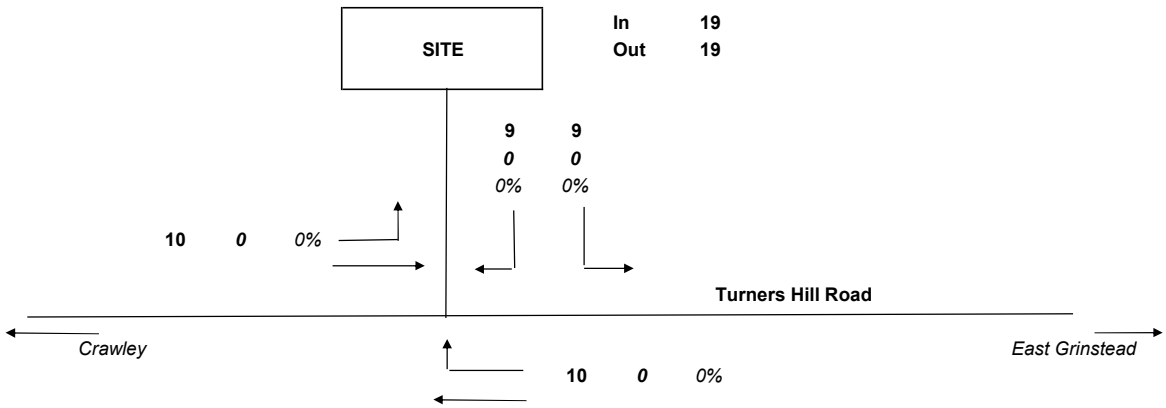
Title: **Predicted Base traffic flows: 2025 weekday 15:00-16:00**



Key

212 **All vehicles**
14 ***HGVs/PSVs***
7% *% HGVs/PSVs*

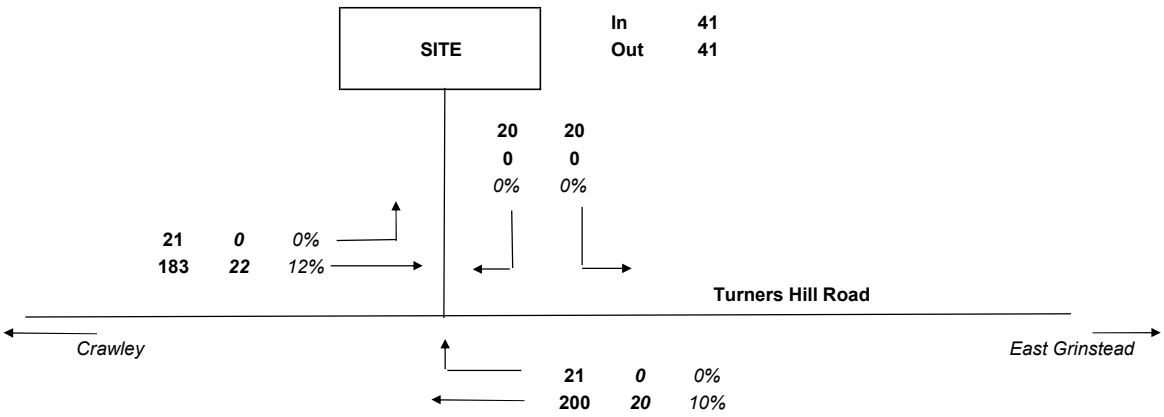
ARDENT CONSULTING ENGINEERS	Client: **Hartmires Investments Ltd**		
	Project: **Turners Hill Burial Ground, Crawley - Crematorium**		
Third Floor, The Hallmark Building 52-56 Leadenhall Street London EC3M 5JE Tel: 020 7680 4088 Email: enquiries@ardent-ce.co.uk	Date: **May 2020**	Job No: **190561**	Drawing No: **Flow Diagram 1**
	Title: **Predicted Burial Ground traffic: weekday 15:00-16:00**		



Key

212 **All vehicles**
14 ***HGVs/PSVs***
7% *% HGVs/PSVs*

ARDENT CONSULTING ENGINEERS	Client: **Hartmires Investments Ltd**		
	Project: **Turners Hill Burial Ground, Crawley - Crematorium**		
Third Floor, The Hallmark Building 52-56 Leadenhall Street London EC3M 5JE Tel: 020 7680 4088 Email: enquiries@ardent-ce.co.uk	Date: **May 2020**	Job No: **190561**	Drawing No: **Flow Diagram 1**
	Title: **Predicted Crematorium traffic: weekday 15:00-16:00**		



Key

212 **All vehicles**
14 ***HGVs/PSVs***
7% *% HGVs/PSVs*

ARDENT CONSULTING ENGINEERS	Client: **Hartmires Investments Ltd**		
	Project: **Turners Hill Burial Ground, Crawley - Crematorium**		
Third Floor, The Hallmark Building 52-56 Leadenhall Street London EC3M 5JE Tel: 020 7680 4088 Email: enquiries@ardent-ce.co.uk	Date: **May 2020**	Job No: **190561**	Drawing No: **Flow Diagram 1**
	Title: **Predicted Base + Burial Ground + Crematorium traffic: 2025 weekday 15:00-16:00**		

Appendix K

Results of JUNCTIONS9/PICADY capacity analysis

Junctions 9

PICADY 9 - Priority Intersection Module

Filename: Turners Hill 2025pm Burial + Crem.j9
Path: C:\Users\transportation\Documents\JUNCTIONS9 files\Turners Hill
Report generation date: 05/05/2020 17:58:03

Summary of junction performance

	PM					
	Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Network Residual Capacity
	2025					
Stream B-AC	0.1	9.50	0.05	A	0.68	232 %
Stream C-AB	0.1	5.00	0.04	A		[Stream B-AC]

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	
Location	
Site number	
Date	27/04/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ARDENTCE\Transportation
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75			✓	Delay	0.85	36.00	20.00

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2025	PM	ONE HOUR	15:45	17:15	15	✓

2025, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.68	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	232	Stream B-AC

Arms

Arms

Arm	Name	Description	Arm type
A	Turners Hill Road NW		Major
B	Burial Plot and Crematorium access		Minor
C	Turners Hill Road SE		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	5.80			210.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.20	16	13

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	499	0.092	0.232	0.146	0.331
B-C	645	0.100	0.252	-	-
C-B	696	0.272	0.272	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	204	100.000
B		ONE HOUR	✓	20	100.000
C		ONE HOUR	✓	224	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	21	183
	B	20	0	0
	C	203	21	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	12
	B	0	0	0
	C	10	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.05	9.50	0.1	A	18	28
C-AB	0.04	5.00	0.1	A	26	39
C-A					180	270
A-B					19	29
A-C					168	252

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	15	4	432	0.035	15	0.0	0.0	8.627	A
C-AB	20	5	742	0.027	20	0.0	0.0	4.988	A
C-A	149	37			149				
A-B	16	4			16				
A-C	138	34			138				

16:00 - 16:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	18	4	419	0.043	18	0.0	0.0	8.975	A
C-AB	25	6	751	0.033	25	0.0	0.0	4.947	A
C-A	176	44			176				
A-B	19	5			19				
A-C	165	41			165				

16:15 - 16:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	22	6	401	0.055	22	0.0	0.1	9.495	A
C-AB	33	8	766	0.043	33	0.0	0.1	4.900	A
C-A	214	53			214				
A-B	23	6			23				
A-C	201	50			201				

16:30 - 16:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	22	6	401	0.055	22	0.1	0.1	9.497	A
C-AB	33	8	766	0.043	33	0.1	0.1	4.912	A
C-A	214	53			214				
A-B	23	6			23				
A-C	201	50			201				

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	18	4	419	0.043	18	0.1	0.0	8.978	A
C-AB	25	6	751	0.033	25	0.1	0.0	4.972	A
C-A	176	44			176				
A-B	19	5			19				
A-C	165	41			165				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	15	4	432	0.035	15	0.0	0.0	8.634	A
C-AB	20	5	741	0.027	20	0.0	0.0	5.000	A
C-A	149	37			149				
A-B	16	4			16				
A-C	138	34			138				